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Welcome Message

On behalf of the Executive Committee, we are delighted to welcome you to the IUPAB2024 congress in Kyoto, Japan. This prestigious event, a collaboration between the 21st IUPAB (International Union of Pure and Applied Biophysics) and the 62nd BSJ (Biophysics Society of Japan), will take place from June 24 to 28, 2024, at the Kyoto International Conference Center.

With the theme 'Rocking Out Biophysics', this congress aims to invigorate the field of biophysics by fostering collaboration and innovation. Academic activities play a vital role in updating existing concepts, and we believe that biophysics, with its powerful perspectives and techniques, has the potential to reshape our understanding of life sciences boldly.

Our mission is to create a dynamic environment where researchers from diverse disciplines worldwide can convene, share new perspectives, and push the boundaries of biophysics. Distinguished researchers in biophysics and related fields are invited to deliver plenary and keynote talks, while over 30 sessions will feature presentations by leading scientists. Young researchers will have the opportunity to showcase their cutting-edge work through oral and poster presentations.

To encourage open exchange and collaboration across generations and borders, we have planned a variety of events, including Welcome reception, Kyoto Night, and Conference dinner where you will find excellent cuisine, sake, crafts, and music from Kyoto and other places in Japan.

Join us in 'Rocking Out Biophysics'!

Sincerely yours,

Hiroyuki NOJI

The chair of the organizing committee of IUPAB2024
President of Biophysical Society of Japan (2021-2023)
Professor, The University of Tokyo

Outline

Meeting Title: 21st IUPAB Congress 2024 (IUPAB2024)

In Collaboration With: The 62nd Annual Meeting of the Biophysical Society of Japan

Venue: Kyoto International Conference Center
https://www.icckyoto.or.jp/en/visitor-2/access/getting_here/

Date: June 24 (Mon) – 28 (Fri), 2024

Theme: Rocking out Biophysics

Official Language: English

Hosted By: IUPAB: International Union for Pure and Applied Biophysics
BSJ: The Biophysical Society of Japan
SCJ: Science Council of Japan

IUPAB2024 Secretariat Office:

c/o Convention Linkage, Inc.
Sanbancho KS BLDG., 2 Sanbancho, Chiyoda-ku,
Tokyo 102-0075, Japan
TEL: +81-3-3263-8698 FAX: +81-3-3263-8693
E-mail: IUPAB2024-kyoto@c-linkage.co.jp

IUPAB2024 Committee Members

Executive Organizing Committee

Chair	Hiroyuki Noji
Vice Chair	Kei Yura
Secretary General	Kazuhito Tabata

Finance Committee

Chair	Katsumi Imada
Members	Kazuhito Tabata
	Takeharu Nagai

Scientific Program Committee

Chair	Takayuki Nishizaka
Members	Hiroko Bannai
	Kumiko Hayashi
	Nobuyasu Koga
	Satoshi Takahashi
	Shuichi Onami
	Tomoko Nishiyama
	Yuji Sugita

Sponsorship Committee

Chair	Hiromi Imamura
Members	Katsumi Imada
	Takeharu Nagai

Public Relations Committee

Chair	Hideki Nakamura
Member	Marie Mita

Poster Committee

Chair	Tomoyasu Aizawa
Members	Eri Chatani
	Daisuke Nakane
	Kayo Hibino
	Keiichi Kojima

OMOTENASHI Committee

Chair	Tomomi Tani
Members	Chie Hosokawa
	Kazuhito Tabata
	Shunsuke F. Shimobayashi
	Takeharu Nagai

Public Lecture Committee

Chair	Shoji Takada
Member	Tsuyoshi Terakawa

Eve Fest Committee

Member	Kota Katayama

Observer

Members	Haruki Nakamura
	Kaori Kakiuchi

Meeting Information

Program at a Glance

	Room A	Room B-1	Room B-2	Room C-2
8:00				
9:00				
10:00				
11:00				
12:00				
13:00	12:30-13:10 **Opening Ceremony**			
14:00	13:30-14:20 **IUPAB Katchalsky Lecture** Prof. Feng Zhang			
15:00	14:30-16:50 **Symposium 1** Super-resolution and Advanced Microscopy Imaging	14:30-16:50 **Symposium 2** Morphogenesis during Development and Repair	14:30-16:50 **Symposium 3** Cryo Electron Microscopy and Tomography	14:30-16:50 **Hands-on Training Session D** DNA Nanomachine Tutorial
16:00				
17:00	17:00-17:40 **Avanti-IUPAB Prize Lecture** Prof. Massimo Olivucci			
18:00		10:30-12:15 **IUPAB Council Meeting** (Venue: Room 555) *Invited only		
19:00				
20:00		19:00-21:00 **Presidential Dinner** (Venue: Heihachi Jaya) *Invited only		
21:00				

Monday, June 24

Room D	Room E	Annex Hall	
			8:00
			9:00
			10:00
			11:00
			12:00
		12:00-17:00 **Poster display and Exhibition**	13:00
			14:00
14:30-16:50 **Symposium 4** Correlative Cell Imaging	14:30-16:50 **Symposium 5** Theoretical Biology of Complex Systems	15:00-17:00 **Coffee break**	15:00
			16:00
			17:00
			18:00
			17:50-19:15 **Welcome Reception**
			19:00
			20:00
			21:00

Program at a Glance

	Room A	Room B-1	Room B-2	Room C-2
8:00	8:00-8:50 **Morning Seminar 1** (Avanti Polar Lipids)			
9:00		9:00-9:50 **Keynote 1** Prof. Kunihiko Kaneko		
10:00	10:00-12:20 **The 20th Early Career Award in Biophysics Candidate Presentations**	10:00-12:20 **Symposium 6** Mechanosensing and Mechanobiology, Biological Temperature	10:00-12:20 **Symposium 7** Protein Structure to Function 1	10:00-12:20 **Symposium 8** Unstructured/Disordered Proteins, RNA
12:00	12:20-13:50 **Break**			
13:00	12:35-13:35 **BP Seminar 1** (JEOL Ltd.)	12:35-13:35 **BP Seminar 2** (Carl Zeiss Co., Ltd.)	12:35-13:35 **BP Seminar 3** (Leica Microsystems K.K.)	12:35-13:35 **BP Seminar 4** (Nakatani Foundation for Advancement of Measuring Technologies in Biomedical Engineering)
14:00				
15:00				
16:00	16:00-18:20 **Symposium 11** Single Molecule Biophysics in Chromosome Science	16:00-18:20 **Symposium 12** Cell Motility, Cytoskeletons and Motor Proteins	16:00-18:20 **Symposium 13** Protein Structure to Function 2	16:00-18:20 **Hands-on Training Session A** Millions of Single Live Cell Analysis with the Automated Trans-scale-scope, AMATERAS
17:00				
18:00				
19:00				
20:00				
21:00				

Tuesday, June 25

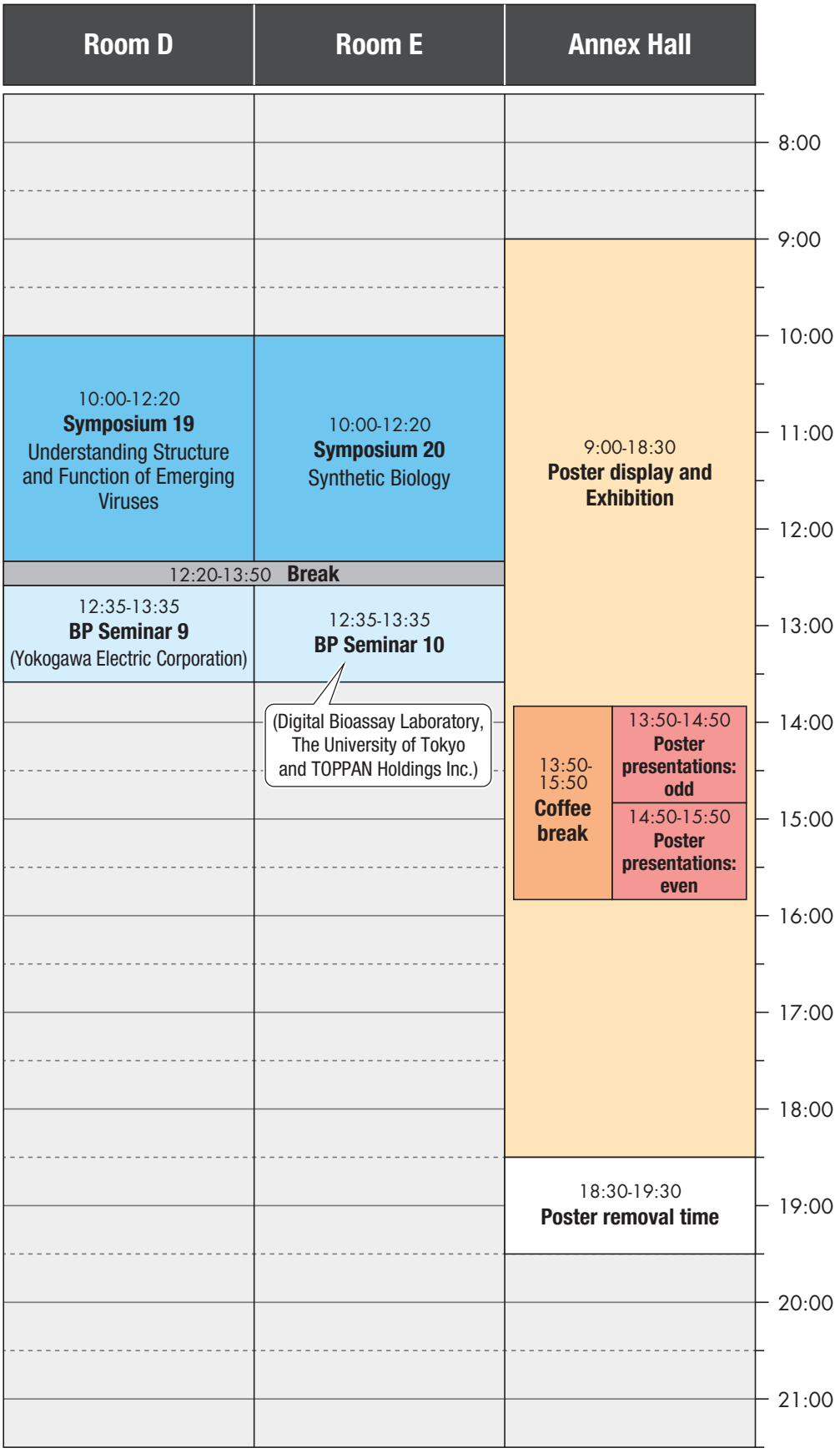
Room D	Room E	Annex Hall	Sakura
10:00-12:20 **Symposium 9** Lipid and Membrane Biophysics	10:00-12:20 **Symposium 10** Data Science for Integrated Dynamic Structural Biology	9:00-18:30 **Poster display and Exhibition**	
12:20-13:50 **Break**			
12:35-13:35 **BP Seminar 5** (SIGMAKOKI CO., LTD.)	12:35-13:35 **BP Seminar 6** (On-chip Biotechnologies Co., Ltd)		
		13:50-15:50 **Coffee break** 13:50-14:50 **Poster presentations: odd** 14:50-15:50 **Poster presentations: even**	
16:00-18:20 **Sponsored Symposium 1** (MEXT KAKENHI Grant-in-Aid for Transformative Research Area (A) "Material properties determine body shapes and their constructions" and "Integration of Extracellular Information by Multimodal ECM Activity")	16:00-18:20 **Symposium 14** Data Science, Machine Learning, and Analytical Frameworks for Understanding the Heterogeneity of Cellular and Multicellular Systems		
		18:30-19:30 **Poster removal time**	18:30-20:00 **Kyoto Night**

8:00 9:00 10:00 11:00 12:00 13:00 14:00 15:00 16:00 17:00 18:00 19:00 20:00 21:00

Program at a Glance

	Room A	Room B-1	Room B-2	Room C-2
8:00	8:00-8:50 **Morning Seminar 2** (GeneFrontier)			
9:00	9:00-9:50 **IUPAB Engstrom Lecture** Prof. Toshio Ando			
10:00	10:00-12:20 **Symposium 15** Single Molecule Biophysics with Advanced Techniques	10:00-12:20 **Symposium 16** Rotary ATPases	10:00-12:20 **Symposium 17** Protein Design & Engineering	10:00-12:20 **Symposium 18** Neural Systems and Excitable Cells
12:00	12:20-13:50 **Break**			
13:00	12:35-13:35 **BP Seminar 7** (Refeyn)	12:35-13:35 **BP Seminar 8** (HAMAMATSU PHOTONICS K.K.)		
14:00				
15:00				
16:00	16:00-16:40 **IUPAB Young Investigator Award Lecture** Prof. Hideaki Kato			
17:00		16:40-17:30 **BPS Award Lecture** Prof. Jerelle A. Joseph		
18:00	17:30-18:20 **Keynote 2** Prof. Gerhard Hummer	17:30-18:20 **Keynote 3** Prof. Rong Li		
19:00	18:30-20:30 **General Assembly** (Voting delegates to attend (observers welcome))			
20:00		12:35-13:35 **Mixer with Presidents and Secretaries** (Venue: Room B-2) *Invited only		
21:00				

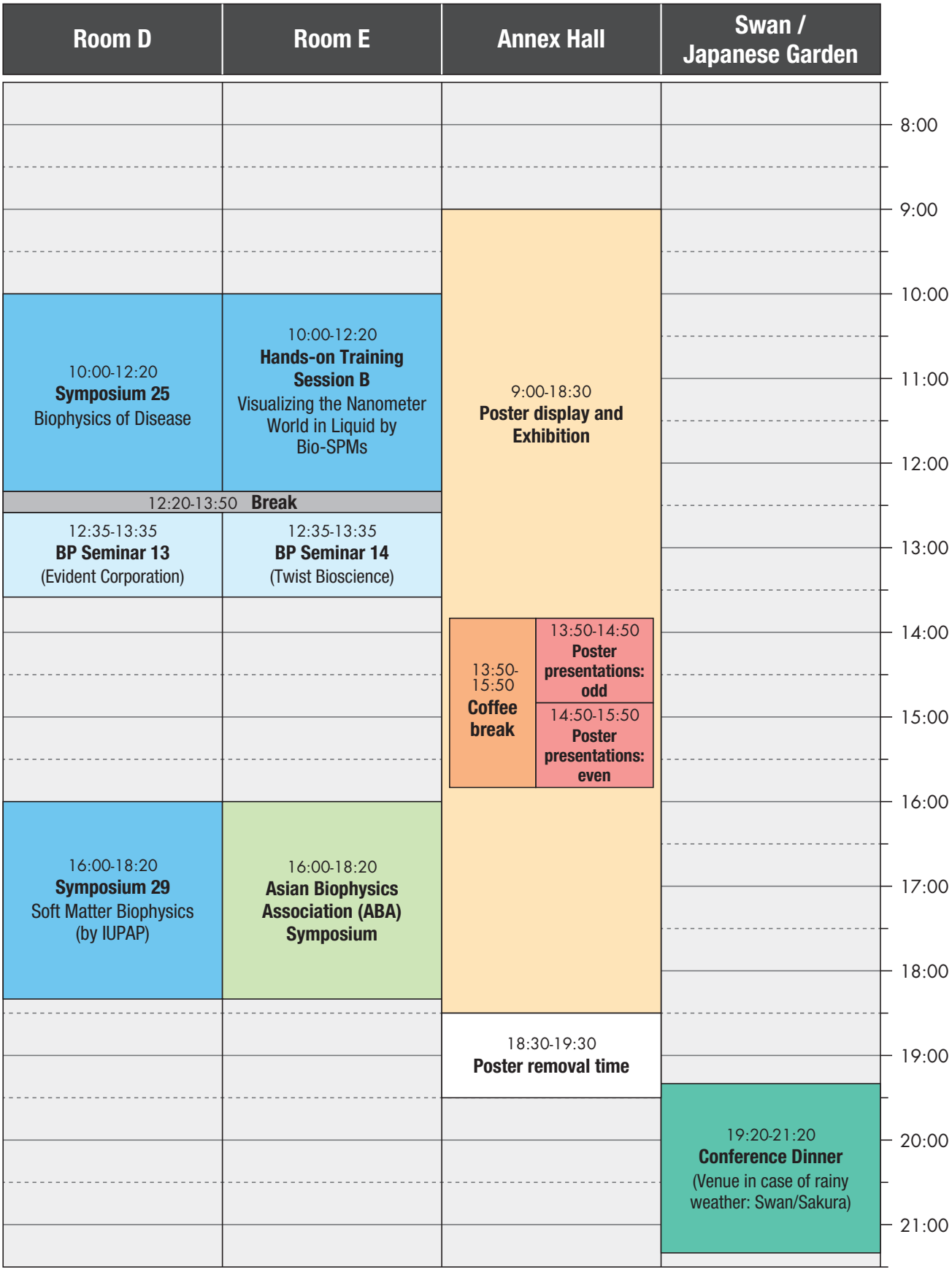
Wednesday, June 26



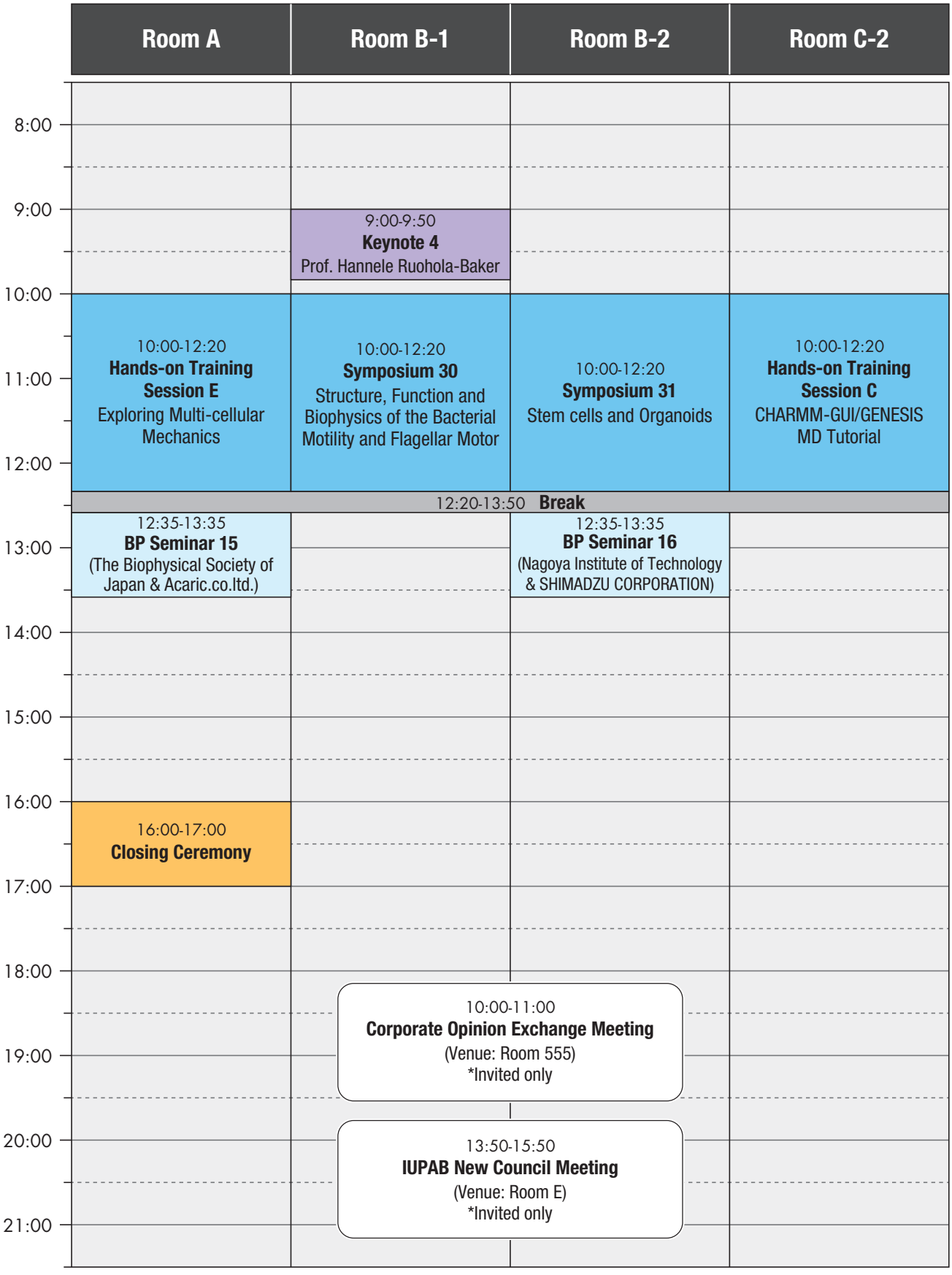
Program at a Glance

	Room A	Room B-1	Room B-2	Room C-2
8:00	8:00-8:50 **Morning Seminar 3** (Avanti Polar Lipids)			
9:00		9:00-9:50 **IUPAB Ramachandran Lecture** Prof. David Baker		
10:00	10:00-12:20 **Symposium 21** Computational Molecular Biophysics	10:00-12:20 **Symposium 22** Bacterial/Archaeal Supermolecular Assembly	10:00-12:20 **Symposium 23** Optogenetics and Photobiology	10:00-12:20 **Symposium 24** Chromatin Dynamics and Imaging
11:00				
12:00	12:20-13:50 **Break**			
13:00	12:35-13:35 **BP Seminar 11** (NIKON SOLUTIONS CO.,LTD.)	12:35-13:35 **BP Seminar 12** (Refeyn)		
14:00				
15:00				
16:00	16:00-18:20 **Sponsored Symposium 2** JST PRESTO, Dynamic supra-assembly of biomolecular systems	16:00-18:20 **Symposium 26** Applications of Non-equilibrium Physics	16:00-18:20 **Symposium 27** DNA/Chromatin Physics	16:00-18:20 **Symposium 28** Membraneless Organella, Autophage, Liquid-liquid Phase Separation
17:00				
18:00				
19:00	18:30-19:10 **The Bei Lecture** Prof. Xiyun Yan			
20:00				
21:00				

Thursday, June 27



Program at a Glance



Friday, June 28

Room D	Room E	Annex Hall	Kyoto University
10:00-12:20 **Symposium 32** Origin of Life	10:00-12:20 **Symposium 33** Data Sharing and Open Science	9:00-16:00 **Poster display and Exhibition**	
12:20-13:50 **Break**			
		13:50-15:50 **Coffee break**	13:50-14:50 **Poster presentations: odd** 14:50-15:50 **Poster presentations: even**
		16:00-17:00 **Poster removal time**	16:15-16:45 **Registration**
			16:45-18:45 **Public Lecture** (at Science Seminar House, Graduate School of Faculty of Science)

8:00 9:00 10:00 11:00 12:00 13:00 14:00 15:00 16:00 17:00 18:00 19:00 20:00 21:00

Hands-on Training Program

Hands-on Training Program
*Pre-registered participants only.

Program A: Millions of single live cell analysis with the automated trans-scale-scope, AMATERAS
Event dates: June 18-21
Venue: Osaka University (June 18-19), RIKEN Kobe Campus (June 20-21)

Learning image processing based on information engineering using AMATERAS (a cutting-edge biological microscope, A Multiple/Multiscale Analytical Tool for Every Rare Activity in Singularity) by Osaka University and RIKEN.

Program B: Visualizing the nanometer world in liquid by Bio-SPMs
Event dates: July 1
Venue: Kanazawa University

One day tour to Kanazawa University to learn about Bio-SPM technologies (super-resolution AFM (FM-AFM & 3D-AFM), high-speed AFM, SICM, AFM for Cell measurement). Participants are given priority to participate in the Bio-SPM summer school conducted annually.
Note: An additional application is required in advance to participate in the Bio-SPM summer school.

Program C: CHARMM-GUI/GENESIS MD tutorial
Event dates: June 30-July 2
Venue: RIKEN Kobe Campus

CHARMM-GUI/GENESIS Workshop held in Kobe to learn MD simulations.

Program D: DNA nanomachine tutorial
Event dates: June 22
Venue: Kansai University

Molecular robotics is a new academic field that aims to create systems that can be called robots using molecules designed from scratch as components. We are pleased to offer a hands-on

program for those interested in molecular robotics to learn the basics of design and evaluation of DNA nanomachines in a short period of time. The program is open to anyone, regardless of specialty or background.
(Sponsored by Grant-in-Aid for Transformative Research Areas (A) “Molecular cybernetics”)

Program E: Exploring multi-cellular mechanics
Event dates: June 29
Venue: Kyoto University

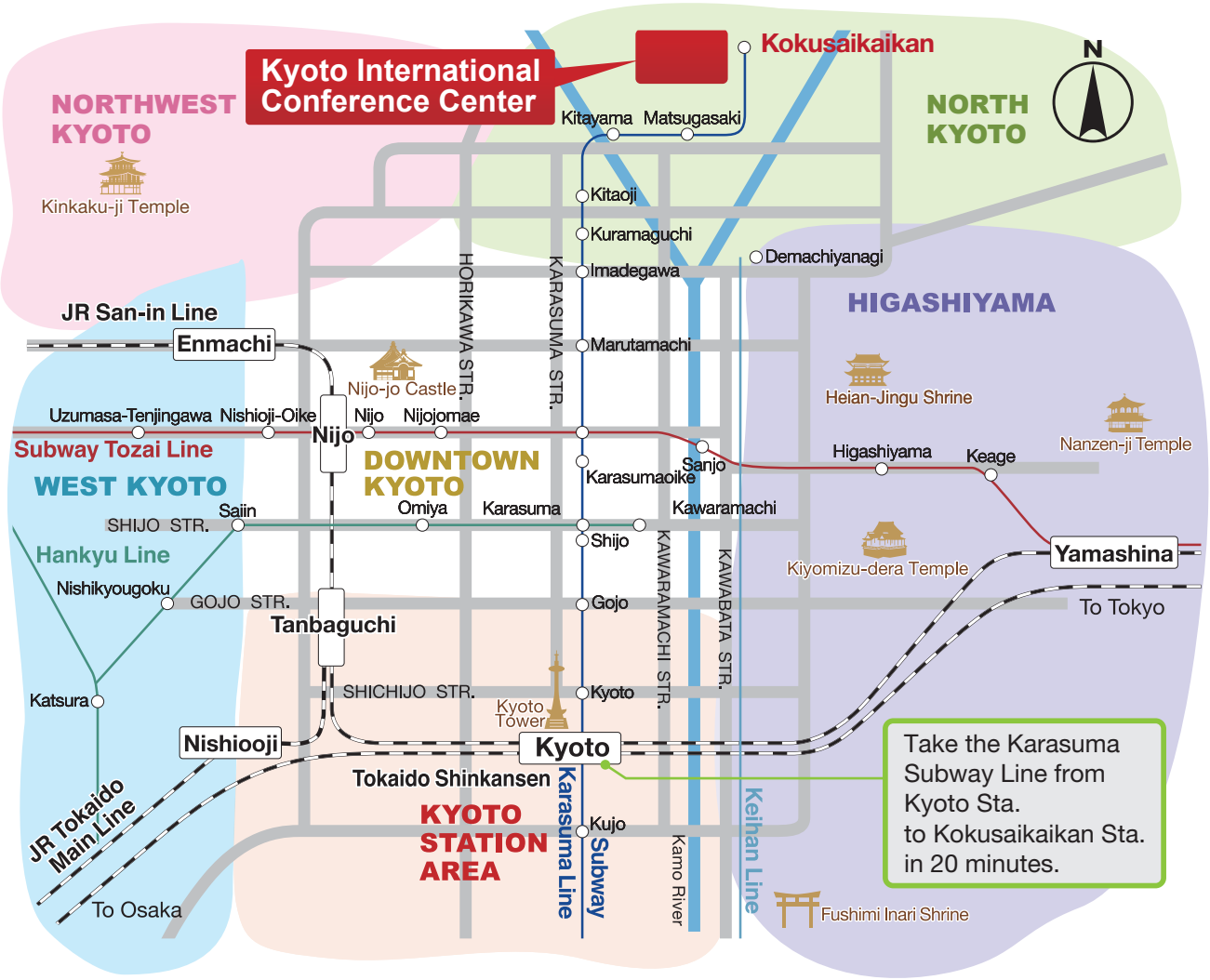
This hands-on session will provide an introduction to imaging and image analysis of multi-cellular systems such as tissue and embryo. Participants will learn how to handle these specimens, take images (2D, 3D), and extract biophysical parameters by image analysis.

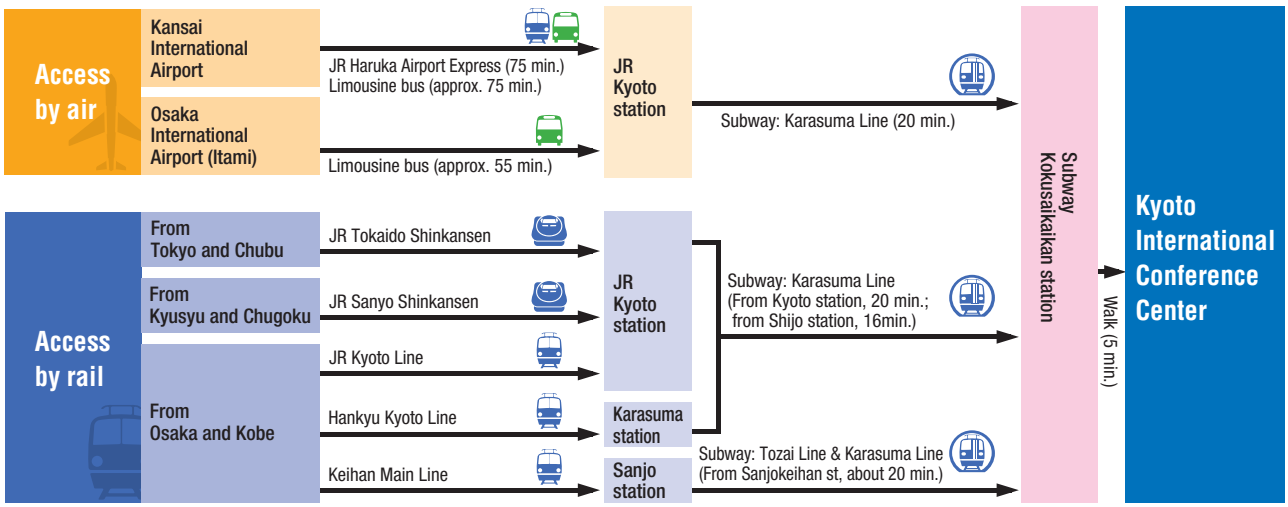
Program F: Real-time single-molecule experiments with optical tweezers and correlated fluorescence microscopy
Event dates: June 22-23
Venue: Institute for Quantitative Bioscience, The University of Tokyo

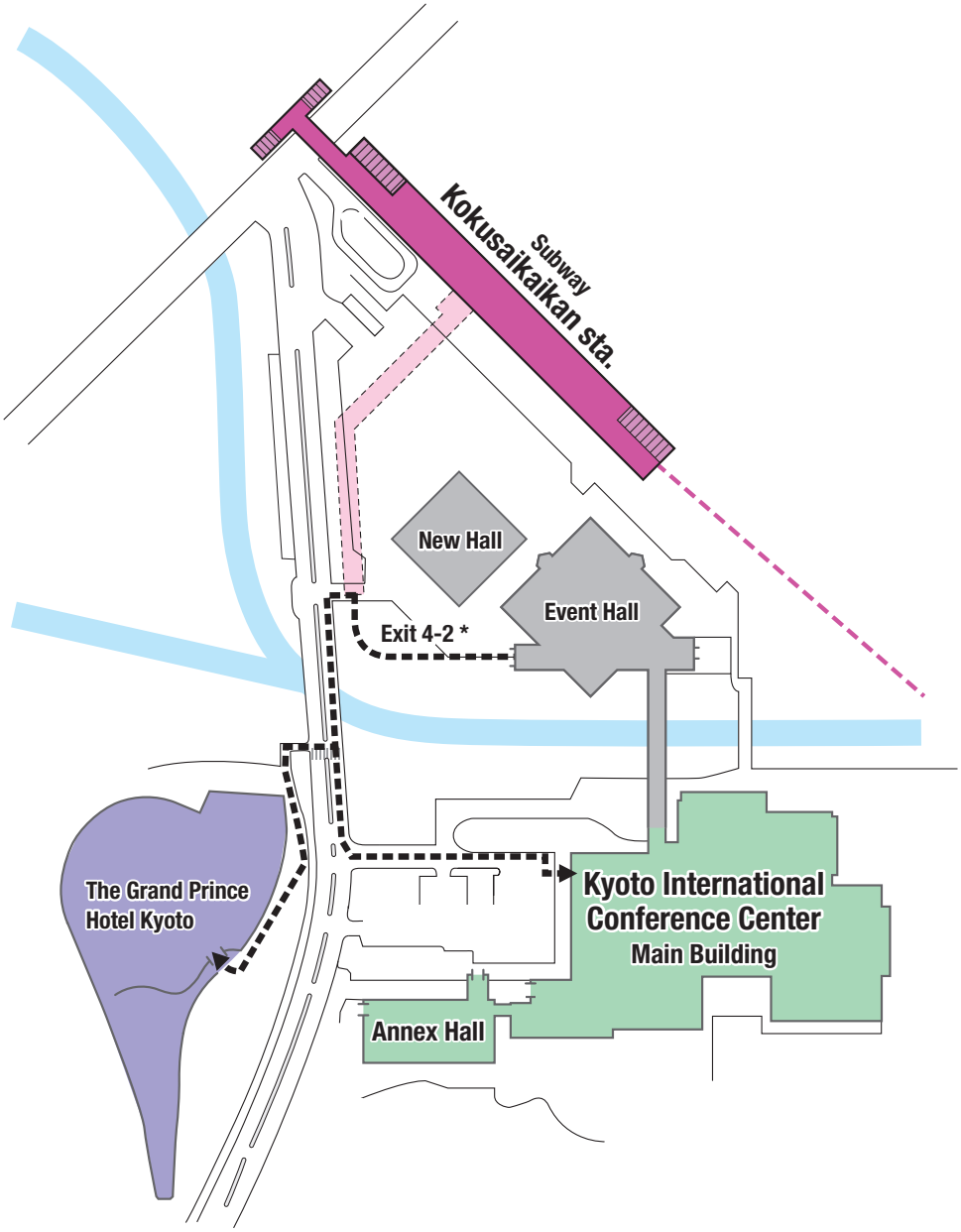
Venue Access

Kyoto International Conference Center

422 Iwakura Oosagi-cho, Sakyo-ku, Kyoto city

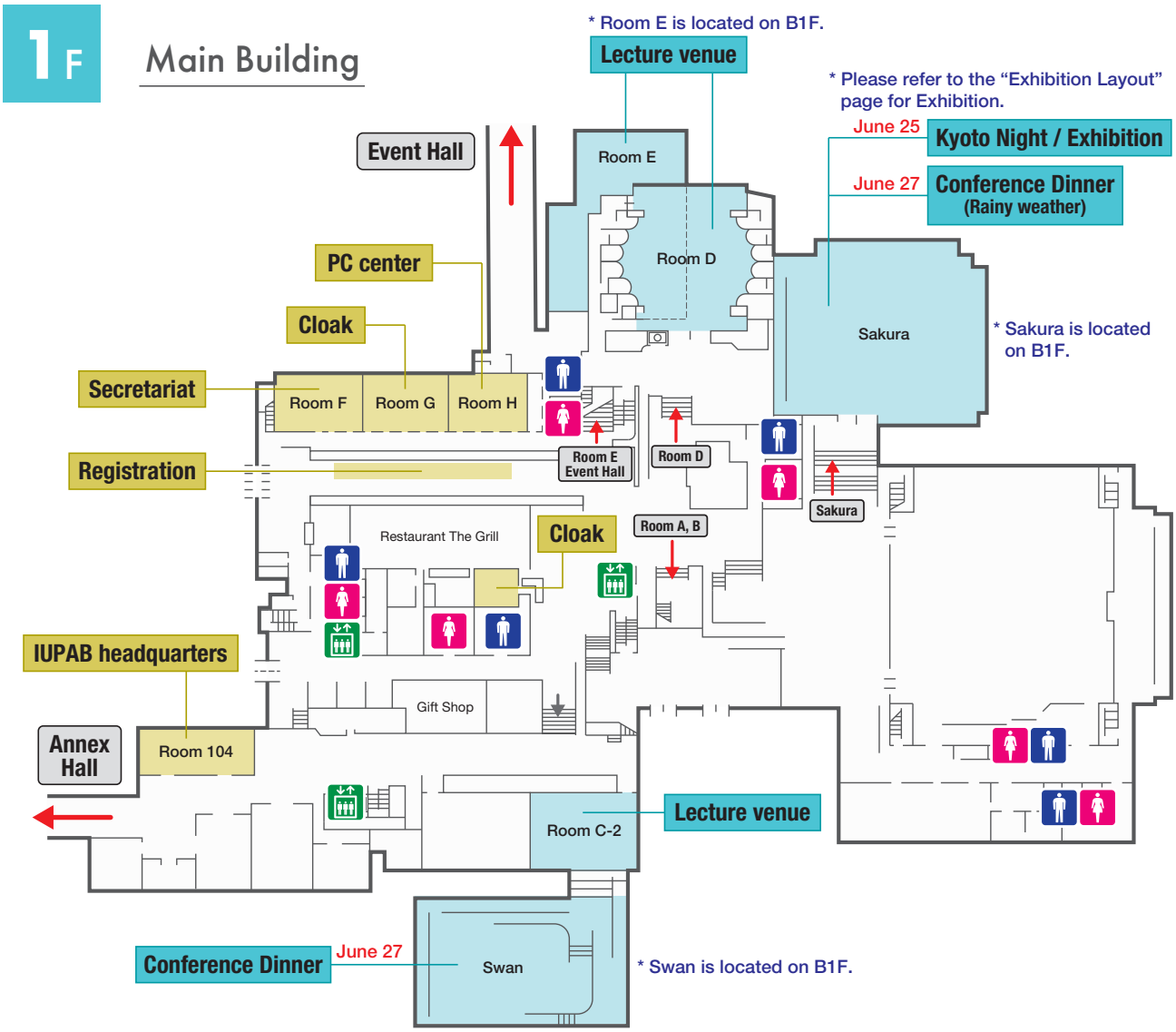


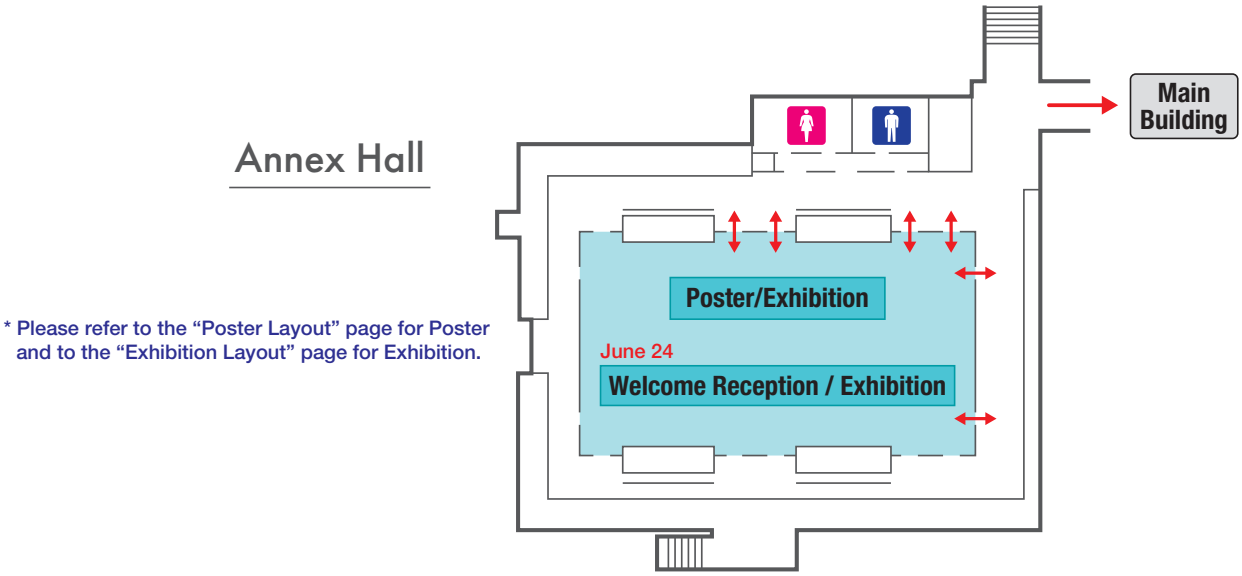




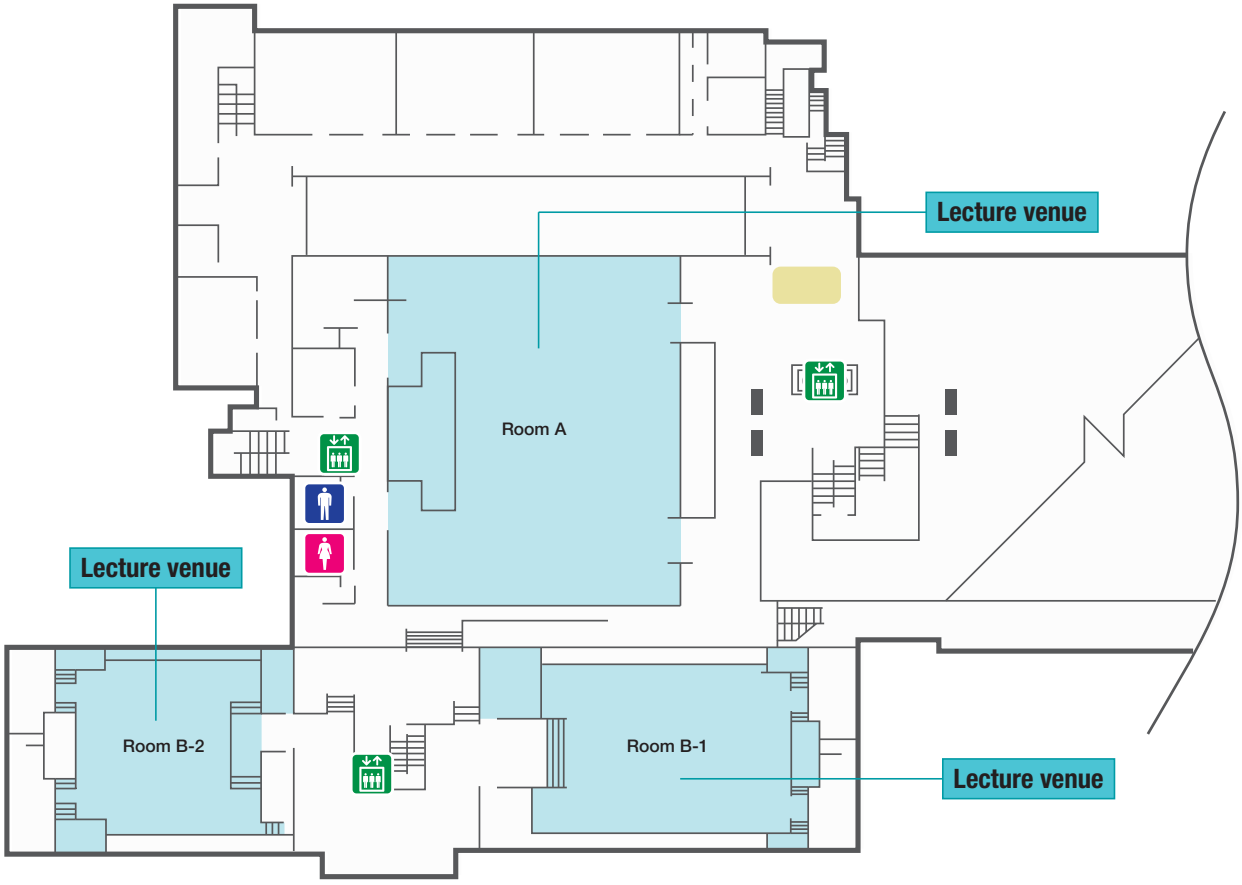
* Exit the ticket gate and walk through the underground passage to Exit 4-2.
The covered walkway from Exit 4-2 will guide you to our front entrance, keeping you dry on rainy days.

Floor Plan

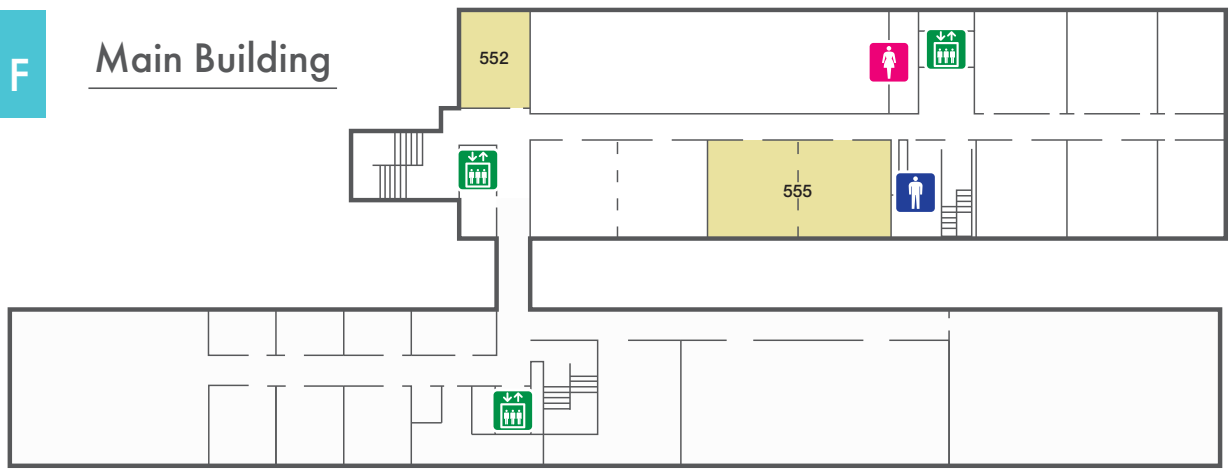

1F
Main Building
* Room E is located on B1F.
Lecture venue
* Please refer to the "Exhibition Layout" page for Exhibition.
June 25
Kyoto Night / Exhibition
June 27
Conference Dinner
(Rainy weather)
Event Hall
Room E
Room D
PC center
Cloak
Sakura
* Sakura is located on B1F.
Secretariat
Room F
Room G
Room H
Registration
Room E Event Hall
Room D
Sakura
Restaurant The Grill
Cloak
Room A, B
IUPAB headquarters
Gift Shop
Annex Hall
Room 104
Room C-2
Lecture venue
Conference Dinner
June 27
Swan
* Swan is located on B1F.


Annex Hall
Main Building
Poster/Exhibition
June 24
Welcome Reception / Exhibition
* Please refer to the "Poster Layout" page for Poster and to the "Exhibition Layout" page for Exhibition.

2F Main Building

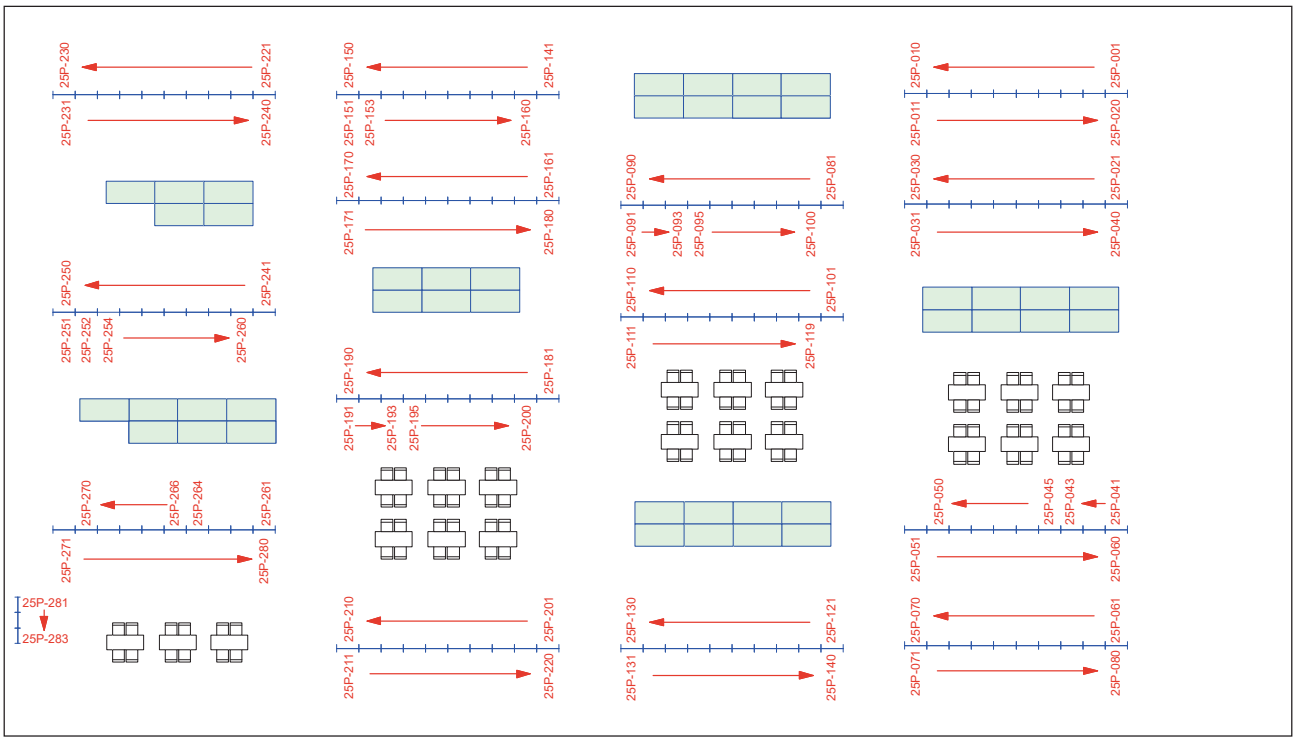


5F Main Building

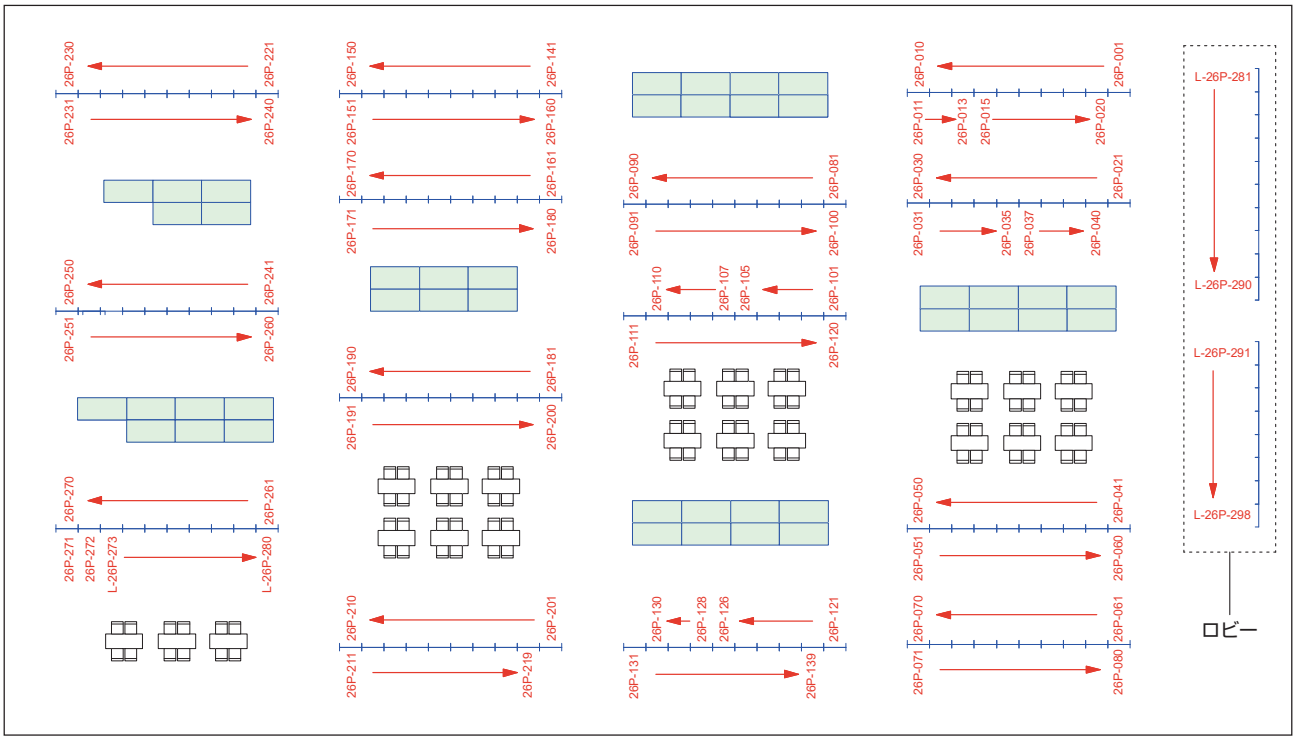


Poster Layout

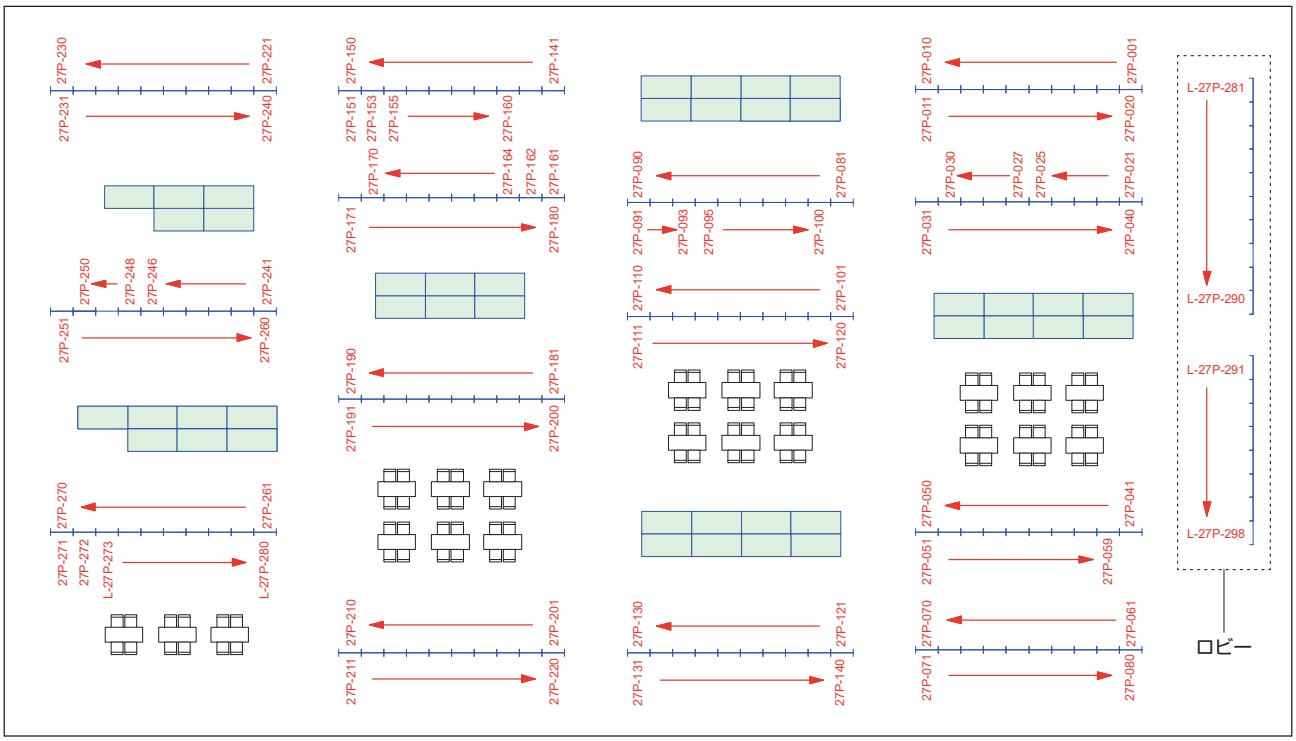
June 25 [TUE]



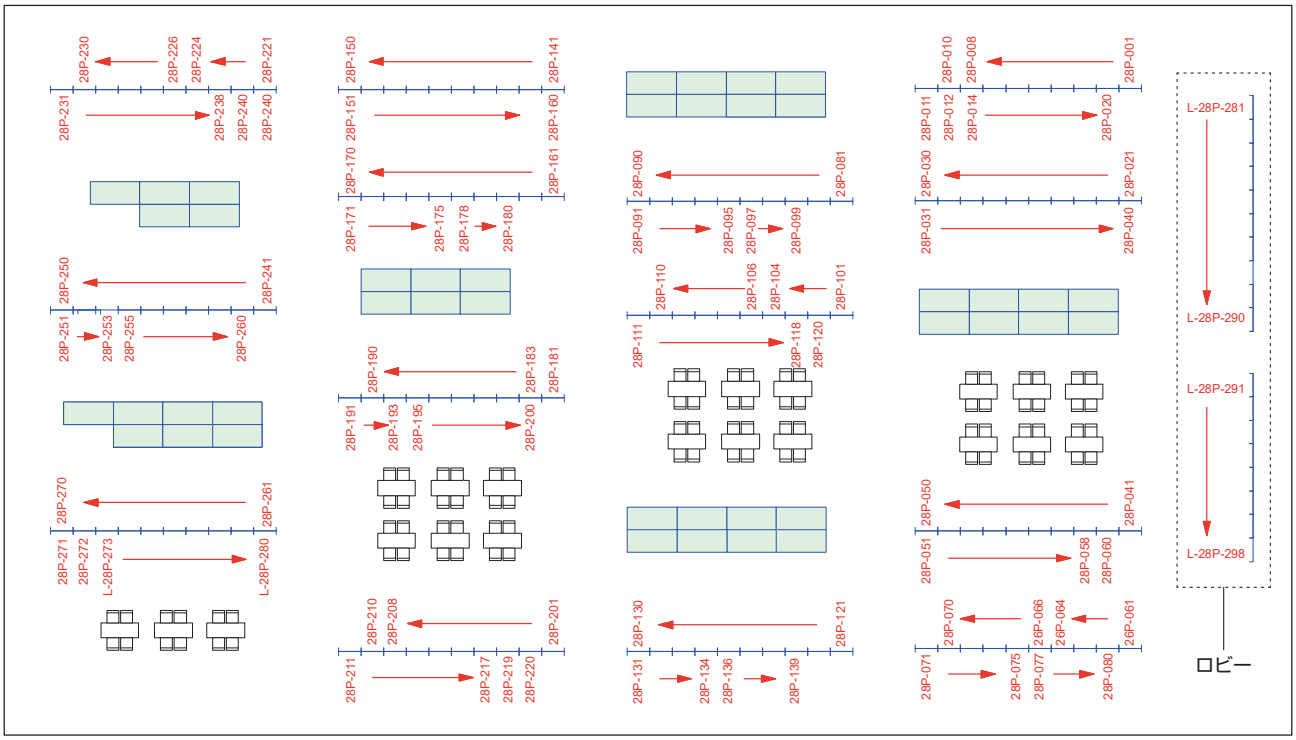
June 26 [WED]



June 27 [THU]

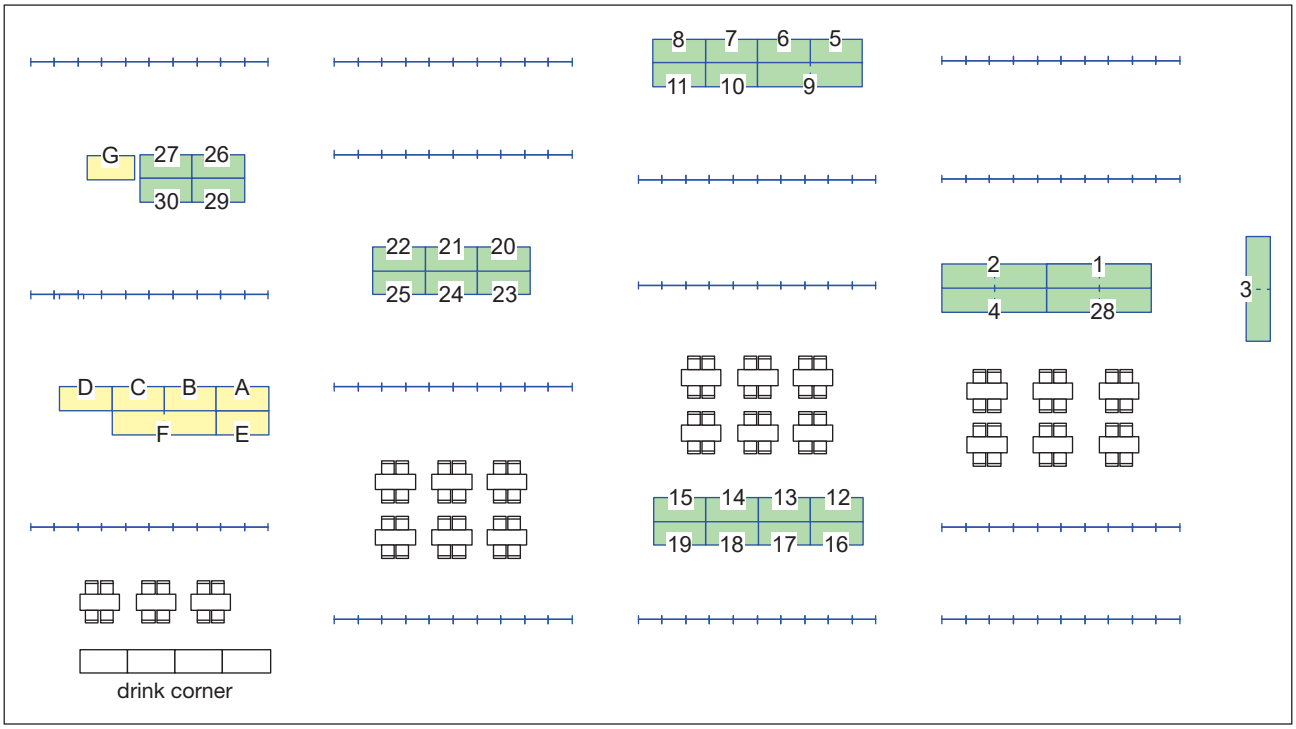


June 28 [FRI]



Exhibition Layout

Annex Hall (June 25 [TUE] – 28 [FRI])



No.	Exhibitor	No.	Exhibitor
1	BLAST Inc.	21	Research Institute of Biomolecule Metrology Co., Ltd.
2	Oxford Instruments K.K.	22	Bruker Japan K.K.
3	Nikon Solutions	23	Yokogawa Electric Corporation
4	Evident Corporation	24	SIGMAKOKI CO., LTD.
5	On-chip Biotechnologies Co., Ltd	25	Japan Laser Corporation
6	TOKYO OHKA KOGYO CO., LTD.	26	FUJIFILM Wako Pure Chemical Corporation
7	NanoAndMore Japan K.K.	27	Yamato Scientific Co., Ltd.
8	HORIBA, Ltd.	28	Quantum Design Japan
9	ORIENTAL GIKEN INC.	29	Pinpoint Photonics, Inc.
10	Chroma Technology Japan	30	CellFree Sciences Co., Ltd
11	Nanion Technologies Japan K.K.	A	Nakatani Foundation for Advancement of Measuring Technologies in Biomedical Engineering
12	JEOL Ltd.		
13	Refeyn	B	Japan Synchrotron Radiation Research Institute (JASRI)
14	Carl Zeiss Co. Ltd.	C	Worldwide Protein Data Bank
15	Avanti Polar Lipids	D	The DNA Bank, RIKEN BioResource Research Center (RIKEN BRC DNABank)
16	TAITEC CORPORATION		
17	Thorlabs Japan Inc.	E	Japan Agency for Medical Research and Development
18	Kiko Tech Co., Ltd.	F	The Biophysical Society of Japan
19	Tokai Hit Co., Ltd.	G	Clinica Publishers, LLC
20	HAMAMATSU PHOTONICS K.K.		

For Participants

Registration Desk

Location: Main Entrance Lobby, 1F, Kyoto International Conference Center (ICC Kyoto)

Opening hours:

Monday, June 24	11:30-16:30
Tuesday, June 25	07:30-16:30
Wednesday, June 26	07:30-16:30
Thursday, June 27	07:30-16:30
Friday, June 28	08:00-11:00

<Participants who have completed pre-registration>

- Your name card, certificate of participation and receipt can be downloaded from the “My Page” portal.
- Please download and print out your name card beforehand, and bring it with you.
- If you have forgotten to bring your name card, please present the QR code sent to your email at the Registration Desk, and your name card will be issued onsite.

<Participants registering on the day of the meeting>

- Please register on the day of the meeting using your own smartphone or PC onsite. Payment is by credit card only.

<Please wear your name card>

All participants are requested to wear their name card at all times in the congress venue.

Registration fees:

Registration Category		**Early Bird** November 1, 2023- April 30, 2024 JST (UTC+9)	**Standard** May 1, 2024- June 28, 2024 JST (UTC+9)	**On-Demand Only** June 29, 2024- July 31, 2024 JST (UTC+9)
Delegate	Member[1)]	JPY 50,000	JPY 70,000	JPY 30,000
	Non-Member	JPY 70,000	JPY 90,000	JPY 40,000
Student[2)]	Member[1)]	JPY 30,000	JPY 40,000	JPY 20,000
	Non-Member	JPY 50,000	JPY 60,000	JPY 30,000
Accompanying Person[3)]		JPY 10,000		
Conference Dinner		JPY 10,000		

For Participants

1) Membership prices apply if you are a member of a national biophysical society.
2) Students are asked to submit a valid student ID.
3) Up to 5 accompanying persons can be registered.

Registration fees include:

	Onsite participants	On-demand participants	Accompanying persons
Onsite participation in all sessions	✓		
On-demand viewing of sessions	✓	✓	
Exhibition	✓		
Abstract book (online)	✓	✓	
Congress materials	✓		
Handy Program Book	✓		
Welcome Reception	✓		✓
Kyoto Night	✓		✓
Conference Dinner	Please register for Conference Dinner (JPY 10,000 per person)		Please register for Conference Dinner (JPY 10,000 per person)

- Registrants and accompanying persons who have paid their registration fees are invited to the Welcome Reception and Kyoto Night.

On-demand streaming

<Dates>

Streaming period	Monday, July 1 – Wednesday, July 31
Registration period	Saturday, June 29 – Wednesday, July 31
Streamed sessions	Plenary Lectures and Keynote Lectures (other sessions are onsite only)

<How to view the on-demand sessions>

On-demand streaming is only available for registered participants. Those who have completed their registration and payment will receive their unique ID for access to the on-demand streaming

page. Please note that the ID is unique to the individual registrant and cannot be shared with anyone else.
Taking pictures, copying, or downloading of the video or content of the broadcast is strictly prohibited. If any of these actions are discovered or suspected, necessary measures, such as contacting the offending participant's affiliated institution, will be taken accordingly.

Official Language

All sessions will be held in English.

Abstract

<From the congress website>
Abstracts are posted on the congress website in PDF format. Please use the following password to view the abstracts.

Password: iupab2024kyoto

<From the online system>
Abstracts are also posted on the online system. Please login to your "My Page" and click "Time Table" button to view abstracts for each session.

Food and Beverage

Morning Seminars:	Danish pastries
BP Seminars (Luncheon Seminars)[1)]:	Boxed sandwiches and Japanese bento (advance application required)
Coffee Breaks[2)]:	Coffee and refreshments

[1)] Pre-registered users only. There will be no lunch boxes sold onsite.
* Once a registration for a BP Seminar is made, no cancellations will be accepted.
* Lunch tickets are printed on your name card and will be checked onsite.
[2)] Coffee breaks will be served after lunch at the Refreshments Corner, located in Annex Hall.

Monday, June 24	15:00-17:00
Tuesday, June 25	13:50-15:50
Wednesday, June 26	13:50-15:50
Thursday, June 27	13:50-15:50
Friday, June 28	13:50-15:50

For Participants

Congress Bags

Congress bags will be distributed at the Registration Desk.

Poster Display and Exhibition

Location:	Annex Hall, Kyoto International Conference Center	
Exhibition hours:	Monday, June 24	12:00-17:00
	Tuesday, June 25	09:00-18:30
	Wednesday, June 26	09:00-18:30
	Thursday, June 27	09:00-18:30
	Friday, June 28	09:00-16:00

Digital Point Rally

During the event you can visit the designated exhibition booths and collect points by scanning the QR codes located in each booth using your smartphone. You will need to sign in to your "My Page", choose "Point Rally" menu and allow your camera use to scan the QR codes. The participants who have gathered 10 or more points will enter the draw, and the winners will receive their prizes at the Closing Ceremony.

Location: Annex Hall, 1F, Kyoto International Conference Center

Date & time: Monday, June 24 12:00 - Friday, 28 June 12:00

Cloakroom

The cloakroom service is available during the following hours.

Location 1:	Room G, 1F, Kyoto International Conference Center	
Location 2:	Permanent Cloakroom, 1F, Kyoto International Conference Center	
Opening hours:	Monday, June 24	11:30-19:30
	Tuesday, June 25	07:30-20:30
	Wednesday, June 26	07:30-21:00
	Thursday, June 27	07:30-21:30
	Friday, June 28	08:00-17:30

* Valuables, non-folding umbrellas, or congress bags cannot be accepted.

Social Events

IUPAB 2024 Opening Ceremony

Location:	Room A, Kyoto International Conference Center
Date & time:	Monday, June 24 12:30-13:10
Performance:	Musical performance of traditional Japanese instruments by AUN & HIDE

Welcome Reception

Location:	Annex Hall
Date & time:	Monday, June 24 17:50-19:15
Performance:	Piano performance by Fuyuco
Food & beverage:	Drinks and snacks
Fee:	Free of charge

Kyoto Night

Location:	Sakura
Date & time:	Tuesday, June 25 18:30-20:00
Performance:	Jazz band
Food & beverage:	Sake and snacks
Fee:	Free of charge

Conference Dinner

Location:	Swan Garden / Sakura (depending on the weather)
Date & time:	Thursday, June 27 19:20-21:20
Style:	Buffet
Performance:	*Gagaku* (Japanese imperial court music) and a Kyoto rock band
Fee:	JPY 10,000
Award ceremony:	Nakatani Foundation Award
	BPS Student Award

IUPAB 2024 Closing Ceremony

Location:	Room A, Kyoto International Conference Center
Date & time:	Friday, June 28 16:00-17:00
Award ceremony:	IUPAB2024 Student and Early Career Researcher Poster Award

For Participants

Additional Events

IUPAB2024 Eve Fest

Location: Tenchikan, Kyoto Sangyo University

Date & time: Sunday, June 23 13:00-20:00

Fee: Free of charge

*A separate fee (JPY 2,000) is required to attend the social gathering.

*Pre-registered participants only.

Public Lecture

Location: Science Seminar House, Graduate School of Faculty of Science, Kyoto University

Date & time: Friday, June 28 16:45-18:45 (Doors open at 16:15)

Fee: Free of charge

*Please register in advance on the website below (Japanese only):

https://theory.biophys.kyoto-u.ac.jp/iupab-public-seminar

Wi-Fi Access

A Wi-Fi service is available free of charge in public spaces and Event Hall of the Kyoto International Conference Center.

Select the following network: ICCK_Public_WiFi (No password required)

Recordings and Photography

Audio recording, photography, and video recording are strictly prohibited in all venues.

Smoking

All indoor areas are non-smoking.

Lost and Found

Lost property will be kept at the Registration Desk (Main Entrance Lobby, 1F) until Friday, June 28 11:00.

Inquiries

[During the event]

Inquiry Desk: Room F, 1F, ICC Kyoto

[Before/after the event]

IUPAB2024 Secretariat Office

c/o Convention Linkage, Inc.

2 Sanbancho, Chiyoda-ku, Tokyo 102-0075, Japan

E-mail: iupab2024-kyoto@c-linkage.co.jp

For Presenters

Session	Presentation Format	Presentation Time	Data Check on the day of your presentation
All Oral Sessions	Onsite only	As per the information provided to you by your chairperson	Submit your presentation slides to the PC center no later than 45 min. prior to your session's start (if your session is the very first session of the day, no later than 30 min. before the session starts).
Poster Presentation	Onsite only	Please check your Poster number. Presentation time is organized by whether the last part (suffix after hyphen) of the Poster number is odd or even. Odd number: 13:50-14:50 Even number: 14:50-15:50	Posting schedule is listed below.

1. Oral Presentations

If you will be making an oral presentation, please check the following information.

Preparing for your onsite presentation:

- Screen aspect ratio is 16:9. Slides created in 4:3 format will be shown on the screen with black bands on both sides of the slides.
- We recommend that you use OS-standard fonts in your presentation, such as Century Gothic, Courier, Times New Roman.
- Supported software: Windows PowerPoint 2019 and PowerPoint for Microsoft 365.
- If your presentation slides include any video or audio files, please save them in one folder with your slide data.

On your presentation day:

No later than 30 min. before the session starts

- Please visit the PC Center to submit your presentation file. You will be given a short technical instruction.

PC Center

Location:	Room H, 1F, Kyoto International Conference Center	
Opening hours:	Monday, June 24	11:30-16:00
	Tuesday, June 25	07:30-16:00
	Wednesday, June 26	07:30-16:00
	Thursday, June 27	07:30-16:00
	Friday, June 28	08:00-12:00

- If you wish to use your own PC:
  - The Secretariat will prepare an HDMI PC cable connector. If your PC is not compatible with this cable connector, please bring a suitable adaptor.
  - Please notify the operator in advance if you will be using video or audio in your presentation.
  - Your presentation file should be named <Session Number>_<Your Full Name>.ppt, and be saved on your desktop.
  - Please disable your screensaver and any power-saving features on your PC.
  - Please bring your AC adapter and converter with you.
  - Please bring your presentation's backup data on a USB flash drive.
  - After your presentation, do not forget to retrieve your computer from the operator at the venue.
  - During your presentation, please use the AC adapter included with your computer, not a mini-AC adapter.

No later than 10 min. before the session starts

- Please make sure to come to the session room and take the speaker's seat at the left front side of the room.

After the Congress:

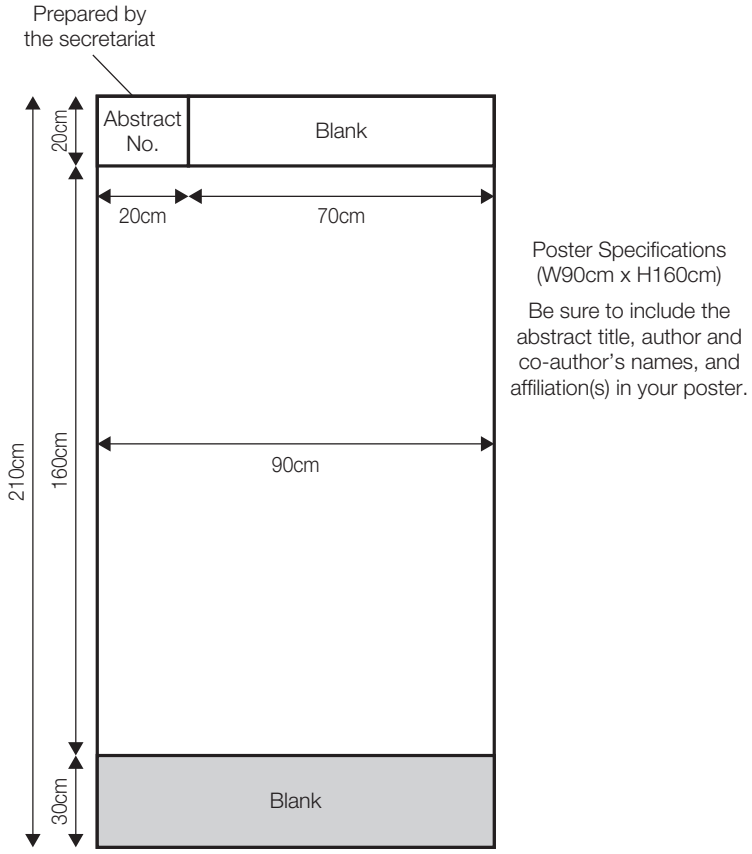
- Your submitted data will be discarded after the congress.

For Presenters

2. Poster Presentations

To present your poster onsite, please follow the steps below:

- Be sure to include the abstract title, author and coauthor names, and the affiliation(s).
- Prepare your poster to fit on the poster board (W90cm x H210cm). Recommended poster size is W90cm×H160cm.



- Bring your poster with you to the Annex Hall of Kyoto International Conference Center on the day of your poster presentation.

Poster set-up/removal times

Presentation date	Set-up	Removal
June 25	June 24 12:00-17:00 or June 25 08:00-09:00	18:30-19:30
June 26	08:00-09:00	18:30-19:30
June 27	08:00-09:00	18:30-19:30
June 28	08:00-09:00	16:00-17:00

* Posters that are left on the poster boards after the removal time has ended will be removed and discarded by the Secretariat after the Congress.

Oral Sessions

Oral Sessions Monday, June 24

Plenary IUPAB Katchalsky Lecture — Room A

13:30-14:20 **Exploration of Biological Diversity**

Chair Takeharu Nagai (Osaka University)

PL-1 **Exploration of Biological Diversity**

Feng Zhang[1,2,3]

[1]Howard Hughes Medical Institute, [2]Broad Institute of MIT and Harvard, [3]McGovern Institute for Brain Research, Department of Brain and Cognitive Sciences, Department of Biological Engineering, Massachusetts Institute of Technology

Symposium 1 — Room A

14:30-16:50 **Super-resolution and Advanced Microscopy Imaging**

Chairs Takanobu Katoh (The University of Tokyo)

Elizabeth Hinde (School of Physics, Faculty of Science, The University of Melbourne)

S1-1 **Cryo-optical microscopy for super-resolution imaging of the moment**

Katsumasa Fujita[1,2]

[1]Osaka University, [2]AIST

S1-2 **3D architectural dynamics of super-molecular assembly in live cells by using single molecule orientation imaging with advanced fluorescence polarization probes**

Tomomi Tani[1], Nori Nakai[2], Keisuke Sato[2], Kenta Saito[2], Sumio Terada[2]

[1]Biomedical Research Institute, National Institute of Advanced Industrial Science and Technology, [2]Graduate School of Medicine, Tokyo Medical and Dental University

S1-3 **Ångström-resolution fluorescence microscopy**

Luciano A. Masullo[1], Susanne Reinhardt[1,2], Isabelle Baudrexel[1,3], Philipp Steen[1,2], Rafal Kowalewski[1,2], Alexandra Eklund[1,3], Sebastian Strauss[1,2], Eduard Unterauer[1,2], Thomas Schlichthaerle[1,2], Maximilian Strauss[1,2], Christian Klein[3,4], Ralf Jungmann[1,2]

[1]Max Planck Institute of Biochemistry, Planegg, Germany, [2]Faculty of Physics and Center for NanoScience, Ludwig Maximilian University, Munich, Germany, [3]Department of Chemistry and Biochemistry, Ludwig Maximilian University, Munich, Germany, [4]Roche Innovation Center Zurich, Roche Pharma Research and Early Development, Schlieren, Switzerland

Monday, June 24

S1-4 **Fluorescence fluctuation spectroscopy of protein transport as a function of oligomeric state**

Elizabeth Hinde, Ashleigh Solano, Xiaomeng Zhang
University of Melbourne

S1-5 **Biophysical Characterization of Cancer Metabolism: Multiparametric Imaging and Phenotypic Tracking in Mitochondrial Dynamics**

Michelle Digman, Giulia Tedeschi, Lorenzo Scipioni, Austin Lefebvre, Francesco Palomba
Department of Biomedical Engineering and the Laboratory for Fluorescence Dynamics, University of California Irvine, Irvine, CA, USA

S1-6 **Immotile cilia mechanically sense the direction of fluid flow for left-right determination**

Takanobu A. Katoh[1,2]
[1]Grad. Sch. Med., The Univ. of Tokyo, Tokyo, Japan, [2]BDR., Riken, Kobe, Japan

Symposium 2 — Room B-1

14:30-16:50 **Morphogenesis during Development and Repair**

Chairs Satoru Okuda (Nano Life Science Institute, Kanazawa University)
Yanlan Mao (Laboratory for Molecular Cell Biology, University College London)

S2-1 **Mechano-hydraulic control of mammalian ovarian follicle development**

Chii Jou Chan[1,2], Arikta Biswas[1], Boon Heng Ng[1], Yuting Lou[1], Kim Whye Leong[1], Jake Turley[1]
[1]Mechanobiology Institute, National University of Singapore, Singapore, [2]Department of Biological Sciences, National University of Singapore, Singapore

S2-2 **A 3D Vertex Model to analyse the Drosophila wing disc during wound healing**

Pablo Vicente Munuera[1], Jose J Muñoz[2], Yanlan Mao[1]
[1]Laboratory for Molecular Cell Biology, University College London, London, UK, [2]Laboratori de Càlcul Numèric (LaCàN), Centre Internacional de Mètodes Numèrics en Enginyeria (CIMNE), Universitat Politècnica de Catalunya (UPC), Barcelona, Spain

S2-3 **Comparative study of interspecies diversity in cortical stiffness using atomic force microscopy**

Misato Iwashita, Yoichi Kosodo
Korea Brain Research Institute

Oral Sessions

S2-4 **Robust cytoplasmic partitioning by resolving an intrinsic cytoskeletal instability**

Melissa Rinaldin[1,2,3], Alison Kickuth[1,2,3], Benjamin Dalton[4], Yitong Xou[5], Stefano Di Talia[5], Jan Brugués[1,2,3]

[1]Cluster of Excellence Physics of Life, TU Dresden, Dresden, 01307 Germany, [2]Max Planck Institute of Molecular Cell Biology and Genetics, Dresden, 01307 Germany, [3]Center of Systems Biology Dresden, 01307 Germany, [4]Department of Physics, Freie Universität Berlin, Berlin, 14195 Germany, [5]Department of Cell Biology, Duke University Medical Center, Durham, NC 27710 USA

S2-5 **"Telescope model" for coordinated organ morphogenesis and stem cell formation**

Ritsuko Morita

Graduate School of Frontier Biosciences, Osaka University

S2-6 **The role of nuclear properties and packing for movements in pseudostratified epithelia**

Mariana Gil, Lucrezia Ferme, Caren Norden

Instituto Gulbenkian de Cienca, Oeiras, Portugal

Symposium 3		**Room B-2**
14:30-16:50	**Cryo Electron Microscopy and Tomography**	
Chairs	Fei Sun (CAS)	
	Masahide Kikkawa (Graduate School of Medicine, The University of Tokyo)	

S3-1 **In-cell structure of microtubule doublet in mouse sperm flagella reveals the structural stability essential for motility**

Fei Sun

National Key Laboratory of Biomacromolecules, CAS Center for Excellence in Biomacromolecules, Institute of Biophysics, Chinese Academy of Sciences, Beijing 100101, China.

S3-2 **Combination of genetics and cryo-electron tomography to study the calcium-dependent regulation of outer arm dynein in zebrafish sperm**

Hiroshi Yamaguchi, Motohiro Morikawa, Masahide Kikkawa

Department of Cell Biology and Anatomy, Graduate School of Medicine, The Univ. of Tokyo

S3-3 **Deciphering the Mechanism of Ribosomal Methylase Mediated Antibiotic Resistance**

Ruchi Anand

Department of Chemistry, Indian Institute of Technology Bombay, Mumbai India 400076

S3-4 **Structural physiology of gastric proton pump and related cation pumps**

Kazuhiro Abe[1,2]

[1]Graduate School of Science, Hokkaido University, Sapporo, Japan, [2]Cellular and Structural Physiology Institute, Nagoya University, Nagoya, Japan

S3-5 **CryoEM brings new mechanistic insights into double-stranded DNA break repair**

Gabriel Lander, Chris Zerio

Scripps Research, La Jolla CA 92037, USA

S3-6 **Structural Studies of SLC Transporters Relevant to Health and Diseases**

Yongchan Lee

Graduate School of Medical Life Science, Yokohama City University, Kanagawa, Japan

Symposium 4 **Room D**

14:30-16:50 **Correlative Cell Imaging**

Chairs Tokuko Haraguchi (Frontier of Biosciences, Osaka University)

Ioanna Mela (Department of Pharmacology, University of Cambridge)

Tomonobu Watanabe (Center for Biosystems Dynamics Research/Research Institute for Radiation Biology and Medicine, RIKEN/Hiroshima University)

S4-1 **Correlative Atomic Force Microscopy with Super-resolution Microscopy for the characterisation of biological specimens**

Ioanna Mela

University of Cambridge, Department of Pharmacology

Oral Sessions

S4-2 **The endoplasmic reticulum connects to the nucleus by constricted junctions that mature after open mitosis in mammalian cells**

Helena Bragulat-Teixidor[1,2,3], Keisuke Ishihara[4], Gréta Martina Szücs[1,2], Shotaro Otsuka[1,2]

[1]Max Perutz Labs, Vienna Biocenter Campus (VBC), Vienna, Austria, [2]Medical University of Vienna, Center for Medical Biochemistry, Vienna, Austria, [3]Vienna BioCenter PhD Program, Doctoral School of the University of Vienna and Medical University of Vienna, Vienna, Austria, [4]Department of Computational and Systems Biology, School of Medicine, University of Pittsburgh, Pittsburgh, PA, USA

S4-3 **From Transcription to Translation: Single Molecule Imaging of Endogenous Gene Activity**

Timothy Stasevich, Matthew Saxton, Tatsuya Morisaki, O'Neil Wiggan

Department of Biochemistry and Molecular Biology, Colorado State University, Fort Collins, CO, USA

S4-4 **Label-free correlative imaging reveals the heterogeneity of tumor microenvironments**

Guan-Yu Zhuo, Wei-Hsun Wang, Ming-Chi Chen

Institute of Translational Medicine and New Drug Development, China Medical University, Taiwan

S4-5 **Live CLEM imaging for studies of nuclear envelope dynamics**

Tokuko Haraguchi

Graduate School of Frontier Biosciences, Osaka University

Symposium 5 — Room E

14:30-16:50 **Theoretical Biology of Complex Systems**

Chairs Mikhail Tikhonov (Physics, Washington University)

Masayo Inoue (Graduate School of Engineering, Kyushu Institute of Technology)

Chikara Furusawa (Center for Biosystems Dynamics Research, RIKEN)

S5-1 **Emergent simplicity in microbial ecosystems**

Mikhail Tikhonov

Washington University in St Louis, St Louis, MO, USA

S5-2 **The origin of non-equilibrium order**

Arvind Murugan

University of Chicago

Monday, June 24

S5-3 **Impact of population spatial structure on mutant fixation, from models on graphs to the gut**
Anne-Florence Bitbol
EPFL

S5-4 **Revealing global stoichiometry conservation architecture in cells by Raman and gene expression correspondences**
Ken-ichiro F. Kamei[1], Koseki Kobayashi-Kirschvink[2,3], Takashi Nozoe[1], Hidenori Nakaoka[4], Miki Umetani[1], Yuichi Wakamoto[1]
[1]The University of Tokyo, [2]Broad Institute of MIT and Harvard, [3]Massachusetts Institute of Technology, [4]Kyoto University

S5-5 **Stability and death of in silico Escherichia coli metabolism**
Yusuke Himeoka[1], Chikara Furusawa[1,2]
[1]Universal biology institute, The University of Tokyo, [2]Center for Biosystems Dynamics Research, RIKEN

Hands-on Training Session D Room C-2

14:30-16:50 **DNA Nanomachine Tutorial**
Chair Shin-ichiro Nomura (Tohoku University)

HT-D-1 **DNA origami-based integrated molecular systems and functional nanomachines**
Masayuki Endo[1,2]
[1]Research Development Division, Kansai University, [2]WPI-iCeMS, Kyoto University

HT-D-2 **Nanomechanical DNA Origami Devices**
Akinori Kuzuya
Department of Chemistry and Materials Engineering, Kansai University

HT-D-3 **Multi-reconfigurable and multi-responsive DNA origami nanodevices**
Yuki Suzuki
Mie University

HT-D-4 **Online user interface of computational tools for accelerating DNA nanotechnology research**
Ibuki Kawamata
Kyoto University

Oral Sessions

HT-D-5 **Long DNA strands' insertion into DNA droplets as a potential model for chromatin condensates studies**

Nathan Nunes Evangelista[1], Chimura Takahiko[2], Koki Kamiya[3], Masahiro Takinoue[1,2]

[1]Department of Life Science and Technology, Tokyo Institute of Technology, [2]Department of Computer Science, Tokyo Institute of Technology, [3]Division of Molecular Science, Graduate School of Science and Technology, Gunma University

HT-D-6 **DNA nanopore sensor for cell secretion measurement**

Hiromu Akai, Kan Shoji

Nagaoka University of Technology

The Avanti Prize Lecture **Room A**

17:00-17:40 **From color-tuning to optogenetics: modeling the relationship between red-light absorption and fluorescence intensity in archaerhodopsins**

Chairs Manuel Prieto (iBB/IST-Institute for Bioengineering and Bioscience, University of Lisbon, Portugal)

Anthony Watts (University of Oxford, UK)

AP **From color-tuning to optogenetics: modeling the relationship between red-light absorption and fluorescence intensity in archaerhodopsins**

Massimo Olivucci[1,2]

[1]Department of Biotechnology, Chemistry and Pharmacy, University of Siena, Siena, Italy, [2]Department of Chemistry, Bowling Green State University, Bowling Green, OH, USA

Tuesday, June 25

Keynote 1 — Room B-1

9:00-9:50 **Searching for Universal Laws in Evolved and Evolvable Complex Biological Systems**

Chair Chun-Biu Li (Stockholm University)

KL-1 **Searching for Universal Laws in Evolved and Evolvable Complex Biological Systems**

Kunihiko Kaneko

Niels Bohr Institue

The 20th Early Career Award in Biophysics Candidate Presentations — Room A

10:00-12:20

Chairs Takayuki Nishizaka (Gakushuin Univesity)

Shuji Akiyama (Institute for Molecular Science)

YF-1 **Microtubule/kinesin complexes spontaneously emerge vortices in cell-sized droplet generated by water/water phase separation**

Hiroki Sakuta[1,2], Naoki Nakatani[3], Takayuki Torisawa[4], Yutaka Sumino[5], Kanta Tsumoto[6], Kazuhiro Oiwa[7,8], Kenichi Yoshikawa[3]

[1]Universal Biology Institute, University of Tokyo, [2]Graduate School of Arts and Sciences, University of Tokyo, [3]Faculty of Life and Medical Sciences, Doshisha University, [4]Cell Architecture Laboratory, National Institute of Genetics, [5]Department of Applied Physics, Faculty of Advanced Engineering Tokyo University of Science, [6]Graduate School of Engineering, Mie University, [7]Advanced ICT Research Institute, National Institute of Information and Communications Technology, [8]Graduate School of Science, University of Hyogo

YF-2 **Oxygen-evolving photosystem II structures during S1–S2–S3 transitions**

Hongjie Li, Yoshiki Nakajima, Michihiro Suga, Jian-Ren Shen

Research Institute for Interdisciplinary Science and Graduate School of Natural Science and Technology, Okayama University, Okayama, Japan

YF-3 **A high-throughput analysis of cancer-cell dormancy under mechanical confinement with micro-hydrogel beads**

Misa Minegishi[1,2], Keiji Nozaki[2,3], Kaori Nishikawa[1], Hirofumi Shintaku[1,2,3]

[1]RIKEN Cluster for Pioneering Research, RIKEN., [2]Institute for Life and Medical Science, Kyoto University., [3]Department of Micro Engineering, Graduate School of Engineering, Kyoto University.

Oral Sessions

YF-4 **Crosstalk of two bacterial actins composed of the force generation unit of Spiroplasma swimming**

Daichi Takahashi[1,2], Makoto Miyata[2,3], Ikuko Fujiwara[4]

[1]Research Institute for Interdisciplinary Science, Okayama University, Japan, [2]Graduate School of Science, Osaka Metropolitan University, Japan, [3]The OMU Advanced Research Institute for Natural Science and Technology, Osaka Metropolitan University, Japan, [4]Department of Materials Sciences and Bioengineering, Nagaoka University of Technology, Japan

YF-5 **Spatiotemporal formation of a single liquid-like condensate of α-synuclein and subsequent aging by optical trapping**

Keisuke Yuzu[1,2], Ching-Yang Lin[2], Po-Wei Yi[2], Chih-Hao Huang[2], Hiroshi Masuhara[2], Eri Chatani[1]

[1]Graduate School of Science, Kobe University, Kobe, Japan, [2]Department of Applied Chemistry, National Yang Ming Chiao Tung University, Hsinchu, Taiwan

YF-6 **Encapsulation of cell nucleolus by single-stranded DNA**

Koichiro Maki[1,2,3,4], Jumpei Fukute[1,3], Taiji Adachi[1,2,3,4]

[1]Laboratory of Biomechanics, Institute for Life and Medical Sciences, Kyoto University, Japan, [2]Department of Micro Engineering, Graduate School of Engineering, Kyoto University, Japan, [3]Department of Mammalian Regulatory Network, Graduate School of Biostudies, Kyoto University, Japan, [4]Department of Medicine and Medical Science, Graduate School of Medicine, Kyoto University, Japan

YF-7 **From cellular chirality to large-scale chirality: Emergence of chiral spiral in migrating cellular system**

Masayuki Hayakawa[1], Biplab Bhattacherjee[1], Lihao Guo[1], Hidekazu Kuwayama[2], Tatsuo Shibata[1]

[1]Laboratory for Physical Biology, RIKEN Center for Biosystems Dynamics Research, Kobe, Japan, [2]Faculty of Life and Environmental Sciences, University of Tsukuba, Tsukuba, Japan

YF-8 **Myosin and tropomyosin-troponin complementarily regulate thermal activation of striated muscles**

Shuya Ishii[1,2], Kotaro Oyama[1,2], Fuyu Kobirumaki-Shimozawa[2], Tomohiro Nakanishi[2,3], Naoya Nakahara[4], Madoka Suzuki[5], Shin'ichi Ishiwata[6], Norio Fukuda[2]

[1]QST, Gunma, Japan, [2]Dept Cell Physiol, Sch Med, Jikei Univ, Tokyo, Japan, [3]Dept Anesthesiology, Sch Med, Jikei Univ, Tokyo, Japan, [4]Dept Mol Physiol, Sch Med, Jikei Univ, Tokyo, Japan, [5]IPR, Osaka Univ, Osaka, Japan, [6]Fac Sci Engn, Waseda Univ, Tokyo, Japan

Tuesday, June 25

YF-9 **Prediction of detailed structures over the entire free energy landscape of protein folding using extended statistical mechanical models and restrained simulations**

Koji Ooka[1], Munehito Arai[1,2,3]

[1]College of Arts and Sciences, The University of Tokyo, Tokyo, Japan., [2]Department of Life Sciences, The University of Tokyo, Tokyo, Japan., [3]Department of Physics, The University of Tokyo, Tokyo, Japan.

YF-10 **Pseudo-luciferase activity of the SARS-CoV-2 spike protein**

Ryo Nishihara[1,2], Hisham M Dokainish[3,4], Yoshiki Kihara[1,5], Yuji Sugita[4,6,7], Ryoji Kurita[1,5]

[1]Health and Medical Research Institute, National Institute of Advanced Industrial Science and Technology, [2]Japan Science and Technology Agency, PRESTO, [3]Faculty of Pharmaceutical Sciences, Hokkaido University, [4]Theoretical Molecular Science Laboratory, RIKEN Cluster for Pioneering Research, [5]Faculty of Pure and Applied Sciences, University of Tsukuba, [6]Laboratory for Biomolecular Function Simulation, RIKEN Center for Biosystems Dynamics Research, [7]Computational Biophysics Research Team, RIKEN Center for Computational Science

Symposium 6 — Room B-1

10:00-12:20 **Mechanosensing and Mechanobiology, Biological Temperature**

Chairs Mitsuhiro Iwaki (Protein Biophysics Group, Bio-ICT Lab, National Institute of Information and Communications Technology)

Kate Poole (Faculty of Medicine & Health, School of Biomedical Sciences, University of New South Wales)

S6-1 **Mammalian mechanosensing via ion channels**

Kate Poole, Abie Cargando, Phoebe Dunbabin, Lioba Schroeter, Amrutha Patkunarajah

School of Biomedical Sciences, Faculty of Medicine and Health, University of New South Wales, Sydney, Australia

S6-2 **Visualization and Control of Biological Temperature Using Subcellular-Targeted Chemical Dyes**

Satoshi Arai

WPI Nano Life Science Institute (WPI-NanoLSI), Kanazawa University

S6-3 **Mechanotransduction at cell-cell junctions: beyond the usual suspects**

Alexander Dunn

Stanford University

Oral Sessions

S6-4 **DNA nanodevices for single-molecule biology in mechanosystems**

Mitsuhiro Iwaki[1,2,3]
[1]Advanced ICT Research Institute, National Institute of Information and Communications Technology, [2]RIKEN Center for Biosystems Dynamics Research, [3]Immunology Frontier Research Center, Osaka University

S6-5 **A high-throughput analysis of cancer-cell dormancy under mechanical confinement with micro-hydrogel beads**

Misa Minegishi[1,2], Keiji Nozaki[2,3], Kaori Nishikawa[1], Hirofumi Shintaku[1,2,3]
[1]RIKEN Cluster for Pioneering Research, RIKEN., [2]Institute for Life and Medical Science, Kyoto University., [3]Department of Micro Engineering, Graduate School of Engineering, Kyoto University.

S6-6 **Platelet migration behavior is dependent on substrate stiffness**

Hendrik von Eysmondt, Jan Seifert, Johannes Rheinlaender, Tilman E. Schäffer
Institute of Applied Physics, University of Tübingen, Germany

Symposium 7		**Room B-2**
10:00-12:20	**Protein Structure to Function 1**	
Chairs	Ho Min Kim (Korea Advanced Institute of Science and Technology)	
	Mikako Shirouzu (Center for Biosystems Dynamics Research, RIKEN)	

S7-1 **Structural dynamics of parathyroid hormone receptor and development of biased agonist**

Osamu Nureki, Kazuhiro Kobayashi
The University of Tokyo, Tokyo, Japan

S7-2 **Structure and Function of TMEM87A, a unique Voltage-dependent Cation Channel in Golgi apparatus**

Ho Min Kim
KAIST

S7-3 **Structural basis for antiepileptic drugs and botulinum neurotoxin recognition of SV2A**

Atsushi Yamagata
RIKEN Center for Biosystems Dynamics Research

Tuesday, June 25

S7-4 **Multi-dimensional crystallography: how do enzymes work?**

Pedram Mehrabi[1], Eike Schulz[4], Sihyun Sung[3], David von Stetten[3], Caitlin Hatton[1], Stephan Kleine-Doepke[1], Jan-Philipp Leimkohl[2], Hendrik Schikora[2], Martin Kollewe[2], Friedjof Tellkamp[2]

[1]Institute for Nanostructure and Solid State Physics, University of Hamburg, Hamburg, Germany., [2]Max-Planck-Institute for the Structure and Dynamics of Matter, Hamburg, Germany., [3]EMBL-Hamburg, [4]University Medical Center Hamburg-Eppendorf (UKE), Hamburg, Germany

S7-5 **SAM lyases – small, divergent and multifunctional proteins in bacteriophage counter defense**

Maria Selmer

Department of Cell and Molecular Biology, Uppsala University, Sweden

S7-6 **Unraveling the Energy Transition Network That Dictates Allosteric Activation of Proapoptotic High-Temperature Requirement Protease A2**

Kakoli Bose[1], Aasna Parui[1], Vandana Mishra[2], Shubhankar Dutta[1], Prasenjit Bhaumik[2]

[1]Bose Lab, ACTREC Tata Memorial Centre, NAVI MUMBAI, India; Homi Bhabha National Institute, Mumbai, India, [2]Department of Biosciences and Bioengineering, Indian Institute of Technology Bombay, India

Symposium 8 — Room C-2

10:00-12:20 **Unstructured/Disordered Proteins, RNA**

Chair Shintaro Iwasaki (Cluster for Pioneering Research, RIKEN)

S8-1 **DEAD-box ATPases are global regulators of phase-separated organelles and RNA flux**

Maria Hondele

Biozentrum, University of Basel, Spitalstrasse 41, 4056 Basel, Switzerland

S8-2 **Engineering phase separations in cells to manipulate RNA condensates**

Zoher Gueroui

Ecole Normale Supérieure

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S8-3 **Transcriptomics in P-bodies reveals the selective mRNA release to modulate translation**

Yuichi Shichino[1], Mari Mito[1], Shintaro Iwasaki[1,2]
[1]RIKEN CPR, [2]Dept. Comp. Biol. Med. Sci., Grad. Sch, Front. Sci., Univ. Tokyo

S8-4 **Stress Granule Fusion Mediated by Mitochondrial Dynamics Is Essential for Cell Survival**

Tae Lim Park, Won-Ki Cho
Department of Biological Sciences, Korea Advanced Institute of Science and Technology (KAIST), Daejeon 34141, Republic of Korea

S8-5 **Amyloid conformation-dependent disaggregation revealed by single-molecule fluorescence imaging**

Yoshiko Nakagawa[1,2], Howard C.H. Chen[1], Yusuke Komi[1], Shinju Sugiyama[1], Takaaki Kurinomaru[3], Yuri Tomabechi[4], Elena Krayukhina[3], Kenji Okamoto[5], Takeshi Yokoyama[4], Mikako Shirouzu[4], Susumu Uchiyama[3,6], Megumi Inaba[2], Tatsuya Niwa[7], Yasushi Sako[5], Takahiro Nakayama[8], Hiroki Konno[8], Noriyuki Kodera[8], Hideki Taguchi[7], Motomasa Tanaka[1]
[1]RIKEN Center for Brain Science, Saitama, Japan, [2]School of Life Science and Technology, Tokyo Institute of Technology, Kanagawa, Japan, [3]Research Department, U-Medico Inc., Osaka, Japan, [4]RIKEN Center for Biosystems Dynamics Research, Kanagawa, Japan, [5]Cellular Informatics Laboratory, RIKEN, Saitama, Japan, [6]Graduate School of Engineering, Osaka University, Osaka, Japan, [7]Cell Biology Center, Institute of Innovative Research, Tokyo Institute of Technology, Kanagawa, Japan, [8]WPI Nano Life Science Institute, Kanazawa University

Symposium 9		**Room D**
10:00-12:20	**Lipid and Membrane Biophysics**	
Chairs	Chiho Watanabe (Graduate school of integrated sciences for life, Hiroshima University)	
	Roberto Covino (Frankfurt Institute for Advanced Studies)	

S9-1 **Exploring Lipid and Membrane Biophysics**

Chiho Watanabe
Graduate School of Integrated Sciences for Life, Hiroshima University, Hiroshima, Japan

S9-2 **High-throughput analysis of membrane fluidity unveils a hidden dimension in immune cell states**

Luca Andronico[1], Yidan Jiang[1,2], Valentina Carannante[3], Sofia Iskrak[1], Patrick A. Sandoz[3], Jaromir Mikes[1], Andrey Klymchenko[4], Marcus Buggert[5], Anders Österborg[6,7], Björn Önfelt[3,5], Petter Brodin[1], Erdinc Sezgin[1]

[1]Science for Life Laboratory, Department of Women's and Children's Health, Karolinska Institutet, 17165 Solna, Sweden, [2]European Molecular Biology Laboratory (EMBL), 69117, Heidelberg, Germany, [3]Science for Life Laboratory, Department of Applied Physics, KTH Royal Institute of Technology, 114 28 Stockholm, Sweden, [4]Laboratoire de Bioimagerie et Pathologies, UMR 7021 CNRS, Université de Strasbourg 74 Route du Rhin 67401 Illkirch France, [5]Department of Medicine Huddinge, Centre for Infectious Medicine, Karolinska Institutet, 171 77, Stockholm, Sweden, [6]Department of Hematology, Karolinska University Hospital, Stockholm, Sweden, [7]Department of Oncology-Pathology, Karolinska Institutet, 171 77, Stockholm, Sweden

S9-3 **Biological tuning of the membrane phase transition facilitates plasma membrane organization and function.**

Sarah Veatch

University of Michigan

S9-4 **Lipid heterogeneity within giant vesicles confer robust protein pattern formation**

Nishu Kanwa

Max Planck Institute for Biochemistry, Germany

S9-5 **Electron diffraction reveals substructures in lipid raft-like ordered membrane domains**

Masanao Kinoshita, Mayu Maeda, Shimpei Yamaguchi, Nobuaki Matsumori

Kyushu University

S9-6 **Elastic and viscous properties of model lipid bilayers measured using dynamic neutron scattering**

Michihiro Nagao[1,2,3]

[1]National Institute of Standards and Technology Center for Neutron Research, [2]Department of Materials Science and Engineering, University of Maryland, [3]Department of Physics and Astronomy, University of Delaware

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S9-7 **Investigating how membranes control the thermodynamics and kinetics of membrane protein complexes with molecular simulations.**

Roberto Covino

Frankfurt Institute for Advanced Studies, Ruth-Moufang-Straße 1, 60438 Frankfurt am Main, Germany.

Symposium 10	**Room E**
10:00-12:20	**Data Science for Integrated Dynamic Structural Biology**
Chairs	Florence Tama (Nagoya University & RIKEN Center for Computational Science) Jianhan Chen (Chemistry, University of Massachusetts Amherst)

S10-1 **Solving 3D puzzles of biomolecular interactions by integrative modelling**

Alexandre Bonvin

Utrecht University, Faculty of Science, Bijvoet Centre

S10-2 **Searching the Molecular Space using Neural Network Energy Models**

Chaok Seok

Seoul National University

S10-3 **Dynamic structure of monomeric Grb2 revealed via integrative modeling**

Mao Oide[1], Teppei Ikeya[2], Weitong Ren[3], Hisham Dokainish[4], Takaharu Mori[5], Yutaka Ito[2], Yuji Sugita[1,6,7]

[1]Theoretical Molecular Science Laboratory, RIKEN Clusters for Pioneering Research, Saitama, Japan, [2]Department of Chemistry, Graduate School of Science, Tokyo Metropolitan University, Tokyo, Japan, [3]Wenzhou Institute, University of Chinese Academy of Sciences, Zhejiang, China, [4]Laboratory of Biomolecular Science, Faculty of Pharmaceutical Sciences, Hokkaido University, Hokkaido, Japan, [5]Department of Chemistry, Faculty of Science Division I, Tokyo University of Science, Tokyo, Japan, [6]Laboratory for Biomolecular Function Simulation, RIKEN Center for Biosystems Dynamics Research, Hyogo, Japan, [7]Computational Biophysics Research Team, RIKEN Center for Computational Science, Hyogo, Japan

S10-4 **Dynamics of Intrinsically Disordered Proteins via Simulations and Machine Learning**

Michael Feig

Michigan State University, East Lansing, MI, USA

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S10-5 **Protein structural ensembles from 3D and 2D cryo-EM data**

Massimiliano Bonomi
Institut Pasteur, Université Paris Cité, CNRS UMR 3528, Computational Structural Biology Unit, Paris, France

Symposium 11 — Room A

16:00-18:20 **Single Molecule Biophysics in Chromosome Science**

Chairs Kayo Hibino (Department of Chromosome Science, National Institute of Genetics)
Je-Kyung Ryu (Seoul National University)

S11-1 **Single-nucleosome imaging unveils dynamic organization of mitotic chromosomes.**

Kayo Hibino[1,2], Yuji Sakai[3], Sachiko Tamura[1], Masatoshi Takagi[4], Katsuhiko Minami[1,2], Toyoaki Natsume[1,2,6], Masa A. Shimazoe[1,2], Masato T. Kanemaki[1,2,5], Naoko Imamoto[4], Kazuhiro Maeshima[1,2]
[1]National Institute of Genetics, Mishima, Japan, [2]SOKENDAI, Mishima, Japan, [3]Kyoto University, Kyoto, Japan, [4]RIKEN Cluster for Pioneering Research, Wako, Japan, [5]The University of Tokyo, Tokyo, Japan, [6]Present address: Research Center for Genome & Medical Sciences, Tokyo

S11-2 **Mechanics and microrheology of native human mitotic chromosomes**

Gijs JL Wuite
Vrije Universiteit, De Boelelaan 1081, 1081 HV, Amsterdam, The Netherlands

S11-3 **Unpaused and Loosened Unwinding of Nucleosomal DNA on H2A.B Variants**

Hikaru Nozawa[1], Fritz Nagae[2], Satoshi Ogihara[1], Rina Hirano[3], Hirohito Yamazaki[4], Ryo Iizuka[1], Munetaka Akatsu[3], Tomoya Kujirai[3], Shoji Takada[2], Hitoshi Kurumizaka[3], Sotaro Uemura[1]
[1]Department of Biological Sciences, Graduate School of Science, The University of Tokyo, Tokyo, Japan, [2]Department of Biophysics, Graduate School of Science, Kyoto University, Kyoto, Japan, [3]Institute for Quantitative Biosciences, The University of Tokyo, Tokyo, Japan, [4]Department of Mechanical Engineering, Nagaoka University of Technology, Niigata, Japan

S11-4 **Super-resolution imaging of transcription in living cells**

Ibrahim Cissé
Department of Biological Physics Max Planck Institute of Immunobiology and Epigenetics

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S11-5 **Bridging-induced phase separation by cohesin complexes**

Je-Kyung Ryu
Department of physics and astronomy, Seoul National University, South Korea

Symposium 12	**Room B-1**
16:00-18:20	**Cell Motility, Cytoskeleton and Motor Proteins**
Chairs	Sarah Köster (Faculty of Physics / Institute for X-Ray Physics, University of Goettingen) Ikuko Fujiwara (Dep. of Materials Science and Bioengineering, Nagaoka University of Technology)

S12-1 **Inhibitory mechanisms of actin polymerization dynamics at the molecular level by Cytochalasin D and Archea gelsolin**

Ikuko Fujiwara[1], Takahiro Mitani[1], Horyo Mizuki[1], Toshiro Oda[2], Shuichi Takeda[3]
[1]Material Sciences and Bioengineering, Nagaoka University of Technology, Japan, [2]Faculty of Health and Welfare, Tokai Gakuin University, Kakamigahara, Japan, [3]Okayama University, Okayama, Japan

S12-2 **COLLECTIVE MOTOR AND MICROTUBULE MECHANICS UNDERLYING SPINDLE SELF-ORGANIZATION**

Yuta Shimamoto[1,2]
[1]National Institute of Genetics, [2]SOKENDAI University

S12-3 **Intermediate filaments in the cytoskeleton: safety belt and shock absorber for the cell?**

Sarah Köster
University of Göttingen, Germany

S12-4 **Intra- and extra-cellular functions of vimentin: mechanics, signaling, and adhesion**

Paul Janmey[1], Robert Bucki[1], Alison Patteson[2]
[1]Department of Physiology, University of Pennsylvania, Philadelphia PA, USA, [2]Physics Department, Syracuse University, Syracuse NY, USA

S12-5 **Cell biophysics: phase diagrams, phase portraits and trajectories**

Cécile Sykes
Laboratoire de Physique de l'École normale supérieure, ENS, Université PSL, CNRS, Sorbonne Université, Université Paris Cité, F-75005 Paris, France

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Symposium 13 — Room B-2

16:00-18:20 **Protein Structure to Function 2**

Chairs Shun-ichi Sekine (RIKEN)
Heeyoun Bunch (Applied Biosciences, Kyungpook National University)

S13-1 **Structural basis of promoter-proximal pausing of RNA polymerase II at +1 nucleosome**

Shun-ichi Sekine

RIKEN Center for Biosystems Dynamics Research, Yokohama, Japan

S13-2 **Coarse-grained molecular dynamics simulations of parental histone H3/H4 recycling by a replisome**

Fritz Nagae[1], Yasuto Murayama[2], Tsuyoshi Terakawa[1]

[1]Department of Biophysics, Graduate School of Science, Kyoto University Kyoto, Japan, [2]Department of Chromosome Science, National Institute of Genetics, Shizuoka, Japan

S13-3 **Structural and biochemical analysis of a unique structural unit of chromatin**

Kayo Nozawa[1], Hitoshi Kurumizaka[2]

[1]School of Life Science and Technology, Tokyo Institute of Technology, [2]Institute for Quantitative Biosciences, The University of Tokyo

S13-4 **A dual interaction between RSV NS1 protein and MED25 underlies RSV virulence and interferon antagonism**

Celia Ait-Mouhoub[2], Jiawei Dong[1], Alexis Verger[3], Marie Galloux[2], Delphyne Descamps[2], Jean-Francois Eleouet[2], Monika Bajorek[2], Christina Sizun[1]

[1]Institut de Chimie des Substances Naturelles, CNRS, Université Paris-Saclay, Gif-sur-Yvette, France, [2]Virologie et Immunologie Moléculaires, INRAE, Université Paris-Saclay, UVSQ, Jouy-en-Josas, France,, [3]Integrative Structural Biology, CNRS, INSERM, Université de Lille, Institut Pasteur de Lille, Lille, France

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S13-5 **ERK2-topoisomerase II regulatory axis is important for gene activation in immediate early genes**

Heeyoun Bunch[1,2], Deukyeong Kim[2], Masahiro Naganuma[3], Reiko Nakagawa[4], Anh Cong[5], Jaehyeon Jeong[1], Haruhiko Ehara[3], Hongha Vu[6], Jeong Ho Chang[6], Matthew Schellenberg[5], Shun-ichi Sekine[3]

[1]Department of Applied Biosciences, Kyungpook National University, Daegu, Republic of Korea, [2]School of Applied Biosciences, College of Agriculture & Life Sciences, Kyungpook National University, Daegu, Republic of Korea, [3]Laboratory for Transcription Structural Biology, RIKEN Center for Biosystems Dynamics Research, 1-7-22 Suehiro-cho, Tsurumi-ku, Yokohama, Japan, [4]RIKEN BDR Laboratory for Phyloinformatics, Hyogo, Japan, [5]Department of Biochemistry and Molecular Biology, Mayo Clinic, Rochester, Minnesota, USA, [6]Department of Biology Education, Kyungpook National University, Daegu, Republic of Korea

S13-6 **Topological formation of transcriptional condensates relative to subnuclear compartments**

Won-Ki Cho

Korea Advanced Institute of Science and Technology (KAIST)

S13-7 **Spatial regulation of ribosomal RNA transcription by phase separation and transition**

Satoru Ide[1,2], Yasuto Murayama[1,2], Kazuhiro Maeshima[1,2]

[1]National Institute of Genetics, Shizuoka, Japan, [2]SOKENDAI (the Graduate University for Advanced Studies), Japan

Symposium 14	**Room E**
16:00-18:20	**Data Science, Machine Learning, and Analytical Frameworks for Understanding the Heterogeneity of Cellular and Multicellular Systems**
Chairs	Susanne Rafelski (Allen Institute for Cell Science) Katsuyuki Shiroguchi (Center for Biosystems Dynamics Research (BDR), RIKEN)

S14-1 **Integrated intracellular organization dynamics and its variations in human iPS cells**

Allen Institute for Cell Science[1], Julie A Theriot[2], Susanne Rafelski[1]

[1]Allen Institute for Cell Science Seattle, WA, USA, [2]Department of Biology and Howard Hughes Medical Institute, University of Washington Seattle, WA USA

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S14-2 **Machine learning interpretable models of cell mechanics and mophogenesis**
Vincenzo Vitelli
University of Chicago, Chicago, USA

S14-3 **Enhancing Identification of Cancer Stem Cells through Line Illumination Raman Microscopy and Hydrogel-Based Platforms**
Jean-Emmanuel Clement
Hokkaido University WPI-ICReDD

S14-4 **Cellular gradient flow structure connects single-cell-level rules and population-level dynamics**
Shuhei Horiguchi[1,2], Tetsuya Kobayashi[2]
[1]Kanazawa University, [2]The University of Tokyo

S14-5 **Imaged-based prediction of single-cell transcriptomic phenotypes using robotic data acquisition**
Katsuyuki Shiroguchi
RIKEN Center for Biosystems Dynamics Research (BDR), Japan

S14-6 **Machine learning for Overcoming Heterogeneity of Single-cell Datasets**
Maria Brbic
EPFL

Hands-on Training Session A Room C-2

16:00-18:20 **Millions of Single Live Cell Analysis with the Automated Trans-scale-scope, AMATERAS**

Chairs Shuichi Onami (RIKEN Center for Biosystems Dynamics Research)
Takeharu Nagai (Osaka University)

HT-A-1 **Automated trans-scale scope opens up a new horizon in life science research**
Takeharu Nagai[1,2,3]
[1]SANKEN, Osaka University, [2]OTRI, Osaka University, [3]RIES, Osaka University

HT-A-2 **Activatable Raman probes for multiplexed vibrational imaging in live cells and tissues**
Mako Kamiya
Department of Life Science and Technology, Tokyo Institute of Technology

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HT-A-3 **Engineering high performance biosensors to analyze signaling and metabolism in live cells**

Robert E. Campbell
Department of Chemistry, School of Science, The University of Tokyo

HT-A-4 **Analyzing the Invisible: Advanced Techniques in Microscopy and Spectroscopy for Internal State Characterization**

Imari Sato
National Institute of Informatics

HT-A-5 **Cell Tracking and Data Management for AMATERAS**

Shuichi Onami[1,2,3]
[1]RIKEN Center for Biosystems Dynamics Research, Kobe, Japan, [2]RIKEN Information R&D and Strategy Headquarters, Kobe, Japan, [3]RIKEN, TRIP Headquarters, Kobe, Japan

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Plenary IUPAB Engstrom Lecture — Room A

9:00-9:50 **Filming Biomolecules in Dynamic Action by High-speed AFM**

Chair Christina Sizun (CNRS/ICSN, Université Paris Saclay)

PL-2 **Filming biomolecules in dynamic action by high-speed AFM**

Toshio Ando

Nano Life Science Institute (WPI-NanoLSI), Kanazawa University

Symposium 15 — Room A

10:00-12:20 **Single Molecule Biophysics with Advanced Techniques**

Chairs Doory Kim (Department of Chemistry, Hanyang University)

Masataka Yanagawa (Tohoku University)

S15-1 **Unveiling receptor dynamics with single-molecule high-content analysis**

Masataka Yanagawa[1,2]

[1]Molecular and Cellular Biochemistry, Graduate School of Pharmaceutical Sciences, Tohoku University, Miyagi, Japan, [2]Cellular Informatics Laboratory, RIKEN Cluster for Pioneering Research, Saitama, Japan

S15-2 **Multidimensional Super-Resolution Microscopy of the Living Cell**

Ke Xu

University of California, Berkeley

S15-3 **Subcellular localization and diffusion dynamics of RNA degradosome proteins in live bacteria cells**

Sangjin Kim

University of Illinois at Urbana-Champaign

S15-4 **mRNA decoding in human is kinetically and structurally distinct from bacteria.**

Scott C Blanchard[1,2]

[1]Department of Structural Biology, St Jude Children's Research Hospital, Memphis, TN, USA, [2]Chemical Biology & Therapeutics, St Jude Children's Research Hospital, Memphis, TN, USA.

S15-5 **Ultrastructural Studies of Gram-positive Bacteria and Their Extracellular Vesicles**

Doory Kim

Hanyang University

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Symposium 16	Room B-1
10:00-12:20	**Rotary ATPases**
Chairs	Tomoko Masaike (Faculty of Science and Technology / Department of Applied Biological Science, Tokyo University of Science) Alastair Stewart (Structural Biology, The Victor Chang Cardiac Research Institute)

S16-1 **Mechanisms of rotary ATPases**

Tomoko Masaike

Department of Applied Biological Science, Faculty of Science and Technology, Tokyo University of Science

S16-2 **E. coli ATP synthase after the addition of ATP or ADP**

Alastair Stewart

The Victor Chang Cardiac Research Institute, Darlinghurst, Australia

S16-3 **Inferring subsystem efficiencies in bipartite molecular machines**

Matthew Leighton, David Sivak

Department of Physics, Simon Fraser University

S16-4 **Biophysical characterization of the archaellar motor rotation**

Yoshiaki Kinosita, Rikiya Watanabe

RIKEN, Saitama, Japan

S16-5 **Molecular Mechanism of V-ATPase Reversible Disassembly**

Stephan Wilkens

SUNY Upstate Medical University, Department of Biochemistry and Molecular Biology, 750 East Adams Street, Syracuse, NY 13210, USA

S16-6 **Sodium motive force-driven ATP synthesis by EhV-ATPase**

Akihiro Otomo[1,2], Lucy Zhu[3], Mayuko Yamamoto[1], Yasuko Okuni[1], Takanori Harashima[1,2], Ryota Iino[1,2]

[1]Institute for Molecular Science, [2]SOKENDAI, [3]ParisTech

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S16-7 **Engineering of ATP synthase to enhance proton-to-ATP ratio**

Hiroshi Ueno[1], Kiyoto Yasuda[1], Norie Hamaguchi[2], Riku Marui[1], Naruhiko Adachi[3], Toshio Moriya[3], Satomi Inaba[3], Toshiya Senda[3], Takeshi Murata[2], Hiroyuki Noji[1]

[1]Department of Applied Chemistry, Graduate School of Engineering, The University of Tokyo, Tokyo, Japan, [2]Department of Chemistry, Graduate School of Science, Chiba University, Chiba, Japan, [3]Structural Biology Research Center, Institute of Materials Structure Science, High Energy Accelerator Research Organization (KEK), Ibaraki, Japan

Symposium 17 — Room B-2

10:00-12:20 **Protein Design & Engineering**

Chairs Guto Rhys (Chemistry, Cardiff University)

Ai Niitsu (CPR, RIKEN)

S17-1 **EMBO Keynote Lecture**
Modular protein design for new protein folds and regulation of protein and biological processes

Roman Jerala

National Institute of Chemistry, Ljubljana, Slovenia

S17-2 **Indels: The Evolutionary Switches Bridging Protein Functions and Topologies**

Paola Laurino

Protein Engineering and Evolution Unit, Okinawa Inst. of Sci. & Tech. Graduate Univ.

S17-3 **How will we catalyse unnatural reactions using proteins?**

Guto Rhys

Cardiff University, UK

S17-4 **Computational design of highly active SNARE-like membrane fusion proteins**

Masaharu Somiya[1,2], Sydney Funk[1], Neil King[1]

[1]Institute for Protein Design, University of Washington, [2]SANKEN, Osaka University

S17-5 **Protein Structure Prediction and Design using RoseTTAFold**

Minkyung Baek

Department of Biological Sciences, Seoul National University, Seoul, Republic of Korea

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S17-6 **Data Efficient Protein Function Improvement by Machine Learning with Molecular Simulation**

Teppei Deguchi[1,2], Yoichi Kurumida[3], Shinji Iida[3], Yutaka Saito[1,2,3]

[1]Graduate School of Frontier Sciences, The University of Tokyo, Chiba, Japan., [2]Artificial Intelligence Research Center, AIST, Tokyo, Japan., [3]Department of Data Science, School of Frontier Engineering, Kitasato University, Kanagawa, Japan.

Symposium 18		**Room C-2**
10:00-12:20	**Neural Systems and Excitable Cells**	
Chairs	Chie Hosokawa (Graduate School of Science / Department of Chemistry, Osaka Metropolitan University)	
	Sung Hyun Kim (Department of Physiology, School of Medicine,, Kyung Hee University)	

S18-1 **Aβ-MISFOLDING AS PRECISE RISK PLASMA BIOMARKER FOR ALZHEIMER DEMENTIA IN A SYMPTOM-FREE STAGE**

Klaus Gerwert[1,2]

[1]Ruhr University Bochum, Bochum, Germany, [2]Center for Protein Diagnostics, Bochum, Germany

S18-2 **Harnessing thermoplasmonics to modulate neuronal excitability and network activity**

Yoonkey Nam

Department of Bio and Brain Engineering, KAIST (Korea Advanced Institute of Science and Technology)

S18-3 **Distinct synaptic vesicle recycling in inhibitory nerve terminals is coordinated by SV2A**

Sung Hyun Kim

Department of Physiology, School of Medicine, Kyung Hee University

S18-4 **Optical Manipulation of Molecular Dynamics in Neurons**

Chie Hosokawa

Osaka Metroplitan University

S18-5 **Measuring the stiffness of neuronal growth cones with scanning ion conductance microscopy**

Aylin Balmes[1], Hannes Schmidt[2], Tilman E. Schäffer[1]

[1]Institute of Applied Physics, University of Tübingen, Tübingen, Germany, [2]Interfaculty Institute of Biochemistry (IFIB), University of Tübingen, Tübingen, Germany

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S18-6 **Optimal power-law encoding is self-organized in cultured neuronal networks**

Asahi Nakamuta, Jun-nosuke Teramae
Grad Sch Informatics, Kyoto University, Kyoto, Japan

Symposium 19 — Room D

10:00-12:20 **Understanding Structure and Function of Emerging Viruses**

Chairs Juha Huiskonen (Institute of Biotechnology, Helsinki Institute of Life Science HiLIFE, University of Helsinki)

Katsumi Maenaka (Faculty of Pharmaceutical Sciences, Hokkaido University)

S19-1 **Functional annotation of viral protein sugarcoats**

Shang-Te Danny Hsu[1,2,3]
[1]Institute of Biological Chemistry, Academia Sinica, Taipei 11529, Taiwan, [2]Institute of Biochemical Sciences, National Taiwan University, Taipei 106319, Taiwan, [3]International Institute for Sustainability with Knotted Chiral Meta Matter (SKCM2), Hiroshima University, Higashihiroshima, Hiroshima 739-8527, Japan

S19-2 **Host Recognition of SARS-CoV-2 Spike: A Double-Edged Sword**

Firdaus Samsudin[1], Palur Raghuvamsi[1,2], Lorena Zuzic[1], Ganna Petruk[3], Manoj Puthia[3], Jitka Petrlova[3], Paul MacAry[4], Ganesh Anand[5], Artur Schmidtchen[6], Peter J. Bond[1,2]
[1]Bioinformatics Institute, A*STAR, Singapore, [2]Dept. of Biological Sciences, NUS, Singapore, [3]Dept. of Clinical Sciences, Lund University, Sweden, [4]Life Sciences Institute, NUS, Singapore, [5]Dept. of Chemistry, The Pennsylvania State University, PA, USA, [6]Dept. of Biomedical Sciences, University of Copenhagen, Denmark

S19-3 **Cryo-ET of SARS-CoV-2 provided insights into its architecture and neutralization**

Sai Li
School of Life Sciences, Tsinghua University, Beijing 100084, China

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S19-4 **Elucidating Spike Protein Conformations from Simulation and Experiment**

Hisham M. Dokainish[1,2], Yuji Sugita[2,3,4], Katsumi Maenaka[1,5,6]

[1]Center for Research and Education on Drug Discovery, Faculty of Pharmaceutical Sciences, Hokkaido University, Sapporo, Japan, [2]Theoretical Molecular Science Laboratory, RIKEN Cluster for Pioneering Research, Wako, Japan, [3]Laboratory for Biomolecular Function Simulation, RIKEN Center for Biosystems Dynamics Research, Kobe, Japan, [4]Computational Biophysics Research Team, RIKEN Center for Computational Science, Kobe, Japan, [5]Hokkaido University Institute for Vaccine Research & Development, Sapporo, Japan, [6]International Institute for Zoonosis Control, Hokkaido University, Sapporo, Japan

S19-5 **Direct inhibition of human APOBEC3 deaminases by HIV-1 Vif independent of the ubiquitination/degradation pathway**

Keisuke Kamba[1], Li Wan[1,2], Kentaro Tozawa[1,2], Satoru Unzai[3], Ryo Morishita[4], Akifumi Takaori-Kondo[5], Takashi Nagata[1,2], Masato Katahira[1,2]

[1]Institute of Advanced Energy, Kyoto University, Kyoto, Japan, [2]Graduate School of Energy Science, Kyoto University, Kyoto, Japan, [3]Department of Frontier Bioscience, Hosei University, Tokyo, Japan, [4]CellFree Sciences Co., Ltd., Ehime, Japan, [5]Graduate School of Medicine, Kyoto University, Japan

S19-6 **Restructuring of bacteriophage ϕ6 viral particle activates semi-conservative transcription**

Serban L. Ilca[1,2], Xiaoyu Sun[3], Esa-Pekka Kumpula[4], Katri Eskelin[3], David I. Stuart[2], Minna M. Poranen[3], Juha Huiskonen[2,4]

[1]New York Structural Biology Center, Simons Electron Microscopy Center, New York, NY, USA, [2]Division of Structural Biology, Centre for Human Genetics, University of Oxford, Oxford, UK, [3]Molecular and Integrative Biosciences Research Programme, Faculty of Biological and Environmental Sciences, University of Helsinki, Helsinki, Finland, [4]Institute of Biotechnology, Helsinki Institute of Life Science HiLIFE, University of Helsinki, Helsinki, Finland

Symposium 20		**Room E**
10:00-12:20	**Synthetic and Constructive Biology**	
Chairs	Tomoaki Matsuura (Tokyo Institute of Technology)	
	Sheref S. Mansy (Chemistry, University of Alberta)	

S20-1 **A potential path to the Darwinian evolution of protocells**

Sheref Mansy

University of Alberta, Department of Chemistry, Edmonton, Alberta T6G 2G2, Canada

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S20-2 **Design and construction of artificial cells reproducing cellular functions**

Yutetsu Kuruma[1,2], Yasuhiro Shimane[1], Rumie Matsumura[1], Sumie Eto[3], Samuel Berhanu[3]

[1]Japan Agency for Marine-Earth Science and Technology (JAMSTEC), [2]Yokohama City University, [3]Earth-Life Science Institute (ELSI)

S20-3 **SUGARS FOR FUNCTION: Enabling protein post-translational modifications in cell-free systems**

Karen Polizzi[1], Elli Makrydaki[1], Oscar Marshall[1], Rochelle Aw[2], Farzana Alam[1], Tejasvi Shivakumar[1], Akashaditya Das[1], Cleo Kontoravdi[1]

[1]Department of Chemical Engineering and Imperial College Centre for Synthetic Biology, London, UK, [2]Department of Bioengineering, Stanford University, Stanford, CA, USA

S20-4 **Pigment Reporters for Further Development of Cell Free Systems for Synthetic Biology with Secondary Metabolism**

Constance B. Bailey[1], Tien T. Sword[2], Jaime Lorenzo N. Dinglasan[2,3], J. William J. William Barker[2], Ghaeath S.K. Abbas[1], Madeline E. Spradley[2], Scott J. Emrich[1], Michael A. Gilchrist[2], Mitchell J. Doktycz[2]

[1]University of Sydney, School of Chemistry, Sydney NSW, Australia, [2]University of Tennessee-Knoxville, Knoxville, TN, USA, [3]Oak Ridge National Laboratory, Oak Ridge, TN, USA

S20-5 **Synthetic approaches to biomolecular motors**

Ken'ya Furuta[1,2]

[1]Advanced ICT Research Institute, National Institute of Information and Communications Technology, Hyogo, Japan, [2]Department of Biological Sciences, Graduate School of Science, Osaka University, Osaka, Japan

Oral Sessions

The Young Investigator Award Lecture	Room A
16:00-16:40	**Structural and functional diversity in light-gated ion channels: channelrhodopsins**
Chairs	Manuel Prieto (iBB/IST-Institute for Bioengineering and Bioscience, University of Lisbon, Portugal) Anthony Watts (University of Oxford, UK)
YIA	**Structural and functional diversity in pump-like cation channelrhodopsins** Hideaki Kato The University of Tokyo

BPS Award Lecture	Room B-1
16:40-17:30	**Accurate Models for Interrogating and Engineering Biomolecular Condensates**
Chair	Kumiko Hayashi (The University of Tokyo)
Presenter	Jennifer Pesanelli (Biophysical Society)
BPS	**Accurate models for interrogating and engineering biomolecular condensates** Jerelle A Joseph[1,2] [1]Department of Chemical and Biological Engineering, Princeton University, USA, [2]Omenn-Darling Bioengineering Institute, Princeton University, USA

Keynote 2	Room A
17:00-17:50	**Molecular Simultations Open a Window into Cellular Dynamics**
Chair	Yuji Sugita (RIKEN)
KL-2	**Molecular simulations open a window into cellular dynamics** Gerhard Hummer[1,2] [1]Department of Theoretical Biophysics, Max Planck Institute of Biophysics, Frankfurt am Main, Germany, [2]Institute for Biophysics, Goethe University Frankfurt, Frankfurt am Main, Germany

Wednesday, June 26

Keynote 3		Room B-1
17:00-17:50	**Cytoplasmic Dynamics and Mechanics in the Maturation and Aging of Mammalian Oocytes**	
Chair	Jie Yan (National University of Sinagpore)	

KL-3 **Cytoplasmic Dynamics and Mechanics in the Maturation and Aging of Mammalian Oocytes**

Rong Li
Mechanobiology Institute, National University of Singapore

Oral Sessions Thursday, June 27

Plenary IUPAB Ramachandran Lecture — Room B-1

9:00-9:50 **Design of New Protein Functions using Deep Learning**
Chair Nobuyasu Koga (Osaka University)

PL-3 **Design of New Protein Functions using Deep Learning**
David Baker
Biochemistry, Genome Sciences, Bioengineering, Chemical Engineering, Computer Science and Physics, University of Washington, USA

Symposium 21 — Room A

10:00-12:20 **Computational Molecular Biophysics**
Chairs Shoji Takada (Graduate School of Science, Kyoto University)
Cecilia Clementi (Physics, Freie Universität Berlin)

S21-1 **Modeling the Genome: A View by a Physicist**
José Onuchic
Center for Theoretical Biological Physics, Rice University, Houston TX 77005, USA

S21-2 **Physicochemical regulation of the liquid-like organisation of chromatin**
Rosana Collepardo-Guevara[1,2,3], Stephen Farr[2], Maria Julia Maristany[2], Jan Huertas[1]
[1]Yusuf Hamied Department of Chemistry, University of Cambridge, Cambridge, [2]Cavendish Laboratory, Department of Physics, University of Cambridge, Cambridge, UK, [3]Department of Genetics, University of Cambridge, Cambridge, UK

S21-3 **Solvent constraints for biopolymer folding and evolution in extraterrestrial environments**
Ignacio Sánchez[1,2], Ezequiel Galpern[1,2], Diego U. Ferreiro[1,2]
[1]Universidad de Buenos Aires, Facultad de Ciencias Exactas y Naturales, Departamento de Química Biológica, Laboratorio de Fisiología de Proteínas, Buenos Aires, Argentina, [2]CONICET-Universidad de Buenos Aires, Instituto de Química Biológica de la Facultad de Ciencias Exactas y Naturales (IQUIBICEN), Buenos Aires, Argentina.

S21-4 **Changes in VEGFR by VEGF: Pursuing activation mechanism and drug targeting via computer simulations**
Young Min Rhee, Yeon Ju Go, Mahroof Kalathingal
Korea Advanced Institute of Science and Technology

Thursday, June 27

S21-5 **Multiscale biomolecular simulations for chromatin and transcription regulation**

Shoji Takada

Graduate School of Science, Kyoto University

Symposium 22 — Room B-1

10:00-12:20 **Bacterial/Archaeal Supermolecular Assembly**

Chairs Isil Tulum (Faculty of Science/ Department of Biology, Istanbul University)

Daisuke Nakane (Department of Engineering Science, The University of Electro-Communications)

S22-1 **Phototaxis and control of type IV pilus functions**

Annegret Wilde[1], Nils Schuergers[1], Jonas Hammerl[1], Yu Han[1], Shylaja Mohandass[2], Conrad Mullineaux[2]

[1]University of Freiburg, Germany, [2]Queen Mary University of London, United Kingdom

S22-2 **Cell surface architecture of a nano-sized archaeon Nanobdella aerobiophila**

Shingo Kato

Japan Collection of Microorganisms (JCM), RIKEN BioResource Research Center

S22-3 **Development of Protein-Based Strategies for Detection, Identification and Controlling Plant Pathogenic Phytoplasmas**

Isil Tulum, Kayhan Derecik

Istanbul University, Faculty of Science, Department of Biology

S22-4 **Coevolution of glycosylation, flagellar motor and cell shape in Campylobacter jejuni for efficient host**

Eli Cohen

Imperial College London

S22-5 **Dissecting the structure and function of the bacterial flagellar motor.**

Anna Roujeinikova

Department of Microbiology, Infection and Immunity Program, Monash Biomedicine Discovery Institute, Monash University, Melbourne, Victoria, Australia

S22-6 **From Inactivity to Motion: Uncovering Motility Dynamics of Alcanivorax Borkumensis**

Shufneg Zhao

Grad. Sch. of Sci. and tech., Univ. of Tsukuba

Oral Sessions

Symposium 23	Room B-2
10:00-12:20	**Optogenetics and Photobiology**
Chairs	Keiichi Inoue (The Institute for Solid State Physics, The University of Tokyo) Kota Katayama (Life Science and Applied Chemistry, Nagoya Institute of Technology)

S23-1 **The search for new carotenoid light-harvesting systems in microbial rhodopsins**

Oded Béjà

Faculty of Biology, Technion – Israel Institute of Technology, Haifa, Israel

S23-2 **MULTIPLE RETINAL ISOMERIZATIONS DURING THE EARLY PHASE OF THE BESTRHODOPSIN PHOTOREACTIONS**

Spyridon Kaziannis[1,4], Matthias Broser[3], Ivo H.M. van Stokkum[2], Jakub Dostal[4], Wayne Busse[3], Arno Munhoven[3], Cesar Bernardo[4], Miroslav Kloz[4], Peter Hegemann[3], John T.M. Kennis[2]

[1]University of Ioannina, Ioannina, [2]Vrije Universiteit, Amsterdam, [3]Humboldt University, Berlin, [4]ELI Beamlines, Prague

S23-3 **Structural Dynamics of Microbial Rhodopsins Captured by X-ray Free Electron Lasers**

Eriko Nango

Institute of Multidisciplinary Research for Advanced Materials, Tohoku University

S23-4 **Photoisomerization Mechanism of Retinal in Different Microbial Rhodopsins - Insight from Multiscale Simulation**

Igor Schapiro

Institute of Chemistry, The Hebrew University of Jerusalem, Israel

S23-5 **Coral opsins: unique spectral tuning and G protein selectivity**

Akihisa Terakita

Department of Biology, Graduate School of Science, Osaka Metropolitan University, Osaka, Japan

Thursday, June 27

Symposium 24	Room C-2
10:00-12:20	**Chromatin Dynamics and Imaging**
Chairs	Kazuhiro Maeshima (Department of Chromosome Science, National Insitute of Genetics) Vadim Backman (Biomedical Engineering, Northwestern University)

S24-1 **Chromatin domains as an emergent property: how cells learn to regulate epigenetic memory and transcriptional reprogramming**

Vadim Backman[1,2]

[1]Department of Biomedical Engineering, Northwestern University, [2]Center for Physical Genomics & Engineering, Northwestern University

S24-2 **Replication-dependent histone (Repli-Histo) labeling specifically visualizes physical properties of euchromatin/heterochromatin in living human cells.**

Katsuhiko Minami[1,2], Satoru Ide[1,2], Sachiko Tamura[1,2], Kazuhiro Maeshima[1,2]

[1]National Institute of Genetics, Japan, [2]Graduate Institute for Advanced Studies, SOKENDAI

S24-3 **Understanding the Regulatory Grammar of Enhancers and Silencers: Biophysical Insights from Machine Learning**

Ryan Friedman, Avinash Ramu, Sara Lichtarge, Yawei Wu, Lloyd Tripp, Daniel Lyon, Connie Myers, David Granas, Maria Gause, Joeseph Corbo, Barak Alon Cohen, Michael White

Washington University School of Medicine, Saint Louis, MO 63110

S24-4 **What phase of matter is the chromosome -- and why should the living cell care?**

Olga K. Dudko

University of California at San Diego

S24-5 **THE PIONEER TRANSCRIPTION FACTOR OCT4 ALTERS CHROMATIN PACKING**

Jan Huertas[1,2], M. Julia Maristany[3], Rosana Collepardo-Guevara[1,2]

[1]Yusuf Hamied Department of Chemistry - University of Cambridge, [2]Department of Genetics - University of Cambridge, [3]Department of Physics - University of Cambridge

Oral Sessions

Symposium 25	Room D
10:00-12:20	**Biophysics of Disease**
Chairs	Eri Chatani (Graduate School of Science / Department of Chemistry, Kobe University) Motomasa Tanaka (RIKEN Center for Brain Science) Lukasz Joachimiak (Center for Alzheimer's and Neurodegenerative Diseases, University of Texas Southwestern Medical Center)

S25-1 **Engineered chaperone-mediated disaggregation and degradation of yeast prions**

Motomasa Tanaka

RIKEN Center for Brain Science, Japan

S25-2 **How heterotypic amyloid interactions determine amyloid pathology**

Nikolaos Louros[1,2], Katerina Konstantoulea[1,2], Frederic Rousseau[1,2], Joost Schymkowitz[1,2]

[1]Switch Laboratory, VIB Center for Brain and Disease Research, Herestraat 49, 3000 Leuven, Belgium, [2]Switch Laboratory, Department of Cellular and Molecular Medicine, KU Leuven, Herestraat 49, 3000 Leuven, Belgium

S25-3 **Visualizing Amyloid Oligomers, the Dark Matter of Alzheimer's Disease**

David Robert Boyer[1], Peng Ge[1], Romany Abshkaron[1], Roni Haj Hussein[1], Yi Xiao Jiang[1], Alejandro Foley[2], Ka Chan[2], Jevgenji Raskatov[2], David Eisenberg[1]

[1]Department of Biological Chemistry, University of California, Los Angeles, USA, [2]Department of Chemistry and Biochemistry, University of California, Santa Cruz, USA

S25-4 **Unveiling the Mechanism of Protein Aggregation to Form Oligomers and Protofibrils: A Study Using Insulin as a Model**

Eri Chatani, Keisuke Yuzu

Graduate School of Science, Kobe University

S25-5 **Chemical and structural bases for fibril aggregate formation of RNA-binding proteins with low-complexity domains by neurodegenerative disease mutations.**

Masato Kato[1,2], Nobuo Maita[2], Kim Sunyong[2], Yuko Kajino[2]

[1]Department of Biochemistry, University of Texas Southwestern Medical Center, Dallas, TX USA,, [2]Institute for Quantum Life Science, National Institutes for Quantum Science and Technology (QST), Chiba, JAPAN

Thursday, June 27

S25-6 **Investigation of Toxicity and Structural Mechanism of Dipeptide Repeats in ALS and the Therapeutic Strategy**

Yun-Ru (Ruby) Chen
Genomics Research Center, Academia Sinica

S25-7 **Engineering proteins to control amyloid assembly**

Lukasz Joachimiak
University of Texas Southwestern Medical Center

S25-8 **Unlocking Ribosome Heterogeneity: High-Resolution Genome-Wide Positional Sequencing and Its Implications in Disease Research**

Gabriella Viero[1], Fabio Lauria[1], Toma Tebaldi[2], Lorenzo Lunelli[3], Gregor Anderluh[4], Thomas Gillingwater[5]
[1]Institute of Biophysics CNR Italy, [2]University of Trento, Trento, Italy, [3]Bruno Kessler Foundation (FBK), Trento, Italy, [4]National Institute of Chemistry, Ljubljana, Slovenia, [5]University of Edinburgh, Edinburgh, United Kingdom

Symposium 26 — Room B-1

16:00-18:20 **Applications of Non-equilibrium Physics**

Chairs Kumiko Hayashi (The University of Tokyo)
Chun-Biu Li (Faculty of Science/Mathematics Department, Stockholm University)

S26-1 **Kinetic basis of G-quadruplex selective stabilizing ligands revealed by single-molecule manipulation**

Huijuan You, Yashuo Zhang, Yuanlei Cheng
School of Pharmacy, Tongji Medical College, Huazhong University of Science and Technology

S26-2 **Nonequilibrium energetics and noise-induced acceleration of molecular motor, kinesin-1**

Takayuki Ariga
Graduate School of Frontier Biosciences, Osaka University, Osaka, Japan

S26-3 **Active fluctuations of cytoplasmic actomyosin networks facilitate dynein-driven intracellular transports along microtubules**

Takayuki Torisawa[1,2], Kei Saito[2,3], Ken'ya Furuta[4], Akatsuki Kimura[1,2]
[1]Cell Architecture Laboratory, National Institute of Genetics, [2]Department of Genetics, Graduate University for Advanced Studies (SOUKENDAI), [3]Physics and Cell Biology Laboratory, National Institute of Genetics, [4]Advanced ICT Research Institute, National Institute of Information and Communications Technology

Oral Sessions

S26-4 **Drug the Allosteric Site of a Cancer Target Revealed by Time-Dependent Linear Response Theory**

Lee-Wei Yang[1,2,3,5], Bang-Chieh Huang[1], Pramod Shah[1], Yi-Yun Cheng[4], Chi-Hong Chang-Chein[1], Kuan-Chou Chen[6], Chao-Ling Yao[6]

[1]Institute of Bioinformatics and Structural Biology, National Tsing Hua University, Hsinchu 300044, Taiwan, [2]PhD program in Biomedical Artificial Intelligence, National Tsing Hua University, Hsinchu 300044, Taiwan, [3]Physics Division, National Center for Theoretical Sciences, Taipei 106319, Taiwan, [4]Praexisio Inc., San Diego, CA92121, USA, [5]Bioinformatics & CBMB Programs, Academia Sinica, Taipei 115201, Taiwan, [6]Department of Chemical Engineering. National Cheng Kung University, Tainan 70101, Taiwan

S26-5 **Microbial competition in expanding colony: Emergent collective alignment gives an advantage to longer cells**

Nathan van den Berg, Kristian Thijssen, Thu Trang Nguyen, Adrien Sarlet, Mireia Cordero, Alba Garcia Vazquez, Namiko Mitarai, Amin Doostmohammadi, Liselotte Jauffred

The Niels Bohr Institute, University of Copenhagen

S26-6 **Single-molecule dynamics across phase boundaries in active biomolecular condensates**

Stefano Bo[1], Lars Hubatsch[2], Jonathan Bauermann[3], Christoph Weber[4], Frank Jülicher[5]

[1]King's College London, London, United Kingdom, [2]Max Planck Institute for Cell Biology and Genetics, Dresden, Germany, [3]Harvard University, Cambridge, United States of America, [4]Augsburg University, Augsburg, Germany, [5]Max Planck Institute for the Physics of Complex Systems, Dresden, Germany

Symposium 27		**Room B-2**
16:00-18:20	**DNA/Chromatin Physics**	
Chairs	Tsuyoshi Terakawa (Faculty of Science / Department of Biophysics, Kyoto University)	
	Eric C. Greene (Biochemistry & Molecular Biophysics, Columbia University)	

S27-1 **Unveiling the Molecular Mechanism of Histone Recycling through Biophysical Approaches**

Tsuyoshi Terakawa

Department of Biophysics, Graduate School of Science, Kyoto University

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S27-2 **New Paradigms for Rad51 paralog function**
Eric Greene
Columbia University, Department of Biochemistry and Molecular Biophysics

S27-3 **Machines on Genes: A Single-Molecule Perspective**
Shixin Liu
The Rockefeller University, New York, USA

S27-4 **Mismatch Elimination in human DNA mismatch repair**
Jong-Bong Lee
Department of Physics, School of Interdisciplinary Bioscience & Bioengineering, Medical Science & Engineering POSTECH, Pohang, Korea

S27-5 **G-quadruplex Structures Formed by Human Telomeric and C9orf72 DNA and RNA**
Guang Zhu, Changdong Liu, Naining Xu, Monica Suen, Bin Yan, Qing Yi
The Hong Kong University of Science and Technology

Symposium 28 **Room C-2**

16:00-18:20 **Membraneless Organella, Autophage, Liquid-liquid Phase Separation**

Chairs Miho Yanagisawa (Graduate School of Arts and Sciences, University of Tokyo)
Arslan Siddique (Chemistry, University of New South Wales)

S28-1 **How does membrane confinement at the cell size change the phase separation of macromolecules?**
Miho Yanagisawa
Graduate School of Arts and Sciences, The University of Tokyo

S28-2 **Cell-inspired biomimetic droplets**
Anderson Ho Cheung Shum[1,2]
[1]The University of Hong Kong, [2]Advanced Biomedical Instrumentation Centre

S28-3 **Capillary force in cells: functional bio-condensate wetting**
Roland L. Knorr[1,2,3]
[1]Interfacial Cell Biology Lab, Humboldt-Universität zu Berlin, Germany, [2]University of Cologne, Faculty of Medicine and University Hospital Cologne, Germany, [3]Graduate School and Faculty of Medicine, The University of Tokyo, Japan

Oral Sessions

S28-4 **Deciphering the molecular mechanism of DNA-protein interactive co-condensates**

Zhi Qi[1], Cheng Li[1], Yunqiang Bian[2], Wenfei Li[2,3]

[1]Center for Quantitative Biology, Peking-Tsinghua Center for Life Sciences, Academy for Advanced Interdisciplinary Studies, Peking University, Beijing 100871, China, [2]Wenzhou Key Laboratory of Biophysics, Wenzhou Institute, University of Chinese Academy of Sciences, Wenzhou, Zhejiang 325000, China, [3]Department of Physics, National Laboratory of Solid-State Microstructure, and Collaborative Innovation Center of Advanced Microstructures, Nanjing University, Nanjing 210093, China

S28-5 **Condensates' interface triggers the liquid-to-solid transition**

Yi Shen[1], David Weitz[2], Daniele Vigolo[3], Tuomas Knowles[4]

[1]School of Chemical and Biomolecular Engineering, The University of Sydney, [2]School of Engineering and Applied Sciences, Harvard University, [3]School of Biomedical Engineering, The University of Sydney, [4]Yusuf Hamied Department of Chemistry, University of Cambridge

Symposium 29 **Room D**

16:00-18:20 **Soft Matter Biophysics**

Chairs Patricia Bassereau (Physical Chemistry Curie, Institut Curie)

Masaki Sasai (Fukui Institute for Fundamental Chemistry, Kyoto University)

S29-1 **Active Topological Defects and Universal Symmetries in Living Biological Matter**

Amin Doostmohammadi

Niels Bohr Institute, University of Copenhagen

S29-2 **On the role of polymerases in shaping the 4D Genome**

Daniel Jost[1], Dario D'Asaro[1,2], Hossein Salari[1,2], Cedric Vaillant[2], Jean-Michel Arbona[1]

[1]Laboratoire de Biologie et Modélisation de la Cellule, École Normale Supérieure de Lyon, CNRS, UMR5239, Inserm U1293, Université Claude Bernard Lyon 1, 46 Allée d'Italie, 69007 Lyon, France, [2]École Normale Supérieure de Lyon, CNRS, Laboratoire de Physique, 46 Allée d'Italie, 69007 Lyon, France

S29-3 **Formation of chromatin domains without loop extrusion: the chromatin capture model of interphase cohesin**

Shin Fujishiro[1], Masaki Sasai[1,2]

[1]Fukui Institute for Fundamental Chemistry, Kyoto University, Kyoto, Japan, [2]Department of Complex Systems Science, Nagoya University, Nagoya, Japan

Thursday, June 27

S29-4 **Lipid membranes and membrane proteins: Not a coexistence but an intimate relationship.**

Alicia Damm[1], Raju Regmi[1], Su-Jin Paik[1], Raj-Kumar Sadhu[1], Jacob Kaestel-Hansen[2], Maxime Dahan[1], Nikos Hatzakis[2], Pierre Sens[1], Daniel Lévy[1], Patricia Bassereau[1]

[1]Institut Curie, Paris, France, [2]Nano-Science Center, Copenhagen, Denmark

S29-5 **Nonlinear Dynamics of the Auditory System**

Dolores Bozovic, Justin Faber

Dept. of Physics and Astronomy, University of California Los Angeles, USA

Hands-on Training Session B — Room E

10:00-12:20 **Visualizing the Nanometer World in Liquid by Bio-SPMs**

Chair Noriyuki Kodera (Kanazawa University)

HT-B-1 **Visualizing Nanoscale Dynamics and Mechanics in Living Cells by Nanoendoscopy AFM**

Takeshi Fukuma

Kanazawa University

HT-B-2 **Nanoscale analysis of microbial cell walls using AFM**

Keisuke Miyazawa[1,2], Takeshi Fukuma[1,2]

[1]Kanazawa University, [2]WPI-NanoLSI

HT-B-3 **Visualizing surface dynamics of living cells at nanometer scale resolution with scanning ion conductance microscopy**

Shinji Watanabe

Nano Life Science Institute (WPI-NanoLSI), Kanazawa University, Ishikawa, Japan

HT-B-4 **Biological Nanopore Probes for Scanning Ion Conductance Microscopy**

Kan Shoji

Nagaoka University of Technology

HT-B-5 **Single-molecule imaging of AMPA-type glutamate receptors by high-speed atomic force microscopy**

Mikihiro Shibata

Kanazawa University

Oral Sessions

HT-B-6 **HS-AFM analysis of microtubule-binding proteins in solution**

Marina Ohno[1], Hayato Shibuya[1], Noriyuki Kodera[2], Ikuko Hayashi[1]
[1]Biomed. Sci., Yokohama City Univ., [2]NanoLSI, Kanazawa Univ.

Asian Biophysics Association (ABA) Symposium **Room E**

16:00-18:20 **Asian Biophysics Association (ABA) Symposium**

Chairs Shang-Te Danny Hsu (Institute of Biological Chemistry, President of ABA, member of Biophysical Society of R.O.C, Academia Sinica)

Haibin Su (Chemistry, Member of The Biophysical Society of Hong Kong, Hong Kong University of Science and Technology)

ABA-1 Elizabeth Hinde
School of Physics, Faculty of Science, President of The Australian Society for Biophysics (ASB), The University of Melbourne

ABA-2 Tao Xu
President of Biophysica Society of China (BSC), Guangzhou Laboratory

ABA-3 Haibin Su
Chemistry, Member of The Biophysical Society of Hong Kong, Hong Kong University of Science and Technology

ABA-4 Ruchi Anand
Vice-President of The Indian Biophysical Society (IBS), Indian Institute of Technology Bombay

ABA-5 Satoshi Takahashi
Institute of Multidisciplinary Research for Advanced Materials, President of the Biophysical Society of Japan (BSJ), Tohoku University

ABA-6 Hyun-Ho Lim
Lab Head, Molecular Physiology and Biophysics Laboratory, President of The Korean Biophysical Society (KBPS), Korea Brain Research Institute

ABA-7 Shang-Te Danny Hsu
Institute of Biological Chemistry, President of ABA, member of Biophysical Society of R.O.C, Academia Sinica

ABA-8 **ABA Young Investigator Award Lecture**
Deciphering the Complexity in Biological Interaction
Tetsuhiro S. Hatakeyama
Earth Life Science Institute (ELSI), Tokyo Institute of Technology, Tokyo, Japan

Thursday, June 27

The Bei Lecture		Room A
18:30-19:10	**Nanozyme, a new biological catalyst and its applications**	
Chair	Tao Xu (National Laboratory of Biomacromolecules, Guangzhou)	
BL	**Nanozyme, a new biological catalyst and its applications** Xiyun Yan Institute of Biophysics, Chinese Academy of Sciences	

Oral Sessions Friday, June 28

Keynote 4	Room B-1
9:00-9:50	**Decoding regeneration using computer designed proteins**
Chair	Ikuko Fujiwara (Nagaoka University of Technology)

KL-4 **Decoding regeneration using computer designed proteins**

Hannele Ruohola-Baker[1,2]

[1]Department of Biochemistry, University of Washington, Seattle, WA, USA, [2]Institute for Stem Cell & Regenerative Medicine, University of Washington, Seattle, WA, USA

Symposium 30	Room B-1
10:00-12:20	**Structure, Function and Biophysics of the Bacterial Motility and Flagellar Motor**
Chairs	Matthew Baker (School of Biotechnology and Biomolecular Science, University of New South Wales) Seiji Kojima (Department of Biological Science, Graduate School of Science, Nagoya University)

S30-1 **Spatio-temporal dynamics of the proton motive force on single bacterial cells**

Anaïs Biquet-Bisquert[1], Baptiste Carrio[1], Nathan Meyer[1], Thales Fernandes[1], Manouk Abkarian[1], Farida Seduk[2], Axel Magalon[2], Ashley Nord[1], Francesco Pedaci[1]

[1]Centre de Biologie Structurale, Université de Montpellier, CNRS, INSERM, Montpellier, France, [2]Aix Marseille Université, CNRS, Laboratoire de Chimie Bactérienne (UMR7283), IMM, IM2B, 13402, Marseille, France

S30-2 **Diversity of flagellar system – What do we learn from H. pylori?**

Wing Ngor Shannon Au, Kailei Sun, Liyang Sun, Wendy Wai Ling Lam

Chinese University of Hong Kong

S30-3 **EMBO Young Investigator Lecture**
5:2 molecular motors – from bacterial motility to anti-phage defense

Nicholas M. I. Taylor

NNF Center for Protein Research, University of Copenhagen

S30-4 **Adhesins and flagella-dependent bacterial surface motility**

Shuichi Nakamura

Grad. Sch. Eng., Tohoku Univ.

Friday, June 28

S30-5 **A cell-surface conveyor belt controls the rotational direction of its driver**

Abhishek Shrivastava
Biodesign Institute, Arizona State University

S30-6 **Protein engineering via directed evolution of the stator subunit of the bacterial flagellar motor**

Pietro Ridone[1], Tsubasa Ishida[3], Angela Lin[1], David Humphreys[4], Eleni Giannoulatou[4], Yoshiyuki Sowa[3], Matthew Baker[1,2]
[1]School of Biotechnology and Biomolecular Science, UNSW Sydney, Sydney, Australia, [2]Institute of Molecular Biology and Biotechnology, FoRTH, Heraklion, Crete, Greece, [3]Hosei University, Kanagawa, Japan, [4]Victor Chang Cardiac Research Institute, Darlinghurst, Australia

Symposium 31 — Room B-2

10:00-12:20 **Stem Cells and Organoids**

Chairs Minoru Takasato (Center for Biosystems Dynamics Research, RIKEN)
Andras Lakatos (Department of Clinical Neurosciences, University of Cambridge)

S31-1 **Generation of Urinary Tract Organoids from Human Pluripotent Stem Cells**

Minoru Takasato[1,2,3]
[1]RIKEN Center for Biosystems Dynamics Research, [2]Graduate School of Biostudies, Kyoto University, [3]Graduate School of Medicine, Osaka University

S31-2 **Tailoring autonomous trial-and-error by robots and AI (robotic search system) for Biophysics**

Genki Kanda[1], Taku Tsuzuki[2], Auto Culture Project Team[1,2,3,4,5], Yosuke Ozawa[2], Masayo Takahashi[3,4], Koichi Takahashi[1], Tohru Natsume[5]
[1]RIKEN, [2]Epistra Inc., [3]Vision Care Inc., [4]VCCT Inc., [5]Robotic Biology Institute Inc.

S31-3 **3D human neural organoid models for interrogating mechanisms and therapeutics in neurodegeneration**

Andras Lakatos
Department of Clinical Neurosciences, University of Cambridge, Cambridge, UK

Oral Sessions

S31-4 **Hepato-Biliary-Pancreatic Organogenesis in a Dis**

Takanori Takebe[1,2,3,4,5]

[1]Division of Stem Cell & Organoid Medicine, Osaka University, [2]Institute of Research, Tokyo Medical and Dental University, [3]Center for Stem Cell & Organoid Medicine (CuSTOM), Cincinnati Children's Hospital Medical Center, [4]Divisions of Gastroenterology, Hepatology and Nutrition and Developmental Biology, Cincinnati Children's Hospital Medical Center, [5]Communication Design Center, Yokohama City University

S31-5 **Large-scale generation of uniform-sized miniature adipocyte spheroids in hydrogel capsules**

Ruri Maekawa, Kazuki Hattori, Sadao Ota

Research Center for Advanced Science and Technology, The University of Tokyo

S31-6 **A state of partial Rb inactivation and intermediate E2F activation safeguards proliferation commitment**

Yumi Konagaya

RIKEN Center for Biosystems Dynamics Research

Symposium 32	**Room D**
10:00-12:20	**Origin of Life**
Chairs	Ryo Mizuuchi (Department of Electrical Engineering and Bioscience, Faculty of Science and Engineering, Waseda University) Tony Z. Jia (Earth-Life Science Institute, Tokyo Institute of Technology)

S32-1 **Evolution of Complex Chemical Mixtures Reveals Combinatorial Compression and Population Synchronicity**

Moran Frenkel-Pinter[1], Kavita Matange[2], Vahab Rajaei[2], Pau Capera-Aragonès[1], John T Costner[2], Adelaide Robertson[2], Jennifer Seoyoung Kim[2], Anton S Petrov[2], Jessica C Bowman[2], Loren Dean Williams[2]

[1]Institute of Chemistry, The Hebrew University of Jerusalem, Israel 91904, [2]School of Chemistry and Biochemistry, Georgia Institute of Technology, Atlanta, GA 30332-0400 USA

S32-2 **The peptides increase the compartmentalization and stability of the protoribosome**

Tomoko Yamaguchi[1,2,3]

[1]Earth-Life Science Institute, Tokyo Institute of Technology, Tokyo, Japan, [2]Department of Cell Biology, Faculty of Science, Charles University, Prague,Czech Republic, [3]Graduate School of Pharmaceutical Sciences, Kyoto University, Kyoto, Japan

S32-3 **Investigating Biophysical Impacts of Prebiotic Milieu on the Membrane Stability using Model Systems**

Arslan Siddique[1,2], Lauren A. Lowe[1,2], Soumya Kanti De[1,2], Daniel Loo[1,2], Andrew Nelson[3], Anna Wang[1,2]

[1]Australian Centre for Astrobiology, University of New South Wales, NSW 2052, Australia, [2]School of Chemistry, University of New South Wales, NSW 2052, Australia, [3]Australian Centre for Neutron Scattering, ANSTO Sydney, NSW 2232, Australia

S32-4 **In vitro selection of primitive catalysts to fill the gap between chemical and enzymatic RNA self-replication systems**

Seung Soo Oh[1], Lijun Zhu[2], Jack Szostak[3]

[1]Department of Materials Science and Engineering, Pohang University of Science and Technology (POSTECH), 77 Cheongam-Ro, Nam-Gu, Pohang, Gyeongbuk 37673, South Korea, [2]Department of Biochemistry and Biophysics, Perelman School of Medicine, University of Pennsylvania, Philadelphia, PA 19104, USA, [3]Howard Hughes Medical Institute, Department of Chemistry, The University of Chicago, Chicago, Illinois 60637, USA

S32-5 **Reconstruction of Ancient Protein Folds in the Central Dogma Machinery**

Shunsuke Tagami

RIKEN BDR

Oral Sessions

Symposium 33	Room E
10:00-12:20	**Data Sharing and Open Science**
Chairs	Shuichi Onami (RIKEN Center for Biosystems Dynamics Research) Caterina Strambio-De-Castillia (Molecular Medicine, University of Massachusetts Chan Medical School)

S33-1 **SSBD and Global Sharing of Bioimaging Data**

Shuichi Onami[1,2,3]

[1]RIKEN Center for Biosystems Dynamics Research, Kobe, Japan, [2]RIKEN Information R&D and Strategy Headquarters, Kobe, Japan, [3]RIKEN, TRIP Headquarters, Kobe, Japan

S33-2 **Managing the image-data life cycle for the real world: connecting the dots from sample preparation to image acquisition, analysis, publication, and data reuse**

Caterina Strambio-De-Castillia

Program in Molecular Medicine, UMass Chan Medical School, Worcester, MA, USA

S33-3 **Chinese Cohort Studies and Data Sharing**

Tao Xu[1,2]

[1]Guangzhou Laboratory, [2]Institute of Biophysics, Chinese Academy of Sciences

S33-4 **GEMS Informatics: advancing data-driven innovation in agri-food and natural resources management.**

Oluwaseun F. Gakenou[1], David M. Drew[1], Jan Greyling[2]

[1]Department of Forestry and Wood Science, Stellenbosch University, South Africa, [2]Stellenbosch Agroinformatics Initiative, Stellenbosch University, South Africa

S33-5 **Scalable strategies for a next-generation of FAIR bioimaging**

Josh Moore[1,2]

[1]German BioImaging-Gesellschaft für Mikroskopie und Bildanalyse e.V., Constance, Germany, [2]Open Microscopy Environment (OME) Consortium

Friday, June 28

Hands-on Training Session E — Room A

10:00-12:20 **Exploring Multi-cellular Mechanics**

Chairs Makoto Sato (Kanazawa University)
Tatsuo Shibata (RIKEN)
Shige H. Yoshimura (Kyoto University)

HT-E-1 **Active cytoskeleton controlled through force and shape**

Yusuke T Maeda[1], Ryota Sakamoto[1,2]
[1]Department of Physics, Kyushu University, [2]Department of Biomedical Engineering, Yale University

HT-E-2 **Cellular-level left-right asymmetry, cell chirality, induces the chiral collective rotation of multicellular colony**

Tomoki Ishibashi[1], Ryohei Nishizawa[1,2], Goshi Ogita[1], Tatsuo Shibata[1]
[1]RIKEN Center for Biosystems Dynamics Research, Japan, [2]Graduate School of Frontier Biosciences, Osaka University

HT-E-3 **Analysis of Differential Growth in Curved Surface Morphogenesis through Constructing a Conformal Map**

Kentaro Morikawa[1], Shinichi Morita[2,3], Kazuki Sakura[2,4], Akiteru Maeno[5], Hiroki Gotoh[6], Teruyuki Niimi[2,3], Yasuhiro Inoue[1]
[1]Department of Micro Engineering, Graduate School of Engineering, Kyoto University, Kyoto, Japan, [2]Division of Evolutionary Developmental Biology, National Institute for Basic Biology, Okazaki, Japan, [3]Basic Biology Program, Graduate Institute for Advanced Studies, The Graduate University for Advanced Studies, SOKENDAI, Okazaki, Japan, [4]Japan Society for The Promotion of Science Research Fellowship, [5]National Institute of Genetics, Shizuoka, Japan, [6]Department of Biological Science, Faculty of Science, Shizuoka University, Shizuoka, Japan

HT-E-4 **Tiling mechanisms of the compound eye through geometrical tessellation**

Steven Davis[1], Takashi Hayashi[1], Takamichi Sushida[2], Masakazu Akiyama[3], Shin-Ichiro Ei[4], Makoto Sato[1]
[1]Kanazawa University, [2]Salesian Polytechnic, [3]Toyama University, [4]Hokkaido University

Oral Sessions

HT-E-5 **Mechanical waves decode positional information to calibrate wound healing response in zebrafish**

Fu-Lai Wen[1], Marco P. De Leon[2], Keng-Hui Lin[3], Chen-Hui Chen[2]
[1]Department of Science Education, National Taipei University of Education, Taipei, Taiwan, [2]Institute of Cellular and Organismic Biology, Academia Sinica, Taipei, Taiwan, [3]Institute of Physics, Academia Sinica, Taipei, Taiwan

HT-E-6 **PIEZO1-mediated mechanosensing regulates the fate of neural progenitor cells during cerebral development**

Mayumi Okamoto[1,2], Tsukasa Shimamura[2], Takaki Miyata[2], Keiko Nonomura[3,4]
[1]Graduate School of Science, Nara Women's University, [2]Graduate School of Medicine, Nagoya University, [3]School of Life Science and Technology, Tokyo Institute of Technology, [4]Division of Embryology, National Institute of Basic Biology

Hands-on Training Session C — Room C-2

10:00-12:20 **CHARMM-GUI/GENESIS MD Tutorial**

Chairs Wonpil Im (Lehigh University)
Yuji Sugita (RIKEN)

HT-C-1 **Three routes to molecular movies**

Helmut Grubmuller, Maxim Igaev, Lars Bock, Steffen Schultze
Max Planck Institute for Multidisciplinary Sciences, Goettingen, Germany

HT-C-2 **Modeling multi-state structures of proteins and simulating their conformational transitions**

Jiaxuan Li, Song Yang, Chen Song
Peking University, Beijing, China

HT-C-3 **Multiscale Simulations of Enzyme Mechanisms: Bridging Catalysis, Conformational Changes and Ligand Release**

Kwangho Nam
Department of Chemistry and Biochemistry, University of Texas at Arlington, Arlington, TX 76019, USA

Friday, June 28

HT-C-4 **Exploring Allosteric Changes in the Conformational Landscape of Src Kinase upon Substrate Binding by GENESIS**

Song-Ho Chong[1,2], Hiraku Oshima[1,3], Yuji Sugita[1,4,5]

[1]RIKEN Center for Biosystems Dynamics Research, Kobe, Japan, [2]Faculty of Life Sciences, Kumamoto University, Kumamoto, Japan, [3]Graduate School of Science, University of Hyogo, Hyogo, Japan, [4]RIKEN Center for Computational Science, Kobe, Japan, [5]RIKEN Center for Pioneering Research, Saitama, Japan

HT-C-5 **Computational Explorations of Chromatin Structure and Dynamics: from Single Nucleosomes to Entire Genes**

Giovanni Brandani

Department of Biophysics, Graduate School of Science, University of Kyoto

HT-C-6 **WHAT CAN CHARMM-GUI DO FOR YOU?**

Wonpil Im

Biological Sciences, Lehigh University, Bethlehem, PA USA

Notes

Poster Sessions

Poster Sessions Tuesday, June 25

Presentation time is organized by whether the last part (suffix) of Poster Session number is odd/even.
Odd number: 13:50-14:50 Even number: 14:50-15:50

Abstracts marked with * in the abstract number eligible for IUPAB2024 Student and Early Career Researcher Poster Award voting
Ex) *25P-999

Protein: Structure

***25P-001** **The molecular strucutre of an axle-less F1-ATPase**

Emily Furlong[1,2], Ian Reiniger-Chatzigian[1], Yi Zeng[1,3], Simon Brown[4], Meghna Sobti[1,3], Alastair Stewart[1,3]

[1]Molecular, Structural and Computational Biology Division, The Victor Chang Cardiac Research Institute, Darlinghurst, Australia, [2]Division of Biomedical Science and Biochemistry, Research School of Biology, Australian National University, Acton, ACT, Australia, [3]St Vincent's Clinical School, Faculty of Medicine, UNSW Sydney, Kensington, Australia, [4]School of Chemistry and Molecular Bioscience, Molecular Horizons, and Australian Research Council Centre for Cryo-electron Microscopy of Membrane Proteins, University of Wollongong, Wollongong, NSW, Australia

***25P-002** **The role of charges in the enzymatic mechanism of acetoacetate decarboxylase**

Masato Ishizaka[1,2], Sören Rindfleisch[1,2], Florian Auer[1,2], Lukas Gingeleit[1,2], Tat Cheng[3], Michael Bielecki[4], Fabian Rabe von Pappenheim[1,2], Elke Penka[1,2], Ronald Kluger[4], Eri Sakata[3], Kai Tittmann[1,2]

[1]Department of Molecular Enzymology, Georg-August University Göttingen, Göttingen, Germany., [2]Max-Planck-Institute for Multidisciplinary Sciences, Göttingen, Germany., [3]Institute for Neuropathology, University Medical Center Göttingen, Göttingen, Germany., [4]Davenport Chemistry Laboratories, Department of Chemistry, University of Toronto, Toronto, Canada.

Tuesday, June 25

***25P-003** **Structural insights into the allosteric inhibition of P2X4 receptors**

Cheng Shen[1], Yuqing Zhang[2], Wenwen Cui[2], Yimeng Zhao[1], Danqi Sheng[1], Xinyu Teng[1], Miaoqing Shao[2], Muneyoshi Ichikawa[1], Jin Wang[2], Motoyuki Hattori[1]

[1]Fudan University, Shanghai, China, [2]China Pharmaceutical University, Nanjing, China

***25P-004** **Cryo-EM Structure of P-glycoprotein Bound by Three Elacridar P-gp-Inhibitor Molecules**

Norie Hamaguchi[1,2,3], Naruhiko Adachi[4], Toshio Moriya[4], Masato Kawasaki[4], Satoshi Yasuda[3], Naohiko Anzai[2], Toshiya Senda[4], Satoshi Ogasawara[3], Takeshi Murata[3]

[1]Graduate School of Medical and Pharmaceutical Sciences, Chiba University, [2]Graduate School of Medicine, Chiba University, [3]Graduate School of Science, Chiba University, [4]Structural Biology Research Center, Institute of Materials Structure Science, High Energy Accelerator Research Organization

***25P-005** **Structural insights into the orthosteric inhibition of P2X receptors by classical non-ATP-analog antagonists**

Danqi Sheng[1], Chenxi Yue[2]

[1]Fudan University, Shanghai China, [2]China Pharmaceutical University, Nanjing, China

***25P-006** **Ion selectivity mechanism of the MgtE channel for Mg2+ over Ca2+**

Xinyu Teng[1], Danqi Sheng[1], Ye Yu[2], Jin Wang[2], Motoyuki Hattori[1]

[1]Fudan University, Shanghai, China, [2]China Pharmaceutical University, Nanjing, China

***25P-007** **Tracking the glucose/ xylose isomerase mechanism using freezing under high pressure**

Agnieszka Klonecka[1,2,3], Joanna Slawek[1], Philippe Carpentier[4,5], Christoph Mueller-Dieckmann[4], Katarzyna Kurpiewska[6], Maciej Kozak[1,7]

[1]SOLARIS National Synchrotron Radiation Centre, Kraków, Poland, [2]Faculty of Physics, Astronomy and Applied Computer Science, Jagiellonian University, Kraków, Poland, [3]Doctoral School of Exact and Natural Science, Jagiellonian University, Kraków, Poland, [4]The European Synchrotron Radiation Facility, Grenoble, France, [5]Institut de Recherche Interdisciplinaire de Grenoble (IRIG), Laboratoire Chimie et Biologie des Métaux (LCBM), Université Grenoble Alpes, CNRS, CEA, Grenoble, France, [6]Faculty of Chemistry, Jagiellonian University, Kraków, Poland, [7]Department of Biomedical Physics, Faculty of Physics, Adam Mickiewicz University, Poznań, Poland

Poster Sessions

***25P-008** **Structure-activity relationship (SAR) study of hydrophobic moiety of nonsecosteroidal VDR ligands using diphenylsilane scaffold**

Narasinghe Mudiyanselage Hansaka Nirupama Thilakarathne[1,2], Takashi Misawa[3], Yosuke Demizu[3], Yuya Hanazono[2], Nobutoshi Ito[2], Hiroyuki Kagechika[1], Shinya Fujii[1]

[1]Institute of Biomaterials and Bioengineering, Tokyo Medical and Dental University, [2]Medical Research Institute, Tokyo Medical and Dental University, [3]National Institute of Health Sciences

***25P-009** **Structural transformation of a dipeptide Gly-Phe by coffee-ring effect**

Ayaka Sako, Masaki Saito, Kazuo Eda, Atsuo Tamura

Kobe University, Graduate School of Science

25P-010 **Exploring the Continuous Conformational Variability of Glutamate Dehydrogenase Using Cryo-EM Single-particle Images and MD Simulations**

Tingting Wang[1], Osamu Miyashita[1], Hideki Shigematsu[2], Masaki Yamamoto[3], Florence Tama[1,4]

[1]Computational Structural Biology Research Team, R-CCS, RIKEN, Japan, [2]Japan Synchrotron Radiation Research Institute (JASRI), SPring-8, Hyogo, Japan, [3]RIKEN SPring-8 Center, Hyogo, Japan, [4]Department of Physics and ITbM, Nagoya University, Japan

25P-011 **Preliminary Cryo-EM study of Arabidopsis Magnesium Transporter MRS2-1**

Hexin Xu[1], Xinyu Teng[1], Cheng Shen[1], Yimeng Zhao[1], Xiaoyu Yang[2], Natsuko I. Kobayashi[2], Keitaro Tanoi[2], Motoyuki Hattori[2]

[1]Fudan University, Shanghai, China, [2]The University of Tokyo, Tokyo, Japan

25P-012 **Application of de novo protein design to structural analysis of non-canonical MgtE Mg2+ channel**

Zhixuan Zhao[1], Kimiho Omae[2], Ziyi Zhang[1], Xinyu Teng[1], Cheng Shen[1], Danqi Sheng[1], Wataru Iwasaki[2], Motoyuki Hattori[1]

[1]Fudan University, Shanghai, China, [2]The University of Tokyo, Tokyo, Japan

25P-013 **Native lipid NanoDisc application for structural determination of RND transporter**

Kenta Tsutsumi, Atsushi Nakagawa, Eiki Yamashita

Institute for Protein Research, Osaka, Japan

25P-014 **Preliminary cryo-EM study of the MgtE Mg2+ channel with the PRC-barrel domain**

Ziyi Zhang[1], Kimiho Omae[2], Cheng Shen[1], Wataru Iwasaki[2], Motoyuki Hattori[1]

[1]Fudan University, Shanghai, China, [2]The University of Tokyo, Tokyo, Japan

Protein: Structure & Function

***25P-015** **Interpretation of Protein-Corona Formation and Inhibition of Fibrillation by Polyphenol Capped Gold Nanoparticles**

Atanu Singha Roy[1], Kakali Baruah[1], Ajit Kumar Singh[2], Anupam Nath Jha[2]

[1]Department of Chemistry, National Institute of Technology Meghalaya, Shillong 793003, India, [2]Department of Molecular Biology and Biotechnology, Tezpur University, Assam 784028, India

***25P-016** **CryoEM-sampling of metastable conformations appearing in cofactor-ligand association and catalysis of glutamate dehydrogenase**

Taiki Wakabayashi[1,2], Mao Oide[3,4], Masayoshi Nakasako[1,2]

[1]Dept. Phys., Keio Univ., Kanagawa, Japan, [2]RIKEN RSC, Hyogo, Japan, [3]Inst. Prot. Res., Osaka Univ., Osaka, Japan, [4]PRESTO, JST, Tokyo, Japan

***25P-017** **Coarse-Grained Molecular Dynamics Simulations of Rotational Asymmetry in FOF1 ATPase**

Shintaroh Kubo[1], Yasushi Okada[1,2]

[1]the University of Tokyo, [2]RIKEN

***25P-018** **Predicting enzyme function using an empirical approach with machine learning**

Suguru Fujita, Tohru Terada

Graduate School of Agricultural and Life Science, Faculty of Agriculture, The university of Tokyo.

***25P-019** **Ca2+-induced formation of ice-like water network on the surface of type II antifreeze protein from Japanese smelt**

Tatsuya Arai[1,2], Yue Yang[1], Sakae Tsuda[1], Kazuhiro Mio[2], Yuji Sasaki[1,2]

[1]Graduate School of Frontier Sciences, The University of Tokyo, [2]AIST-UTokyo Advanced Operando-Measurement Technology Open Innovation Laboratory (OPERANDO-OIL)

Poster Sessions

***25P-020** **Predicting protein conformational motions with AlphaFold2 dictated by physical energy landscape**

Xingyue Guan[1,2], Qianyuan Tang[3], Weitong Ren[2], Wenfei Li[1,2], Wei Wang[1]

[1]Department of Physics, National Laboratory of Solid State Microstructure, Nanjing University, Nanjing 210093, China, [2]Wenzhou Key Laboratory of Biophysics, Wenzhou Institute, University of Chinese Academy of Sciences, Wenzhou, Zhejiang 325000, China, [3]Department of Physics, Hong Kong Baptist University, 224 Waterloo Road, Kowloon Tong, Hong Kong SAR, China

***25P-021** **Thermodynamic insights into the antiamyloid activity of lobeline on lysozyme fibrillation**

Vibeizonuo Rupreo[1], Jhimli Bhattacharyya[1], Ria Saha[2], Rajib Kumar Mitra[2]

[1]Department of Chemistry, National Institute of Technology Nagaland, Dimapur, Nagaland - 797103, India, [2]Department of Chemical and Biological Sciences, S.N. Bose National Centre for Basic Sciences, Kolkata - 700106, West Bengal, India

***25P-022** **Functional mechanism of a short wavelength absorbing cation channelrhodopsin, KnChR**

Koki Natsume[1], Shoko Hososhima[1,2], Yuzhu Wang[3], Tatsuki Tanaka[3], Wataru Shihoya[3], Osamu Nureki[3], Hideki Kandori[1,2], Satoshi Tsunoda[1,2]

[1]Nagoya Institute of Technology, [2]Opto-Biotechnology Research Center, [3]The University of Tokyo

***25P-023** **Structural basis of inhibition and transport in Organic Cation Transporter 1**

Yi Cheng Zeng[1,2], Meghna Sobti[1,2], Ada Quinn[3], Esther Kristianto[4], Simon Brown[5], Nicola Smith[6], Jamie Vandenberg[2,7], Renae Ryan[8], Alastair Stewart[1,2]

[1]Molecular, Structural and Computational Biology Division, The Victor Chang Cardiac Research Institute, Darlinghurst, NSW, Australia, [2]School of Clinical Medicine, Faculty of Medicine and Health, UNSW Sydney, Sydney, NSW, Australia, [3]Australian Institute of Bioengineering and Nanotechnology, University of Queensland, Brisbane, QLD, Australia, [4]Freedman Foundation Metabolomics Facility, The Victor Chang Cardiac Research Institute, Darlinghurst, NSW, Australia, [5]School of Chemistry and Molecular Bioscience, Molecular Horizons, and Australian Research Council Centre for Cryo-electron Microscopy of Membrane Proteins, University of Wollongong, Wollongong, NSW, Australia, [6]School of Biomedical Sciences, Faculty of Medicine & Health, UNSW Sydney, Kensington, NSW, Australia, [7]Molecular Cardiology and Biophysics Division, The Victor Chang Cardiac Research Institute, Darlinghurst, NSW, Australia, [8]School of Medical Sciences, Faculty of Medicine and Health, University of Sydney, Sydney, NSW, Australia

Tuesday, June 25

***25P-024** **Rational Design of High-Affinity Protein Binders by Side Chain Dihedral Correlation Network**

Yun-Jung Hsieh[1,2], Ta I Hung[3,4], Wei-Lin Lu[1], Chia-en Chang[3,4], Kuen-Phon Wu[1,2]

[1]Institute of Biological Chemistry, Academia Sinica, Taipei, Taiwan, [2]Institute of Biochemical Sciences, National Taiwan University, Taipei, Taiwan, [3]Department of Chemistry, University of California, Riverside, United States, [4]Department of Bioengineering, University of California, Riverside, United States

***25P-025** **Cytoplasmic domain of GtACR1 regulations the channel gating.**

Hana Maruyama[1], Shoko Hososhima[1], Satoshi Tsunoda[1,2], Yuya Ohki[3], Takashi Kikukawa[3,4], Takashi Tsukamoto[3,4], Hideki Kandori[1,2]

[1]Graduate School of Engineering, Nagoya Institute of Technology, [2]Opto Bio Technology Research Center, [3]Graduate School of Life Science, Hokkaido University, [4]Faculty of Advanced Life Science, Hokkaido University

***25P-026** **Beyond the Active site: The addition of a remote loop reveals a new complex biological function for chitinase enzymes**

Dan Kozome[1], Adnan Sljoka[2,3], Paola Laurino[1]

[1]Protein Engineering and Evolution Unit, Okinawa Institute of Science and Technology Graduate University, Okinawa, Japan, [2]Center for Advanced Intelligence Project, RIKEN, [3]York University, Canada

***25P-027** **Towards the Cryo-EM Structures of Viral Annealase Proteins**

Lucy Johanna Fitschen[1,2], Jodi Brewster[1,2], Jordan Nicholls[1,2], Stefan Mueller[1], Gökhan Tolun[1,2]

[1]School of Chemistry and Molecular Bioscience, and Molecular Horizons, University of Wollongong, Wollongong, Australia, [2]ARC Industrial Transformation Training Centre for Cryo-electron Microscopy of Membrane Proteins (CCeMMP)

***25P-028** **Targeting the oncoprotein GOLPH3**

Anastasia Theodoropoulou[1], Luciano Abriata[1], Anita Nasrallah[2], Francesco Talotta[2], Sarah Vacle[1], Fernando Meireles[1], Maria J. Marcaida[1], Giovanni D'Angelo[2], Matteo Dal Peraro[1]

[1]Laboratory for Biomolecular Modeling, Institute of Bioengineering, EPFL, Switzerland, [2]Lipid Cell Biology Laboratory, Institute of Bioengineering, EPFL, Switzerland

Poster Sessions

25P-029 **IgG subclass oligomerization upon antigen binding – Full biophysical characterization of the missing link between antibody binding and complement activation**

Jürgen Strasser[1], Nikolaus Frischauf[1], Aran F. Labrijn[2], Frank J. Beurskens[2], Johannes Preiner[1]

[1]University of Applied Sciences Upper Austria, Linz, Austria, [2]Genmab, Utrecht, Netherlands

25P-030 **Regulation of enzyme structure and function by weak metal-ion binding**

Masayuki Oda[1], Yumi Kitagawa[1], Takuji Oyama[2], Kosuke Morikawa[1]

[1]Kyoto Prefectural University, [2]University of Yamanashi

25P-031 **Structure and function of stomatin-like protein FliL to assist flagellar motor stator PomAB in marine Vibrio**

Norihiro Takekawa[1], Tatsuro Nishikino[2], Ray Burton-Smith[3], Yuki Tajimi[4], Mitsuru Ikeda[3], Kazuyoshi Murata[3], Seiji Kojima[5], Takayuki Uchihashi[4], Katsumi Imada[1], Michio Homma[4]

[1]Dep Macromol Sci, Grad Sch Sci, Osaka Univ, [2]Dep Life Sci Appli Chem, Nagoya Inst Tech, [3]ExCELLS, Nat Inst Nat Sci, [4]Div Material Sci, Grad Sch Sci, Nagoya Univ, [5]Div Biol Sci, Grad Sch Sci, Nagoya Univ

25P-032 **Factors influencing pH-sensitive color changes in firefly bioluminescence were studied through computational analysis of hydrogen bond networks in close proximity to catalytic centers of luciferase and its mutants using QM/MM**

Kota Nosaka[1], Naohisa Wada[2]

[1]Graduate School of Life Sciences, Toyo University, Gunma, Japan, [2]kyoto Luminous Science Laboratory, Kyoto, Japan

25P-033 **A double-edged sword: Bacteriophage PlyGRCS endolysin targeting MRSA Staphylococcus aureus isolates and serendipitous discovery of its interaction with a cold shock protein C (CspC)**

Padmanabhan Balasundaram

Department of Biophysics, National Institute of Mental Health and Neuro Sciences (NIMHANS)

25P-034 **Deciphering Protein Dynamics and Evolution: Insights from AlphaFold 2's Predicted Aligned Error**

Qian-Yuan Tang[1], Liangxu Xie[2], Xiangze Zeng[1]

[1]Hong Kong Baptist University, Hong Kong, China, [2]Jiangsu University of Technology, China

25P-035 **Conformational Heterogeneity and Fluorescence Resonance Energy Transfer in the Calcium Indicator Yellow Cameleon YC3.60**

Hiroki Tsubota, Yuna Kinoshita, Mamoru Shigeno, Haruko Hosoi

Toho University

25P-036 **Protein Dynamics and Mechanisms from Multiple Structures**

Robert L Jernigan, Mesih Kilinc, Kejue Jia, Weixia Deng, Pradeep Bk, Rthan Bush

Department of Biochemistry, Biophysics and Molecular Biology, Iowa State University, Ames, IA, USA

Protein: Physical property

***25P-037** **Role of aggregation-prone segments in fibril formation of the amyloidogenic apolipoprotein A-I variant**

Norihiro Namba[1], Takashi Ohgita[1], Hiroko Tamagaki-Asahina[2], Toshinori Shimanouchi[3], Takeshi Sato[2], Hiroyuki Saito[1]

[1]Laboratory of Biophysical Chemistry, Kyoto Pharmaceutical University, [2]Division of Liberal Arts Sciences, Kyoto Pharmaceutical University, [3]Graduate School of Environmental and Life Science, Okayama University

***25P-038** **Feasibility of immunoglobulin A purification using phosphate-modified zirconia particles**

Shogo Kanoh[1,2], Kentaro Shiraki[1], Katsuya Kato[3], Atsushi Hirano[2]

[1]Faculty of Pure and Applied Sciences, University of Tsukuba, 1-1-1 Tennodai, Tsukuba, Ibaraki 305-8573, Japan, [2]Nanomaterials Research Institute, National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Ibaraki 305-8565, Japan, [3]Chubu Center, National Institute of Advanced Industrial Science and Technology (AIST), Nagoya, Aichi 463-8560, Japan

Poster Sessions

***25P-039** **Development of a high-throughput data collecting system for antibody optimization: thermal stability and interaction kinetics**

Sae Ito[1], Ryo Matsunaga[1], Makoto Nakakido[1], Daisuke Komura[2], Hiroto Katoh[2], Shumpei Ishikawa[2], Kouhei Tsumoto[1,3]

[1]Department of Bioengineering, School of Engineering, The University of Tokyo., [2]Department of Preventive Medicine, Graduate School of Medicine, The University of Tokyo., [3]Department of Chemistry and Biotechnology, School of Engineering, The University of Tokyo.

***25P-040** **Air/water-interface-induced self-assembly of biosurfactant protein RolA from filamentous fungus Aspergillus oryzae**

Nao Takahashi[1], Yuki Terauchi[2], Takumi Tanaka[3], Akira Yoshimi[4], Hiroshi Yabu[5], Keietsu Abe[1]

[1]Grad. Sch. Agric. Sci., Tohoku Univ, Sendai, Japan, [2]RCTMR, Yamaguchi Univ. Yamaguchi, Japan, [3]Grad. Sch. Eng., Osaka Univ. Osaka, Japan, [4]Grad. Sch. Glob. Env. Stud., Kyoto Univ. Kyoto, Japan, [5]WPI-AIMR, Tohoku Univ. Sendai, Japan

***25P-041** **pKa, stretching vibrational frequencies, and nuclear magnetic resonance chemical shifts in H-bond networks of protein environments**

Masaki Tsujimura[1], Keisuke Saito[1,2], Hiroshi Ishikita[1,2]

[1]Graduate School of Engineering, The University of Tokyo, Tokyo, Japan, [2]Research Center for Advanced Science and Technology, The University of Tokyo, Tokyo, Japan

25P-042 **The common feature of fibril formation mechanism of α-synuclein and apolipoprotein A-I**

Takashi Ohgita, Norihiro Namba, Hiroki Kono, Hiroyuki Saito

Kyoto Pharmaceutical University

Protein: Function

***25P-043** **Regulatory mechanism of HADH and its localization in cell organelles during temperature acclimation in Caenorhabditis elegans**

Yukina Mori[1], Misaki Okahata[1], Akihisa Fukumoto[1], Yohei Minakuchi[2], Atsushi Toyoda[2], Akane Ohta[1], Atushi Kuhara[1,3]

[1]Faculty of Science and Engineering Konan University & Institute for Integrative Neurobiology, Kobe, Japan, [2]National Institute of Genetics, [3]PRIME, AMED

***25P-045** **Proposed design of kinetic parameters for agonist antibodies that induce OX40 clustering.**

Kan Ujiie[1], Aki Tanabe[2], Satoru Nagatoishi[3], Ryo Matsunaga[1,4], Kouhei Tsumoto[1,4,5]

[1]Department of Bioengineering, School of Engineering, The University of Tokyo, Japan, [2]AIDS Research Center, National Institute of Infectious Diseases, Japan, [3]Medical Device Development and Regulation Research Center,School of Engineering, The University of Tokyo, Japan, [4]Department of Chemistry & Biotechnology, School of Engineering, The University of Tokyo, Japan, [5]Institute of Medical Science, The University of Tokyo, Japan

***25P-046** **In vitro assembly of a protein capsule and cargo molecules into virus-like particles.**

Kenya Tajima[1], Yusuke Sakai[2], Naohiro Terasaka[1]

[1]Earth-Life Science Institute, Tokyo Institute of Technology, Tokyo, Japan, [2]Center for Biosystems Dynamics Research, RIKEN, Osaka, Japan

25P-047 **FHL complex as a cell strategy to regulate proton motive force and survive under energy limited fermentative conditions**

Heghine Gevorgyan, Anna Poladyan, Anait Vassilian, Karen Trchounian

Laboratory of Microbiology, Bioenergetics and Biotechnology, Research Institute of Biology, Yerevan State University

25P-048 **Regulation Mechanism of Liquid-Liquid Phase Separation and Following Aggregation of Fused in Sarcoma by RNA Revealed by Raman Microscopy**

Shinya Tahara, Uchu Matsuura, Shinji Kajimoto, Takakazu Nakabayashi

Graduate School of Pharmaceutical Sciences, Tohoku University

Protein: Measurement & Analysis

***25P-049** **Platinum (II) stabilizes a molten-globule conformation of a small globular cytosolic protein**

Suman Tiwari, A.S.R. Koti

Department of Chemical Sciences, TIFR, Mumbai, India.

***25P-050** **Visualization and quantitative analysis of protein-protein interaction and cell fusion events using split Akaluc complementation in deep tissues**

Yiling Li, Genki Kawamura, Qiaojing Li, Takeaki Ozawa

Department of Chemistry, School of Science, The University of Tokyo, Japan

Poster Sessions

***25P-051** **Time-resolved study of the interaction mechanism between α1-acid glycoprotein and membrane by vacuum-ultraviolet circular-dichroism spectroscopy**

Satoshi Hashimoto[1], Koichi Matsuo[1,2]

[1]Graduate School of Advanced Science and Engineering, Hiroshima University, [2]Hiroshima Synchrotron Radiation center, Hiroshima University

25P-052 **Real-time Visualization of Structural Maintenance of Chromosomes Complexes by High-Speed Atomic Force Microscopy**

Kenichi Umeda[1,2], Yumiko Kurokawa[3], Yasuto Murayama[3], Noriyuki Kodera[1]

[1]Nano Life Science Institute, Kanazawa University, Japan, [2]PRESTO/JST, Japan, [3]Department of Chromosome Science, National Institute of Genetics, Japan

25P-053 **Sensitivity of various occupancy estimation for synthetic data related to time-resolved serial femtosecond crystallography.**

Sriram Srinivasa Raghavan[1], Florence Tama[1,2,3], Osamu Miyashita[1]

[1]RIKEN Center for Computational Science, Kobe, Japan., [2]Institute of Transformative Biomolecules (WPI-ITbM), Nagoya University, Aichi, Japan., [3]Department of Physics, Graduate School of Science, Nagoya University, Aichi, Japan.

25P-054 **A state of partial Rb inactivation and intermediate E2F activation safeguards proliferation commitment**

Yumi Konagaya

RIKEN Center for Biosystems Dynamics Research

25P-055 **Real-time HS-AFM observation of EEA1-mediated vesicle fusion in the absence of canonical regulators**

Tareg Omer Mohammed, Prem Babu, Shingo Fukuda, Toshio Ando

Nano Life Science Institute, Kanazawa University, Kakuma-machi, Kanazawa 920-1192, Japan

Protein: Design & Engineering

***25P-056** **PMBiT: A Bioluminescent Probe for Large Antigen Detection**

Cheng Qian[1], Ayumu Ninomiya[1], Natsuki Shibukawa[1], Hiroshi Ueda[2], Takanobu Yasuda[2], Bo Zhu[2], Tetsuya Kitaguchi[2]

[1]Graduate School of Life Science and Technology, Tokyo Institute of Technology, Kanagawa, Japan, [2]Laboratory for Chemistry and Life Science, Tokyo Institute of Technology, Kanagawa, Japan

Tuesday, June 25

***25P-057** **Stabilizing Talin R3 in its Folded State: De Novo Design of a Peptide Binder as a Molecular Lock**

Yuze Sun, Jie Yan
National university of singapore mechanobiology institute

***25P-058** **Hibody: A Bioluminescent Immunosensor Based on "Trap & Release" of Luciferase-derived Peptide Fused to Antibody**

Takanobu Yasuda, Bo Zhu, Hiroshi Ueda, Tetsuya Kitaguchi
Laboratory for Chemistry and Life Science, Institute of Innovative Research, Tokyo Institute of Technology, Kanagawa, Japan

***25P-059** **Increased reaction efficiency by external stimuli-sensitive linker**

Momoka Takazawa, Koki Kamiya
Graduate School of Science and Technology, Gunma University, Kiryu, Gunma, Japan

***25P-060** **Design of Proteins that adopt interconvertible two distinct functional conformations**

Toma Ikeda[1], Tatsuya Nojima[2], Hideki Taguchi[1,2]
[1]School of Life Science and Technology, Tokyo Institute of Technology, Japan, [2]Institute of Innovative Research, Tokyo Institute of Technology, Japan

***25P-061** **The symmetric SAKe protein scaffold**

Staf Wouters[1], Andreu Mor Maldonado[2], Hiroki Noguchi[1], Kenichi Kamata[1], Wim Maes[3], Karen Vanhoorelbeke[3], Jeremy Tame[4], Steven De Feyter[2], Arnout Voet[1]
[1]Laboratory for Biomolecular Modeling and Design, KU Leuven, Heverlee, Belgium, [2]Division of Molecular Imaging and Photonics, KU Leuven, Heverlee, Belgium, [3]Laboratory for Thrombosis Research, KU Leuven, Kortrijk, Belgium, [4]Protein Design Laboratory, Yokohama City University, Yokohama, Japan

***25P-062** **Characterization of novel scFv×VHH format of biparatopic antibody against MtsA from Streptococcus pyogenes**

Risa Asano[1], Miyu Takeuchi[1], Makoto Nakakido[1], Chihiro Aikawa[2], Takeshi Yokoyama[3], Yoshikazu Tanaka[3], Ichiro Nakagawa[2], Kouhei Tsumoto[1,4,5]
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25P-063 **Functional protein complexes from symmetric designer proteins**

Arnout RD Voet, Staf Wouters, Bram Mylemans, Hiroki Noguchi
KU Leuven, Belgium

Poster Sessions

25P-064 **Development of a general methodology to design sensor proteins**

Rie Tatsumi, Nobuyasu Koga
Institute for Protein Research (IPR), Osaka University, Osaka, Japan

25P-065 **A one-pot detection system using β-glucuronidase-based enzyme switch and label-free antibody**

Bo Zhu[1], Yukihiko Yamasaki[2], Takanobu Yasuda[1], Cheng Qian[3], Zhirou Qiu[3], Hiroshi Ueda[1], Tetsuya Kitaguchi[1]
[1]Laboratory for Chemistry and Life Science, Institute of Innovative Research, Tokyo Institute of Technology, Yokohama, Japan, [2]BioDynamics Laboratory Inc., Tokyo, Japan, [3]Graduate School of Life Science and Technology, Tokyo Institute of Technology, Yokohama, Japan

Protein: Intrinsic disorder

***25P-066** **The Relationship between Self-assembly and Local Dynamics of Intrinsically Disordered Proteins**

Ryoga Kobayashi[1], Takashi S. Kodama[2], Norio Yoshida[3], Hideki Nakamura[4,5], Yohei Miyanoiri[2], Hidehito Tochio[1], Naotaka Sekiyama[1]
[1]Department of Biophysics, Graduate School of Science, Kyoto University, Kyoto, Japan, [2]Institute for Protein Research, Osaka University, Osaka, Japan, [3]Department of Complex systems science, Graduate School of Informatics, Nagoya University, Nagoya, Japan, [4]Department of Synthetic Chemistry and Biological Chemistry, Graduate School of Engineering, Kyoto University, Kyoto, Japan, [5]Hakubi Center for Advanced Research , Kyoto University, Kyoto, Japan

***25P-067** **Interaction Mechanism of α-Synuclein with Synapsin in the Liquid Condensates**

Shunki Takaramoto, Keiichi Inoue
The Institute for Solid State Physics, University of Tokyo, Kashiwa, Japan

25P-068 **Global Analysis of Disordered Proteome in Cells**

Shouxiang Zhang, Tze Cin Owyong, Yuning Hong
La Trobe University, Melbourne, Australia

Tuesday, June 25

Heme proteins

***25P-069** **Crystal structures of bovine heart cytochrome c oxidase with inhibitor complex**

Tomohiro Ide[1], Kyoko Shinzawa-Itoh[2], Kazumasa Muramoto[2]

[1]School of Science, University of Hyogo, Hyogo, Japan., [2]Graduate School of Science, University of Hyogo, Hyogo, Japan.

25P-070 **Gold Nanoparticle Thin Film Electrode Enables Direct Electrochemical Control of Cytochrome P450 Reaction**

Yasuhiro Mie[1], Chitose Mikami[1], Yoshiaki Yasutake[2], Naoki Matsuda[3]

[1]Bioproduction Research Institute, AIST, [2]CBBD-OIL, AIST-Waseda Univ., [3]Sensing System Research Center, AIST

Membrane proteins

***25P-071** **Engineering cardiolipin binding to an artificial membrane protein reveals determinants for lipid-mediated stabilization**

Mia Louis Abramsson[1], Robin A Corey[2], Jan Škerle[3,4], Louise Persson[5], Olivia Andén[6], Abraham O Oluwole[7], Rebecca J Howard[6], Erik Lindahl[6], Carol V Robinson[7], David Drew[3], Kvido Strisovsky[4], Erik G Marklund[5], Phillip J Stansfeld[8], Michael Landreh[1,9]

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***25P-072** **Identification of Novel Receptor for Polyphenolic Metabolites**

Shota Nishikawa[1], Yuki Masujima[1], Ryuji Ohue-Kitano[1,2,3], Ikuo Kimura[1,2]

[1]Graduate School of Pharmaceutical Sciences, Kyoto University, Kyoto, Japan, [2]Graduate School of Biostudies, Kyoto University, Kyoto, Japan, [3]Graduate School of Biostudies and Center for Living Systems Information Science (CeLiSIS), Kyoto University, Kyoto, Japan

Poster Sessions

***25P-073** **Mechanism of caffeine-induced functional recovery in RyR2 loss-of-function mutant**

Yuya Otori[1], Raymond Burton-Smith[2], Nagomi Kurebayashi[3], Kazuyoshi Murata[2], Hiroaki Kato[1,4], Takashi Murayama[3], Haruo Ogawa[1]

[1]Graduate School of Pharmaceutical Sciences, Kyoto University, [2]Exploratory Research Center on Life and Living Systems, [3]Juntendo University Graduate School of Medicine, [4]RIKEN SPring-8 Center

***25P-074** **A proton-transfer mechanism in the malaria parasite lactate/H+ symporter suggests a transporter without conformational changes**

Ciara J F Wallis, Kasimir Gregory, Stephen Fairweather, Ruitao Jin, Sitong He, Giel van Dooren, Adele Lehane, Ben Corry

Research School of Biology, The Australian National University, Canberra, Australia

***25P-075** **Ligand binding mechanism analysis of muscarinic acetylcholine receptors utilizing vibrational spectroscopy**

Moeka Mizuno[1], Yuya Sugiura[1], Ryoji Suno[3], Hideki Kandori[1,2], Kota Katayama[1,2]

[1]Graduate School of Engineering, Nagoya Institute of Technology, Aichi, Japan, [2]OptoBio Technology Research Center, Aichi, Japan, [3]Deparment of Medical Chemistry, Kansai Medical University, Osaka, Japan

25P-076 **Structural dynamics of potassium ion selective and cyclic nucleotide binding in a CNG channel SthK using ATR-FTIR**

Tatsuro Nishikino[1], Hiroto Fukuda[2], Koki Ogasawara[2], Yuji Furutani[1,3]

[1]Grad. Sch. of Eng., Nagoya Inst. of Tech., Aichi, Japan., [2]Sch. of Eng., Nagoya Inst. of Tech., Aichi, Japan., [3]OptoBioTech. Res. Cent., Nagoya Inst. of Tech., Aichi, Japan.

25P-077 **Where is the N-tail? A Computational Study of Intrinsically Disordered Regions of Human ATP-sensitive Potassium Channel**

Katarzyna Walczewska-Szewc, Wieslaw Nowak

Institute of Physics, Faculty of Physics, Astronomy and Informatics, Nicolaus Copernicus University in Torun, ul. Grudziadzka 5, 87-100 Torun, Poland

25P-078 **A Novel Gate Operation Pathway of Lipopolysaccharide Transport by Bacterial ABC Transporter MsbA and LptC**

Kien Xuan Ngo, Toshio Ando

Nano Life Science Institute (WPI-NanoLSI), Kanazawa University, Kanazawa, Japan

25P-079 **Pulmonary Surfactant Protein C (SP-C): The role of palmitoyl chains on protein-protein interaction and oligomerization, from time-resolved fluorescence methodologies**

Manuel Prieto[2,3], Michelle Morán-Lalangui[1], Ana Coutinho[2,3,4], Jesús Pérez-Gil[1], Luís M. S. Loura[5,6,7], Begoña García-Álvarez[1]

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DNA & DNA binding proteins

***25P-080** **Single molecule imaging of DNA higher-order structural formation by human transcription factor Yin Yang 1.**

Yan Xi, Takada Shoji, Terakawa Tsuyoshi

Graduate School of science, Kyoto University, Kyoto, Japan

***25P-081** **Differential dynamics specify MeCP2 function at nucleosomes and methylated DNA**

Gabriella N.L. Chua[1,2], John Watters[1], Paul Dominic Olinares[3], Joshua Luo[1], Brian Chait[3], Shixin Liu[1]

[1]Laboratory of Nanoscale Biophysics and Biochemistry, The Rockefeller University, New York, NY, USA, [2]Tri-Institutional PhD Program in Chemical Biology, New York, NY, USA, [3]Laboratory of Mass Spectrometry and Gaseous Ion Chemistry, The Rockefeller University, New York, NY, USA

25P-082 **Mediator Mei5-Sae3 Stabilizes Dmc1 Recombinase Clusters for Efficient Assembly on RPA-Coated Single-Stranded DNA**

Hung-Wen Li[1], Chin-Dian Wei[1], Hao-Yen Chang[1,2], Chia-Hua Lu[1], Chih-Chun Chang[2], Asako Furukohri[3], Akira Shinohara[3], Peter Chi[2,4]

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Poster Sessions

RNA & RNA binding proteins

***25P-083** **Molecular mechanisms of interaction between RNase I and ribosomes**

Atsushi Minami[1], Takehito Tanzawa[2], Zhuohao Yang[3], Takashi Funatsu[3], Takayuki Kato[2], Tomohisa Kuzuyama[1,5], Hideji Yoshida[4], Tetsuhiro Ogawa[1,5]

[1]Graduate School of Agricultural and Life Sciences, The University of Tokyo, Tokyo, Japan, [2]Institute for Protein Research, Osaka University, Osaka, Japan, [3]Graduate School of Pharmaceutical Sciences, The University of Tokyo, Tokyo, Japan, [4]Faculty of Medicine, Osaka Medical and Pharmaceutical University, Osaka, Japan, [5]Collaborative Research Institute for Innovative Microbiology, The University of Tokyo, Tokyo, Japan

25P-084 **Nascent pre-ribosomal RNA acts as surfactants that suppress fusion of fibrillar centers in nucleolus**

Tetsuya Yamamoto[1], Tomohiro Yamazaki[2], Kensuke Ninomiya[2], Tetsuro Hirose[2]

[1]Institute for Chemical Reaction Design and Discovery, Hokkaido University, [2]Department of Frontier Biosciences, Osaka University

DNA/RNA nanotechnology

***25P-085** **Agent model for numerical simulation of the DNA active droplet**

Kei Goraku[1], Ryohei Furuichi[1], Masahiro Takinoue[1,2]

[1]Department of Computer Science, Tokyo Institute of Technology, Tokyo, Japan, [2]Living Systems Materialogy (LiSM), Tokyo Institute of Technology, Tokyo, Japan

***25P-086** **Construction of DNA droplets capable of autonomously moving by sensing nucleic acids**

Kanta Takagi[1], Tomoya Maruyama[2], Masahiro Takinoue[1,2,3]

[1]Department of Computer Science, Tokyo Institute of Technology, Tokyo, Japan, [2]Department of Life Science and Technology, Tokyo Institute of Technology, Tokyo, Japan, [3]Living Systems Materialogy (LiSM), Tokyo Institute of Technology, Tokyo, Japan

***25P-087** **Specific cell binding of functionalized DNA droplets**

Ryoya Hasegawa[1], Jing Gong[1], Shin–Ichiro M. Nomura[2], Masahiro Takinoue[1,3,4]

[1]Department of Life Science and Technology, Tokyo Institute of Technology, [2]Department of Robotics, Graduate School of Engineering, Tohoku University, [3]Department of Computer Science, Tokyo Institute of Technology, [4]Living Systems Materialogy Research Group, International Research Frontiers Initiative

***25P-088** **DNA droplets based on self-assembled DNA nanostructure polymers with programmable multivalency**

Naoki Yoshida[1], Masahiro Takinoue[2]

[1]School of Life Science and Technology, Tokyo Institute of Technology, Yokohama, Japan, [2]School of Computing, Tokyo Institute of Technology, Yokohama, Japan

***25P-089** **DNA Nanostructure-based Chromatin-inspired Heterogeneous Fluid Gel Structures**

Hong Xuan Chai[1], Masahiro Takinoue[1,2]

[1]School of Life Science and Technology, Tokyo Institute of Technology, Japan, [2]School of Computing, Tokyo Institute of Technology, Japan

Nucleic acid: Others

***25P-090** **Mechanical diversity and folding intermediates of parallel-stranded G-quadruplexes with a bulge**

Yashuo Zhang, Huijuan You

School of Pharmacy, Tongji Medical College, Huazhong University of Science and Technology, Wuhan 430030, China

***25P-091** **Force propagation in dense DNA solution**

Miku Nakao[1], Saki Matsuyama[1], Akinori Miyamoto[2], Yoshihiro Murayama[1,2]

[1]Department of Biomedical Engineering, Tokyo University of Agriculture and Technology, [2]Department of Applied Physics, Tokyo University of Agriculture and Technology

Chromatin & Chromosomes

***25P-092** **Molecular motor in a box: a model for chromatin remodelers**

Sophie Klempahn[1], Helmut Schiessel[1,2]

[1]Cluster of Excellence Physics of Life, TUD Dresden University of Technology, 01307 Dresden, Germany, [2]Institut für Theoretische Physik, TUD Dresden University of Technology, 01069 Dresden, Germany

***25P-093** **Coarse-grained Simulations for Unidirectional Translocation of Bacterial SMC Complex via DNA-segment Capture**

Masataka Yamauchi, Giovanni B. Brandani, Tsuyoshi Terakawa, Shoji Takada

Dept. of Biophysics, Grad. of Sci., Kyoto Univ

Poster Sessions

25P-095 **Theory of viscoelasticity of chromatin and its surrounding environment**

Soya Shinkai, Shuichi Onami
RIKEN Center for Biosystems Dynamics Research

Water & Hydration & Electrolyte

***25P-096** **Effect of osmolytes on the activity of α-amylase**

Sachika Furukawa, Mafumi Hishida
Department of Chemistry, Faculty of Science, Tokyo University of Science, Tokyo, Japan

25P-097 **Investigations of hydration structures and dynamics around proteins and peptides with MD simulations**

Takuya Takahashi[2], Ryutaro Inou[1], Yui Nakamura[1], Simon Hikiri[2]
[1]Graduate School of Life Sciences, Ritsumeikan University, Kusatsu, Japan, [2]College of Life Sciences, Ritsumeikan University, Kusatsu, Japan

Molecular genetics & Gene expression

***25P-098** **Effects of transcription termination elements on in vitro genome transcription**

Keisuke Saito, Yukino Matsui, Nobuhide Doi, Kei Fujiwara
Dept. of Biosci. and Info., Keio University

Morphogenesis and Development

***25P-099** **Three-dimensional Mechanical Cooperativity Optimises Epithelial Wound Healing**

Shu En Lim, Rob Tetley, Yanlan Mao
University College London

Tuesday, June 25

Muscle

***25P-100** **Myosin and tropomyosin-troponin complementarily regulate thermal activation of striated muscles**

Shuya Ishii[1,2], Kotaro Oyama[1,2], Fuyu Kobirumaki-Shimozawa[2], Tomohiro Nakanishi[2,3], Naoya Nakahara[4], Madoka Suzuki[5], Shin'ichi Ishiwata[6], Norio Fukuda[2]

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25P-101 **Observation of power stroke coordination in DNA Origami based artificial myosin filaments**

Hiroki Fukunaga[1], Takumi Washio[2,3], Keisuke Fujita[4], Masashi Ohmachi[4], Hiroaki Takagi[5], Keigo Ikezaki[6], Toshio Yanagida[7], Mitsuhiro Iwaki[1,8]

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Molecular motor

***25P-102** **Spontaneous γ subunit rotation upon conformational changes of the α, β subunits in F1-ATPase**

Masahiro Motohashi[1,2], Mao Oide[2,5], Chigusa Kobayashi[3], Jaewoon Jung[2,3], Eiro Muneyuki[1], Yuji Sugita[2,3,4]

[1]Fac. Sci. Engineering, Chuo Univ., [2]RIKEN CPR, [3]RIKEN R-CCS, [4]RIKEN BDR, [5]PRESTO, JST

***25P-103** **Characterization of the motility of tetrahymena kinesin 9A and 9B**

Hiroto Ishii, Masahiko Yamagishi, Junichiro Yajima

Graduate School of Arts and Science, The University of Tokyo, Tokyo, Japan

***25P-104** **Modeling the motion of heterodimeric kinesins reveals head- head coordination in a KIF1A dimer**

Tomoki Kita, Kazuo Sasaki, Shinsuke Niwa

Tohoku University

Poster Sessions

***25P-105** **Structural analysis of ATP synthases embedded in a lipid bilayer under proton motive force by cryoEM**

Atsuki Nakano[1], Jun-ichi Kishikawa[2], Kaoru Mitsuoka[3], Ken Yokoyama[1]
[1]Fac. of Life Sci., Kyoto Sangyo Univ, [2]Applied Biology, Kyoto Institute of Technology, [3]Research Center for Ultra-High Voltage Electron Microscopy, Osaka University

25P-106 **Application of information theory to understand cooperative force generation between skeletal myosin molecules**

Motoshi Kaya, Arun Kasimchetty, Hideo Higuchi
Department of Physics, University of Tokyo

25P-107 **Extreme-Value Analysis of Intracellular Cargo Transport by Motor Proteins**

Takuma Naoi[1], Yuki Kagawa[1], Kimiko Nagino[1], Shinsuke Niwa[2], Kumiko Hayashi[1,3]
[1]Department of Applied Physics, Graduate School of Engineering, Tohoku University, [2]Frontier Research Institute for Interdisciplinary Sciences, Tohoku University, [3]Institute for Solid State Physics, The University of Tokyo

25P-108 **Comparative analysis of cilia force production in effective and recovery strokes of isolated Volvox carteri cells**

Ryuta Yamaguchi, Katsuya Shimabukuro
National Institute of Technology, Ube College

25P-109 **Cryo-EM structure of mammalian V-ATPase.**

Yui Nishida[1], Atsuko Nakanishi[2], Atsuki Nakano[1], Fuka Ueda[1], Kaoru Mitsuoka[2], Ken Yokoyama[1]
[1]Kyoto Sangyo Univ, Kyoto, Japan, [2]Research Center for UHVEM, Osaka, Japan

Single Molecule Biophysics

***25P-110** **Regulation of anticalin-CTLA4 binding mechano-stability by altering protein pulling geometry**

Yang Sun[1,2]
[1]Department of Chemistry, University of Basel, [2]Department of Biosystems Science and Engineering, ETH Zurich

Tuesday, June 25

***25P-111** **Versatile peptide probes for labeling cell-surface GPCR**

Toshiki Yoda[1], Yasushi Sako[2], Asuka Inoue[1], Masataka Yanagawa[1]

[1]Molecular and Cellular Biochemistry, Graduate School of Pharmaceutical Sciences, Tohoku University, Miyagi, Japan, [2]Cellular Informatics Laboratory, RIKEN Cluster for Pioneering Research, Saitama, Japan

***25P-112** **The role of von Willebrand factor-like Domains in Mucin Adhesion**

Rebecca Schlatterer[1], Oliver Lieleg[2], Bizan N. Balzer[1,3]

[1]Institute of Physical Chemistry, University of Freiburg, Freiburg, Germany, [2]TUM School of Engineering and Design, Department for Materials Engineering and Center for Protein Assemblies (CPA) & Munich Institute of Biomedical Engineering (MIBE), TU München, Garching, Germany, [3]Cluster of Excellence livMatS @ FIT – Freiburg Center for Interactive Materials and Bioinspired Technologies and Freiburg Materials Research Center (FMF), University of Freiburg, Freiburg, Germany

***25P-113** **Self-fueled Peptide Assembly Investigated via AFM-based Imaging**

Christiane Wenzel[1,2], Mahesh Pol[1], Kun Dai[1], Charalampos Pappas[1], Bizan N. Balzer[1,2,3], Thorsten Hugel[1,2]

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***25P-114** **Force-Dependent Structural Changes of Filamin C Rod Domains Regulated by Filamin C Dimer**

Yunxin Deng[1], Jie Yan[1,2]

[1]Mechanobiology Institute, National University of Singapore, Singapore 117411, [2]Department of Physics, National University of Singapore, Singapore 117542

25P-115 **State-of-the-art high-speed atomic force microscopy for filming faster biomolecular dynamics**

Shingo Fukuda[1], Akihiro Otomo[2,3], Ryota Iino[2,3], Toshio Ando[1]

[1]WPI NanoLSI, Kanazawa Univ., [2]Institute for Molecular Science, NINS, [3]SOKENDAI

25P-116 **In-cell single-molecule FRET measurement of cytosolic RAF proteins**

Kenji Okamoto, Yasushi Sako

RIKEN CPR

Poster Sessions

***25P-117** **Extent of stochasticity in folding dynamics determines the force-tolerance and longevity of mechanosensing proteins**

Pritam Saha, Vishavdeep Vashisht, Ojas Singh, Gaurav Kumar Bhati, Surbhi Garg, Dr. Sabyasachi Rakshit

Department of chemical sciences, Indian Institute of Science Education and research Mohali, India

Cell biology: Adhesion

25P-118 **A Novel Semi-Automatic Software Tool for Focal Adhesion Analysis**

Joanna Hajduk[1,2], Patrycja Twardawa[1,2], Zenon Rajfur[2,3]

[1]Doctoral School of Exact and Natural Sciences, Jagiellonian University, Łojasiewicza 11, 30-348 Cracow, Poland, [2]Faculty of Physics, Astronomy and Applied Computer Science, Jagiellonian University, Łojasiewicza 11, 30-348 Cracow, Poland, [3]Jagiellonian Center of Biomedical Imaging, Jagiellonian University, 30-348 Cracow, Poland

Cell biology: Motility

***25P-119** **Effect of Substrate Elasticity on Adhesion and Motility of Cancer Cells**

Shotaro Yamamoto[1], Tomoko Oyama[2], Kotaro Oyama[2], Mitsumasa Taguchi[2], Hiromi Miyoshi[1]

[1]Tokyo Metropolitan University, [2]National Institutes for Quantum Science and Technology

***25P-120** **Decoding Antidote Access: Binding/Unbinding Pathways toward Organophosphate-Inhibited HuAChE**

Kowit Hengphasatporn[1], Nalinee Kongkaew[2], Thanyada Rungrotmongkol[2,3], Yasuteru Shigeta[1], Ryuhei Harada[1]

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***25P-121** **β-arrestin acts as an inhibitor of trimeric G protein signaling in eukaryotic chemotaxis**

Masaki Muromoto[1], Satomi Matsuoka[1,2,3], Masahiro Ueda[1,2,3]

[1]Graduate School of Frontier Biosciences, Osaka University, [2]Graduate School of Science, Osaka University, [3]Center for Biosystems Dynamics Research, RIKEN

***25P-122** **Conversion from Linear Contraction to Rotation of Stress Fibers in Migrating Keratocytes**

Chika Okimura[1], Shu Akiyama[1], Yukinori Nishigami[2,3], Tatsunari Sakurai[4], Yoshiaki Iwadate[1]

[1]Department of Biology, Yamaguchi University, [2]Research Institute for Electronic Science, Hokkaido University, [3]Graduate School of Life Science, Hokkaido University, [4]Department of Mathematical Engineering, Musashino University

***25P-123** **Rebirth of Fish Epidermal Keratocyte Sheets**

Norihiko Nishimura, Chika Okimura, Yoshiaki Iwadate

Department of Biology, Yamaguchi University

***25P-124** **Integration between Epidermal Keratocyte Sheets Accompanied by Rapid Disassembly of Actomyosin Cables**

Kazuma Shimizu, Chika Okimura, Yoshiaki Iwadate

Department of Biology, Yamaguchi University

***25P-125** **Side-by-side interaction of adjacent cells dominates the collaborative dynamics and ordering of collective cells**

Mitsuru Sentoku[1], Miki Takei[1], Masahru Endo[1], Kenji Yasuda[1,2]

[1]Department of Pure and Applied Physics, Graduate School of Advanced Science and Engineering, Waseda University, Tokyo, Japan, [2]Department of Physics, School of Advanced Science and Engineering, Waseda University, Tokyo, Japan

***25P-126** **Mimicking dynamics of human gastrulation: microprint culture of two types of cells derived from human iPS cells**

Ryo Kojima[1], Hazuki Tuboi[1], Miyu Mori[1], Chihiro Takeuchi[1], Kiyoshi Ohnuma[1,2]

[1]Department of Bioengineering, Nagaoka University of Technology, [2]Department of Science of Technology Innovation, Nagaoka University of Technology

25P-127 **Structural and Functional Insights into Drosophila melanogaster Sperm Flagella: A Focus on Axonemal Architecture and Beating Patterns**

Sho Tamai[1], Kosei Sato[2], Kazuhiro Oiwa[1,2]

[1]Graduate School of Science, University of Hyogo, [2]National Institute of Information and Communications Technology

Poster Sessions

25P-128 **Structural Changes of Beating Comb Plates of Ctenophores during Effective and Recovery Strokes as Probed by Time-resolved X-ray Diffraction Recording**

Hiroyuki Iwamoto[1], Mio Kosaka[2], Ryo Yokoya[2], Kei Jokura[2], Kazuhiro Oiwa[3], Kazuo Inaba[2]

[1]SPring-8 • JASRI, Hyogo, Japan, [2]Univ. Tsukuba, Shimoda Marine Research Ctr., Shizuoka, Japan, [3]NICT • Bio-ICT, Hyogo, Japan

25P-129 **Identifying direct and indirect interactions among collectively moving individuals using pairwise information flow metric**

M. Mohiuddin[1,2], Sulimon Sattari[4], Udoy S. Basak[3], Tamiki Komatsuzaki[1,4,5,6]

[1]Graduate School of Chemical Sciences and Engineering, Hokkaido University, Japan, [2]Comilla University, Cumilla-3506, Bangladesh, [3]Pabna University of Science and Technology, Pabna 6600, Bangladesh, [4]Research Center of Mathematics for Social Creativity,Research Institute for Electronic Science, Hokkaido University, Japan, [5]Institute for Chemical Reaction Design and Discovery (WPI-ICReDD), Hokkaido University, Japan, [6]The Institute of Scientific and Industrial Research, Osaka University, Japan

25P-130 **Structural and functional analyses of the C-terminal cytoplasmic domain of a flagellar export gate protein, FlhB**

Miki Kinoshita[1,2], Tomoko Miyata[1,2], Keiichi Namba[1,2], Tohru Minamino[1]

[1]Graduate School of Frontier Biosciences, Osaka University, Suita, Osaka, Japan, [2]JEOL YOKOGUSHI Research Alliance Laboratories, Osaka University, Suita, Osaka, Japan

Cell biology: Cytoskeleton & Membrane skeleton

***25P-131** **Crosstalk of two bacterial actins composed of the force generation unit of Spiroplasma swimming**

Daichi Takahashi[1,2], Makoto Miyata[2,3], Ikuko Fujiwara[4]

[1]Research Institute for Interdisciplinary Science, Okayama University, Japan, [2]Graduate School of Science, Osaka Metropolitan University, Japan, [3]The OMU Advanced Research Institute for Natural Science and Technology, Osaka Metropolitan University, Japan, [4]Department of Materials Sciences and Bioengineering, Nagaoka University of Technology, Japan

***25P-132** **Microtubule Fatigue Under Repetitive Mechanical Stress**

Syeda Rubaiya Nasrin[1], Akira Kakugo[1], Neda M. Bassir Kazeruni[2], Masatoshi Ichikawa[1]

[1]Kyoto University, [2]Columbia University

25P-133 **Dominant negative mutations in γ-tubulin cause partial loss of protofilaments in centriole triplet microtubules**

Yuki Nakazawa[1,2], Mao Horii[3], Akira Noga[1,3,4], Ken-ichi Wakabayashi[4,5], Masafumi Hirono[1]

[1]Dep. Frontier Biosci., Hosei Univ., Tokyo, Japan, [2]STG, OIST, Okinawa, Japan, [3]Dep. BioSci., Grad. Sch. Sci., Univ. Tokyo, Tokyo, Japan, [4]Inst. Innov. Res., Tokyo Inst. Tech., Tokyo, Japan, [5]Fac. Life Sci., Kyoto Sangyo Univ., Kyoto, Japan

25P-134 **Actin fluctuations regulate cofilin binding**

Akihiro Narita

Nagoya Univ.

25P-135 **Signaling Mechanisms to Regulate Activation of Actin Depolymerization Factor Cofilin in Mast Cells**

Ruriko Suzuki[1], Satoru Yokawa[2], Tadahide Furuno[2], Naohide Hirashima[1]

[1]Grad. Sch. Pharm. Sci., Nagoya City Univ., Nagoya, Japan, [2]Sch. Pharm., Aichi Gakuin Univ., Nagoya, Japan

Cell biology: Signal transduction & Cell membrane

***25P-136** **The maximum phagocytic limit of macrophages is determined by the maximum expansion ability of the local cell membrane surrounding antigens.**

Dan Horonushi[1], Sota Suzuki[1], Maiha Ando[1], Haruka Yuki[2], Kenji Yasuda[1,2]

[1]Department of Pure and Applied Physics, Graduate School of Advanced Science and Engineering, Waseda University, Tokyo, Japan., [2]Department of Physics, School of Advanced Science and Engineering, Waseda University, Tokyo, Japan.

***25P-137** **Lipid domains in the inner leaflet of cell plasma membranes serve as a signaling platform for K-Ras**

Toshiki Mori[1], Koichiro M. Hirosawa[2], Rinshi S. Kasai[3], Tomohiko Taguchi[4], Yasunari Yokota[5], Kenichi G.N. Suzuki[1,2,3]

[1]UGSAS, Gifu Univ., Japan, [2]iGCORE, Gifu Univ., Japan, [3]Natl. Cancer Ctr. Res. Inst., Japan, [4]Grad. Sch. Life Sci., Tohoku Univ., Japan, [5]Dept. Eng., Gifu Univ., Japan

Poster Sessions

25P-138 **ERK-mediated STAT3 inhibition causes dynamic heterogeneity in IL-6 signaling**

Keisuke Fujita[1], Masahiro Ueda[1,2]

[1]Laboratory for Cell Signaling Dynamics, RIKEN BDR, Osaka, Japan, [2]Laboratory of Single Molecule Biology, Graduate School of Frontier Biosciences, Osaka University, Osaka, Japan

25P-139 **Intracelluar information flow in RAS-MAPK signaling**

Nobuhisa Umeki[1], Yoshiyuki Kabashima[2,3], Yasushi Sako[1]

[1]Cellular Informatics Laboratory, RIKEN, CPR , Wako, Japan, [2]Institute for Physics of Intelligence, The University of Tokyo, Tokyo, Japan, [3]Trans-Scale Quantum Science Institute , The University of Tokyo, Tokyo, Japan

Biological & Artificial membrane: Structure & Property

***25P-140** **Protein accumulation on amphiphilic protein-phospholipid hybrid leaflet**

Masato Suzuki, Koki Kamiya

Graduate School of Science and Technology, Gunma University

***25P-141** **Creation of Asymmetric Membrane Vesicles with a Protein Inner Membrane Mixed with Phospholipids**

Yuki Nagai, Koki Kamiya

Graduate School of Science and Technology, Gunma Univ., Gunma, Japan

***25P-142** **Triglyceride-Tethered Membrane Lipase Sensor**

Samara Elizabeth Bridge[1], Upeksha Mirissa Lankage[1], Bruce Cornell[1,3], Stephen Holt[1,2], Matt Padula[1], Charles Cranfield[1]

[1]School of Life Sciences, University of Technology Sydney, Ultimo, NSW 2007, Australia, [2]Australian Nuclear Science and Technology Organisation, Lucas Heights, NSW 2234, Australia, [3]SDX, Surgical Diagnostics Pty Ltd., Roseville, NSW 2069, Australia

25P-143 **Characterization of Lipid Vesicles Adsorbed on Bovine Serum Albumin: Adhesion and Large Nano-indentation**

Eman Ramadan Sarsour[1], Tomohiro Hayashi[2]

[1]Department of Physics, Faculty of Science, Helwan University, Cairo, Egypt, [2]Department of Materials Science and Engineering, Tokyo Institute of Technology, JAPAN

25P-144 **Decoding functional oligomeric states of membrane-associated protein oligomers forming membrane pores**

Radek Šachl[1], Vandana Singh[1], Sabína Čujová[1], Petra Riegerová[1], Martin Hof[1], Julia P. Steringer[2], Walter Nickel[2]

[1]Department of Biophysical Chemistry, J. Heyrovsky´ Institute of Physical Chemistry of the Academy of Sciences of the Czech Republic, Prague, 182 23, Czech Republic, [2]Heidelberg University Biochemistry Center, Heidelberg, Germany

25P-145 **Solid-Supported-Membrane-Based Electrophysiology: Application to the Analysis of Membrane Binding**

Ronald J Clarke[1], Francesco Tadini-Buoninsegni[2]

[1]School of Chemistry, University of Sydney, Sydney NSW, Australia, [2]Department of Chemistry “Ugo Schiff”, University of Florence, Sesto Fiorentino, Florence, Italy

Biological & Artificial membrane: Dynamics

***25P-146** **Unraveling of the mechanisms of hierarchical mesoscale domain organization in cell plasma membranes by super-resolution microscopy and single-molecule tracking.**

Toui Kawai[1], Rinshi S. Kasai[2], Koichiro M. Hirosawa[3], Yasunari Yokota[4], Takahiro K. Fujiwara[5], Akihiro Kusumi[6], Kenichi G. N. Suzuki[2,3]

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***25P-147** **Impact of peptides on the solubility of Amphotericin B and its sterol-specific membrane activity**

Lissy M. Hartmann[1], Stephen A. Holt[2], Robert A. Russell[2], Anton P. Le Brun[2], Anneka C. Pereira Schmidt[3], Chandra H. Chavali[3], Evelyne Deplazes[1,3], Charles G. Cranfield[1]

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***25P-148** **Acceleration of lipid exchange reaction between human cells and supported lipid bilayers**

Asahi Gono, Takashi Okuno

Faculty of Science, Yamagata Univ.

Poster Sessions

25P-149 **Antibacterial activity of C-terminal fragments of NEMURI**

Moynul Hasan
Institute for Genetic Medicine, Hokkaido University, Japan.

Biological & Artificial membrane: Excitation & Channels

***25P-150** **Photocaged amino acid method elucidates the potency of individual positively-charged residues in PIP2-dependency of the Kir2.1 inwardly rectifying potassium channel**

Junxian Zhou, Natsuki Mizutani, Kohei Yamamoto, Yoshifumi Okochi, Yasushi Okamura
Graduate School of Medicine, Osaka University

25P-151 **ATP directly regulates the voltage-gated proton channel**

Akira Kawanabe[1], Kohei Takeshita[2], Maki Takata[1], Yuichiro Fujiwara[1,3]
[1]Faculty of Medicine, Kagawa University, [2]Riken Spring-8 center, [3]Graduate School of Biomedical and Health Sciences, Hiroshima University

Membraneless Organella, autophage, Liquid-liquid phase separation

***25P-153** **Coalescence of liquid or gel-like DNA-encapsulating micro-droplets**

Takashi Nishio[1,2], Helmut Schiessel[1,3]
[1]Cluster of Excellence Physics of Life, TUD Dresden University of Technology, [2]Biomedical Research Institute, National Institute of Advanced Industrial Science and Technology (AIST), [3]Institut für Theoretische Physik, TUD Dresden University of Technology

***25P-154** **Aberrant phase transition of stress granules in living cells observed by Raman/Brillouin microscopy and machine learning**

Ren Shibuya[1], Shinji Kajimoto[1,2], Hideyuki Yaginuma[3,4], Tetsuro Ariyoshi[3,4], Yasushi Okada[3,4], Takakazu Nakabayashi[1]
[1]Graduate School of Pharmaceutical Sciences, Tohoku University, Japan, [2]JST PRESTO, Japan, [3]WPI-IRCN, The University of Tokyo, Japan, [4]RIKEN BDR, Japan

***25P-155** **Molecular weight polydispersity initiates nucleation of polymer blends around the phase separation boundary**

Akari Kamo[1], Arash Nikoubashman[2], Miho Yanagisawa[1,3]
[1]Department of Physics, Graduate School of Science, The University of Tokyo, Japan, [2]Leibniz-Institut für Polymerforschung Dresden e.V., Dresden, Germany, [3]Komaba Institute of Science, Graduate School of Arts and Sciences, The University of Tokyo, Japan

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***25P-156** **Hyperphosphorylation of nucleolar protein Nopp140 drives mitotic nucleolar disassembly.**

Hisashi Shimamura[1], Yuki Norizoe[2], Takahiro Sakaue[2], Shige H. Yoshimura[3]

[1]Faculty of Integrated Human Studies, Kyoto University, [2]College of Science and Engineering, Aoyama Gakuin University, [3]Graduate School of Biostudies, Kyoto University

25P-157 **Molecular dynamics of autophagosomal lipid transfer**

Yuji Sakai[1,2,3], Kazuaki Matoba[4], Nobuo Noda[5], Yuji Sugita[6]

[1]Institute for Life and Medical Sciences, Kyoto University, [2]Graduate School of Medicine, The University of Tokyo, [3]RIKEN iTHEMS, [4]Institute of Microbial Chemistry, [5]Institute for Genetic Medicine, Hokkaido University, [6]RIKEN Cluster for Pioneering Research

25P-158 **Designer coacervates for protein sequestration**

Akihiro Kishimura[1,2,3,4], Biplab K C[1,2], Ryoma Omae[1,2], Hiroshi Kamizawa[2], Gakuto Takeda[1,2], Takumi Yamada[2], Hinano Nakamoto[2], Teruki Nii[1], Takeshi Mori[1,4], Yoshiki Katayama[1,3,4,5]

[1]Department of Applied Chemistry, Faculty of Engineering, Kyushu University, Fukuoka, Japan, [2]Graduate School of System Life Sciences, Kyushu University, Fukuoka, Japan, [3]Center for Molecular Systems (CMS), Kyushu University, Fukuoka, Japan, [4]Center for Future Chemistry, Kyushu University, Fukuoka, Japan, [5]Center for Advanced Medical Open Innovation, Kyushu University, Fukuoka, Japan

25P-159 **Highly Charged Proteins and Their Repulsive Interactions in Regulation of Biomolecular Condensation**

Cheng Tan[1], Jaewoon Jung[1,2], Yuji Sugita[1,2,3]

[1]RIKEN Center for Computational Science, [2]RIKEN Cluster for Pioneering Research, [3]RIKEN Center for Biosystems Dynamics Research

25P-160 **A Key Role of Less Bulky-Hydrophobic Amphipathic α-helix in Autophagy**

Taki Nishimura[1,2,3], Gianmarco Lazzeri[4,5], Noboru Mizushima[2], Roberto Covino[4,5], Sharon A Tooze[3]

[1]PRESTO, Japan Science and Technology Agency, Tokyo, Japan, [2]Department of Biochemistry and Molecular Biology, Graduate School of Medicine, The University of Tokyo, Tokyo, Japan, [3]Molecular Cell Biology of Autophagy Laboratory, The Francis Crick Institute, London, UK, [4]Frankfurt Institute for Advanced Studies, Frankfurt am Main, Germany, [5]Goethe University, Frankfurt am Main, Germany

Poster Sessions

Chemoreception

***25P-161** **Ligand recognition of the Vibrio cholerae chemoreceptor for two distinct attractants, pyruvate and serine**

Fuga Omori[1], Hirotaka Tajima[2,3], Ikuro Kawagishi[1,2,3]

[1]Grad. Sch. Sci. and Engin., Hosei Univ, [2]Fac. of Biosci. and Appl. Chem., Hosei Univ, [3]Res. Cent. for Micro-Nano Tech., Hosei Univ

Neuroscience & Sensory systems

***25P-162** **HS-AFM reveals the structural role of CaMKII in synaptic structural plasticity**

Taisei Suzuki[1], Takashi Sumikama[2], Hideji Murakoshi[3], Mikihiro Shibata[2,4]

[1]Grad. Sch. NanoLS., Kanazawa University, Ishikawa, Japan, [2]WPI-Nano Life Science Institute, Kanazawa University, Ishikawa, Japan, [3]Supportive Center for Brain Research, NIPS, Aichi, Japan, [4]Institute for Frontier Science Initiative, Kanazawa University, Ishikawa, Japan

***25P-163** **Physics of transport through capillaries and the blood-brain barrier: comparative study of hydrogel phantom and living mouse models**

Anastasia S Vanina[1], Alexander Sychev[1], Ivan Proskurkin[2], Anastasia Lavrova[2,3], Eugene Postnikov[1,4]

[1]Kursk State University, [2]Immanuel Kant Baltic Federal University, [3]Saint-Petersburg State Research Institute of Phthisiopulmonology, [4]Saratov State University

25P-164 **Spontaneous depolarization wave in the embryonic CNS: optical imaging with a voltage-sensitive dye**

Yoko Momose-Sato[1], Katsushige Sato[2]

[1]Kanto-Gakuin University, College of Nutrition, [2]Komazawa Women's University, Faculty of Human Health

25P-165 **Oscillations in the embryonic chick olfactory bulb: optical imaging with a voltage-sensitive dye**

Katsushige Sato[1], Yoko Momose-Sato[2]

[1]Komazawa Women's University, Faculty of Human Health, [2]Kanto-Gakuin University, College of Nutrition

Tuesday, June 25

Neuronal circuit & Information processing

***25P-166** **Environmental oxygen information generates temperature response diversity in C. elegans**

Misaki Okahata[1,2], Taichiro Iki[2], Sawako Yoshina[3], Yohei Minakuchi[4], Shohei Mitani[3], Toshie Kai[2], Toru Miura[1], Atsushi Toyoda[4], Akane Ohta[1], Atsushi Kuhara[1,5]

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25P-167 **Construction of Single-Cell Level Linear Neural Network with Agarose Micro Fabrication Technology**

Shion Sakamoto[1,2,3], Kentaro Kito[1,2,3], Masahito Hayashi[1,2,3], Tomoyuki Kaneko[1,2,3]

[1]Hosei university, [2]LaRC, [3]FB

Behavior

25P-168 **Anticipation Behavior of the Physarum Plasmodia to Periodic Light Stimulus**

Kazuki Moriguchi

Graduate School of Systems Information Science, Future University Hakodate, Hokkaido, Japan

Photobiology: Vision & Photoreception

***25P-169** **The mechanism regulating the binding properties of retinal isomers in opsins**

Chihiro Fujiyabu, Takahiro Yamashita

Kyoto University, Kyoto, Japan

***25P-170** **Light-induced structural changes of a rhodopsin domain in a rhodopsin-bestrophin giant ion channel complex studied by time-resolved infrared spectroscopy**

Honda Nastuki[1], Rei Yoshizumi[1,2], Kandori Hideki[1,2], Furutani Yuji[1,2]

[1]Graduate School of Engineering, Nagoya Institute of Technology, [2]Optobiotechnology Research Center, Nagoya Institute of Technology

Poster Sessions

***25P-171** **Exploration of the Diversity of Absorption Spectra in Vertebrate Retinal Photo-isomerase, RGR**

Chunyangguang Li, Takashi Nagata, Naoya Morimoto, Keiichi Inoue
The Institute for Solid State Physics, The University of Tokyo, Kashiwa, Japan

***25P-172** **Exploring the spectral tuning mechanism of bestrhodopsin from Phaeocystis antarctica**

Yifan Liu[1], Masae Konno[1], Inoue Keiichi[1], Ariel Chazan[2], Andrey Rozenberg[2], Oded Béjà[2]
[1]The Institute for Solid State Physics, The University of Tokyo, Japan, [2]Faculty of Biology, Technion-Israel Institute of Technology, Israel

25P-173 **In Vitro Analysis of the Effect of Narrowband and Broadband Light in Visible Range on Lens Epithelial Cell Migration**

Hiromi Miyoshi[1], Aki Nishida[1], Masafumi Otomo[1], Takuto Suzuki[1], Yuki Tani[2]
[1]Department of Mechanical Systems Engineering, Tokyo Metropolitan University, [2]HOYA CORPORATION, Vision Care Section

25P-174 **Insights into light-driven chloride ion pump mechanism of NM-R3 and NpHR by molecular dynamics simulation**

Masahiko Taguchi[1,2], Akiya Moriuchi[2], Hinano Ogawa[2], Osamu Miyashita[3], Eriko Nango[1,2,4]
[1]IMRAM Tohoku Univ., [2]Grad. Sch. Sci. Tohoku Univ., [3]RIKEN R-CCS, [4]RIKEN SPring-8 Center

Photobiology: Photosynthesis

***25P-175** **Structure of S2 High-Spin State Manganese Cluster of Photosystem II by Multi-frequency Electron Paramagnetic Resonance (EPR) Spectroscopy**

Kosaki Shinya[1], Nakajima Yoshiki[2], Shen Jian-Ren[2], Mino Hiroyuki[1]
[1]Grad. Sch. Sci., Nagoya Univ., Aichi, Japan, [2]Res. Inst. Interdiscip. Sci., Okayama Univ., Okayama, Japan

***25P-176** **Oxygen-evolving photosystem II structures during S1–S2–S3 transitions**

Hongjie Li, Yoshiki Nakajima, Michihiro Suga, Jian-Ren Shen
Research Institute for Interdisciplinary Science and Graduate School of Natural Science and Technology, Okayama University, Okayama, Japan

25P-177 **Theoretical analysis of the light-harvesting process in C. thermophilum type-I reaction center that binds three different species of chlorophyll molecules**

Wataru Shimooka[1], Hirotaka Kitoh-Nishioka[2], Shigeru Itoh[1], Akihiro Kimura[1]

[1]Department of Physics, Graduate School of Science, Nagoya University, [2]Faculty of Science and Engineering, Kindai University

25P-178 **Electron Transfer Reactions in the Photosynthetic Reaction Center Complex lacking Iron-Sulfur Cluster Fx of Green Sulfur Bacterium Chlorobaculum tepidum**

Tomomi Inagaki[1], Yukie Kojima[2], Kazuki Terauchi[1], Chihiro Azai[2]

[1]Graduate School of Life Sciences, Ritsumeikan University, Shiga, Japan, [2]Graduate School of Science and Engineering, Chuo University, Tokyo, Japan

Photobiology: Optogenetics & Optical control

***25P-179** **Antitumor effects of photo-induced cell death using an outward proton pump rhodopsin**

Shin Nakao[1], Keiichi Kojima[1,2], Naoya Kenmotsu[1], Yosuke Togashi[1,2], Yuki Sudo[1,2]

[1]Grad. Sch., Med. Dent. and Pharm. Sci., Okayama Univ., Okayama, Japan., [2]Fac., Med. Dent. and Pharm. Sci., Okayama Univ., Okayama, Japan.

25P-180 **Microbial Rhodopsin Engineering through Machine Learning and Automated Experiments**

Keiichi Inoue[1,2], Takashi Nagata[1], Masae Konno[1], Masayuki Karasuyama[3], Yu Inatsu[3], Kazuhito V. Tabata[4], Ichiro Takeuchi[2,5]

[1]The Institute for Solid State Physics, The University of Tokyo, [2]RIKEN Center for Advanced Intelligence Project, [3]Graduate School of Engineering, Nagoya, Institute of Technology, [4]Graduate School of Engineering, The University of Tokyo, [5]Graduate School of Engineering, Nagoya University

Radiobiology & Active oxygen

25P-181 **Analysis of Radiation-induced Stem Cell Competition and Bystander Response Using Titanium Characteristic X-ray Microbeam**

Masanori Tomita[1], Yuki Fujimichi[1], Atsushi Ito[2]

[1]Sustainable Sys. Res. Lab., CRIEPI, Chiba, Japan, [2]Sch. Eng., Tokai Univ., Kanagawa, Japan

Poster Sessions

Origin of life & Evolution

***25P-182** **The role of non-biological membraneless polyester microdroplets as protocells at the origins of life**

Tony Z Jia[1,2], Kuhan Chandru[3,4]

[1]Earth-Life Science Institute, Tokyo Institute of Technology, 2-12-1-IE-1 Ookayama, Meguro-ku, Tokyo 152-8550, Japan, [2]Blue Marble Space Institute of Science, 600 1st Ave, Floor 1, Seattle, WA 98104, USA,, [3]Space Science Center (ANGKASA), Institute of Climate Change, National University of Malaysia, Selangor, 43650 Malaysia, [4]Polymer Research Center (PORCE), Faculty of Science and Technology, National University of Malaysia, Selangor, 43600 Malaysia

***25P-183** **Creation of a Membraneless Protocell with Earth-abundant Transition Metal Catalysts**

Chen Chen[1], Tony Z. Jia[2,3], Ryuhei Nakamura[1,2]

[1]Biofunctional Catalyst Research Team, RIKEN Center for Sustainable Resource Science (CSRS), Wako, Japan, [2]Earth-Life Science Institute (ELSI), Tokyo Institute of Technology, Tokyo, Japan., [3]Blue Marble Space Institute of Science, Seattle, WA, 98104 USA

***25P-184** **Primordial Evolution by Linking Sequence Information and Vesicle Reproduction**

Akiko Baba[1], Keidai Sato[1], Shuna Asanuma[1], Ivo Henkys[1], Tomoko Kawahata[1], Ulf Olsson[2], Anna Wang[3], Masayuki Imai[1]

[1]Grad. Sch. Sci., Tohoku Univ., [2]Grad. Sch. Sci., Lund Univ., [3]Grad. Sch. Sci., New South Wales Univ.

25P-185 **Genetic properties influencing transcriptional variability**

Saburo Tsuru[1], Chikara Furusawa[1,2,3]

[1]Universal Biology Institute, Graduate School of Science, The University of Tokyo, Tokyo, Japan, [2]Department of Physics, Graduate School of Science, The University of Tokyo, Tokyo, Japan, [3]Center for Biosystems Dynamics Research, RIKEN, Osaka, Japan

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Synthetic biology & Artificial cells

***25P-186** **Optimizing the in vitro expression profile of central dogma-related proteins**

Chisato Nishizawa[1], Shunsuke Aburaya[2], Yuishin Kosaka[1], Kenji Sugase[1], Wataru Aoki[3]

[1]Graduate School of Agriculture, Kyoto University, Kyoto, Japan, [2]Medical Institute of Bioregulation, Kyushu University, Fukuoka, Japan, [3]Graduate School of Engineering, Osaka University, Osaka, Japan

***25P-187** **Characterization of ribosome biogenesis in vitro**

Yuishin Kosaka[1], Yumi Miyawaki[1], Megumi Mori[1], Shunsuke Aburaya[2], Chisato Nishizawa[1], Takeshi Chujo[3], Tatsuya Niwa[4], Takumi Miyazaki[1], Takashi Sugita[5], Hideki Taguchi[4], Kazuhito Tomizawa[3], Kenji Sugase[1], Mitsuyoshi Ueda[1], Wataru Aoki[6]

[1]Kyoto University, [2]Kyushu University, [3]Kumamoto University, [4]Tokyo Institute of Technology, [5]TechnoPro, Inc. TechnoPro R&D, Company, [6]Osaka University

***25P-188** **Light-Induced Control of Directional Movement in Chlamydomonas-Encapsulated Liposomes**

Hiromasa Shiraiwa, Koichiro Akiyama, Shunsuke Shiomi, Masahito Hayashi, Tomoyuki Kaneko

LaRC, FB, Grad. Sch. Sci. & Eng., Hosei Univ., Tokyo, Japan

***25P-189** **Construction of asymmetric lipid-protein membrane tension sensing system by using mechanosensitive channels**

Kotaro Baba, Koki Kamiya

Graduate School of Science and Technology, Gunma University, Gunma, Japan

25P-190 **Designing a reproduction cycle of vesicles coupled with artificial metabolic pathways**

Minoru Kurisu[1], Peter Walde[2], Masayuki Imai[1]

[1]Department of Physics, Graduate School of Science, Tohoku University, Sendai, Japan, [2]Department of Materials Science, ETH Zürich, Zürich, Switzerland

25P-191 **Dynamic Instability of Totally-synthetic Supramolecular Dipeptide Fibers upon Hybridization of Surfactant Micelles**

Ryou Kubota[1], Shogo Torigoe[1], Kazutoshi Nagao[1], Yuya Hamanaka[1], Itaru Hamachi[1,2]

[1]Graduate School of Engineering, Kyoto University, [2]JST ERATO

Poster Sessions

Genome biology

***25P-192** **Heterogeneity of Genomic Sequence within Population in Single Plaque of Influenza Virus Revealed by Revio analysis**

Kenji Tamao[1], Masayuki Su'etsugu[2], Hiroyuki Noji[1], Kazuhito Tabata[1]
[1]Appl.Chem., Grad.Sch.Eng., Univ. Tokyo, [2]Dept.Life. Sci., Col.Sci., Univ.Rikkyo

Computational biology: Bioinformatics

***25P-193** **Improving Protein Complex Prediction through the Generation of Multiple Decoy Structures using Docking Software and Aggressive Refinement by AlphaFold2**

Seiya Tanaka[1], Masaki Koyama[1], Hiroki Onoda[1,2], Leonard Chavas[1,2], George Chikenji[1]
[1]Nagoya University, [2]Synchrotoron Radiation Research Center

Computational biology: Molecular simulation

***25P-195** **Elucidating the Binding Pathway of 'Abltide' to Abl Kinase through Enhanced 2D Replica Exchange Molecular Dynamics Simulations**

Yichao Wu
Osaka University, WPI Premium Research Institute for Human Metaverse Medicine (WPI-PRIMe)

***25P-196** **Exploring Protein-Lipid Interactions in Membranes: A Coarse-Grained Perspective with Implicit Solvent Modeling**

Diego Ugarte[1,3,4], Shoji Takada[2], Yuji Sugita[1,3,4]
[1]RIKEN R-CCS, Kobe, Japan, [2]Kyoto University, Kyoto, Japan, [3]RIKEN BDR, Kobe, Japan, [4]RIKEN CPR, Saitama, Japan

***25P-197** **Investigating TDP43 Condensation and Contributions of Ions: A Multiscale Comparative Analysis of Coarse-Grained Models**

Yangyang Zhang[1], Cheng Tan[1], Yuji Sugita[1,2,3]
[1]RIKEN Center for Computational Science, Kobe, Japan, [2]RIKEN Cluster for Pioneering Research, Wako, Japan, [3]RIKEN Center for Biosystem Dynamics Research, Kobe, Japan

***25P-198** **Virtual alanine scan for entire sequence of SARS-CoV-2 main protease complexed with ensitrelvir**

Ayato Mizuno[1], Tomoki Nakayoshi[1,2], Koichi Kato[1,3], Eiji Kurimoto[1], Akifumi Oda[1,4]

[1]Faculty of Pharmacy, Meijo University, Aichi, Japan, [2]Graduate School of Information Sciences, Hiroshima City University, Hiroshima, Japan, [3]Faculty of Pharmaceutical Sciences, Shonan University of Medical Sciences, Kanagawa, Japan, [4]Institute for Protein Research, Osaka University, Osaka, Japan

***25P-199** **Simulation of Lipid Membranes and Their Interaction with Polystyrene**

Nora Kremer, Thorsten Koslowski

University of Freiburg

***25P-200** **Enhancing protein conformation sampling with coevolution**

Antoni Marciniak[1,2], Darko Mitrovic[1,2], Lucie Delemotte[1,2]

[1]KTH Royal Institute of Technology, [2]SciLifeLab

***25P-201** **Charge–Charge Interactions in Molecular Dynamics Simulations of Glycans, Glycosaminoglycans, and Lipopolysaccharides**

Denys Biriukov[1,2,3], Miguel Riopedre-Fernández[3], Hector Martinez-Seara[3]

[1]National Centre for Biomolecular Research, Faculty of Science, Masaryk University, Brno, Czech Republic, [2]Central European Institute of Technology, Masaryk University, Brno, Czech Republic, [3]Institute of Organic Chemistry and Biochemistry, Czech Academy of Sciences, Prague, Czech Republic

***25P-202** **Quantifying chromosome structural dynamical pathways during cell fate decision making process**

Xiakun Chu

Advanced Materials Thrust, Function Hub, The Hong Kong University of Science and Technology (Guangzhou), Nansha, Guangzhou, Guangdong 511400, China

***25P-203** **Physical determinants of multiphase organisation in protein/RNA condensates**

Pin Yu Chew[1], Jerelle A. Joseph[2], Rosana Collepardo-Guevara[1], Aleks Reinhardt[1]

[1]Yusuf Hamied Department of Chemistry, University of Cambridge, Cambridge, United Kingdom, [2]Department of Chemical and Biological Engineering, Princeton University, Princeton, New Jersey

Poster Sessions

***25P-204** **Molecular determinants of lipid selectivity of VPS13 lipid transport protein**

Thanchanok Chanachanvong
Thanchanok Chanachanvong, Puey Ounjai, Tanadet Pipatpolkai

***25P-205** **Ligand dependent conformational plasticity that guides substrate transport cycle of ABC transporters**

Sungho Bosco Han[1,2], Jim Warwicker[1], Hao Fan[2], Stephen Prince[1]
[1]The University of Manchester, Manchester, United Kingdom, [2]Agency for Science, Technology and Research (A*STAR), Singapore

25P-206 **Exploring 3D cell spreading in supramolecular hydrogels and dynamics-induced hydrogel surface reconfiguration through molecular simulations**

Tianjie Li, Chun Hon Lau, Yi Wang
Department of Physics, The Chinese University of Hong Kong, Shatin, N.T., Hong Kong, China

25P-207 **The role of computational approaches in uncovering mechanisms of ferroptotic cell death signal**

Karolina Mikulska-Ruminska
Faculty of Physics, Astronomy and Informatics, Nicolaus Copernicus University in Torun, Poland

25P-208 **Dimerization of APP-C99 using BE-ABMD simulations**

Shingo Ito[1], Yuji Sugita[1,2,3]
[1]RIKEN, Cluster for Pioneering Research, [2]RIKEN, Center for Computational Science, [3]RIKEN, Center for Biosystems Dynamics Research

25P-209 **Computer aided engineering of nonstandard biotechnological enzyme – nitrile hydratase case**

Lukasz Peplowski
Department of Biophysics, Nicolaus Copernicus University, Torun, Poland

25P-210 **Why bestatin inhibitor prefers human carnosinase II (CN2) to human carnosinase I (CN1): Simulation study.**

Borvornwat Toviwek
Department of Chemistry, Faculty of Science, Kasetsart University, Chatuchak, Bangkok, 10900, Thailand

25P-211 **Computational and Biochemical Studies on the Molecular Interactions Between Melanopsin and its AntagonistsC**

Ruisi Zou[1], Kohei Obayashi[2], Hisao Tsukamoto[2], Toshifumi Mori[1,3]

[1]Interdisciplinary Graduate School of Engineering Sciences, Kyushu University, [2]Department of Biology, Graduate School of Science, Kobe University, [3]Institute for Materials Chemistry and Engineering, Kyushu University

25P-212 **Atom Filtering Algorithm and GPU-Accelerated Calculation of Simulation Atomic Force Microscopy Images**

Romain Amyot[1,2], Noriyuki Kodera[1], Holger Flechsig[1]

[1]WPI-NanoLSI, Kanazawa University, Kanazawa, Japan, [2]JSPS International Research Fellow

25P-213 **Small GTPase Ran: exploring nucleotide-specific conformations**

Erika Balog[1], Janka Czigleczki[1], Balint Dudas[2], Pedro Tulio de Resende Lara[3], David Perahia[4], Hyunbum Jang[5], Ruth Nussinov[5,6]

[1]Department of Biophysics and Radiation Biology, Semmelweis University, Budapest, Hungary, [2]Dept of Physics and Astronomy, Faculty of Maths and Physical Sciences, University College London, London, UK, [3]Department of Medical Genetics and Genomic Medicine, School of Medical Sciences, University of Campinas-UNICAMP, Campinas, Brazil, [4]Laboratoire et Biologie et Pharmacologie Appliquée, Ecole Normale Supérieure Paris-Saclay, Gif-sur-Yvette,France, [5]Computational Structural Biology Section, Frederick National Laboratory for Cancer Research in the Cancer Innovation Laboratory, National Cancer Institute, Frederick, MD, USA, [6]Department of Human Molecular Genetics and Biochemistry, Sackler School of Medicine, Tel Aviv University, Tel Aviv, Israel

25P-214 **Large-scale coarse-grained MD simulations for heterogeneous biomolecular systems by efficient parallelization**

Jaewoon Jung[1,2], Cheng Tan[1], Yuji Sugita[1,2,3]

[1]RIKEN R-CCS, [2]RIKEN CPR, [3]RIKEN BDR

25P-215 **Molecular dynamics simulation of amyloid-β aggregates**

Hisashi Okumura[1,2,3], Satoru G. Itoh[1,2,3]

[1]Exploratory Research Center on Life and Living Systems, [2]Institute for Molecular Science, [3]Graduate Institute for Advanced Studies

Poster Sessions

Computational biology: Biological modeling and simulation

***25P-216** **Mathematical model of glioma cell migration and deformation dependent on adhesion dynamics to extracellular matrix**

Haruna Tagawa[1], Daisuke Kanematsu[2], Asako Katsuma[2], Naoyuki Inagaki[1], Yonehiro Kanemura[2], Yuichi Sakumura[1]

[1]Nara Institute of Science and Technology, Nara, Japan, [2]National Hospital Organization Osaka National Hospital, Osaka, Japan

***25P-217** **Reassessing the Exon-Foldon correspondence using Frustration Analysis**

Ezequiel Alejandro Galpern[1], Hana Jaafari[2], Carlos Bueno[2], Peter G. Wolynes[2], Diego U. Ferreiro[1]

[1]Protein Physiology Lab, Instituto de Química Biológica de la Facultad de Ciencias Exactas y Naturales, CONICET - Universidad de Buenos Aires, C1428EGA, Buenos Aires, Argentina, [2]Center for Theoretical Biological Physics, Rice University, Houston, TX 77005

***25P-218** **Computational study of the agonism/antagonism effect of small molecules to toll-like receptor (TLR) 7**

Ruitao Jin, Sitong He, Ben Corry

Australian National University

***25P-219** **Torsion Angles to Map Protein Conformational Changes**

Katie Blaze O'Flynn[1], Helen Ginn[1,2]

[1]Deutsches Elektronen-Synchrotron DESY, Hamburg, Germany, [2]University of Hamburg, Germany

***25P-220** **Simulating three dimensional epithelial monolayer tissue deformation using cell center model**

Tomohiro Mimura, Yasuhiro Inoue

Department of Micro Engineering, Graduate School of Engineering, Kyoto University, Kyoto, Japan

Tuesday, June 25

***25P-221** **Development and validation of novel anticancer drugs against protein kinase D2**

Ahmed Shemy[1], Olivia Appelmans[1,3], Lauren Voets[2], Johan Van Lint[3], Wim De Borggraeve[2], Arnout Voet[1]

[1]KU Leuven, Department of Chemistry, Biochemistry, Molecular and Structural Biology, Celestijnenlaan 200G - box 2403, B-3001 Leuven, Belgium, [2]KU Leuven, Department of Chemistry, Molecular Design and Synthesis, Celestijnenlaan 200F - box 2404, B-3001 Leuven, Belgium, [3]KU Leuven, Department of Cellular and Molecular Medicine, Laboratory of Protein Phosphorylation and Proteomics, O&N I Herestraat 49 - box 901, B-3000 Leuven, Belgium

***25P-222** **An investigation of the molecular mechanisms underpinning the aggregation of POR-BT isomers within membranes using molecular dynamics simulations**

Manish Kesherwani[1], Qian Wu[1], Masayasu Taki[1], Yoshiki Tanaka[2], Quan Manh Phung[1], Sawako Enoki[3], Yasushi Okada[3,4,5,6], Shigehiro Yamaguchi[1,2,9], Florence Tama[1,7,8]

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25P-223 **Membrane morphology of Clathrin-Mediated Endocytosis**

Suguru Ushioda, Masashi Tachikawa

Tachikawa Lab, Faculty of Science, Yokohama City Univ.

25P-224 **Novel Dengue Vaccine Development – A Multiscale Simulation Study**

Jan K. Marzinek[1], Raghuvamsi Palur[1], Peter Bond[1,2]

[1]Bioinformatics Institute (A*STAR), Singapore, [2]Department of Biological Sciences, National University of Singapore, Singapore

25P-225 **Navigating Bio-Systems Through A Deep Learnt Lens-Scape of Multiscale Analytics**

Haibin Su

The Hong Kong University of Science and Technology

Poster Sessions

25P-226 **Exploring intermediate states along binding of inhibitors to protein kinases using large-scale molecular dynamics simulations**

Ai Shinobu[1,2], Suyong Re[3], Hiraku Oshima[1,4], Yuji Sugita[1,5,6]

[1]RIKEN Center for Biosystems Dynamics Research, Japan, [2]WPI Premium Research Institute for Human Metaverse Medicine, Osaka University, Japan, [3]Artificial Intelligence Center for Health and Biomedical Research, National Institutes of Biomedical Innovation, Health, and Nutrition, Japan, [4]Graduate School of Science, University of Hyogo, Japan, [5]RIKEN Cluster for Pioneering Research, Japan, [6]RIKEN Center for Computational Science, Japan

Computational biology: machine learning for molecules or cell systems

***25P-227** **Prediction of Olfactory Perception From Learned Molecular Representation**

Zi Hui Lau[1], Tetsuya J. Kobayashi[2]

[1]Department of Electrical Engineering and Information Systems (EEIS), Graduate School of Engineering, The University of Tokyo, Bunkyo-ku, Tokyo, 113-8656, Japan, [2]Institute of Industrial Science (IIS), The University of Tokyo, Meguro-ku, Tokyo, 153-8505, Japan

***25P-228** **Label-free detection of senescent cells using Raman imaging and machine learning**

Hiroko Kodama[1], Ren Shibuya[2], Hiroaki Takahashi[2], Shinji Kajimoto[1,2,3], Takakazu Nakabayashi[1,2]

[1]Faculty of Pharmaceutical Science, Tohoku Univ., [2]Graduate School of Pharmaceutical Science, Tohoku Univ., [3]JST PRESTO

Mathematical & Theoretical biology

***25P-229** **Theory for Optimal Estimation and Control with Resource Limitations in Biological Information Processing**

Takehiro Tottori[1,2], Tetsuya Kobayashi[2]

[1]Laboratory for Neural Computation and Adaptation, RIKEN Center for Brain Science, [2]Institute of Industrial Science, The University of Tokyo

***25P-230** **Framework for efficient drug selection using machine learning**

Shunta Nonaga[1], Koji Tabata[2,3], Tamiki Komatsuzaki[1,2,3,4]

[1]Graduate School of Chemical Sciences and Engineering, Hokkaido University, Sapporo, Japan, [2]Research Center of Mathematics for Social Creativity, Research Institute for Electronic Science, Hokkaido University,, [3]Institute for Chemical Reaction Design and Discovery (WPI-ICReDD), Hokkaido Sapporo, Japan,, [4]The Institute of Scientific and Industrial Research, Osaka University, Osaka, Japan

***25P-231** **THEORETICAL STUDY ON PARTIAL AND TOTAL ADAPTATION OF MULTIPLE TISSUES UNDER FORCE INTERACTION**

Ryunosuke Suzuki, Taiji Adachi

Kyoto University, Kyoto, Japan

25P-232 **Stoichiometric constraints alter thermodynamic fates of growing systems**

Atsushi Kamimura[1], Yuki Sughiyama[2], Tetsuya J. Kobayashi[1]

[1]The University of Tokyo, [2]Tohoku University

25P-233 **Information Geometry of Equilibrium and Nonequilibrium Chemical Reaction Networks**

Tetsuya J. Kobayashi[1,2,3], Dimitri Loutchko[1], Atsushi Kamimura[1], Shuhei Horiguchi[2], Yuki Sughiyama[1]

[1]Institute of Industrial Science, The University of Tokyo, Japan, [2]Department of Mathematical Informatics, Graduate School of Information Science and Technology, The University of Tokyo, Japan, [3]Universal Biology Institute, The University of Tokyo, Japan

Ecology & Environment

***25P-234** **Mutual Reinforcement Between Spatial Structure and Species Coexistence in a Living Soil Model**

Riz Fernando Noronha, Kim Sneppen, Kunihiko Kaneko

Niels Bohr Institute, Copenhagen, Denmark

Poster Sessions

Nonequilibrium state & Biological rhythm

***25P-235** **Mechanism of scaling behavior of an intracellular reaction-diffusion wave in cell-size space**

Sakura Takada[1], Shunshi Kohyama[2], Natsuhiko Yoshinaga[3,4], Nobuhide Doi[1], Kei Fujiwara[1]

[1]Dept. of Biosci. and Info., Keio Univ., Yokohama, Japan, [2]Max Planck Inst. of Biochem., Martinsried, Germany, [3]AIMR, Tohoku Univ., Sendai, Japan, [4]MathAM-OIL, AIST, Sendai, Japan

25P-236 **Chaotic Oscillations of Sarcomeres within Cardiomyocytes Induced by Calcium Fluctuations: Identification and Physiological Significance of 'S4C'**

Seine A. Shintani[1,2,3]

[1]Department of Biomedical Sciences, College of Life and Health Sciences, Chubu University, [2]Center for Mathematical Science and Artificial Intelligence, Chubu University, [3]Institute for Advanced Research, Nagoya University, Nagoya

Measurements

***25P-237** **Quantitative correspondence between drug-response curves in the REMA test measured fluoromerically and colourimetrically**

Alexander V. Sychev[1], Anastasia Lavrova[2], Eugene Postnikov[1]

[1]Kursk State University, [2]Saint-Petersburg State Research Institute of Phthisiopulmonology

***25P-238** **Development of a dual-luciferase indicator for 'Mix-and-read' detection of Cu2+**

Ti Wu[1,2], Mitsuru Hattori[1], Takeharu Nagai[1,2]

[1]SANKEN, Osaka University, Japan, [2]Graduate school of Pharmaceutical Scinences, Osaka University, Japan

***25P-239** **Combined analysis of static and dynamic cell-mechanics with unbiased transcriptomics for thousands of single cells**

Akifumi Shiomi[1,3], Taikopaul Kaneko[2], Kaori Nishikawa[1], Dino Di Carlo[3,4,5,6], Hirofumi Shintaku[1,2]

[1]Cluster for Pioneering Research, RIKEN, Japan, [2]Institute for Life and Medical Sciences, Kyoto University, Japan, [3]Department of Bioengineering, University of California, USA, [4]California NanoSystems Institute, USA, [5]Jonsson Comprehensive Cancer Center, USA, [6]Department of Mechanical Engineering, University of California, Los Angeles, USA

25P-240 **Nanoendoscopy-AFM measurement of nuclear stiffness in living different metastatic cancer cells**

Takehiko Ichikawa[1], Kundan Sivashanmugan[2], Takeshi Shimi[1,3], Kojiro Ishibashi[3], Takeshi Yoshida[1,4], Akiko Kudo[1], Eishu Hirata[1,3], Rikinari Hanayama[1,4], Hiroshi Kimura[5,6], Takeshi Fukuma[1,7]

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25P-241 **Enzyme reaction measurement using graphene biosensors and its application to SARS-CoV-2 detection**

Takao Ono[1], Yohei Watanabe[2], Shin-ichi Nakakita[3], Yasushi Kanai[1,4], Naruto Miyakawa[5], Ayumi Shinagawa[5], Shota Ushiba[5], Shinsuke Tani[5], Yasuo Suzuki[6], Masahiko Kimura[5], Daichi Chiba[1,4,7,8], Kazuhiko Matsumoto[1]

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25P-242 **Construction 4 channels polarization-dependent fluorescence correlation spectroscopy for detection of protein interaction.**

Masataka Kinjo, Riku Ando, Akira Kitamura

Hokkaido University, Sapporo, Japan.

Bioimaging

***25P-243** **Development of luminescent glucose sensor and its application**

Tanaka Rikuto[1], Sugiura Kazunori[2], Hattori Mitsuru[2], Nagai Takeharu[1,2]

[1]Graduate School of Frontier Biosciences, Osaka University, [2]SANKEN, Osaka Univeristy

***25P-244** **Quantitative chemical and physical imaging of heterochromatin in a living cell using Raman-Brillouin microscopy**

Masato Machida[1], Atsushi Shibata[2], Kentaro Fujii[3], Shinji Kajimoto[1,4], Takakazu Nakabayashi[1]

[1]Graduate School of Pharmaceutical Sciences, Tohoku University, [2]Division of Molecular Oncological Pharmacy, Keio University Faculty of Pharmacy, [3]QST, [4]JST PRESTO

Poster Sessions

***25P-245** **Investigating the Mechanical Properties and Dynamics of Focal Adhesions in Living Cells by Nanoendoscopy-AFM Technique**

Alam Mohammad Shahidul, Tetsuya Shirokawa, Takehiko Ichikawa, Clemens M. Franz, Takeshi Fukuma

Nano Life Sicence Institute, Kanazawa University

***25P-246** **Native molecular properties of full-length SARS-CoV-2 Open Reading Frame 6 (ORF6) protein observed using HS-AFM**

Goro Nishide[1], Keesiang Lim[2], Maiki Tamura[3], Akiko Kobayashi[4], Qingci Zhao[3], Masaharu Hazawa[2,4], Toshio Ando[2], Noritaka Nishida[3], Richard W. Wong[2,4]

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***25P-247** **Shannon entropy and complexity in describing and visualizing the chemical diversity of surrounding cells by mass spectrometry imaging techniques**

Lili Xu[1], Manabu Machida[2], Tomoaki Kahyo[1], Mitsutoshi Setou[1]

[1]Hamamatsu University School of Medicine, Hamamatsu, Japan, [2]Kindai University, Higashi-Hiroshima, Japan

***25P-248** **Label-free detection of supersulfides ina living cell using Raman microscopy**

Keisuke Koga[1], Shinji Kajimoto[1,2], Shinya Tahara[1], Tomohiro Konno[1], Takakazu Nakabayashi[1]

[1]Graduate School of Pharmaceutical Sciences, Tohoku University, [2]JST PRESTO

***25P-249** **Mechanical properties of human platelets in biochemical confinement**

Vincent Gidlund, Jan Seifert, Johanna Rodriguez, Carmela Rianna, Tilman E. Schäffer

Institute of Applied Physics, University of Tübingen, Tübingen, Germany

Tuesday, June 25

***25P-250** **Oblique Line Scan Illumination Enables Expansive, Accurate and Sensitive Single Protein Measurements in Solution and in Living Cells**

Amine Driouchi[1], Mason Bretan[1], Brynmor Davis[1], Alec Heckert[1], Markus Seeger[1], Maité Bradley Silva[1], William Forrest[1], Jessica Hsiung[1], Jiongyi Tan[1], Hongli Yang[1], Eric Betzig[2], Xavier Darzacq[2], Russ Berman[1], Daniel Anderson[1]

[1]Eikon Therapeutics, [2]University of California Berkeley

***25P-251** **Characterization of a novel membrane voltage sensor in the bacterial flagellar type III export apparatus**

Sakata Kai[1], Minamino Tohru[2], Morimoto Yusuke[3]

[1]Grad. Sch. Comp. Sci. and Sys. Eng., Kyushu Inst. Tech., Fukuoka, Japan, [2]Grad. Sch. Front. Biosci., Osaka Univ., Osaka, Japan, [3]Dept. Phys. and Info. Eng., Fac. Comp. Sci. and Sys. Eng., Kyushu Inst. Tech., Fukuoka, Japan

25P-252 **Atomic force microscopy (AFM)-based nanoindentation of the RSJ2 Ralstonia phage**

Udom Sae-Ueng[1], Chooseel Bunsuwansakul[1], Namthip Phironrit[1], Christian Nehls[2,3]

[1]National Science and Technology Development Agency, Pathum Thani, Thailand, [2]Research Center Borstel - Leibniz Lung Center, Borstel, Germany, [3]Centre for Structural Systems Biology, Hamburg, Germany

25P-254 **Scanning-free functional Fluorescence Microscopy Imaging Toward Spatial Mapping of Biomolecular Information in Live Cell**

Sho Oasa[1], Aleksandar Krmpot[2,3], Stanko Nikolic[2,3], Andrew Clayton[4], Igor Tsigelny[5], Jean-Pierre Changeux[6], Lars Terenius[1], Milivoj Belic[3], Rudolf Rigler[7], Vladana Vukojevic[1]

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25P-255 **Characteristics of extracellular collagen in cartilage revealed by polarization-resolved second harmonic generation imaging**

Ming-Xin Lee

Institute of Translational Medicine and New Drug Development

Poster Sessions

Bioengineering

***25P-256** **Exploring Biological Changes in Whole and Serum Blood of Healthy and Diabetic Patients Using Drying Droplets**

Anusuya Pal[1], Amalesh Gope[2], Miho Yanagisawa[1]

[1]Graduate School of Arts and Sciences, The University of Tokyo, Tokyo, Japan, [2]Department of Linguistics and Language Technology, Tezpur University, Tezpur, Assam, India

***25P-257** **Fabrication of a Nanobody-based Ratiometric Bioluminescent Immunosensor for Point-of-care Testing**

Yinghui Yang[1], Akihito Inoue[1], Takanobu Yasuda[2], Hiroshi Ueda[2], Bo Zhu[2], Tetsuya Kitaguchi[2]

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***25P-258** **High-throughput nano/micro biological particle analyzer with unsupervised denoising for enhanced sensitivity**

Yuichiro Iwamoto[1], Benjamin Salmon[2], Yusuke Yoshioka[3], Bin Xu[1], Ryosuke Kojima[1], Alexander Krull[2], Sadao Ota[1]

[1]The University of Tokyo, Tokyo, Japan, [2]University of Birmingham, Birmingham, United Kingdom, [3]Tokyo Medical University, Tokyo, Japan

***25P-259** **Multicolor autonomous bioluminescence imaging based on bacterial bioluminescence system**

Subhan Hadi Kusuma[1,2], Mitsuru Hattori[2], Takeharu Nagai[1,2]

[1]Graduate School of Frontier Bioscience, Osaka University, Japan, [2]SANKEN, Osaka University, Japan

25P-260 **Isolation of novel fluorogenic RNA aptamers via affinity- and fluorescence-based in vitro selection**

Ryo Iizuka[1], Keisuke Ito[1], Tomotaka Tayama[1], Sotaro Uemura[1,2]

[1]Department of Biological Sciences, Graduate School of Science, The University of Tokyo, [2]Core Research for Evolutional Science and Technology (CREST), Japan Science and Technology Agency

Tuesday, June 25

Crystal growth & Crystallization technique

***25P-261** **Protein – calixarene crystal engineering**

Niamh Maria Mockler[1], Kiefer Ramberg[1], Colin Raston[2], Peter Crowley[1]
[1]School of Biological and Chemical Sciences, University of Galway, H91 TK33, Galway, Ireland, [2]Flinders University, Adelaide, Australia.

***25P-262** **Investigation of crystallization of crystallized protein expressed using E. coil**

Yume Kosuge, Koki Kamiya
Graduate School of Science and Technology, Gunma University, Kiryu, Gunma, Japan

Virus structure, function, SARS-CoV-2

***25P-263** **Study of the binding site dynamics, druggability and cryptic pocket formation in different human coronaviruses' main protease (Mpro)**

Ahmed Adel Ezat
Biophysics Department, Faculty of Science, Cairo University, 21613 Giza, Egypt

***25P-264** **Cryo-EM structure of the Borna disease virus 1 RNA-free nucleoprotein complex**

Shinya Goto[1,2], Yuya Hirai[3], Keizo Tomonaga[4,5,6], Takeshi Noda[1,2], Masayuki Horie[7,8], Yukihiko Sugita[1,2,9]
[1]Laboratory of Ultrastructural Virology, Institute for Life and Medical Sciences, Kyoto University, [2]Laboratory of Ultrastructural Virology, Graduate School of Biostudy, Kyoto University, [3]Department of Biology, Osaka Dental University, [4]Laboratory of RNA viruses, Institute for Life and Medical Sciences, Kyoto University, [5]Laboratory of RNA Viruses, Graduate School of Biostudy, Kyoto University, [6]Laboratory of Molecular Virology, Graduate School of Medicine, Kyoto University, [7]Laboratory of Veterinary Microbiology, Graduate School of Veterinary Science, Osaka Metropolitan University, [8]Osaka International Research Center for Infectious Diseases, Osaka Metropolitan University, [9]Hakubi Center for Advanced Research, Kyoto University

25P-266 **Unraveling the Dynamics of SARS-CoV-2 Spike: From Glycosylation States to Cryptic Pockets and Antibody Binding**

Mohd Firdaus Samsudin[1], Lorena Zuzic[1], Palur Raghuvamsi[1,2], Aishwary Shivgan[1], Nikhil Tulsian[2], Himanshi Chawla[3], Joel Allen[3], Max Crispin[3], Paul MacAry[4], Ganesh Anand[5], Peter Bond[1,2]
[1]Bioinformatics Institute, A*STAR, Singapore, [2]Dept. of Biological Sciences, NUS, Singapore, [3]School of Biological Sciences, University of Southampton, Southampton, UK, [4]Life Sciences Institute, NUS, Singapore, [5]Dept. of Chemistry, The Pennsylvania State University, PA, USA

Poster Sessions

Mechanosensing and Mechanobiology, Biological Temperature

***25P-267** **Development of a high-frequency focused ultrasound system for applying noninvasively localized mechanical stimulation to cells in culture**

Natsumi Fujiwara, Shao Ying Tan, Akira Nagakubo, Masahiro Kino-oka, Hirotsugu Ogi

Graduate School of Engineering, Osaka University, Japan

25P-268 **Force transmission by retrograde actin flow-induced dynamic stretching of Talin**

Sawako Yamashiro[1,2], David Rutkowski[3], Kelli Ann Lynch[3,4], Ying Liu[1], Dimitrios Vavylonis[3], Naoki Watanabe[1,2]

[1]Laboratory of Single-Molecule Cell Biology, Kyoto University Graduate School of Biostudies, Kyoto, Japan, [2]Department of Pharmacology, Kyoto University Graduate School of Medicine, Kyoto, Japan, [3]Department of Physics, Lehigh University, Bethlehem, PA, USA, [4]University of South Florida, Tampa, FL, USA

25P-269 **Modulating E-Cadherin Engagement to Alter Cell Junctional Tension in Spheroids**

Seongho Kim, Isaac T.S. Li

Department of Chemistry, The University of British Columbia, Canada

Biophysics of disease

***25P-270** **Opportunities of Raman spectroscopy in pulmonary arterial hypertension**

Elvin Suleyman oglu Allakhverdiev[1], Olga Slatinskaya[2], Oleg Rodnenkov[1], Tamila Martynyuk[1], Georgy Maksimov[2]

[1]National Medical Research Center of Cardiology named after academician E.I. Chazov of Ministry of Health of the Russian Federation, [2]Faculty of Biology, Department of Biophysics Lomonosov Moscow State University, Moscow, Russian Federation

***25P-271** **Exploring Dapagliflozin Therapy Effects on Nanomechanics and Morphology of Red Blood Cells in Type I Diabetes Mellitus**

Patrycja Lidia Twardawa[1,2], Bartłomiej Matejko[3], Agata Kubisiak[1,2], Katarzyna Cyranka[3,4], Tomasz Klupa[3,4], Marta Targosz-Korecka[1]

[1]Jagiellonian University, Faculty of Physics, Astronomy and Applied Computer Science, M. Smoluchowski Institute of Physics, Kraków, Poland, [2]Jagiellonian University, Doctoral School of Exact and Natural Sciences, Kraków, Poland, [3]University Hospital in Kraków, Kraków, Poland, [4]Jagiellonian University Medical College, Department of Metabolic Diseases, Kraków, Poland

25P-272 **Opposite effects of extracellular chloride and pH on closely related ClC-6 and ClC-7 transporters suggest non-overlapping function in endo-lysosomes**

Maria Antonietta Coppola[1], Paola Gavazzo[1], Ilaria Zanardi[1], Abraham Tettey-Matey[1], Antonella Liantonio[2], Paola Imbrici[2], Peying Fong[3], Michael Pusch[1]

[1]Institute of Biophysics, CNR, Genoa, Italy, [2]Department of Pharmacy–Drug Sciences, University of Bari "Aldo Moro", Bari, Italy, [3]Department of Anatomy and Physiology, Kansas State University College of Veterinary Medicine, Manhattan, KS, USA

Miscellaneous topics

***25P-273** **Structural and Magneto Absorption Study of Hard and Soft Ferrite**

Usha Praveena V J

Department of Physics, St. Francis College for Women, Hyderabad-500 016, Telangana, India

25P-274 **FUNCTIONALIZED CNT AND ACTIVATED CARBON**

Shikha Chander[1], Meenu Mangal[2]

[1]St. Francis Degree & Postgraduate Women's College, Begumpet 500016, Hyderabad, Telangana, India, [2]Poddar International College, Mansarovar, Jaipur-302020, Rajasthan, India,

Single Molecule Biophysics

25P-275 **Quantifying ligand binding kinetics in G-quadruplex DNA with fluorescence lifetime correlation analyses**

Chao-Han Cheng, Chih-Chieh Ko, Yong-Zhan Hong, Chung-Chieh Wu

Department of Applied Chemistry, National Pingtung University, Pingtung, Taiwan

Poster Sessions

Cell biology: Motility

25P-276 **Inference of cellular traction forces using temporal information**

Kazuko Hamaoka, Hirokazu Tanimoto
Grad. Sch. Nanobioscience, Yokohama City Univ.

Computational biology: Molecular simulation

25P-277 **Secondary Proton Transfer in the Qo Site of Cytochrome bc1**

Guilherme M. Arantes, Sofia Camilo
Department of Biochemistry, Instituto de Quimica, Universidade de Sao Paulo, Brazil

Computational biology: Biological modeling and simulation

25P-278 **Phase-field model of Dictyostelium fruiting body formation**

Seiya Nishikawa[1], Satoshi Kuwana[1], Gen Honda[1,2], Satoshi Sawai[1,3], Shuji Ishihara[1,3]
[1]Graduate School of Arts and Sciences, University of Tokyo, [2]Komaba Institute for Science, University of Tokyo, [3]Universal Biology Institute, University of Tokyo

25P-279 **Topography-mediated cell communication**

Aleksandra Ardaševa[1], Varun Venkatesh[1], Daiki Matsunaga[2], Shinji Deguchi[2], Amin Doostmohammadi[1]
[1]Niels Bohr Institute, University of Copenhagen, Denmark, [2]Division of Bioengineering, Graduate School of Engineering Science, Osaka University, Japan

Mathematical & Theoretical biology

25P-280 **Latecomer Killing: Elaborate Response in Yeast Communities**

Tetsuhiro S. Hatakeyama[1], Kunihiko Kaneko[2], Kunihiro Ohta[3], Miki Tamura[3], Arisa Oda[3]
[1]Earth Life Science Institute (ELSI), Tokyo Institute of Technology, [2]Niels Bohr Institute, Copenhagen University, [3]Department of Basic Science, The University of Tokyo

Biophysics of disease

25P-281 **Reinstating heart rate variability improves cardiac output in heart failure - novel insights from proteomics**

David Crossman[1], George Guo[1], Julia Shanks[1], Jizhong Bai[1], Martin Middleditch[2], Gus Grey[1], Julian Paton[1], Rohit Ramchandra[1]

[1]Manaaki Manawa—The Centre for Heart Research, Department of Physiology, University of Auckland, 85 Park Road, Grafton, Auckland, 1023, New Zealand, [2]Auckland Science Analytical Services, Faculty of Science, University of Auckland, 23 Symonds Street, Auckland Central, Auckland, 1010, New Zealand.

25P-282 **Development of the two-fingered microhand and micro fluidic system for measuring the mechanical properties of cell**

Masaru Kojima[1], Masahiro Totani[1], Masahiro Kawakami[1], Toshihiko Ogura[2], Tatsuo Arai[3]

[1]Osaka University, [2]Tohoku University, [3]The University of Electro-Communications

25P-283 **Targeting Retinal Angiogenesis: Potential of AT11-L0 Aptamer for Drug Delivery**

David Moreira[1,2], Jessica Lopes-Nunes[2], Fátima Santos[3], Maria Oliveira[4,5], António Paulo[4,5], Maria Campello[4,5], Carla Cruz[1,2], Cândida Ascensão Teixeira Tomaz[1,2]

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Poster Sessions Wednesday, June 26

Presentation time is organized by whether the last part (suffix) of Poster Session number is odd/even.
Odd number: 13:50-14:50 Even number: 14:50-15:50

Abstracts marked with * in the abstract number eligible for IUPAB2024 Student and Early Career Researcher Poster Award voting
Ex) *25P-999

Protein: Structure

***26P-001** **Unravelling Protein Complexity with 3Di-based Structural Entropy**
Zecheng Zhang, Qian-Yuan Tang
Hong Kong Bapist University

***26P-002** **Frustration-Fluctuation Correspondence in Enzymes**
Yuxiang Zheng, Qian-Yuan Tang
Hong Kong Baptist University

***26P-003** **Cryo-EM Structure of the hERG Channel Complexed with a K+ Channel Blocker**
Yasuomi Miyashita[1,2], Toshio Moriya[3], Masato Kawasaki[3], Satoshi Ogasawara[2], Naruhiko Adachi[3], Satoshi Yasuda[2], Tetsuichiro Saito[1], Toshiya Senda[3], Takeshi Murata[2]
[1]Developmental Biology, Graduate School of Medicine, Chiba University, [2]Membrane Protein Research Center, Graduate School of Science, Chiba University, [3]Structural Biology Research Center, Institute of Materials Structure Science, High Energy Accelerator Research Organization

Wednesday, June 26

***26P-004** **Crystal Structure of Pectocin M1 from Pectobacterium carotovorum: Unveiling Diverse Conformations and Binding Interactions during the Initial Step of Pectocin M Uptake through the Ferredoxin Uptake System**

Nawee Jantarit[1,2], Hideaki Tanaka[1], Genji Kurisu[1,2]

[1]Protein Crystallography Laboratory, Institute for Protein Research, Osaka University, Suita, Osaka Japan, [2]Department of Macromolecular Sciences, Graduate School of Science, Osaka University, Toyonaka, Osaka, Japan

***26P-005** **Symmetry Matched Protein – Macrocycle Assembly**

Colin Wren[1], Ronan J. Flood[1], Niamh M. Mockler[1], Martin Savko[2], Qiang Shi[3], Peter B. Crowley[1]

[1]School of Biological and Chemical Sciences, University of Galway, H91 TK33, Galway, Ireland, [2]Synchrotron SOLEIL, L'Orme des Merisiers, Saint-Aubin, 91191, Gif-sur-Yvette, France, [3]Advanced Materials Institute, Qilu University of Technology, Shandong Academy of Sciences, Jinan, 250014 P. R. China

***26P-006** **Structure of Francisella tularensis subsp. novicida Cas9 in the catalytically poised state**

Shinsuke Higashiyama, Ryoya Nakagawa, Hisato Hirano, Osamu Nureki

Department of Biological Sciences, Graduate School of Science, University of Tokyo, Tokyo, Japan

***26P-007** **Cryo-EM structure of a photosystem I supercomplex from oleaginous green alga Coccomyxa subellipsoidea**

Pi-Cheng Tsai, Fusamichi Akita, Jian-Ren Shen

Research Institute for Interdisciplinary Science, Okayama University, Okayama, Japan

***26P-008** **Structural analysis of the photosystem I-light harvesting I supercomplex from a cryptophyte alga Rhodomonas sp.**

Wenyue Zhang

Graduate school of natural science and technology & Research Institute for Interdisciplinary Science, Okayama University, Okayama, Japan.

***26P-009** **Structural analysis of brain-associated proteins in complex with novel PET radiotracers**

Kaede Goto[1], Junta Tomono[1], Shozo Furumoto[2], Nobuyuki Okamura[3], Ryuichi Harada[3], Takeshi Yokoyama[1], Yoshikazu Tanaka[1]

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Poster Sessions

26P-010 **Cryo-EM structure of the zinc-activated channel (ZAC) in the Cys-loop receptor superfamily**

Fei Jin[1], Yi-Yu Lin[2], Ru-Chun Wang[2], Yimeng Zhao[1], Cheng Shen[1], Danqi Sheng[1], Muneyoshi Ichikawa[1], Ye Yu[2], Jin Wang[2], Motoyuki Hattori[1]
[1]Fudan University, Shanghai, China, [2]China Pharmaceutical University, Nanjing, China

26P-011 **The conformation and its thermal stability of antibiotic peptide alamethicin in alcohol solution studied by NMR**

Yoshinori Miura
Center for Advanced Instrumental Analysis, Kyushu University

26P-012 **A novel blue-carotenoprotein from sponge**

Momose Kuroda[1], Yui Fujita[1], Momoko Ishida[1], Satoko Matsunaga[1], Mitsuru Jimbo[2], Takeshi Yokoyama[3], Yoshikazu Tanaka[3], Ryuichi Sakai[4]
[1]NIT, Hakodate College, [2]Kitasato Univ., Sch. Marine Biosci., [3]Grad. Sch. Life Sci., Tohoku Univ., [4]Fac.& Grad. Sch. Fish. Sci., Hokkaido Univ.

26P-013 **Structure-activity Relationship of a novel enzyme derived from marine Streptomyces**

Takumi Oshiro[1], Shuta Uehara[1], Yoshikazu Tanaka[2], Takuya Ito[3], Yoshio Kodera[1,4], Takashi Matsui[1,4]
[1]Grad. Sch. Sci., Kitasato Univ., [2]Grad. Sch. Life Sci. Tohoku Univ., [3]Fac. of Pharm., Osaka Ohtani Univ., [4]Center for Disease Proteomics, Sch. Sci., Kitasato Univ.

Protein: Structure & Function

***26P-015** **Proton conduction mechanism in FO rotary motor studied by quantum molecular dynamics simulation**

Yukinari Kamiyama[1], Dan Parkin[2], Junichi Ono[2], Yoshifumi Nishimura[2], Hiromi Nakai[1,2], Mitsunori Takano[1,2]
[1]Grad. Scl. Adv. Sci. & Eng., Waseda Univ., Tokyo, Japan, [2]Waseda Res. Inst. for Sci. & Eng., Waseda Univ., Tokyo, Japan

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***26P-016** **Time-resolved crystallography for the study of a B12-dependent photoreceptor using X-ray free-electron lasers**

Ronald Rios Santacruz[1], Giorgio Schiro[1], David Leys[2], Nigel Scrutton[2], Tosha Takehiko[3], Kensuke Tono[3], Derren Heyes[2], Harshwardhan Poddar[2], Martin Weik[1]

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***26P-017** **Heterogeneity of Microtubule Lattices Revealed by Cryo-ET and Non-averaging Structural Analysis**

Hanjin Liu[1], Hiroshi Yamaguchi[2], Masahide Kikkawa[2], Tomohiro Shima[1]

[1]Graduated School of Science, The University of Tokyo, Japan, [2]Graduated School of Medicine, The University of Tokyo, Japan

***26P-018** **Structural-dynamics insight of an alligator-derived antimicrobial peptide, AsCATH5, in interaction with membrane mimetics as revealed by solution NMR and MD simulation**

Jeremia Oktavian Chrisnanto, Kohei Kano, Mitsuki Shibagaki, Tefera Dessalegn Abeje, Hirai Fumi, Yasuhiro Kumaki, Hiroyuki Kumeta, Tomoyasu Aizawa

Hokkaido University

***26P-019** **Discovery and structural characterization of novel pore-forming toxins**

Jana Susanne Anton, Fernando Meireles, Juan F. Bada, Maria J. Marcaida, Matteo Dal Peraro

Laboratory for Biomolecular Modeling, École polytechnique fédérale de Lausanne, Switzerland

***26P-020** **Functional annotation of Cysteine Post-Translational Modifications based on protein sequences and structures and development of a consolidated Cysteine database (CysDBase)**

Devarakonda Himaja, Dr. Debashree Bandyopadhyay

Birla Institute of Technology and Science, Hyderabad Campus , INDIA

Poster Sessions

***26P-021** **Crystal structure and proton transporting mechanism of viral heliorhodopsin, V2HeR3**

Ritsu Mizutori[1], Nipawan Nuemket[2,3], Shoko Hososhima[1], Sayaka Ohashi[1], Satoshi Tsunoda[1,4], Yuji Furutani[1,4], Oded Baja[5], Eriko Nango[3,6], Kota Katayama[1,4], Hideki Kandori[1,4]

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***26P-022** **Theoretical study on the photoactivation state of chloride pump NpHR using QM/MM Method**

Tomo Ejiri, Ryo Oyama, Shigehiko Hayashi

Department of Chemistry, Graduate School of Science, Kyoto University, Kyoto, Japan

***26P-023** **Investigating allosteric communication with ultrahigh-resolution X-ray crystallography**

Caitlin Emma Hatton, Pedram Mehrabi

Institute for Nanostructure and Solid-State Physics, Universität Hamburg, Hamburg, Germany

***26P-024** **Development of supramolecular micelles promoting oxidative protein folding under a crowded environment**

Mai Kitamura[1], Takahiro Muraoka[1,2]

[1]Graduate School of Engineering, Tokyo University of Agriculture and Technology, Tokyo, Japan, [2]Kanagawa Institute of Industrial Science and Technology, Kanagawa, Japan

***26P-025** **Insights into the Cytochrome c Oxidase proton pumping mechanism from constant-pH MD simulations**

Ines Domingos Silva Pires[1], António M. Baptista[2], Miguel Machuqueiro[1]

[1]BioISI - Biosystems and Integrative Sciences Institute, Faculdade de Ciências, Universidade de Lisboa, Campo Grande, Ed. C8, Lisboa, Portugal, [2]ITQB NOVA, Instituto de Tecnologia Química e Biológica António Xavier, Universidade Nova de Lisboa, Av. da República, EAN 2780-157 Oeiras, Portugal

***26P-026** **Mass photometry as a novel single molecule approach to study immunoglobulin binding protein (BiP) oligomerization and function**

Karina New[1], Miguel Lagos[1], Roi Asor[2], Zahra Alavi[3], Philipp Kukura[2], Christian Wilson[1]

[1]Faculty of Chemical and Pharmaceutical Sciences, University of Chile, Santiago, Chile, [2]Department of Chemistry, University of Oxford, Oxford, UK, [3]Seaver College of Science and Engineering, Loyola Marymount University, Los Angeles, USA

***26P-027** **Catalytic mechanism of the cytosolic θ type carbonic anhydrase from marine diatom Phaeodactylum tricornutum**

Hiroto Negoro[1,2], Hideaki Tanaka[1,2], Ginga Shimakawa[3], Hiroyasu Koteishi[1,2], Akihiro Kawamoto[1,2], Yusuke Matsuda[3], Genji Kurisu[1,2]

[1]Institute for Protein Research, Osaka University, [2]Department of Biotechnology, Graduate School of Engineering, Osaka University, [3]Department of Bioscience, School of Biological & Environmental Sciences, Kwansei Gakuin University

***26P-028** **Structure of nitric oxide reductase dimer revealed by single particle cryo-electron microscopy**

Ryohei Kawakami[1,2], Chai Gopalasingam[2], Hideki Shigematsu[3], Takehiko Tosha[1,2]

[1]Grad. Sch. Sci., Univ. Hyogo, Hyogo, Japan, [2]RIKEN SPring-8 Center, Hyogo, Japan, [3]JASRI Structural Biology, Hyogo, Japan

26P-029 **The glycation effect on structure and dynamics of human serum albumin**

Prin Tadawattana, Sirin Sittiwanitchai, Prapasiri Pongprayoon

Department of Chemistry, Faculty of Science, Kasetsart University, Chatuchak, Bangkok, 10900, Thailand

26P-030 **The crystal structures of Sau3AI with and without bound DNA suggest a self-activation-based DNA cleavage mechanism**

Feng Yu[2], Yahui Liu[1], Chunyan Xu[2], Huan Zhou[2], Weiwei Wang[2], Bing Liu[5], Yan Liu[1,6], Xiaojian Hu[3], Jianhua He[4]

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Poster Sessions

26P-031 **Mechanism of Formate Oxidation by NAD-dependent Formate Dehydrogenase: Computational Studies on Near-Attack Conformations**

Jiri Kozelka[1,2], Yevgen Yurenko[3], Jan Novotný[3,4], Radek Marek[3,4]
[1]Department of Condensed Matter Physics, Faculty of Science, Masaryk University, Brno, Czech Republic, [2]Université Paris Cité, DSIMB UMR_S U1134, Paris, France, [3]National Center for Biomolecular Research, Masaryk University, Brno, Czech Republic, [4]Department of Chemistry, Faculty of Science, Masaryk University, Brno, Czech Republic

26P-032 **Imaging and inhibition analysis of human serum amyloid A aggregation using quantum dots**

Liangquan Shi, Tuya Gegen, Kuragano Masahiro, Tokuraku Kiyotaka
Graduate School of Engineering, Muroran Institute of Technology

26P-033 **Real-time Imaging and Inhibition Analysis of Amylin Aggregations Using Quantum Dot nanoprobes**

Xiaoyu Yin, Ziwei Liu, Tuya Gegen, Hayate Sawatari, Keiya Shimamori, Masahiro Kuragano, Kiyotaka Tokuraku
Graduate School of Engineering, Muroran Institute of Technology

26P-034 **Structural and functional analyses of YeeE/YeeD complex in thiosulfate uptake pathway**

Mai Ikei[1], Ryoji Miyazaki[1], Keigo Monden[1], Yusuke Naito[1], Azusa Takeuchi[1], Yutaro S. Takahashi[1], Yoshiki Tanaka[1], Keina Murata[2], Takaharu Mori[2], Muneyoshi Ichikawa[3], Tomoya Tsukazaki[1]
[1]Nara Institute of Science and Technology, [2]Tokyo University of Science, [3]Fudan University

26P-035 **TRANSPLANTATION OF ENZYMATIC FUNCTION BY EXCHANGE OF FUNCTION ELEMENTS**

Mikio Kataoka[1], Yoichi Yamazaki[1], Yasushi Imamoto[2], Hironari Kamikubo[1]
[1]Nara Institute of Science and Technology, [2]Kyoto University

Protein: Physical property

***26P-037** **Thermal Boundary Conductance at the Protein–Water Interface**

Futa Yoshimura, Takahisa Yamato
Graduate School of Science, Nagoya University, Nagoya, Japan

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***26P-038** **Structural Insights into Switching Mechanisms between Spontaneous Folding and Ligand-Induced Folding of Staphylococcal Nuclease**

Yujiro Mori[1,2], Issei Suzuki[3], Shogo Fukazawa[3], Kosuke Miki[3], Heinrich Roder[2], Kosuke Maki[1]

[1]Grad. Schl. Sci., Nagoya Univ., Aichi, Japan, [2]Fox Chase Cancer Ctr., Pennsylvania, United States, [3]Schl. Sci., Nagoya Univ., Aichi, Japan

26P-039 **αB-crystallin prevents aging of α-synuclein droplets**

Kenji Fujitsuka[1], Keisuke Yuzu[1], Yuki Michiue[1], John A. Carver[2], Eri Chatani[1]

[1]Graduate School of Science, Kobe University, Kobe, Japan, [2]Research School of Chemistry, Australian National University, Canberra, Australia

***26P-040** **The function of multiple aggregates formed by the tumor suppressor protein p53**

Emi Hibino[1], Reiji Hijikata[1], Takeshi Tenno[1,2], Hidekazu Hiroaki[1,2]

[1]Grad. Scl. Pharm. Sci, Nagoya Univ., [2]BeCellBar

***26P-041** **Spatiotemporal formation of a single liquid-like condensate of α-synuclein and subsequent aging by optical trapping**

Keisuke Yuzu[1,2], Ching-Yang Lin[2], Po-Wei Yi[2], Chih-Hao Huang[2], Hiroshi Masuhara[2], Eri Chatani[1]

[1]Graduate School of Science, Kobe University, Kobe, Japan, [2]Department of Applied Chemistry, National Yang Ming Chiao Tung University, Hsinchu, Taiwan

26P-042 **The oligomeric state is essential for fibroin nanofiber formation.**

Haruya Kajimoto[1], Kento Yonezawa[2], Takehiro Sato[3], Kok Sim Chan[1], Kiichi Hyashi[1], Takuya Sawai[1], Yusuke Okamoto[1], Rakuri Aiba[1], Yoichi Yamazaki[1], Sachiko Toma-Fukai[1], Hironari Kamikubo[1,2]

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Poster Sessions

Protein: Function

***26P-043** **pH-gating mechanism of the bacterial inner membrane urea channel HpUreI of Helicobacter pylori**

Sahar Shojaei, Anna Stoib, Tobias Putz, Nađa Stević, Christine Siligan, Andreas Horner

Institute of Biophysics, Johannes Kepler University Linz, Gruberstr. 40, 4020 Linz, Austria

***26P-044** **Yeast complementation assays as a screening tool for urea, water, and ammonia permeability of membrane channels**

Anna Stoib, Sahar Shojaei, Felix Wolkenstein, Sandra Posch, Christine Siligan, Andreas Horner

Institute of Biophysics, Johannes Kepler University Linz, Gruberstr. 40, 4020 Linz, Austria

***26P-045** **Enhanced cell-membrane fluidity mediated by antifreeze proteins mitigates hypothermic injury to cells**

Yue Yang[1], Tatsuya Arai[1,2], Sakae Tsuda[1], Kazuhiro Mio[2], Yuji C. Sasaki[1,2]

[1]Graduate School of Frontier Sciences, the University of Tokyo, Chiba, Japan, [2]AIST-Utokyo OPERANDO-OIL, Chiba, Japan

26P-046 **Towards longer luminescence lifetime of the minimal luciferase picALuc**

Yuki Ohmuro-Matsuyama[1], Genta Kamiya[2], Kento Motoyama[1], Mitsuru Hattori[3], Ryogo Takai[1], Nobuo Kitada[2], Takeharu Nagai[3], Shojiro Maki[2], Hayato Matsui[1], Tadaomi Furuta[4]

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26P-047 **High-speed atomic force microscopy reveals functional dynamics of FnCas9**

Hideaki Tsukada

Mikihiro Shibata

Wednesday, June 26

Protein: Measurement & Analysis

***26P-048** **Development of Liquid Sample Observation Methods for Pulse-Electron Microscope**

Ryoya Katayama, Takeru Yamasaki, Tomoharu Matsumoto, Akihiro Narita
Grad. Sch. of Sci., Nagoya Univ.

***26P-049** **Light-induced structural changes of heliorhodopsin 48C12 studied by using surface-enhanced infrared absorption spectroscopy**

Tatsuya Sakamoto[1], Soichiro Kato[1], Jingyi Tang[1], Insyeerah Jauhari[2], Yuji Furutani[1,3]
[1]Graduate School of Engineering, Nagoya Institute of Technology, Aichi, Japan, [2]Faculty of Engineering, Nagoya Institute of Technology, Aichi, Japan, [3]OptoBioTechnology Research Center, Nagoya Institute of Technology, Aichi, Japan

***26P-050** **Nanopore-based peptidome analysis based on the protein-protein interactions.**

Misa Yamaji[1], Ayaka Nakada[1], Kota Naito[2], Yoshikazu Tanaka[2], Ryuji Kawano[1]
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26P-051 **Protein Acetylation Tracked using UV-Visible Absorption, Luminescence Spectroscopy and TD-DFT calculations**

Rajaram Swaminathan[1], Himanshi Devi[1], Simangka Borsaikia[1], Apoorva Badaya[2], Ravindra Venkatramani[2]
[1]Department of Biosciences and Bioengineering, Indian Institute of Technology Guwahati, Assam, India, [2]Department of Chemical Sciences, Tata Institute of Fundamental Research, Mumbai, India

26P-052 **Development of cysteine-specific modification technique for the quantitative analysis**

Arisa Suto[1], Yoshio Kodera[1,2], Takashi Matsui[1,2]
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Poster Sessions

26P-053 **Analysis of membrane translocation of Clostridioides difficile binary toxin using electrophysiologicaltechniques**

Yuki Mitani[1], Sotaro Takiguchi[2], Ryuji Kawano[2], Hideaki Tsuge[1]
[1]Graduate School of Life Science, Kyoto Sangyo University, Kyoto, Japan., [2]Department of Biotechnology and Life Science, Tokyo University of Agriculture and Technology, Tokyo, Japan.

26P-054 **Simple and Efficient Detection Scheme of Two-Color Fluorescence Correlation Spectroscopy for Protein Dynamics Investigation from Nanoseconds to Milliseconds**

Yutaka Sano[1], Yuji Itoh[1], Atsuhito Fukasawa[2], Hiroyuki Oikawa[1], Satoshi Takahashi[1]
[1]Tohoku University, [2]Hamamatsu Photonics K. K.

Protein: Design & Engineering

***26P-055** **Computational Design of engineered NT-193 antibody with broad activity against SARS-CoV-2 variant.**

Xu Pan, Hisham M. Dokainish, Katsumi Maenaka
Faculty of Pharmaceutical Sciences, Hokkaido University

***26P-056** **In silico/in vitro evolution of peptide nanopore with β-barrel structure**

Mana Sato[1], Shoko Fujita[1], Tomoaki Matsuura[2], Ryuji Kawano[1]
[1]Department of Biotechnology and Life Science, Tokyo University of Agriculture and Technology, Tokyo, Japan, [2]Earth-Life Science Institute, Tokyo Institute of Technology, Tokyo, Japan

***26P-057** **The molecular basis through which Fv-supercharging affects the physicochemical properties of antibodies**

Keisuke Kasahara[1], Daisuke Kuroda[2], Jose Caaveiro[3], Satoru Nagatoishi[4], Kouhei Tsumoto[1,4,5]
[1]Department of Bioengineering, School of Engineering, The University of Tokyo, [2]Research Center for Drug and Vaccine Development, National Institute of Infectious Diseases, [3]Graduate School of Pharmaceutical Science, Kyushu University, [4]Medical Device Development and Regulation Research Center, School of Engineering, The University of Tokyo, [5]Department of Chemistry and Biotechnology, School of Engineering, The University of Tokyo

***26P-058** **Dynamics and Evolution of Uniform Substrate Binder**

Yusran Abdillah Muthahari, Paola Laurino
Okinawa Institute of Science and Technology (OIST) Graduate School

***26P-059** **Tandem artificial nucleocapsid to package longer RNA genome and expand protein architectures**

Hualin Li, Naohiro Terasaka

Earth-Life Science Institute, Tokyo Institute of Technology, Tokyo, Japan

***26P-060** **Exploring the design rules for artificial phase-separating peptides based on natural phase-separating protein sequences**

Joe Mori[1,2], Atsumi Hando[1], Satoshi Takahashi[1,2], Keisuke Ikeda[3], Kiyoto Kamagata[1,2]

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26P-061 **Development of various fluorescence lifetime sensors using mTurquoise2 platform**

Chongxia Zhong[1,2], Satoshi Arai[1], Yasushi Okada[2,3]

[1]1. WPI Nano Life Science Institute, Kanazawa University, Kanazawa, Japan, [2]2. Laboratory for Cell Polarity Regulation, RIKEN Center for Biosystems Dynamics Research, RIKEN, Osaka, Japan, [3]3. Department of Cell Biology, Department of Physics, the University of Tokyo, Tokyo, Japan

26P-062 **Darwinian ultrahigh-throughput evolution of biomolecules with in vitro compartmentalized gene amplification races**

Taro Furubayashi[1], Thibault Di Meo[1], Yoshihiro Minagawa[1], Hiroyuki Noji[1], Yannick Rondelez[2]

[1]The University of Tokyo, Tokyo, Japan, [2]ESPCI, Paris, France

26P-063 **Magnetic bead-based protein display screening system for quantitative selection and evolution of functional proteins**

Shingo Ueno[1], Fumi Toshioka[1], Shoichi Tsuchiya[1], Takanori Ichiki[1,2]

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Protein: Intrinsic disorder

***26P-064** **Improvement of detection ability for amyloid fibril seeds by interaction between ultrasonic cavitation and surfactants**

Tomoki Ota, Kichitaro Nakajima, Keiichi Yamaguchi, Yuji Goto, Hirotsugu Ogi

Osaka University, Graduate School of Engineering

Poster Sessions

***26P-065** **The role of phase transitions of biopolymers in the formation and functioning of A-bodies**

Anastasiia Gavrilova[1], Yakov Mokin[1], Anna Fefilova[2], Aleksander Fonin[1]

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***26P-066** **High-Speed Atomic Force Microscopy Reveals Structural Dynamics of Microtubule-Associated Protein Tau Aggregation.**

Tatsuya Kimura[1], Kenjiro Ono[2], Ken-ichi Umeda[1], Daiki Muramatsu[2], Hiroki Konno[1], Noriyuki Kodera[1], Toshio Ando[1], Takahiro Nakayama[1]

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26P-067 **From the single-chain behavior to phase behavior of intrinsically disordered proteins**

Xiangze Zeng

Hong Kong Baptist University

Heme proteins

***26P-068** **Organ-specific probing of mitochondrial and lipid properties in Caenorhabditis elegans with Raman spectroscopy and imaging**

Evelina Nikelshparg[1], Mariela Pavan[2], Anat Ben-Zvi[1]

[1]Ben-Gurion University Of The Negev, Faculty Of Natural Sciences, Life Sciences Department, [2]Ben-Gurion University Of The Negev, Ilse Katz Institute for Nanoscale Science & Technology

26P-069 **Purification and characterization of cholate-free cytochrome c oxidase from bovine heart**

Kyoko Shinzawa-Itoh[1], Kenta Tsutumi[3], Tomohiro Ide[2], Seishiro Mori[2], Eiki Yamashita[3], Kazumasa Muramoto[1]

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Membrane proteins

***26P-070** **Time-resolved FTIR study of light-driven ion pump rhodopsin mutants converted from sodium to chloride pump.**

Masahiro Yamamoto[1], Hideki Kandori[1,2], Yuji Furutani[1,2]

[1]Graduate School of Engineering, Nagoya Institute of Technology, Aichi, Japan, [2]OptoBioTechnology Research Center, Nagoya Institute of Technology, Aichi, Japan

***26P-071** **Detection of TEV protease by pore blockage in Outer Membrane Protein-G Nanopore mutation**

Haruka Suzuki, Toshiyuki Tosaka, Koki Kamiya

Graduate School of Science and Engineering, Gunma University, Gunma, Japan

***26P-072** **Construction and evaluation of the mutant β-barrel outer membrane protein nanopore**

Toshiyuki Tosaka, Koki Kamiya

Graduate School of Science and Technology, Gunma University, Gunma, Japan

***26P-073** **Detection of Polypeptide Related to Membrane Fusion through Nanopore MscL and Interaction based on Proteins Function**

Weibo Liang

State Key Laboratory of Biotherapy, Sichuan University, Chengdu, China

***26P-074** **Time-resolved infrared dual-comb spectroscopy using quantum cascade lasers reveals differences in conformational changes of two heliorhodopsins found from a bacterium and an archaeon**

Toshiki Nakamura[1], Soichiro Kato[1], Ryo Yamamoto[1], Manish Singh[1], Hideki Kandori[1,2], Yuji Furutani[1,2]

[1]Department of Life Science and Applied Chemistry, Nagoya Institute of Technology, Nagoya, Japan,, [2]OptoBioTechnology Research Center, Nagoya Institute of Technology, Nagoya, Japan

***26P-075** **Exploration of physical properties in streptomyces heliorhodopsin and the physiological function in the native cells**

Koyo Yamada[1], Rei Abe-Yoshizumi[1], Toshiki Nakamura[1], Yuji Furutani[1,2], Tatsuro Nishikino[1], Hideki Kandori[1,2]

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Poster Sessions

26P-076 **Rottlerin as an aquaporin-3 inhibitor for cancer therapy**

Inês Paccetti Alves[1], Marta Baptista[2], Catarina Pimpão[1], Inês V. da Silva[1], Bruno L. Victor[2], Graça Soveral[1]

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26P-077 **An attempt at high-resolution structural analysis of membrane proteins reconstituted into liposomes**

Atsuki Nakano, Takaya Kawauchi, Ren Kobayashi, Yuto Muto, Taichi Tsuyama, Ken Yokoyama

Kyotosangyo University

26P-078 **Reconstitution and nanoscale visualization of cadherin clusters on supported lipid bilayer in solution**

Shigetaka Nishiguchi[1,5], Tadaomi Furuta[2], Yui Kanaoka[3], Takayuki Uchihashi[1,3,4]

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26P-079 **Protonophoric function of the 2-oxoglutarate/malate carrier.**

Elena E Pohl, Kristina Žuna, Tatyana Tyschuk, Jürgen Kreiter

Department of Biomedical Sciences, University of Veterinary Medicine, 1210 Vienna, Austria

DNA & DNA binding proteins

***26P-080** **Dynamic interactions between DNA and a transcription factor, Photozipper, visualized by high-speed atomic force microscopy**

Akihiro Tsuji[1], Hayato Yamashita[1], Osamu Hisatomi[2], Masayuki Abe[1]

[1]Graduate School of Engineering Science, Osaka University, Osaka, Japan, [2]Graduate School of Science, Osaka University, Osaka, Japan

***26P-081** **Mechanism of DNAs attraction mediated by low and high valence salts**

Hongwei Zuo, Fujia Tian, Liang Dai

city university of Hong Kong

26P-082 **Encapsulation of cell nucleolus by single-stranded DNA**

Koichiro Maki[1,2,3,4], Jumpei Fukute[1,3], Taiji Adachi[1,2,3,4]

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RNA & RNA binding proteins

***26P-083** **Molecular simulations to investigate the protein-RNA assembly mechanism of Tetrahymena telomerase**

Max Cutler, Naoto Hori, Charles Laughton

Nottingham University

26P-084 **Structural Ensembles of the 5'-UTR of Hepatitis C Virus RNA With and Without MicroRNA Using SIS-RNA Model**

Huong T Vu, Naoto Hori

School of Pharmacy, University of Nottingham, Nottingham, NG7 2RD, United Kingdom

DNA/RNA nanotechnology

***26P-085** **Automation of DNA gel generation experiments using machine learning and pipetting robots**

Yuko Yoshida[1], Masahiro Takinoue[1,2]

[1]Department of Computer Science, Tokyo Institute of Technology, Tokyo, Japan, [2]Living Systems Materialogy (LiSM), Tokyo Institute of Technology, Tokyo, Japan

***26P-086** **Network formation of enzymes via DNA motif in two types of cascade reactions**

Aoi Mameuda, Koki Kamiya

Graduate School of Science and Technology, Gunma University, Gunma, Japan

***26P-087** **A Hydrogel Biosensor Combining Aptamer Recognition and DNA-Driven Hydrogels**

Satofumi Kato[1], Masahiro Takinoue[2], Hiroaki Onoe[1]

[1]Keio University, [2]Tokyo Institute of Technology

Poster Sessions

***26P-088** **Towards Rotary DNA Motor with Conformational Change**

Akihiro Fukuda[1], Yusuke Sato[2], Takeshi Yokoyama[1,3], Yoshikazu Tanaka[1], Shoichi Toyabe[1]

[1]Tohoku University, [2]Kyushu Institute of Technology, [3]JST PRESTO

***26P-089** **Liquid-liquid phase separation of computational DNA droplets on the gold surface**

Koki Yoshida, Masahiro Takinoue

Tokyo Institute of Technology

Nucleic acid: Others

***26P-090** **Molecular Dynamics Simulations to Investigate Interactions Between Polymers and RNA in Polymer Nanoparticles**

James Aaron Robins, Naoto Hori, Cameron Alexander, Keith Spriggs

School of Pharmacy, University of Nottingham

***26P-091** **Oligonucleotide Assembly enhanced by intrinsically disordered protein droplet**

Taiji Ueno, Yoshihiro Minagawa, Hiroyuki Noji

Department of Applied Chemistry, School of Engineering, The university of Tokyo.

Chromatin & Chromosomes

***26P-092** **Mechanic Properties of Nucleosomes are Key Modulators of the Unwrapping Energy Landscape**

Maria Julia Maristany[1], Ignacio Perez Lopez[2], Stephen Farr[3], Jan Huertas[4,5], Rosana Collepardo-Guevara[4,5]

[1]Department of Physics, University of Cambridge, UK, [2]University of Seville, Spain, [3]Universitat Pompeu Fabra, Spain, [4]Department of Chemistry, University of Cambridge, UK, [5]Department of Genetics, University of Cambridge, UK

***26P-093** **Protein search processes mediated by chromatin topology**

Shuvadip Dutta[1], Adarshkrishnan R.[1], Ranjith Padinhateeri[2], Mithun K. Mitra[1]

[1]Department of Physics, Indian Institute of Technology Bombay, Mumbai 400076, India, [2]Department of Biosciences and Bioengineering, Indian Institute of Technology Bombay, Mumbai 400076, India

26P-094 **Effect of the molecular crowding environment on the structure of poly-nucleosomes**

Tomoko Sunami[1], Amarjeet Kumar[1], Hidetoshi Kono[1,2]

[1]iQLS, QST, [2]Graduate School of Sci. and Eng., Chiba Univ.

26P-095 **From Sequence to Structure: Refining Chromatin Models with PTM and Contact Frequency Data**

Justin Chan[1], Giovanni Brandani[2], Shoji Takada[2], Kono Hidetoshi[1]

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Water & Hydration & Electrolyte

***26P-096** **Effect of hydration state polymers on Liquid-Liquid Phase Separation.**

Kengo Cho, Mafumi Hishida

Department of Chemistry, Faculty of Science, Tokyo University of Science, Tokyo, Japan

26P-097 **Correlation analysis of co-solvation free energies in insulin dissociation**

Simon Hikiri[1], Nobuyuki Matubayasi[2]

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Molecular genetics & Gene expression

26P-098 **PML protein localization and bioinformatic interactome analysis in ageing related diseases.**

Eugene Smirnov, Sergey Silonov, Aleksandra Nozdracheva, Konstantin Turoverov, Alexander Fonin

Laboratory of Structural Dynamics, Stability and Folding of Proteins, Russian Academy of Sciences, St. Petersburg 194064, Russia

Poster Sessions

Morphogenesis and Development

***26P-099** **Nuclear softening triggers a transcriptional burst during early embryogenesis**

Masahito Tanaka[1], Rin Sakanoue[2], Atsushi Takasu[2], Yasuki Miyagawa[2], Naoko Watanabe[1], Kei Miyamoto[2], Yuta Shimamoto[1,3]

[1]Laboratory of Physics and Cell Biology, National Institute of Genetics, Shizuoka, Japan., [2]Graduate School of Biology-Oriented Science and Technology, Kindai University, Wakayama, Japan., [3]Department of Genetics, Sokendai University, Shizuoka, Japan.

Muscle

***26P-100** **Cardiac cycle-dependent alterations in redox states revealed by cryo-Raman spectral analysis**

WenJin Ho[1], Yoshinori Harada[1], Kentaro Mochizuki[1], Yasuaki Kumamoto[2,3], Masahito Yamanaka[2,3], Katsumasa Fujita[2,3,4], Hideo Tanaka[1,5]

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26P-101 **Effects of Near-Infrared Laser Irradiation on Circular Cardiomyocyte Network**

Momo Akada, Kentaro Kito, Masahito Hayashi, Tomoyuki Kaneko

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Molecular motor

***26P-102** **Directionality on kinesin-1 motility can be determined depending on the anchor points**

Rieko Sumiyoshi[1,2], Masahiko Yamagishi[1,3], Junichiro Yajima[1,3,4]

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***26P-103** **Three-dimensional motility of myosin IC bound to lipid membrane**

Yusei Sato[1], Kohei Yoshimura[2], Kyohei Matsuda[1], Takeshi Haraguchi[2], Akisato Marumo[1], Masahiko Yamagishi[1], Suguru Sato[2], Kohji Ito[2], Junichiro Yajima[1]

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***26P-104** **Energetics of engineered FoF1-ATP synthase with high H+/ATP ratio**

Kiyoto Yasuda[2], Riku Marui[1], Hiroshi Ueno[2], Hiroyuki Noji[2]

[1]The University of Tokyo, Graduate school of Engineering, Department of Bioengineering, Noji Lab., [2]The University of Tokyo, Graduate school of Engineering, Department of Applied Chemistry, Noji Lab.

***26P-105** **Biomolecular motors use two asymmetries to generate unidirectional movement**

Shintaro Nakayama[1,2], Akane Furuta[1], Maki Yoshio[1], Misako Amino[1], Kazuhiro Oiwa[1,2], Ken'ya Furuta[1,3]

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26P-107 **Nuclear Spin Catalysis in Living Cells and Biomolecular Motors**

Vitaly K Koltover

Federal Research Center of Problems of Chemical Physics and Medical Chemistry, Russian Academy of Sciences, Chernogolovka, Moscow Region, 142432, Russia

26P-108 **Mechanical force measurement of F1-ATPase using accurate revolution control by an optical-vortex tweezers.**

Yu Hashimoto, Tomoko Otsu-Hyodo, Taro Ando, Yoshiyuk Ohtake, Sayaka Kazami, Yuji Kimura, Yu Takiguchi, Hiroyasu Itoh

Central Research Laboratory, Hamamatsu Photonics K.K., Hamamatsu, Japan

26P-109 **Flagellar rotation-speed difference observed in the same bacterial cells**

Tsubasa Ishihara, Shuichi Nakamura

Grad. Sch. Eng., Tohoku Univ.

Poster Sessions

Single Molecule Biophysics

***26P-110** **Enhanced Interpretation of STED-FCS Diffusion Law Plot Dependencies**

Barbora Svobodova[1,2], Radek Sachl[2]

[1]Faculty of Mathematics and Physics, Charles University, Prague, Czech Republic, [2]J. Heyrovsky´ Institute of Physical Chemistry of the Czech Academy of Sciences, Prague, Czech Republic

***26P-111** **High sensitivity detection of HBV RNA based on 3D-DNA nanomachine and biological nanopore sensing technology**

Shixin Yan, Jia Geng

Department of Laboratory Medicine, State Key Laboratory of Biotherapy and Cancer Center, Med-X Center for Manufacturing, West China Hospital, Sichuan University, 610041, Chengdu, China

***26P-112** **NANOSPACER: Optical analysis of biomolecules and nanoparticles in solution using nanofluidic devices**

Oliver Vanderpoorten

UiT The Arctic University of Norway, Tromsoe, Norway

***26P-113** **Single-molecule manipulation of genome integrity guardians**

María Ortiz[1], Roberto Galleto[2], Borja Ibarra[1]

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***26P-114** **Interdomain linkers regulate the mechanotransduction in proteins**

Tanuja Joshi, Pritam Saha, Sabyasachi Rakshit

Department of Chemical Sciences, Indian Institute of Science Education and Research Mohali, Punjab, India-140306,

26P-115 **Single-molecule sensing with aerolysin pore-forming toxins**

Matteo Dal Peraro

Institute of Bioengineering, School of Life Sciences, Ecole Polytechnique Fédérale de Lausanne (EPFL), Lausanne, Switzerland

26P-116 **Live-cell Single-molecule Imaging and Mapping of Human SWI/SNF Chromatin Remodelers Reveal Bromodomain-mediated and Cancer-mutants-specific Landscape of Multi-modal DNA-binding Dynamics**

Wilfried Engl, Hendrik Sielaff, Aliz Kunstar-Thomas, Siyi Chen, Woei Shyuan Ng, Ziqing Winston Zhao

National University of Singapore

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Cell biology: Adhesion

26P-117 **Dynamics and function of adhesion GPCR**

Rinshi Kasai[1], Shigetaka Nishiguchi[2], Takayuki Uchihashi[3]
[1]National Cancer Center Research Institute, [2]Osaka University, [3]Nagoya University

Cell biology: Motility

***26P-118** **Sheet-like structure of bacterial actin MreBs driving helicity switching by cryo electron tomography**

Haruka Yuasa[1], Yuya Sasajima[1], Hana Kiyama[1], Daichi Takahashi[1,2], Takuma Toyonaga[1,3], Tomoko Miyata[4,5], Fumiaki Makino[4,5,6], Keiichi Namba[4,5], Makoto Miyata[1,3]
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***26P-119** **Rotation of bacterial cell-bodies in different species capable and incapable of flagellar wrapping**

Naoki Ogura[1], Aoba Yoshioka[2], Daisuke Nakane[2], Hirofumi Wada[3]
[1]Department of Biomedical Engineering, Tokyo University of Agriculture and Technology, [2]Department of Engineering Science, University of Electro-Communications, [3]Department of Physical Sciences, Ritsumeikan University

***26P-120** **Viscoelasticity dependence of ciliary beating and the resulting flow**

Saki Tamura, Misako Otaki, Yoshihiro Murayama
Department of Biomedical Engineering, Tokyo University of Agriculture and Technology

***26P-121** **Water flow navigates the long journey of surface-associated bacteria living in hot springs**

Naoki Uemura[1], Naoya Chiba[2], Masatada Tamakoshi[2], Daisuke Nakane[1]
[1]Department of Engineering Science, The University of Electro-Communications, Tokyo, Japan, [2]School of Life Sciences, Tokyo University of Pharmacy and Life Sciences, Tokyo, Japan

Poster Sessions

***26P-122** **Analysis of Fluctuations in Measurement Data of Bacterial Flagellar Motors**

Kenta Takemori, Yusuke V. Morimoto
Graduate School of Computer Science and Systems Engineering, Kyushu Institute of Technology, Fukuoka, Japan

***26P-123** **Quantitative model of vascular cell motility in angiogenesis**

Hayate Segawa[1], Shigetomo Fukuhara[2], Kazushi Ikeda[1], Yuichi Sakumura[1]
[1]Nara Institute of Science and Technology, [2]Nippon Medical School

***26P-124** **Suppressing Bacterial Surface Colonization and Motility with Biosurfactants**

Li Xiaojie[1], Andrew Utada[2]
[1]Grad. Sch. Of Sci. and Tech. Univ. of Tsukuba, Tsukuba, Japan, [2]Faculty of Life and Env. Sci., Tsukuba, Japan

***26P-125** **Cell Type-Dependent Coordinated Regulation of Rho GTPases in Cell Motility**

Yufei Wu
Nara Institute of Science and Technology

26P-126 **A highly conserved Arg-391 residue of FlhA is involved in export switching of the flagellar type III secretion system in Salmonella**

Tohru Minamino[1], Miki Kinoshita[1,2], Motoshi Sakai[3], Takayuki Uchihashi[4], Norihiro Takekawa[3], Katsumi Imada[3], Keiichi Namba[1,2]
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26P-128 **Cell size variation affects bacterial swimming speed**

Riu Osanai, Shuichi Nakamura
Dept.appl.Phys.,Grad.Sch.Eng.,Tohoku Univ.

26P-129 **Atomic model comparison of the L- and R-type straight bacterial flagellar filaments for understanding the supercoiling mechanism**

Fumiaki Makino[1,2,3], Kasim Waraichi[4], Miki Kinoshita[1,2], Tomoko Miyata[1,2], Tohru Minamino[1], Keiichi Namba[1,2]
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Cell biology: Cytoskeleton & Membrane skeleton

***26P-130** **Deformability cytometry of Jurkat cells for cell immunotherapy**

Lija Fajdiga, Nina Bernat, Lara Betocchi, Špela Zemljič Jokhadar, Jure Derganc

Institute of Biophysics, Faculty of Medicine, University of Ljubljana, Slovenia

***26P-131** **Development and application of an optogenetic tool to control the actin polymerization**

Kei Yamamoto[1], Yosuke Yamazaki[1], Kazuhiro Aoki[2], Makito Miyazaki[1,3,4]

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26P-132 **Polymerization of PEG-attached actin**

Masaya Sagara, Hiroto Narita, Kuniyuki Hatori

Department of mechanical systems engineering, Faculty of engineering/Graduate school of science and engineering, Yamagata university

26P-133 **Measurement of intracellular forces using centrifuge polarizing microscope (CPM)**

Makoto Goda[1,2], Michael Shribak[1], Zenki Ikeda[4,5], Naobumi Okada[6], Tomomi Tani[1,7], Gohta Goshima[1,3], Rudolf Oldenbourg[1], Akatsuki Kimura[1,4,5]

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26P-134 **Construction of a mechanical model for C. elegans gastrulation**

Tokitaka Katayama[1,2], Akatsuki Kimura[1,2]

[1]National Institute of Genetic (NIG), [2]Genetics Course, SOKENDAI

Cell biology: Signal transduction & Cell membrane

***26P-135** **Cell size feedback mechanism for propagating cell-cell signals in Dictyostelium discoideum**

Yukihisa Hayashida[1], Chikoo Oosawa[2], Takuo Yasunaga[2], Yusuke V Morimoto[2,3]

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Poster Sessions

***26P-136** **Cellular Guardianship Symphony by the Dynamic Duo of LL37 and HNP-1**

Jing Zhang, Kaori Sugihara
The University of Tokyo

26P-137 **Slow diffusion and signal amplification on membranes regulated by phospholipase D**

Gen Honda[1], Satoshi Sawai[1,2], Miho Yanagisawa[1,2,3]
[1]Department of Basic Science, Graduate School of Arts and Sciences, University of Tokyo, Tokyo, Japan, [2]Research Center for Complex Systems Biology, Graduate School of Arts and Sciences, University of Tokyo, Tokyo, Japan, [3]Komaba Institute for Science, Graduate School of Arts and Sciences, University of Tokyo, Tokyo, Japan

26P-138 **Small extracellular vesicles trigger integrin-mediated adhesion signal in the recipient cells**

Koichiro M Hirosawa[1], Yusuke Sato[2], Eriko Yamaguchi[1], Naoko Komura[1], Hiromune Ando[1], Yasunari Yokota[3], Kenichi G.N. Suzuki[1,4]
[1]iGCORE, Gifu Univ., Japan, [2]Dept. Chem. Tohoku Univ, Japan, [3]Dept. Eng., Gifu Univ., Japan, [4]Natl. Cancer Ctr. Res. Inst., Japan

Biological & Artificial membrane: Structure & Property

***26P-139** **Membrane tension and its effect on a membrane structure**

Zuzana Johanovská[1,2], David Šťastný[1], Radek Šachl[1], Martin Hof[1]
[1]Heyrovský Institute of Physical Chemistry, Czech Academy of Sciences, Prague, Czech Republic, [2]Charles University, Faculty of Mathematics and Physics, Prague, Czech Republic

***26P-141** **Elucidating the Molecular Mechanism of the Dual Cooperative Effect Between antimicrobials LL37 and HNP1: A Study of Peptide-Lipid and Peptide-Peptide Interactions**

Yuge Hou, Kaori Sugihara
The institute of industrial Science, The University of Tokyo

26P-142 **Dimerization of transmembrane peptides synergistically enhances the lipid scrambling activities**

Hiroyuki Nakao[1], Toshiki Tsujii[1], Hiroaki Saito[2], Keisuke Ikeda[1], Minoru Nakano[1]
[1]Faculty of Pharmaceutical Sciences, University of Toyama, Toyama, Japan, [2]Faculty of Pharmaceutical Sciences, Hokuriku University, Ishikawa, Japan

26P-143 **Mechanism of action and lipid-mediated synergistic interactions of antimicrobial peptides: New regulatory mechanisms also for membrane proteins?**

Burkhard Bechinger[1,2]

[1]University of Strasbourg / CNRS, Chemistry UMR7177, [2]Institut Universitaire de France IUF

26P-144 **Impact of Acetonitrile Molecules on Miscibility Transition Temperature of Multicomponent Lipid Vesicles**

Shota Matsuzawa[1], Kazunari Yoshida[1,2]

[1]Faculty of Engineering, Yamagata University, [2]Graduate School of Science and Engineering, Yamagata University

Biological & Artificial membrane: Dynamics

***26P-145** **Effect of actin encapsulation on the behavior of lipid bilayers under osmotic stress**

Ken Bessho, Mahito Kikumoto, Yuki Mizutani, Moka Ito, Kingo Takiguchi

Nagoya Univ., Grad. Sch. Sci., Dept. Bio. Sci.

***26P-146** **PORE-FORMING ACTIVITIES OF *β*-HAIRPIN ANTIMICROBIAL PEPTIDES EVALUATED BY LIPID BILAYER SYSTEM**

Yuki Hagiri, Wakana Hashimoto, Ryuji Kawano

Department of Biotechnology and Life Science, Tokyo University of Agriculture and Technology, Tokyo, Japan

***26P-147** **Synthesis of fluorescence-derivative of DHA-containing phospholipids and its behavior in lipid bilayers.**

Kotaro Shimizu, Masanao Kinoshita, Nobuaki Matsumori

Kyushu University

***26P-148** **Morphological change in liposomes that encapsulating F-actins with the adjusted length distribution**

Yuki Mizutani[1], Moka Ito[1], Mahito Kikumoto[1], Masahito Hayashi[2], Kingo Takiguchi[1]

[1]Nagoya Univ., Grad. Sch. Sci., Dept. Bio Sci., [2]Hosei Univ.

26P-149 **Membrane viscosity of phase-separated ternary GUVs having Lo domains as the basis for lipid rafts**

Julia Tanaka, Yuka Sakuma

Department of Physics, Tohoku University

Poster Sessions

Biological & Artificial membrane: Excitation & Channels

26P-150 **Development of a high-throughput device for recording channel currents using agarose gel beads**

Mami Asakura[1], Wang Shuyan[2], Minako Hirano[2], Toru Ide[2]
[1]Dept. of Comp. Tech. Soln., Okayama Univ., [2]Grad. Sch. Health Sys., Okayama Univ.

Biological & Artificial membrane: Transport & Signal transduction

***26P-151** **The fusion site of cell penetrating peptide sequences affects the cytoplasmic transport**

Akari Miwa, Koki Kamiya
Graduate School of Science and Technology, Gunma University, Gunma, Japan

Membraneless Organella, autophage, Liquid-liquid phase separation

***26P-152** **Phase separation and phase transition of protein mixture on chemically modified glass surfaces**

Toya Yoshida, Tomohiro Nobeyama, Kentaro Shiraki
Institute of Pure and Applied Sciences, University of Tsukuba

***26P-153** **Quantitative analysis of lipophagy by a small molecule fluorescent reporter**

Siyang Ding[1], Jesse Rudd-Schmidt[2], Oana Sanislav[3], Jinyun Zou[2], Tze Cin Owyong[1], Ebony Monson[3], Karla Helbig[3], Paul Fisher[3], Ian Ganley[4], Kazuhide Shaun Okuda[1,5,6], Ilia Voskoboinik[2,6], Yuning Hong[1]
[1]Department of Biochemistry and Chemistry, La Trobe Institute for Molecular Science, La Trobe University, Melbourne, VIC, Australia, [2]Killer Cell Biology Laboratory, Cancer Immunology Program, Peter MacCallum Cancer Centre, Melbourne, VIC, Australia, [3]Department of Microbiology, Anatomy, Physiology and Pharmacology, La Trobe University, Melbourne, VIC, Australia, [4]MRC Protein Phosphorylation and Ubiquitylation Unit, University of Dundee, Dundee, UK, [5]Organogenesis and Cancer Program, Peter MacCallum Cancer Centre, Melbourne, VIC, Australia, [6]Sir Peter MacCallum Department of Oncology, University of Melbourne, Parkville, VIC, Australia

***26P-154** **Quantitative Raman analyses and photo-regulation of nucleic acid–peptide droplets formed by liquid–liquid phase separation**

Kohei Yokosawa, Shinya Tahara, Shinji Kajimoto, Takakazu Nakabayashi
Graduate School of Pharmaceutical Sciences, Tohoku University, Japan

***26P-155** **A new method for structural switching of multiphase coacervates based on rational design of charged polypeptides**

Hinano Nakamoto[1], Hiroshi Kamizawa[1], Takumi Yamada[1], Biplab K C[2], Teruki Nii[2], Takeshi Mori[2,3], Yoshiki Katayama[2,3,4,5], Akihiro Kishimura[2,3,4]

[1]Graduate School of Systems Life Sciences, Kyushu University, [2]Faculty of Engineering, Kyushu University, [3]Center for Future Chemistry, Kyushu University, [4]Center for Molecular Systems, Kyushu University, [5]Center for Advanced Medical Open Innovation, Kyushu University

26P-156 **Tunable Wetting Properties in Multicomponent Protein Condensates**

Ding Wang[1,2], Lei-Han Tang[1]

[1]Department of Physics, Hong Kong Baptist University, Hong Kong SAR, China, [2]Department of Materials Science and Engineering, Southern University of Science and Technology, Shenzhen, China

26P-157 **Super enhancer-derived lncRNA CCAT1-L regulates the condensation of human Mediator**

Junho Lee

Korea Advanced Institute of Science and Technology (KAIST)

26P-158 **Metastable phase-separated droplet generation and long-time DNA enrichment by laser-induced Soret effect**

Mika Kobayashi[1,2], Yoshihiro Minagawa[2], Hiroyuki Noji[2]

[1]Tokyo University of Agriculture and Technology, [2]University of Tokyo

Neuroscience & Sensory systems

***26P-159** **High-speed AFM reveals activity-dependent stable complexes of kinase domains in CaMKIIβ**

Keisuke Matsushima[1], Hideji Murakoshi[2], Mikihiro Shibata[3,4]

[1]Graduate School of Natural Science and Technology, Kanazawa University, Ishikawa, Japan, [2]Supportive Center for Brain Research, National Institute for Physiological Sciences, Aichi, Japan, [3]WPI Nano Life Science Institute, Kanazawa University, Ishikawa, Japan, [4]Institute for Frontier Science Initiative, Kanazawa University, Ishikawa, Japan

***26P-160** **Molecular mechanism of classical conditioning in earthworm**

Sukehiro Kabayama, Yoshiichiro Kitamura

Kanto-Gakuin University

Poster Sessions

26P-161 **Ion-channel-based complete synchronization between neurons**

Seido Nagano
Department of Bioinformatics, Ritsumeikan University

26P-162 **Models of complex structure-related diffusion anomalies of transport in the brain's extracellular space**

Eugene B Postnikov[1], Igor Sokolov[2], Anastasia Lavrova[3], Dmitry Postnov[4]
[1]Kursk State University, [2]Humboldt University Berlin, [3]Saint-Petersburg State Research Institute of Phthisiopulmonology, [4]Saratov State University

Neuronal circuit & Information processing

***26P-163** **Outgrowth order in breaking symmetry of immature neurites is another regulation factor of neuronal polarity formation**

Soya Hagiwara[1], Ryohei Yamazaki[2], Nanami Abe[2], Naoya Takada[1], Kenji Yasuda[1,2]
[1]Dept. Phys., Sch. Adv. Sci. & Eng., Waseda Univ., Japan, [2]Dept. Pure & Appl. Phys., Grad. Schl. Adv. Sci. & Eng., Waseda Univ., Japan

26P-164 **Large-scale voltage-sensitive dye imaging of mouse prefrontal cortex: Biophysical mapping of intra- and inter-hemispheric connections**

Takashi Tominaga[1,2], Pooja Gusain[1], Makiko Taketoshi[1], Yoko Tominaga[1]
[1]Institute of Neuroscience, Tokushima Bunri University, Sanuki, Japan, [2]Kagawa School of Pharmaceutical Sciences, Tokushima Bunri University, Sanuki, Japan

Behavior

***26P-165** **Swimming ciliate, Stentor selects anchoring sites accompanied by extracellular geometries**

Syun Echigoya[1], Katsuhiko Sato[1,2], Toshiyuki Nakagaki[1], Yukinori Nishigami[1]
[1]RIES Hokkaido University, Sapporo, Japan, [2]University of Toyama, Japan

Photobiology: Vision & Photoreception

***26P-166** **Electrophysiological Study of the Effect of Weak Organic Acids on the Transport Activity of Proton Pumping Rhodopsin of Rhizobacteria**

Zikun Lyu, Shunki Takaramoto, María del Carmen Marín, Hiromu Yawo, Keiichi Inoue
The Institute for Solid State Physics, University of Tokyo, Kashiwa, Japan

***26P-167** **Structural basis for early proton transfer reaction on a primate blue-sensitive pigment**

Yosuke Mizuno[1], Hiroo Imai[2], Hideki Kandori[1,3], Kota Katayama[1,3]

[1]Graduate school of Engineering, Nagoya Institute of Technology, Aichi, Japan, [2]Center for the Evolutionary Origins of Human Behavior, Kyoto University, Aichi, Japan, [3]OptoBio Technology Research Center, Nagoya Institute of Technology, Aichi, Japan

***26P-168** **Time-resolved crystallography uncovering cryptochrome signal transduction mechanism**

Yuhei Hosokawa[1,2,3], Po-Hsun Wang[2,4], Mai Nakamura[3], Nicolas Caramello[5], Sylvain Engilberge[5], Antoine Royant[5], Lars-Oliver Essen[4], Ming-Daw Tsai[2], Junpei Yamamoto[3], Manuel Maestre-Reyna[1,2]

[1]National Taiwan University, Taipei, Taiwan, [2]Academia Sinica, Taipei, Taiwan, [3]Osaka University, Osaka, Japan, [4]Philipps University Marburg, Marburg, Germany, [5]European Synchrotron Radiation Facility, Grenoble, France

***26P-169** **Light-induced difference FTIR analysis of xenorhodopsin from Nanosalina at 77 K**

Yuma Ito[1], Tatsuro Nishikino[1,2], Hideki Kandori[1,2], Yuji Furutani[1,2]

[1]Department of Life Science and Applied Chemistry, Nagoya Institute of Technology, [2]OptoBioTechnology Research Center, Nagoya Institute of Technology

26P-170 **Spectroscopic and functional characterization of novel viral rhodopsins**

Takashi Nagata[1], Shunki Takaramoto[1], Andrey Rozenberg[2], Oded Béjà[2], Keiichi Inoue[1]

[1]The Institute for Solid State Physics, The University of Tokyo, Japan, [2]Faculty of Biology, Technion - Israel Institute of Technology, Israel

26P-171 **Modulation of intracellular calcium responses using photocyclic vertebrate visual pigments**

Kazumi Sakai, Shion Aoki, Takahiro Yamashita

Kyoto University

Poster Sessions

Photobiology: Photosynthesis

***26P-172** **Carotenoids binding effect of the photoreaction processes on Xanthorhodopsin**

Shota Itakura[1], Yosuke Mizuno[1], Kota Katayama[1,2], Rei Abe-Yoshizumi[1], Ariel Chazan[3], Oded Béjà[3], Hideki Kandori[1,2]

[1]Graduate School of Engineering, Nagoya Institute of Technology, Aichi, Japan, [2]OptoBioTechnology Research Center, Aichi, Japan, [3]Technion-Israel Institute of Technology, Haifa, Israel

***26P-173** **Mobility of protein complexes in plant thylakoid membranes analyzed by high-speed atomic force microscopy**

Yudai Nishitani, Daisuke Yamamoto

Fac. Sci., Fukuoka Univ., Fukuoka, Japan

***26P-174** **Excitation energy transfer dynamics among antenna pigments in the ΔpshX-reaction center from Heliomicrobium modesticaldum**

Risa Kojima[1], Kevin E Redding[2], Daisuke Kosumi[3], Hirozo Oh-oka[4]

[1]College of Life Science, Ritsumeikan University, Shiga, Japan, [2]School of Molecular Sciences, Arizona State University, Arizona, USA, [3]Institute of Industrial Nanomaterials, Kumamoto University, Kumamoto, Japan, [4]Center for Education in Liberal Arts and Sciences, Osaka University, Osaka, Japan

26P-175 **Structural Basis for Enabling Photosynthesis with Extremely Low-energy Near-infrared Light in the LH1–RC Complex of a Thermophilic Purple Nonsulfur Bacterium**

Yukihiro Kimura[1], Ryo Kanno[2], Kaisei Mori[1], Ryuta Seto[1], Yoshiki Matsuda[1], Shinji Takenaka[1], Hiroyuki Mino[3], Malgorzata Hall[4], Endang R. Purba[4], Akira Mizoguchi[5], Bruno M. Humbel[6], Michael T. Madigan[7], Zheng-Yu Wang-Otomo[8], Kazutoshi Tani[9]

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26P-176 **Characterization of an LH1–RC photocomplex from a novel Japanese hot spring purple sulfur bacterium, Caldichromatium japonicum**

Akane Minamino[1], Mohit. K. Saini[2], Endang R. Purba[3], Malgorzata Hall[3], Shinji Takenaka[1], Vera Thiel[4], Bruno M. Humbel[5], Michael T. Madigan[6], Zheng-Yu Wang-Otomo[7], Kazutoshi Tani[8], Yukihiro Kimura[1]

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Photobiology: Optogenetics & Optical control

***26P-177** **Channel gating mechanism of K+ selective channelrhodopsin, KCR**

Ryotaro Shimamura[1], Shoko Hososhima[1,2], Hideki Kandori[1,2], Satoshi Tsunoda[1,2]

[1]Department of Life Science and Applied Chemistry, Nagoya Institute of Technology, [2]Opto Bio Technology Research Center, Nagoya Institute of Technology

***26P-178** **In vivo single-cell 3D optogenetics technology with light-field microscopy**

Tomoyoshi Inoue[1], Ryuki Imamura[1], Naoya Kataoka[2], Akihiro Fukushima[2], Shin Usuki[3], Takuma Sugi[1]

[1]Program of Biomedical Science, Graduate School of Integrated Sciences for Life, Hiroshima University, Hiroshima, Japan, [2]Department of Integrative Physiology, Nagoya University Graduate School of Medicine, Aichi, Japan, [3]Research Institute of Electronics, Shizuoka University, Shizuoka, Japan

26P-179 **Identification of the important region for photoactivity in photoactivated adenylyl cyclase**

Minako Hirano[1], Masumi Takebe[2], Hinase Kondo[1], Mami Asakura[3], Toru Ide[1]

[1]Grad. Sch. Health Sys., Okayama University, [2]Hamamatsu Photonics K.K., [3]Dept. of Comp. Tech. Soln., Okayama University

Poster Sessions

Radiobiology & Active oxygen

26P-180 **Verification of the dosimetry techniques using GAFCHROMIC films for the study of the mechanism of the FLASH effect with synchrotron radiation**

Munetoshi Maeda[1], Ryoichi Hirayama[2], Ayumi Shiro[3], Mika Maeda[1], Masanori Tomita[4]

[1]The Wakasa Wan Energy Research Center, Fukui, Japan, [2]National Institutes for Quantum Science and Technology, Chiba, Japan, [3]National Institutes for Quantum Science and Technology, Hyogo, Japan, [4]Central Research Institute of Electric Power Industry, Chiba, Japan

Origin of life & Evolution

***26P-181** **Observation of Fatty Acid Vesicle Condensation on the Surface of Simulated Hydrothermal Vent Minerals**

Shunto Harada[1,2], Hye-Eun Lee[1,2], Yamei Li[1,2], Ryuhei Nakamura[1,2]

[1]Earth-Life Science Institute (ELSI), Tokyo Institute of Technology, [2]RIKEN Center for Sustainable Resource Science

***26P-182** **Genome reduction increases parasite sensitivity and promotes the evolution of endosymbiotic mutualism**

Yuki Kanai[1], Chikara Furusawa[2,3]

[1]Department of Biological Sciences, Graduate School of Science, The University of Tokyo, [2]Universal Biology Institute, Graduate School of Science, The University of Tokyo, [3]Center for Biosystem Dynamics Research, RIKEN

***26P-183** **Proofreading inherited by template-directed ligation**

Hiroyuki Aoyanagi, Yasuhiro Magi, Shoichi Toyabe

Department of Applied Physics, Graduate School of Engineering, Tohoku University, Japan

26P-184 **The Relation Between Biology and Physics: Origins of Life Research and its Philosophical Implications**

Julieta Macome

Department of History and Philosophy of Science, Cambridge University, CB2 3RH Cambridge, UK

Wednesday, June 26

Synthetic biology & Artificial cells

***26P-185** **Control of lipid membrane composition in vesicles by external stimulations**

Sumin Lee, Koki Kamiya
Graduate School of Science and Engineering, Gunma University, Gunma, Japan

***26P-186** **Construction of enzymatically assembled gel-in-liposome as artificial Cell model**

Wancheng Zhang[1], Aileen Cooney[2], Lorenzo Di Michele[3], Yuval Elani[2], Tomoaki Matsuura[1]
[1]Earth-life Science Institute, Tokyo Institute of Technology, [2]Department of Chemical Engineering, Imperial College London, [3]Department of Chemical Engineering and Biotechnology, University of Cambridge

***26P-187** **Creation of cell-sized droplets entrapping DNA or living cells through phase separation under one-dimensional confinement**

Mayu Shono
Department of Chemical Engineering and Materials Science, Doshisha University, Kyoto, Japan

***26P-188** **TOWARD THE CONSTRUCTION OF A SELF-REPLICATING SYSTEM DRIVEN BY GENE EXPRESSION OF REPLICATION CYCLE REACTION (RCR)**

Yuya Yamahishi, Sonoyama Naoki, Kawakami Naoki, Hasebe Tomonori, Su'etsugu Masayuki
College of Science, Rikkyo University, Tokyo, Japan

26P-189 **Analysis of biochemical reaction in liposomes after terahertz wave irradiation**

Gakushi Tsuji[1,2], Masaya Oki[1,2], Yuusuke Yamaguchi[3]
[1]Department of Applied Chemistry and Biotechnology, Graduate School of Engineering, University of Fukui, [2]Life Science innovation center, University of Fukui, Fukui, Japan, [3]Research Center for Development of Far-infrared Region, University of Fukui, Fukui, Japan

Poster Sessions

26P-190 **Cation-selective pores from POSS-decorated amphiphilic diblock copolymers**

Denis G Knyazev[1], Nora Hagleitner-Ertuğrul[1], Asad Ullah[2], Nikolaus Goessweiner-Mohr[1], Hazrat Hussain[2], Peter Pohl[1]

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Computational biology: Bioinformatics

***26P-191** **Learning What AlphaFold2 Learned**

Nozaki Kosei

Department of Applied Physics, Graduate School of Engineering, Nagoya University.

***26P-192** **Theoretical Insights into Conformational Changes in SOD1 Involved in the Pathological Mechanism of Amyotrophic Lateral Sclerosis: Residue Interaction Network Analysis**

Shun Fujimaki, Norifumi Yamamoto

Chiba Tech

26P-193 **Analysis of protein-protein interaction search space by ensemble docking**

Nobuyuki Uchikoga[1], Yuri Matsuzaki[2]

[1]Dept Network Design, Sch Interdiscip Math Sci, Meiji Univ., [2]Tokyo Tech. Acad. for Leadership, Tokyo Inst. Tech

Computational biology: Molecular simulation

***26P-194** **Experimental and Computational Predictions of the Intrinsic Reactivity of Small Molecules with Lipid Membranes**

Yeshurun Amarasingham Tanna, John Sanderson, Mark Wilson

Department of Chemistry, University of Durham (UK)

***26P-195** **Multiphase condensate formation of postsynaptic density: a comparative study of protein assembly in 3D and 2D systems**

Risa Yamada, Shoji Takada

Department of Biophysics, Graduate School of Science, Kyoto University, Kyoto, Japan

***26P-196** **Molecular simulations of TMEM16A channel blockers**

Tanadet Pipatpolkai

School of Physical and Mathematical Science, Department of Physics and Applied Physics, Nanyang Technological University, Singapore, 637371

***26P-197** **Different behavior of dissociation pathways of glutamine and glutamate in complex with Medaka Taste Receptor T1R**

Duy Phuoc Tran[1], Vi Toan Lam[1], Hao Thai Nguyen[1], Akio Kitao[1], Atsuko Yamashita[2]

[1]Life Science & Technology, Tokyo Institute of Technology, Japan, [2]Graduate School of Medicine, Dentistry and Pharmaceutical Sciences, Okayama University, Japan

***26P-198** **Decoding Peptide Solvation Dynamics: Uncovering the Influence of Hydrophobic Forces and Addressing Solvation Complexity via Multiway Statistical Analysis Techniques.**

Monika Phougat[1], Narinder Singh Sahni[1], Devapriya Choudhury[2]

[1]School of Computational & Integrative Sciences, Jawaharlal Nehru University, New Delhi, India, [2]School of Biotechnology, Jawaharlal Nehru University, New Delhi, India

***26P-199** **Ubiquinone/ubiquinol exchange pathway in the photosynthetic RC–LH1 supercompex**

Yosuke Teshirogi, Yoshitaka Moriwaki, Tohru Terada

Dept. of Biotechnol., Grad. Sch. of Agri and Life Science., The Univ. of Tokyo

***26P-200** **Spectrum analyses on the non-linear response of a red blood cell model**

Tetsuya Yamamoto, Hiroshi Watanabe

Keio University

***26P-201** **Lipid-protein interaction fingerprints for the Kv7 ion channels**

Ali Saad Kusay[1], Lucie Delemotte[2], Sara Liin[1]

[1]Division of Neurobiology, Department of Biomedical and Clinical Sciences, Linköping University, Linköping, Sweden, [2]Science for Life Laboratory, Department of Applied Physics, KTH Royal Institute of Technology, Solna, Sweden

***26P-202** **A drug design strategy based on in vitro and in silico studies applied to the development of inhibitors against alpha-glucosidase and alpha-amylase receptors of diabetics from selected Metformin derivatives.**

Nor Akmalyati Sulong[1,2]

[1]Department of Chemistry, Quantum Information Science and Technology (QIST), Faculty of Science, University Malaya, 50603 Kuala Lumpur, Malaysia, [2]Institute for Molecular Science, Myodaiji, Okazaki 444-8787, Japan

Poster Sessions

***26P-203** **Molecular Dynamics Study on the Solvent Influence and Stability of the Aspirin-Hydroxypropyl-ß-Cyclodextrin Complex Structure**

Helmia Jayyinunnisya, Dedy Rendrawan, Lince Meriko, Kazutomo Kawaguchi, Hidemi Nagao

Graduate School of Mathematical and Physical Science, Kanazawa University, Kanazawa, Japan

***26P-204** **Molecular dynamics calculations of peptides self-assembling on boron nitride surfaces**

Hiroki Maeda[1], Chishu Homma[1], Eiji Yamamoto[2], Yuhei Hayamizu[1]

[1]Tokyo Tech, [2]Keio University

***26P-205** **Docking and Molecular Dynamics Simulation Study of BAK1 and BRI1 Proteins in Arabidopsis thaliana Plant**

Lince - Meriko, Helmia Jayyinunnisya, Dedy Rendrawan, Kazutomo Kawaguchi, Hidemi Nagao

Kanazawa University

26P-206 **Hydrogen Bond Energies in Helical Secondary Structures Dissected by Negative Fragmentation Approach and Density Functional Theory**

Hiroko X Kondo[1], Haruki Nakamura[2], Yu Takano[3]

[1]Kitami Institute of Technology, [2]Institute for Protein Research, [3]Hiroshima City University

26P-207 **Insight into structural propagating mechanism of photoactivated adenylate cyclase OaPAC by microsecond molecular simulation.**

Akiya Fukuda[1], Masahiko Taguchi[1,2,3], Shun Sakuraba[3], Justin Chan[3], Eriko Nango[1,2,4], Hidetoshi Kono[3]

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26P-208 **Integration of AlphaFold with Molecular Dynamics for Sampling Conformational States of Transporter Proteins**

Jun Ohnuki, Kei-ichi Okazaki

Institute for Molecular Science, National Institutes of Natural Sciences, Okazaki, Japan

26P-209 **Molecular simulations of cholesterol recognition by SREBP cleavage-activating protein**

Charal Khiewdee[1], Puey Ounjai[1], Tanadet Pipatpolkai[2]

[1]Department of Biology, Faculty of Science, Mahidol University, Bangkok, Thailand 10400, [2]The School of Physical and Mathematical Sciences (SPMS), Nanyang Technological University, 50 Nanyang Avenue, Singapore 639798

26P-210 **Development and Application of a Protocol for Predicting Membrane Permeability of Cyclic Peptides Based on Molecular Dynamics Simulations**

Masatake Sugita[1,2], Takuya Fujie[1,2], Keisuke Yanagisawa[1,2], Masahito Ohue[1,2], Yutaka Akiyama[1,2]

[1]Department of Computer Science, School of Computing, Tokyo Institute of Technology, W3-34, 2-12-1, Ookayama, Meguro-ku, Tokyo, Japan, [2]Middle Molecule IT-based Drug Discovery Laboratory (MIDL), Tokyo Institute of Technology, W8-76, 2-12-1, Ookayama, Meguro-ku, Tokyo, Japan

26P-211 **Impact of glycan shielding on antibody epitopes on viral envelope proteins revealed by molecular dynamics simulations**

Suyong Re[1], Kenji Mizuguchi[1,2]

[1]Artificial Intelligence Center for Health and Biomedical Research, National Institutes of Biomedical Innovation, Health, and Nutrition, Osaka, Japan, [2]Institute for Protein Research, Osaka University, Osaka, Japan

26P-212 **Hybrid of Manifold Learning and Molecular Simulation to Reconstruct the Protein Conformational Change using Cryo-Electron Microscopy Experiment**

Takashi Yoshidome

Department of Applied Physics, Graduate School of Engineering, Tohoku University, Japan

26P-213 **Elucidating the Importance of Water Models in Protein-ATP Interactions in High ATP Concentrations**

Toshifumi Mori[1,2], Norio Yoshida[3]

[1]Institute for Materials Chemistry and Engineering, Kyushu University, [2]Interdisciplinary Graduate School of Engineering Sciences, Kyushu University, [3]Graduate School of Informatics, Nagoya University

26P-214 **Fast Computational Method for the Hydration Free Energy**

Taichi Ito, Takashi Yoshidome

Department of Applied Physics, Graduate School of Engineering, Tohoku University, Japan

Poster Sessions

26P-215 **Molecular dynamics method for studying a flow on lipid bilayer**

Masaki Otawa[1,2], Satoru G. Itoh[1,2,3], Hisashi Okumura[1,2,3]

[1]The Graduate University for Advanced Studies, [2]Institute for Molecular Science, [3]Exploratory Research Center on Life and Living Systems

Computational biology: Biological modeling and simulation

***26P-216** **Metabolome Analysis in Mice Liver Using Thermodynamics**

Takumi Abekawa[1], Satoshi Ohno[2], Shinya Kuroda[1]

[1]Department of Biological Sciences, School of Science, University of Tokyo, Tokyo, Japan, [2]Department of AI Systems Medicine, M&D Data Science Center, Tokyo Medical and Dental University, Tokyo, Japan

***26P-217** **INVESTIGATION OF FACTORS AFFECTING THE QUALITY OFSINGLE PHOTON EMISSION COMPUTED TOMOGRAPHY (SPECT) IMAGES: A MONTE CARLO SIMULATION STUDY**

Mercy Amondi[1], Jared Ombiro[2], Sankara Aluko[4], Duke Oeba[3]

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***26P-218** **Elucidating the adaptive mechanical behaviors of actomyosin bundles in cells**

Shihang Ding[1], Taeyoon Kim[2], Shinji Deguchi[1]

[1]Graduate School of Engineering Science, Osaka University, Osaka, Japan, [2]Weldon School of Biomedical Engineering, Purdue University, West Lafayette, Indiana, USA

***26P-219** **Development of a Protein Language Model-Based Thermal Stability Prediction Model for Nanobodies**

Yuki Hashidate, Yasuhiro Matsunaga

Graduate School of Science and Engineering, Saitama University, Saitama, Japan

Wednesday, June 26

***26P-221** **Prediction of the mutation effects of Indonesian Protein Nsp3 SARS-Unique domain (SUD)-pyridostatin as a ligand interaction via end-point binding free energy calculations**

Dedy Rendrawan, Kazutomo Kawaguchi, Hidemi Nagao

Faculty of Mathematics and Physics, Institute of Science and Engineering, Kanazawa University, Japan,

***26P-222** **Adhesive Active Brownian Particle Model for Cell Populations**

Sota Shimamura[1], Nen Saito[2,3], Shuji Ishihara[1,4]

[1]Graduate School of Arts and Sciences, The University of Tokyo, Tokyo, Japan, [2]Exploratory Research Center on Life and Living Systems (ExCELLS), National Institutes of Natural Sciences, Aichi, Japan,, [3]Graduate School of Integrated Sciences for Life, Hiroshima University, Hiroshima, Japan, [4]Universal Biology Institute, The University of Tokyo, Tokyo, Japan

26P-223 **Estimation of biochemical reaction parameters using a mathematical model of the cell-free translation system**

Shunnosuke Ban[1], Yusuke Himeoka[2], Tomoaki Matsuura[3], Yoshihiro Shimizu[4], Chikara Furusawa[1,2,4]

[1]Department of Physics, Graduate School of Science, The University of Tokyo, Tokyo, Japan, [2]Universal Biology Institute, Graduate School of Science, The University of Tokyo, Tokyo, Japan, [3]Earth-Life Science Institute, Tokyo Institute of Technology, Tokyo, Japan, [4]Center for Biosystems Dynamics Research, RIKEN, Osaka, Japan

26P-224 **Coevolution of functionality and foldability of lattice proteins**

Norifumi Maruyama[1,2], Macoto Kikuchi[1,2]

[1]Cybermedia center, Osaka University, [2]Department of Physics, Osaka University

26P-225 **Live imaging-based inference of mechanical potential of cell-cell interaction in 3D-multicellular systems**

Hiroshi Koyama[1,2], Toshihiko Fujimori[1,2]

[1]Div. Embryology, National Institute for Basic Biology, Japan, [2]SOKENDAI (Grad. Univ. Advanced Studies)

26P-226 **Visualization of protein conformational ensembles using refinement in the information content space: Application to SANXS data**

Tomotaka Oroguchi[1,2], Rintaro Inoue[3], Ken Morishima[3], Masaaki Sugiyama[3]

[1]Department of Physics, Faculty of Science and Technology, Keio University, [2]RIKEN SPring-8 Center, [3]Institute for Integrated Radiation and Nuclear Science, Kyoto University

Poster Sessions

Computational biology: machine learning for molecules or cell systems

***26P-227** **Examining Cell Division Dynamics in Cyanidioschyzon merolae Through High-Resolution 3D Imaging**

Jin Kousaka[1], Atsuko H. Iwane[2], Yuichi Togashi[1,2]
[1]Ritsumeikan University, [2]RIKEN Center for Biosystems Dynamics Research

***26P-228** **Structure changes in the ABC transporter cycle using nonlinear morphing method, MOVE-DM.**

Shota Shimogochi[1], Kazuhi Harai[2], Ryota Kiyooka[1], Naoyuki Miyashita[1,2]
[1]Grad. Sch. BOST, KINDAI Univ., [2]BOST. KINDAI Univ.

26P-229 **Predicting Novel PLP-binding Proteins Using Transfer Learning of Graph Neural Network-based Ligand-binding Site Prediction**

Masafumi Shionyu[1], Momoka Nakamoto[1], Atsushi Hijikata[2], Takashi Nakamura[1], Yukio Mukai[1]
[1]Graduate School of Bioscience, Nagahama Institute of Bio-Science and Technology, Shiga, Japan, [2]School of Life Sciences, Tokyo University of Pharmacy and Life Science, Tokyo, Japan

Mathematical & Theoretical biology

***26P-230** **Population dynamics of generalist/specialist strategies in the feast-famine cycle**

Rintaro Niimi[1], Chikara Furusawa[1,2], Yusuke Himeoka[1]
[1]Graduate School of Science, the University of Tokyo, [2]BDR, RIKEN, Japan

***26P-231** **Mathematically deriving loop mobility for single protein structures**

Virginia Apostolopoulou[1], Nicholas Pearce[2], Helen Ginn[3]
[1]Hamburg Centre for Ultrafast Imaging, Universität Hamburg, Luruper Chaussee 149, DE-22761, Hamburg, Germany, [2]Department of Physics, Chemistry and Biology (IFM), Linköping University, SE-581 83 Linköping, Sweden, [3]Deutsches Elektronen-Synchrotron DESY, Notkestraße 85, DE-22607, Hamburg, Germany

***26P-232** **Appearance and adaptive properties of bow-tie structures from simple metabolic networks**

Yudai Iyoda[1], Chikara Furusawa[1,2], Yusuke Himeoka[1]
[1]Graduate School of Science, The University of Tokyo, Japan, [2]BDR, RIKEN, Japan

26P-233 **Reinforcement learning is a common principle for biological control of complex adaptive systems**

Tomoyuki Yamaguchi

Research Institute, Nozaki Tokushukai Hospital, Osaka, Japan

26P-234 **Evaluation of different machine learning models applied to diagnostics and treatment success at the pulmonary tuberculosis**

Anastasia Lavrova[1], Diljara Esmedlyaeva[1], Artem Veselsky[1], Pavel Gavrilov[1], Eugene Postnikov[2]

[1]Saint-Petersburg State Research Institute of Phthisiopulmonology, Russia, [2]Kursk State University, Russia

Ecology & Environment

***26P-235** **Analysis of Alcanivorax borkumensis Biofilm on Binary Oil-mixtures using Microfluidic Devices**

Rei Shimizu

Graduate School of Sci. and Tech., Univ. of Tsukuba, Tsukuba, Japan

Nonequilibrium state & Biological rhythm

26P-236 **Spiral wave and homogeneous cyclic modes on membrane**

Hiroshi Noguchi[1], Frédéric van Wijland[2], Jean-Baptiste Fournier[2]

[1]University of Tokyo, [2]Université Paris Cité

Measurements

***26P-237** **Hydrogel Colloidosomes from Aqueous Two-Phase Emulsion as New Microreactors for Digital Nucleic Acid Detection**

Bicheng Zhang, Kanji Tomohara, Hiroyuki Noji

Graduate School of Engineering, The University of Tokyo

***26P-238** **Development for the detection of salivary biomarkers by solid-state nanopore**

Eiji Kato, Ryo Akita, Sotaro Uemura

Department of Biological Sciences, Graduate School of Science, The University of Tokyo, Tokyo, Japan

Poster Sessions

26P-239 **3D structural determination of biological ensembles using high-order spatial correlations in single-particle X-ray scattering**

Wenyang Zhao[1], Osamu Miyashita[1], Miki Nakano[1], Florence Tama[1,2,3]
[1]RIKEN Center for Computational Science, Kobe, Japan, [2]Institute of Transformative Bio-Molecules, Nagoya University, Nagoya, Japan, [3]Graduate School of Science, Nagoya University, Nagoya, Japan

26P-240 **IR measurement of flavin mononucleotide aqueous solution by resonance IR method**

Minori Yamakawa, Hirona Takahashi, Konoka Mifune, Makoto Sakai
Okayama University of Science

26P-241 **Selective IR measurement of fluorescent protein chromophores by resonance IR spectroscopy**

Konoka Mifune, Hirona Takahashi, Minori Yamakawa, Makoto Sakai
Okayama University of Science

Bioimaging

***26P-242** **Molecular mechanisms of selective binding of extracellular vesicles to cells as revealed by single particle tracking and super resolution microscopy**

Tatsuki Isogai[1], Koichiro M. Hirosawa[2], Miki Kanno[3], Yasunari Yokota[4], Kenichi G. N. Suzuki[1,2,3,5]
[1]UGSAS, Gifu Univ. Gifu, Japan, [2]iGCORE, Gifu Univ. Gifu, Japan, [3]Grad. Sch. Nat. Sci. Tech., Gifu Univ. Gifu, Japan, [4]Dept. Eng., Gifu Univ. Gifu, Japan, [5]Natl . Cancer Ctr. Res. Inst., Tokyo, Japan

***26P-243** **Development of Fluorescent Thermometers Based on Carbon Quantum Dots with Various Detection Modes**

Yuki S. Kato[1], Shingo Sotoma[2,3], Yukiho Shimazaki[3,4], Shunsuke Chuma[3,4], Kohki Okabe[5], Madoka Suzuki[3], Yoshie Harada[3,6,7]
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***26P-244** **Nanoendoscopy-AFM Measurements of Live Cells: Impact on Proliferation and Stress Response**

Mohammad Mubarak Hosain, Takehiko Ichikawa, Takeshi Fukuma
Nano Life Science, Kanazawa University

***26P-245** **Miniaturization of the laser spot for cantilever deflection detection to realize ultra-high-speed AFM**

Karen Kamoshita[2], Kenichi Umeda[1], Noriyuki Kodera[1]
[1]WPI-NanoLSI, Kanazawa Univ., [2]Grad. Sch. Math. & Phys., Kanazawa Univ.

***26P-246** **Live-cell imaging defines a threshold in CDK activity at the G2/M transition**

Hironori Sugiyama[1], Yuhei Goto[1,2,3], Yohei Kondo[1,2,3], Damien Coudreuse[4], Kazuhiro Aoki[1,2,3,5]
[1]The Exploratory Research Center on Life and Living Systems, [2]National Institute for Basic Biology, [3]The Graduate University for Advanced Studies, [4]Centre national de la recherche scientifique, [5]Kyoto University

***26P-247** **Elucidation of various IL-1α/β release control mechanisms in cellular inflammatory responses by live-cell imaging of secretion activity.**

Yu Peng[2], Zhuohao Yang[1], Masahiro Nagata[3]
[1]Laboratory of Bio-Analytical Chemistry Graduate School of Pharmaceutical Sciences,The University of Tokyo, [2]Laboratory for Nanobiology, Institute for Protein Research, Osaka University, [3]University of Cologne • Institute for Genetics

***26P-248** **Cryogenic X-ray Ptychographic Imaging of CItured Cells toward Visualization of Hierarchical Structures of Chromatin**

Yuta Kinami[1,2], Kurumi Nishimagi[1], Kosei Harada[2,3], Masayoshi Nakasako[2,3], Yukako Oma[1], Masahiko Harata[1,4], Yuki Takayama[1,2,4]
[1]Graduate School of Agricultural Science, Tohoku University, Sendai, Japan, [2]RIKEN SPring-8 Center, Hyogo, Japan, [3]Faculty of Science and Technology, Keio University, Hiyoshi, Japan, [4]International Center for Synchrotron Radiation Innovation Smart, Tohoku University, Sendai, Japan

***26P-249** **X-ray diffraction imaging tomography at cryogenic temperature is powerful to reveal 3D structures of biological specimens**

Kosei Harada[1,2], Yuki Takayama[2,3,4], Masayoshi Nakasako[1,2]
[1]Faculty of Science and Technology, Keio University, Yokohama, Japan, [2]RIKEN SPring-8 Center, Hyogo, Japan, [3]Graduate School of Agricultural Science, Tohoku University, Sendai, Japan, [4]International Center for Synchrotron Radiation Innovation Smart, Tohoku University, Sendai, Japan

Poster Sessions

***26P-250** **Development of nano-endoscopic high-speed atomic force microscopy**

Hikaru Ichida[1], Kenichi Umeda[2], Mohammad Shahidul Alam[1], Risa Omura[2], Kudo Makiko[2], Takehiko Ichikawa[2], Takeshi Fukuma[2], Takahiro Nakayama[2], Mikihiro Shibata[2,3], Noriyuki Kodera[2]

[1]Grad. Sch. NanoLS., Kanazawa Univ., [2]WPI-NanoLSI, Kanazawa Univ., [3]InFiniti, Kanazawa Univ.

26P-251 **CTCF-mediated Chromatin Looping is Coupled to the Formation of Phase-separated Transcriptional Condensate**

Ryangguen Lee[1], Moo-Koo Kang[2], Yong-Jin Kim[2], Bobae Yang[2], Hwanyong Shim[1]

[1]Department of Biological Sciences, Korea Advanced Institute of Science and Technology (KAIST), [2]Department of Environmental Medical Biology, Institute of Tropical Medicine, Yonsei University College of Medicine

26P-252 **Mechanical properties of hiPSC derived-cardiomyocytes: investigating beating and non-beating cell's nucleus via Nanoendoscopy-AFM**

Alexis S. Borowiak[1], T. Ichikawa[1], M. Ito[2], T. Shimi[1], Y. Kono[1], R. Nitta[3], T. Fukuma[1]

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26P-253 **New mode of intercellular communication: direct vesicle delivery to neighboring cells**

Tomohiro Minakawa[1], Fumiyoshi Ishidate[2], Takahiro K. Fujiwara[2], Jun K. Yamashita[1]

[1]Department of Cellular and Tissue Communication, Graduate School of Medicine, The University of Tokyo, Tokyo, Japan, [2]iCeMS Analysis Center, Institute for Integrated Cell-Material Sciences (WPI-iCeMS), Kyoto University Institute for Advanced Study, Kyoto University, Kyoto, Japan

26P-254 **Photonic chips: a versatile platform for super-resolution microscopy**

Jean-Claude Tinguely, Vishesh Dubey, Luis Enrique Villegas-Hernandéz, Krishna Agarwal, Balpreet Singh Ahluwalia

UiT The Arctic University of Norway

Wednesday, June 26

Bioengineering

***26P-255** **Direct and continuous monitoring of multi-component antibiotic gentamicin in blood**

Chen Chen[1,2], Changjian Zhao[1,2], Yu Wang[1,2], Jia Geng[1,2]

[1]Department of Laboratory Medicine, State Key Laboratory of Biotherapy and Cancer Center, West China Hospital, Sichuan University and Collaborative Innovation Center, Chengdu 610041 China., [2]Tianfu Jincheng Laboratory, City of Future Medicine, Chengdu 610500, China.

***26P-256** **Microalgae- and Cyanobacteria-Mediated Fabrication of Functionalized Gold Nanoparticles for Photothermal Applications**

Reham Samir Hamida[1], Shingo Sotoma[2], Madoka Suzuki[1], Yoshie Harada[1,3,4]

[1]Institute for Protein Research, Osaka University, Osaka, Japan, [2]Faculty of Molecular Chemistry and Engineering, Kyoto Institute of Technology, Kyoto, Japan, [3]Center for Quantum Information and Quantum Biology, Osaka University, Osaka, Japan, [4]Premium Research Institute for Human Metaverse Medicine (WPI-PRIMe), Osaka University, Osaka, Japan

***26P-257** **Iono-chromic control of G-protein Ras by fused with M13 peptide**

Zhang Ziyun, Sabek Yassine, Nobuyuki Nishibe, Shinsaku Maruta

Department of Biosciences, Graduate School of Science and Engineering Soka University, Hachioji, Tokyo JAPAN

***26P-258** **Redox-Active Liquid-Liquid Phase Separation Materials Promote Oxidative Protein Folding**

Yukino Yamashita[1], Munehiro Kumashiro[2], Tomohide Saio[2], Takahiro Muraoka[1,3]

[1]Department of Applied Chemistry, Graduate School of Engineering, Tokyo University of Agriculture and Technology, [2]Division of Molecular Life Science, Institute of Advanced Medical Sciences, Tokushima University, [3]Kanagawa Institute of Industrial Science and Technology (KISTEC)

Poster Sessions

26P-259 **SeeDB-Live: minimally invasive optical clearing media for fluorescence imaging of live tissue ex vivo and in vivo**

Shigenori Inagaki[1], Nao Tamagawa[2], Yuki Kambe[2], Rei Yagasaki[3], Aki Teranishi[3], Misato Miyagawa[3], Hikari Takeshima[1], Shunki Tamura[1], Satoshi Fujimoto[1], Yuki Naito[1,4], Keisuke Ito[5], Hideki Enomoto[5], Katsuhiko Hayashi[1,4], Takashi Sato[6], Yoshiaki Tagawa[2], Satoru Okuda[3], Tatsuo Sato[2], Takeshi Imai[1]

[1]Kyushu University, [2]Kagoshima University, [3]Kanazawa University, [4]Osaka University, [5]Kobe University, [6]Medical University of South Carolina

Crystal growth & Crystallization technique

***26P-260** **Emergence of order from proteins under nucleation**

Dimitrios Triantafyllidis[1], Suraksha Smitha[1], Felix Lehmkühler[2], Arwen R. Pearson[1]

[1]Hamburg Centre for Ultrafast Imaging, Institute for Nanostructure and Solid State Physics, Universität Hamburg, Luruper Chaussee 149, 22761 Hamburg, Germany, [2]Deutsches Elektronen-Synchrotron DESY, Notkestraße 85, 22607 Hamburg, Germany

Virus structure, function, SARS-CoV-2

***26P-261** **Complementation of Influenza A virus genome segments by cellular coinfection**

Yuu Kawahara, Hiroyuki Noji, Kazuhito Tabata

Department of Applied Chemistry, School of Engineering, University of Tokyo

***26P-262** **Observation of the compaction process ribonucleoprotein complex formed by SARS-CoV-2 genome RNA and N protein by using fluorescence correlation spectroscopy.**

Takuya Katayama[1,2], Yuji Itoh[1,2,3], Naoya Kaneda[1,3], Satoshi Takahashi[1,2,3]

[1]IMRAM, Tohoku Univ., [2]Grad. Sch. Life Sci., Tohoku Univ., [3]Grad. Sch. Sci., Tohoku Univ.

26P-263 **Pseudo-luciferase activity of the SARS-CoV-2 spike protein**

Ryo Nishihara[1,2], Hisham M Dokainish[3,4], Yoshiki Kihara[1,5], Yuji Sugita[4,6,7], Ryoji Kurita[1,5]

[1]Health and Medical Research Institute, National Institute of Advanced Industrial Science and Technology, [2]Japan Science and Technology Agency, PRESTO, [3]Faculty of Pharmaceutical Sciences, Hokkaido University, [4]Theoretical Molecular Science Laboratory, RIKEN Cluster for Pioneering Research, [5]Faculty of Pure and Applied Sciences, University of Tsukuba, [6]Laboratory for Biomolecular Function Simulation, RIKEN Center for Biosystems Dynamics Research, [7]Computational Biophysics Research Team, RIKEN Center for Computational Science

Mechanosensing and Mechanobiology, Biological Temperature

***26P-264** **Tracking of adipogenesis process of mesenchymal stem cells cultured in the spherical microwells**

You-Hsuan Liu[1], Karen G. Rosal[1], Chon-In Cheong[2], Feng-Chiao Tsai[3], Keng-Hui Lin[1]

[1]Institute of Physics, Academia Sinica, Taipei, Taiwan, [2]Genenet Technology Limited, Stevenage, UK, [3]Department and Graduate Institute of Pharmacology, National Taiwan University, Taipei, Taiwan

***26P-265** **Phenotypic Heterogeneity and Cell Orientation in Extracellular Matrix Production of Escherichia coli**

Fumiaki Yokoyama, Kazumasa Takeuchi

Department of Physics, The University of Tokyo, Tokyo, Japan

26P-266 **“DIY Statistical Mechanics” to understand the concepts of Boltzmann distribution and local temperature**

Kiyoshi Ohnuma[1], Masayo Inoue[2], Noritaka Masaki[3], Masako Ohtaki[4], Taro Toyota[5]

[1]Nagaoka University of Technology, [2]Kyushu Institute of Technology, [3]National Institute of Genetics, [4]WASEDA University, [5]The University of Tokyo

Biophysics of disease

***26P-267** **Tissue Repair in Colorectal Cancer Organoids**

Jimmy Van Hear[1], Yanlan Mao[1], Chris Tape[2]

[1]Laboratory for Molecular Cell Biology, University College London, [2]UCL Cancer Institute, University College London

Poster Sessions

***26P-268** **Clustering of Progerin Induces Nuclear Deformation By Disrupting Heterochromatin Organization**

YigJi Lee, Won-Ki Cho
Department of Biological Sciences, Korea Advanced Institute of Science and Technology, Daejeon, 34141, Republic of Korea

26P-269 **Fibrinogen-erythrocyte binding and erythrocyte-erythrocyte adhesion as determinants for cardiovascular risk**

Catarina Lopes[1], Ryan Gouveia e Melo[2], Luís Mendes Pedro[2], Filomena Carvalho[1], Nuno C. Santos[1]
[1]Instituto de Medicina Molecular, Faculdade de Medicina, Universidade de Lisboa, Lisbon, Portugal, [2]Hospital de Santa Maria, Centro Hospitalar Universitário Lisboa Norte, Lisbon, Portugal

Miscellaneous topics

***26P-270** **Immobilization of Liposomes within Porous Aluminum Oxide and Intact Release: Basic Study and Applications to Single Particle Analysis for Exosomes**

Masahiro Okada[1], Yusuke Sato[1], Tetsuji Itoh[2], Seiichi Nishizawa[1]
[1]Graduate School of Science, Tohoku University, [2]AIST Tohoku

***26P-271** **Enhancing Tomato Shelf Life through Nanoparticle-Based Preservation Techniques**

Kummari Swathi[1,2], CH.Shanthi Devi[3,4]
[1]Research Scholar, Andhra University, Visakhapatnam, [2]Assistant Professor, St. Francis College for Women, Hyderabad, [3]Research Guide Andhra University, Visakhapatnam, [4]Assistant Professor, Vishaka Degree College, Visakhapatnam

26P-272 **NOVEL ANTIBACTERIAL AGENTS IN TREATING MULTIDRUG RESISTANT BACTERIA CAUSING WOUND INFECTIONS IN DIABETIC PATIENTS**

Shailaja Raj Marla[2], Mithali Raj Marla[1], Maria Shajan[2]
[1]Kamineni institute of medical Sciences, [2]St. Francis College For Women

Thursday, June 27

Presentation time is organized by whether the last part (suffix) of Poster Session number is odd/even.
Odd number: 13:50-14:50 Even number: 14:50-15:50

Abstracts marked with * in the abstract number eligible for IUPAB2024 Student and Early Career Researcher Poster Award voting
Ex) *25P-999

Protein: Structure

***27P-001** **Structural Basis for the Functional Diversity in Mechanosensitive Channel OSCAs**

Kio Horinaka, Tatsuya Hagino, Tsukasa Kusakizako, Osamu Nureki
Department of Biological Sciences, Graduate School of Science, The University of Tokyo, Tokyo, Japan

***27P-002** **Development of an Oxidative Folding Promoter by Controlling Protein Recognition Properties**

Koki Suzuki[1], Ryoya Nojiri[1], Tomohide Saio[2], Takahiro Muraoka[1,3]
[1]School of Engineering, Tokyo University of Agriculture and Technology, [2]Institute of Medical Sciences, Tokushima University, [3]Kanagawa Institute of Industrial Science Technology

***27P-003** **How well do Alphafold2 structures perform in Molecular Docking?**

Ben Hanks, John Douglas Tanner, Ben Corry
Australian National UNiversity

***27P-004** **Cryo-EM Structure Analysis of hOCT2, Organic Cation Transporter 2**

Haruna Inuzuka, Yongchan Lee, Tomohiro Nishizawa
Yokahama City University

Poster Sessions

***27P-005** **Magnetic field effects on structure of iron sulfur protein studied by EPR and SAXS**

Shogo Soga[1], Ryoma Kobayashi[2], Hirokazu Masai[3], Shinji Kohara[4], Kiminori Maeda[1], Mitsuhiro Hirai[5], Hiroki Nagashima[1,2], Shigeki Arai[2]

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***27P-006** **Analysis of the aggregation characteristics of tau droplets under oxidizing and reducing conditions**

Yuki Michiue[1], Ayumi Masui[1], Keisuke Yuzu[1], Yumiko Ohhashi[1,2], Keiichi Yamaguchi[3], Yasushi Kawata[4], Eri Chatani[1]

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***27P-007** **Determination of the hemocyanin structure from Concholepas concholepas using an X ray crystallography and Cryo EM combined approach**

Sebastian Manuel Muñoz[1], Michelle Salazar[2], Gabriel Vallejos[1], Augusto Manubens[2,3], Mathias Ellena[4], José Edwin Quesñay[4], Andre Ambrosio[4], Maria Inés Becker[2,3], Victor Castro-Fernandez[1], Victoria Guixé[1]

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***27P-008** **Designing Self-assembling Protein Nanoparticle using computational method**

JinWoong Song[1], SeaHae Choi[2], Junsu Ko[3], Won-Kyu Lee[2], Juyong Lee[1,3,4]

[1]College of Pharmacy, Seoul National University, Seoul, Republic of Korea, [2]New Drug Development Center, Osong Medical Innovation Foundation (Kbiohealth), Cheongju, Republic of Korea, [3]Arontier Co., Seoul, Republic of Korea, [4]Department of Molecular Medicine and Biopharmaceutical Sciences, Graduate School of Convergence Science and Technology, Seoul, Republic of Korea

Thursday, June 27

***27P-009** **Structure-based discovery of dual pathway inhibitors for SARS-CoV-2 entry**

Haofeng Wang
ShanghaiTech University

27P-010 **Efficient design of allosteric activators for Rsp5 E3 ligase using machine-learning tool ProteinMPNN**

Wei-Lin Lu
Institute of Biological Chemistry, Academia Sinica

27P-011 **Structural analysis of dissimilatory sulfate reductase**

Rio Hamada, Koji Nishikawa, Hideaki Ogata
University of Hyogo

27P-012 **Strucuture analysis of Panx3**

Ryuga Teramura, Taiichi Tsuyama, Ken Yokoyama
Kyoto Sangyo University

27P-013 **Approach to in situ structural analysis using JEOL's Cryo-FIB-SEM and CRYO ARM**

Tomoko Miyata[1,2], Miki Kinoshita[1,2], Fumiaki Makino[1,2,3], Yoshie Kushima[1,2], Reiko Yamauchi[1,2], Keiichi Namba[1,2]
[1]Graduate School of Frontier Biosciences, Osaka University, [2]JEOL YOKOGUSHI Research Alliance Laboratories, Osaka University, [3]JEOL Ltd

27P-014 **Cryo-EM structure of full-length cargo receptor ERGIC-53 in complex with MCFD2**

Satoshi Watanabe[1], Yoshiaki Kise[2], Kento Yonezawa[3], Mariko Inoue[1], Nobutaka Shimizu[3], Osamu Nureki[2], Kenji Inaba[1,4]
[1]Tohoku University, [2]The University of Tokyo, [3]KEK, IMSS, PF, [4]Kyushu University

Protein: Structure & Function

***27P-015** **Investigation of structural dynamics of E6AP/E6/p53 complex by using HS-AFM and computational simulation**

Yamamoto Sohma[1], Kazusa Takeda[2], Holger Flechsig[3], Hiroki Konno[3]
[1]College of Science and Engineering, School of Biological Science and Technology, Kanazawa University, Kakuma-machi, Kanazawa 920-1192, Japan, [2]Graduate School of Natural Science and Technology, Kanazawa University, Kanazawa 920-1192, Japan, [3]WPI Nano Life Science Institute (WPI-NanoLSI), Kanazawa University, Kakuma-machi, Kanazawa 920-1192, Japan

Poster Sessions

***27P-016** **Structural Basis of How MGME1 Processes DNA 5′ Ends to Maintain Mitochondrial Genome Integrity**

Eric Yin-Chen Mao[1], Chyuan-Chuan Wu[2]

[1]Department of Chemistry, College of Science, National Cheng Kung University, Tainan, Taiwan, [2]Department of Biochemistry and Molecular Biology, College of Medicine, National Cheng Kung University, Tainan, Taiwan

***27P-017** **Unveiling dynamics of Adenosine A2a receptor coupled to G proteins**

Sari Hagimoto, Duy Tran, Akio Kitao

Tokyo Institute of Technology

***27P-018** **Structural basis for recruitment of peptidoglycan endopeptidase MepS by lipoprotein NlpI**

Shen Wang

Institute of Biochemistry and Molecular Biology, College of Medicine, National Taiwan University, Taipei, Taiwan.

***27P-019** **Structural and functional analysis of PPL, a lectin from the poisonous mushroom Pleurocybella porrigen**

Daisuke Adachi

Graduate School of Medical Life Science, Yokohama City University, 1-7-29 Suehiro, Tsurumi-ku Yokohama, 230-0045, Kanagawa, Japan

***27P-020** **ERK1 is a noble topological factor to relax DNA supercoiling**

Sangmin Ju[1], Jaehyeon Jeong[2], Soo Jin Lee[3], Sanzhar Tarassov[4], Jeong Ho Jang[3], Heeyoun Bunch[1,2]

[1]1School of Applied Biosciences, College of Agriculture & Life Sciences, Kyungpook National University, Daegu, Republic of Korea, [2]2Department of Applied Biosciences, Kyungpook National University, Daegu, Republic of Korea, [3]3Department of Biology Education, Kyungpook National University, Daegu, Republic of Korea, [4]4Department of Biofabrication, Kyungpook National University, Daegu, Republic of Korea

***27P-021** **Reconstruction and Analysis of the Ancestral ATPase**

Aya Suzuki[1], Ryutaro Furukawa[1], Meghna Sobti[2,3], Hiroshi Ueno[1], Alastair G. Stewart[2,3], Satoshi Akanuma[4], Hiroyuki Noji[1]

[1]Applied Chemistry, Graduate School of Engineering, The University of Tokyo, Tokyo, Japan, [2]Molecular, Structural and Computational Biology Division, The Victor Chang Cardiac Research Institute, NSW, Australia, [3]St Vincent's Clinical School, Faculty of Medicine, UNSW Sydney, NSW, Australia, [4]Faculty of Human Sciences, Waseda University, Saitama, Japan

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***27P-022** **In situ structural analysis of Salmonella T3SS within the SCV**

Taiga Horii[1,2], Hiroko Takazaki[2], Yukihisa Hayashida[3], Yusuke V. Morimoto[4], Takayuki Kato[1,2]

[1]Grad. Sch. Frontier Biosci., Osaka Univ., Japan, [2]IPR, Osaka Univ., Japan, [3]Grad. Sch. Comp. Sci. and Sys. Eng., Kyushu Inst. Tech., Japan, [4]Dept. Phys. and Info. Eng., Fac. Comp. Sci. and Sys. Eng., Kyushu Inst. Tech., Japan

***27P-023** **Structural basis of bifunctionality of mimosine synthase in plants**

Sayaka Tsuji[1], Shigeki Ogai[2], Masakazu Fukuta[2], Hirosuke Oku[2], Hiroshi Sugimoto[3], Masaki Horitani[1,4]

[1]The United Graduate School of Agricultural Sciences, Kagoshima University, [2]Tropical Biosphere Research Center University of the Ryukyus, [3]RIKEN, [4]Faculty of Agriculture, Saga university

***27P-024** **Revealing KcsA dynamics by single-particle analysis and molecular dynamics**

Kotaku Yano[1], Hiroko Takazaki[2], Takuo Yasunaga[1]

[1]Graduate School of Computer Science and Systems Engineering, Kyushu Institute of Technology, Fukuoka, Japan, [2]IPR, Osaka University

***27P-025** **Molecular Mechanisms of Diverse Chemokine Recognition and Downstream Signaling Selectivity of Chemokine Receptors**

Fumiya K. Sano[1], Shirsha Saha[2], Sharma Saloni[2], Ramanuj Banerjee[2], Yoshiaki Kise[1], Wataru Shihoya[1], Osamu Nureki[1], Arun Shukla[2]

[1]Grad. Sch. of Sci., The Univ. of Tokyo, [2]Dept.of Bio. Sci., Indian Inst. of Tech.

***27P-027** **Deciphering Substrate Selectivity in SWEET Transporters: A Molecular Dynamics Perspective**

Aditi Laddha[1], Ramasubbu Sankararamakrishnan[1,2]

[1]Department of Biological Sciences and Bioengineering, Indian Institute of Technology Kanpur, Kanpur, Uttar Pradesh, India, [2]Mehta Family Centre for Engineering in Medicine, Indian Institute of Technology Kanpur, Kanpur, India

***27P-028** **Elucidation of Characteristic Cold-Adaptation Mechanism of Pyruvate Kinase from Psychrophilic Bacteria by X-ray Crystallography**

Hansani Ekanayake[1], Hiroshi Sugimoto[2], Masaki Horitani[3]

[1]The United Graduate School of Agricultural Sciences, Kagoshima University, Japan, [2]RIKEN RSC, Japan, [3]Faculty of Agriculture, Saga University, Japan

Poster Sessions

27P-029 **Different Dimerization Behavior of Fluorescent Proteins, eGFP and eYFP**

Yuna Kinoshita, Haruko Hosoi
Toho University

27P-030 **Role of actin-binding loops in determining myosin velocity**

Hideki Furusawa, Takeshi Haraguchi, Kohji Ito
Department of Biology, Graduate School of Science, Chiba University, Chiba 263-8522, Japan

27P-031 **Investigated the Amino Acid Region That Enables the fastest Movement in the Fastest Myosin**

Runa Komoto, Suzune Kato, Kohei Yosimura, Takeshi Haraguchi, Kohji Ito
Department of Biology, Graduate School of Science, Chiba University, Chiba 263-8522, Japan

27P-032 **Real-Time, Site-Specific Observation of Chaperone-Mediated Protein Folding using Noncanonical Amino Acid Labeling**

Munehiro Kumashiro[1], Adarshi Welegedara[2], Haocheng Qianzhu[2], Elwy Abdelkader[2], Thomas Huber[2], Gottfried Otting[2], Tomohide Saio[1]
[1]Institute of Advanced Medical Sciences, Tokushima University, Tokushima, Japan, [2]Research School of Chemistry, Australian National University, Canberra, Australia

27P-033 **Search for specific regions of myosin responsible for moving actin through chiral curves**

Yoshiki Takayama, Kohei Yoshimura, Taisei Nagai, Takuma Imi, Takeshi Haraguchi, Kohji Ito
Department of Biology, Graduate School of Science, Chiba University, Chiba 263-8522, Japan

27P-034 **Reaction Pathways in DNA Hydrolysis of EcoRV Calculated by QM/MM Metadynamics**

Itaru Onishi[1], Mika Mitsumatsu[1], Hiroki Sato[1], Ryoutarou Matsuda[1], Norio Yoshida[2], Fumio Hirata[3], Masayuki Irisa[1]
[1]Comp. Sci. and Sys. Eng., Kyushu Inst. Tech., Japan, [2]Grad. Sch. Inform., Nagoya Univ., Japan, [3]Inst. Mol. Sci., Japan

27P-035 **Elucidating the Mechanism Underlying Atypical UBA7-UBE2L6 Disulfide Complex Formation**

Pei-Tzu Chen[1], Kuen-Phon Wu[1,2]

[1]Institute of Biological Chemistry, Academia Sinica, Taipei, Taiwan, [2]Institute of Biochemical Sciences, College of Life Science, National Taiwan University, Taipei, Taiwan

27P-036 **Molecular mechanisms for smooth rotation of the flagellar rod within the LP ring**

Akio Kitao[1], Tomoko Yamaguchi[2,3], Fumiaki Makino[2,4,5], Tomoko Miyata[2,5], Tohru Minamino[2], Takayuki Kato[6], Keiichi Namba[2,5]

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Protein: Physical property

***27P-037** **Human antimicrobial peptide LL-37 possesses unique multimerization properties compared to its orthologs in mouse and rat**

Mitsuki Shibagaki, Jeremia Chrisnanto, Dessalegn Tefera, Kotaro Tsukioka, Waka Ueda, Kohei Kano, Hao Gu, Fumi Hirai, Yasuhiro Kumaki, Hiroyuki Kumeta, Tomoyasu Aizawa

Graduate School of Life Science, Hokkaido University, Sapporo, Hokkaido, Japan

***27P-038** **A Nanotech methodology of Liquid-liquid phase separated droplet regulation with Butterfly-shaped Gold Nanomaterials**

Tomohiro Nobeyama[1], Koji Takata[2], Megumi Mori[3], Yoichi Yamada[1], Tatsuya Murakami[2], Kentaro Shiraki[1]

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***27P-039** **Nonionic Amino acid Interactions Evaluated Through Solubility**

Akira Nomoto[1,2], Shunsuke Tomita[2], Kentaro Shiraki[1]

[1]Institute of Pure and Applied Sciences, University of Tsukuba, [2]Health and Medical Research Institute, National Institute of Advanced Industrial Science and Technology

Poster Sessions

***27P-040** **Fly-Casting-Like Capture and Translocation of KIF1A by C-Terminal Tail of Tubulin**

Koki Adachi, Mitsunori Takano
Dept. Pure & Appl. Phys., Grad. Scl. Adv. Sci. & Eng., Waseda Univ., Tokyo, Japan

***27P-041** **αB-crystallin prevents aging of α-synuclein droplets**

Kenji Fujitsuka[1], Keisuke Yuzu[1], Yuki Michiue[1], John A. Carver[2], Eri Chatani[1]
[1]Graduate School of Science, Kobe University, Kobe, Japan, [2]Research School of Chemistry, Australian National University, Canberra, Australia

27P-042 **Differences in microstructural changes during tensile deformation between hair shapes**

Hironori Kimura, Kota Yamamoto, Kazuyuki Suzuta
Milbon Co., Ltd

Protein: Function

***27P-043** **Development of Cell-free Screening Method for Terminal deoxynucleotidyl transferase for Enzymatic DNA synthesis**

Takashi Ohmizu, Hiroshi Ueno, Hiroyuki Noji
University of Tokyo

***27P-044** **Analysis of the physiological significance of dual-localization of Hfd1 in yeast**

Yuta Konishi[1], Haruka Sakaue[2], Hironori Takeda[3], Toshiya Endo[2]
[1]Kyoto Sangyo Univ., Division of Life Science, [2]Kyoto Sangyo Univ., Faculty of Life Science, [3]Kobe University, Engineering Biology Research Center

***27P-045** **Identification of multiple responsible genes for abnormal cold acclimation of C. elegans lectin mutants**

Moe Tezuka[1], Misaki Okahata[1], Akane Ohta[1,2], Atsushi Kuhara[1,2]
[1]Faculty of Science and Engineering Konan University & Institute for Integrative Neurobiology, Kobe, Japan, [2]PRIME, AMED

27P-046 **Reconstitution of ER glutathione transport system**

Ryuta Sakamoto[1], Chika Tsutsumi[1], Ryosuke Tahara[1], Kazuhiro Nagata[3], Ryo Ushioda[1,2]
[1]Laboratory of Molecular and Cellular Biology, Faculty of Life Sciences, Kyoto Sangyo University, [2]Institute for Protein Dynamics, Kyoto Sangyo University, [3]JT Biohistory Research Hall

27P-047 **Investigating the catalytic mechanism of Sars-CoV-2 MPro**
Stephan Kleine-Doepke, Pedram Mehrabi, Caitlin Hatton
Universität Hamburg, Germany

Protein: Measurement & Analysis

***27P-048** **Supramolecular chirality in DFNKF amyloid fibrils derived from human calcitonin by VCD**
Shinryu Isa[1], Toki Fujino[1], Raja Prema[1], Daisuke Sato[1], Akira Naito[1], Hisako Sato[2], Izuru Kawamura[1]
[1]Yokohama National University, Yokohama, Japan, [2]Ehime University, Matsuyama, Japan

***27P-049** **Measurement of structural flexibility of enzymes using spin labeling-ESR**
Akane Yato[1], Rio Asaka[2], Keiichi Watanabe[2], Masaki Horitani[1,2]
[1]The United Graduate School of Agricultural Sciences, Kagoshima University, [2]Faculty of Agriculture, Saga University

27P-050 **Muon in Structural Biology: Visualization of proton and electron transfer by the elementary particle "Muon"**
Tamiko Kiyotani[1], Ichiro Tanaka[2], Masatoshi Hiraishi[2], Nobuo Niimura[2]
[1]Showa Pharmaceutical University, [2]Ibaraki University

27P-051 **Optimization of Cryo 3D-CLEM for in situ Structural Analysis**
Hiroko Takazaki, Misaki Arie, Taiga Horii, Takayuki Kato
Institute for Protein Research, Osaka University, Osaka, Japan.

27P-052 **Investigating CRMP2 isoforms multimerization dynamics by High-Speed AFM**
Djamel Eddine Chafai, Saho Kitagawa
WPI Nano Life Science Institute (WPI-NanoLSI), Kanazawa University, Kakuma-machi, Kanazawa 920-1192, Japan

27P-053 **Designing an alternative protocol to detect the antigen-antibody reaction using EPR and aggregated AuNPs as paramagnetic probes**
Luis Celedón Ornelas, Alma Nelly Díaz Herreros, José Silvestre Figueroa Mendoza, Marco Alonso Arellano Alcántara, Belén Chávez Ramírez, Stephany Natasha Arellano Ahumada, Daniel Ramírez Rosales
Instituto Politécnico Nacional

Poster Sessions

Protein: Design & Engineering

***27P-054** **De novo design of a protein containing one left-handed $\beta\alpha\beta$-motif.**

Naoki Tomita[1], Hiroto Murata[1], Hiroki Onoda[2], Leonard Chavas[1,2], George Chikenji[1]

[1]Dept. of Appl. Phys., Grad. Sch. of Eng., Nagoya Univ., Aichi, Japan, [2]NUSR, Nagoya Univ., Aichi, Japan

***27P-055** **Machine-learning-assisted multiple maturation of antibody fragment: simultaneous improvement of target-binding, bacterial expression, and thermal stability**

Tomoyuki Ito[1], Sakiya Kawada[1], Hikaru Nakazawa[1], Akikazu Murakami[2,3], Mitsuo Umetsu[1,4]

[1]Grad. Sch. Eng., Tohoku Univ., Sendai, Japan, [2]Grad. Sch. Biomed. Sci., Tokushima Univ., Tokushima, Japan, [3]RePHAGEN Co. Ltd., Okinawa, Japan, [4]AIP, RIKEN, Tokyo, Japan

***27P-056** **Construction of heptameric de novo peptide nanopore by chimera proteinization**

Ayaka Nakada[1], Kota Natio[2], Rina Ogawa[1], Misa Yamaji[1], Yoshikazu Tanaka[2], Ryuji Kawano[1]

[1]Department of Biotechnology and Life Science, Tokyo University of Agriculture and Technology, Tokyo, Japan, [2]Graduate School of Life Sciences, Tohoku University, Sendai, Japan

***27P-057** **Library design aiming for the development of covalent binding antibody mimetics**

Yuki Tokunaga[1], Ryo Matsunaga[1], Kohei Tsumoto[1,2]

[1]School of Engineering, The University of Tokyo, Japan, [2]The Institute of Medical Science, The University of Tokyo, Japan

***27P-058** **Miniaturized cyclic peptides derived from CDR-H3 of antibodies exhibit binding activities to SARS-CoV-2 RBD**

Yoshiki Yasuda[1], Satoru Nagatoishi[2], Ryo Matsunaga[2], Daisuke Kuroda[3], Kouhei Tsumoto[1,2,4]

[1]Department of Chemistry and Biotechnology, school of Engineering, The University of Tokyo, Tokyo, Japan, [2]Department of Bioengineering, School of Engineering, The University of Tokyo, Tokyo, Japan, [3]Research Center for Drug and Vaccine Development, National Institute of Infectious Diseases, Tokyo, Japan, [4]The Institute of Medical Science, The University of Tokyo, Tokyo, Japan

***27P-059** **De novo nanobody binder design by generative AI models**

Hakyung Lee[1], Juyong Lee[1,2]

[1]Department of Molecular Medicine and Biopharmaceutical Sciences, Seoul National University, [2]College of Pharmacy, Seoul National University

27P-061 **Towards further enhancement of the activity of the minimal luciferase picALuc**

Tadaomi Furuta[1], Yuki Ohmuro-Matsuyama[2]

[1]School of Life Science and Technology, Tokyo Institute of Technology, [2]Technology Research Laboratory, Shimadzu Corporation

27P-062 **Structural analysis unveils the enhanced stability of AI-designed ubiquitin-fold proteins**

Kuen-Phon Wu, Wei-Lin Lu, Wei-Jen Chuang

Institute of Biological Chemistry, Academia Sinica, Taipei, Taiwan

Protein: Intrinsic disorder

***27P-063** **Comprehensive Analysis of Intrinsically Disordered Proteins in the Marsupial**

Shiho Aoki[1], Wataru Onodera[2], Toru Asahi[3,4]

[1]Waseda University, Dept. of Advanced Sci. and Eng., Tokyo, Japan, [2]JSPS Postdoctoral Fellow, PD, Tokyo, Japan, [3]Waseda University, Dept. of Science and Engineering, Tokyo, Japan, [4]Waseda University, Nano-Life, Tokyo, Japan

***27P-064** **Elucidating fusion dynamics of FUS protein droplets using fluorescence microscopy and optical tweezers**

Syamil Muharror Ahsanul Husna[2,3], Atsumi Hando[1,2], Saori Kanbayashi[2], Satoshi Takahashi[1,2,3], Kiyoto Kamagata[1,2,3]

[1]Department of Life Science, Graduate School of Science, Tohoku University, [2]Institute of Multidisciplinary Research for Advanced Materials, Tohoku University, [3]Department of Chemistry, Graduate School of Science, Tohoku University

***27P-065** **Balancing stability, dynamics and kinetics in phase separation of intrinsically disordered proteins**

Guoqing Zhang, Xiakun Chu

The Hong Kong University of Science and Technology (Guangzhou)

Poster Sessions

27P-066 **Characterization, regulation, and design of protein droplets**

Kiyoto Kamagata[1], Ryo Kusano[1], Atsumi Hando[1], Nanako Iwaki[1], Maulana Ariefai[1], Keisuke Ikeda[2], Tomoshi Kameda[3]

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Heme proteins

***27P-067** **Two distinct conformations in apo forms of bacterial heme ABC transporter**

Machika Kataoka[1,2], Ayaho Abe[1,2], Chai Gopalasingam[2], Christoph Gerle[2], Hideki Shigematsu[3], Masaki Yamamoto[2], Hiroshi Sugimoto[2]

[1]Graduate School of Science, University of Hyogo, Japan., [2]RIKEN SPring-8 Center, Hyogo, Japan., [3]JASRI, Hyogo, Japan.

27P-068 **Dramatic Effects of Chemical Modifications on the Function of a Classical Allosteric Protein by Pin-Point Changes in Hydrophobicity**

Antonio Tsuneshige

Department of Frontier Bioscience, and Research Center for Micro-Nano Technology, Hosei University, and Tokyo, Japan

Membrane proteins

***27P-069** **Vibrational spectroscopic study of chemical interaction between *κ*-opioid receptor (KOR) and ligands having morphinan structure**

Ryo Nishikawa[1], Kota Katayama[1,2], Seiya Iwata[1], Ryoji Suno[1], Chiyo Suno[3], Takuya Kobayashi[3], Hideki Kandori[1,2]

[1]Graduate School of Engineering. Nagoya Institute of Technology, Aichi, Japan, [2]OptoBioTechnology Research Center, Aichi, Japan, [3]Deparment of Medical Chemistry. Kansai Medical University, Osaka, Japan

***27P-070** **Role of ANT1 in proton transport: New insights into the mechanism of fatty acid anion sliding at the protein-lipid interface**

Sanja Vojvodić[3], Juergen Kreiter[2], Mario Vazdar[1], Elena E. Pohl[3]

[1]Department of Mathematics, Informatics, and Cybernetics, Faculty of Chemical Engineering, University of Chemistry and Technology, Prag, Czech Republic, [2]Institute of Molecular and Cellular Physiology, Stanford Medical School, Stanford, USA, [3]Physiology and Biophysics, University of Veterinary Medicine, Vienna, Austria

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***27P-071** **Cryo-EM Structural Analysis of Enterococcus hirae V-ATPase with Improved Resolution**

Yuan-E Lee[1], Raymond Burton-Smith[1,3], Akihiro Otomo[2,3], Takeshi Murata[4], Ryota Iino[2,3], Kazuyoshi Murata[1,3]

[1]ExCELLS/NIPS, Okazaki, Japan, [2]IMS, Okazaki, Japan, [3]SOKENDAI, Hayama, Japan, [4]Chiba University, Chiba, Japan

***27P-072** **Solid-state NMR analysis of wild-type and mutant Schizorhodopsin proteins**

Akito Kitaguchi[1], Seiya Tajima[1], Toshio Nagashima[2], Toshio Yamazaki[2], Hideki Kandori[3], Keiichi Inoue[4], Izuru Kawamura[1]

[1]Yokohama National University, Japan, [2]RIKEN RSC, [3]Nagoya Institute of Technology, Japan, [4]The Institute for Solid State Physics, The University of Tokyo, Japan

***27P-073** **Zn2+ Ion Transportation Mechanisms of TRPC6 Channels: All-Atom Molecular Dynamics Simulation**

Sirin Sittiwanichai, Kowit Hengphasatporn, Yasuteru Shigeta

Center for Computational Sciences, University of Tsukuba, 1-1-1 Tennodai, Tsukuba, Ibaraki, 305-8577, Japan

***27P-074** **Structural Basis for Signaling and Drug-Induced Activation of the Trk Receptors**

Erik Kot[1], Sergey Goncharuk[2], Ekaterina Vasilieva[3], Alexandra Shabalkina[2], María Franco[4], Ekaterina Lyukmanova[1], Alexander Arseniev[2], Andrea Benito-Martínez[4], Mario Costa[5,6], Antonino Cattaneo[6], Marcal Vilar[4], Konstantin Mineev[7]

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27P-075 **New Lipid-Bilayer Nanodiscs for Membrane-Protein Biophysics**

Sandro Keller, David Glueck, Lena Bauernhofer, Loretta Eggenreich, Carolyn Vargas

Biophysics, Institute of Molecular Biosciences (IMB), University of Graz, Austria

Poster Sessions

27P-076 **Coupling of ATP reactions with allocrite transport in heme ABC transporter; BhuUV-T, revealed by time-resolved spectroscopy.**

Tetsunari Kimura[1,2], Ayaka Naka[1], Akiho Hara[1], Yasuhiro Kobori[1,2], Yoshitsugu Shiro[3], Hiroshi Sugimoto[3,4]

[1]Kobe University, Graduate School of Science, Department of Chemistry, [2]Kobe University, Molecular Photoscience Research Center, [3]University of Hyogo, Graduate School of Science, Department of Life Science, [4]RIKEN, SPring-8 Center

27P-077 **Understanding the Structure and Receptor Selectivity of Histamine H4 Receptor**

Dohyun Im[1], Jun-ichi Kishikawa[2], Yuki Shiimura[3], Yukihiko Sugita[4], Takeshi Noda[4], Takayuki Kato[5], Hidetsugu Asada[1], So Iwata[1]

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27P-078 **Generation of human TMEM16F-specific affibodies**

Eunyoung Kim[1], Jinho Bang[2], Ji Hye Sung[1], Jonghwan Lee[2], Sunghyun Kim[2], Byoung-Cheol Lee[1]

[1]Korea Brain Research Institute, Neurovascular Unit Research Group, Daegu 41068, Korea, [2]Korea Institute of Ceramic Engineering and Technology, Bio-Healthcare Materials Center, Cheongju, Korea

DNA & DNA binding proteins

***27P-079** **High-speed AFM analysis of effects of drugs on the dynamic DNA morphologies interacting with MDP1, dormancy induction protein of Mycobacterium tuberculosis**

Kaho Nakamoto[1], Rei Moriya[1], Kenichi Umeda[2], Akihito Nishiyama[3], Sohkichi Matsumoto[3], Noriyuki Kodera[2]

[1]Grad. Sch. Math. & Phys., Kanazawa Univ., [2]WPI-NanoLSI, Kanazawa Univ., [3]Dept. Bacteriol., Niigata Univ. Sch. Med.

***27P-080** **Single-molecule imaging of MDP1, dormancy induction protein of Mycobacterium tuberculosis, with high-speed AFM**

Yuna Goto[1], Kaho Nakamoto[1], Kenichi Umeda[2], Akihito Nishiyama[3], Sohkichi Matsumoto[3], Noriyuki Kodera[2]

[1]Grad. Sch. Math. & Phys., Kanazawa Univ., [2]WPI-NanoLSI, Kanazawa Univ., [3]Dept. Bacteriol., Niigata Univ. Sch. Med.

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***27P-081** **Template-free oligonucleotide synthesis by Terminal Deoxynucleotidyl Transferase in a microreactor array**

Yusuke Miyata, Hiroshi Ueno, Hiroyuki Noji
Department of Applied Chemistry, School of Engineering, The University of Tokyo

27P-082 **Phosphorylation and histone peptides reduce main- but not side-chain dynamics of N-terminal intrinsically disordered region of HP1 during phase separation, as studied by conventional and TOAC spin labels**

Isao Suetake[1,2], Toshiki Takei[2], Tomoaki Sugishiata[2], Shun Ito[2], Kazunobu Sato[3], Yuichi Mishima[2], Kohei Muraoka[2], Toru Kawakami[2], Yoh Matsuki[2], Toshimichi Fujiwara[2], Takeji Takui[3], Makoto Miyata[3], Hironobu Hojo[2], Toshiaki Arata[2,3]
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RNA & RNA binding proteins

27P-083 **Short repeat RNA suppresses aggregation of ALS-causative protein TDP-43 and its 25 kDa carboxy-terminal fragment**

Ai Fujimoto[1], Akira Kitamura[2,3]
[1]Graduate school of Life Science, Hokkaido University, Hokkaido, Japan, [2]Faculty of Advanced Life Science, Hokkaido University, Hokkaido, Japan, [3]PRIME, AMED

DNA/RNA nanotechnology

***27P-084** **How to engineer a fast-moving DNA-nanoparticle motor with long run length and high unidirectionality?**

Takanori Harashima[1,2], Akihiro Otomo[1,2], Ryota Iino[1,2]
[1]Institute for Molecular Science, National Institutes of Natural Sciences, [2]Graduate Institute for Advanced Studies, SOKENDAI

***27P-085** **Timing-controlled dynamics of DNA droplet-based artificial cell**

Tomoya Maruyama[1], Masahiro Takinoue[1,2,3]
[1]Department of Life Science and Technology, Tokyo Institute of Technology, Japan, [2]Department of Computer Science, Tokyo Institute of Technology, Japan, [3]Living System Materiology (LisM) Research Group, International Research Frontiers Initiative (IRFI), Tokyo Institute of Technology, Japan

Poster Sessions

***27P-086** **Regulation of molecular distribution in lipid vesicles based on artificial DNA cortex**

Takuro Yoshinaga, Koki Shibata, Yusuke Sato
Department of Intelligent Systems Engineering, Kyushu Institute of Technology, Japan

***27P-087** **Mechanical properties of artificial cells with DNA cytoskeleton**

Kazutoshi Masuda[1], Miho Yanagisawa[1,2]
[1]Graduate School of Arts & Science, The University of Tokyo, Tokyo, Japan, [2]Komaba Institute for Science, The University of Tokyo, Tokyo, Japan

***27P-088** **Lipid nanoparticle fusion with a phospholipid membrane**

Jan Šimek, Nestor Mora, Radek Šachl
J. Heyrovsky Institute of Physical Chemistry

***27P-089** **Spontaneous film-like DNA structure formation at the oil-air interface**

Daichi Tominaga[1], Shogo Hamada[2], Yusuke Sato[1]
[1]Department of Intelligent Systems Engineering, Kyushu Institute of Technology, Japan, [2]Department of Computer Science, Tokyo Institute of Technology, Japan

Nucleic acid: Others

***27P-090** **The effect of Temperature and Pressure on the structural transition from the quadruplex to random coil of VEGF**

Hiroto Yamasaki, Toshiki Nakao, Minoru Kato
Ritsumeikan University

27P-091 **Modelling complex and large RNA structures to advance RNA biology and therapeutics**

Naoto Hori, James A. Robins, Huong T. Vu
School of Pharmacy, University of Nottingham

Chromatin & Chromosomes

***27P-092** **DNA Unwinding analysis of N-terminal tailless nucleosomes using nanopore measurements**

Satoshi Ogihara[1], Hikaru Nozawa[1], Takumi Oishi[2], Munetaka Akatsu[2], Hitoshi Kurumizaka[2], Sotaro Uemura[1]
[1]Department of Biological Sciences, Graduate School of Science, The University of Tokyo, [2]Institute for Quantitative Biosciences, The University of Tokyo

27P-093 **Effect of RNA expression on chromatin phase separation : Molecular Dynamics simulation**

Shaya Shiraishi, Yuuki Norizoe, Takuya Saito, Takahiro Sakaue

Department of Physical Sciences, Aoyama Gakuin University

Electronic

***27P-095** **Electrochemical activity of catalytic amyloids: self-assembly of (XH)4 peptides and hemin on graphite electrodes**

Marie Sugiyama[1], Luo Wei[1], Ayhan Yurtsever[2], Takeshi Fukuma[2], Yuhei Hayamizu[1]

[1]Tokyo Institute of Technology, Tokyo, Japan, [2]Kanazawa University, Kanazawa, Japan

Water & Hydration & Electrolyte

***27P-096** **Prediction of hydration structures over membrane proteins using deep learning in combination with the emprical hydration distribution**

Kochi Sato[1,2,3], Mao Oide[4,5], Masayoshi Nakasako[1,2]

[1]Department of Physics, Keio University, Kanagawa, Japan, [2]SPring-8 Center, RIKEN, Hyogo, Japan, [3]SPRING, Japan Science and Technology Agency, Tokyo, Japan, [4]Institute for protein research, Osaka University, Osaka, Japan, [5]PRESTO, Japan Science and Technology Agency, Tokyo, Japan

27P-097 **Hydration and Fluctuation Dynamics of a Membrane Transport Protein-Glucose Complex**

Tatsuki Kawauchi[1], Tomohiko Hayashi[1], Mitsunori Ikeguchi[2]

[1]Graduate School of Science and Technology, Niigata University, [2]Graduate School of Medical Life Science, Yokohama City University

Molecular genetics & Gene expression

27P-098 **Nine-banded armadillo transcriptome and chromatin accessibility at single-cell reveal persistent identity signatures in concordance with cell population variations**

Risa Karakida Kawaguchi[1,2], Sara Ballouz[2], Maria T Pena[3], Leon French[4], Frank M. Knight[5], Linda B. Adams[3], Jesse Gillis[2,4]

[1]Center for iPS Cell Research and Application, Kyoto University, [2]Cold Spring Harbor Laboratory, [3]National Hansen's Disease Program, [4]University of Toronto, [5]University of the Ozarks

Poster Sessions

Morphogenesis and Development

***27P-099** **Deep learning approach to investigate tissue hydraulics during ovarian follicle development.**

Jake Turley[1], Kim Whye Leong[1], Chii Jou Chan[1,2]

[1]Mechanobiology Institute, National University of Singapore, [2]Department of Biological Sciences, National University of Singapore

Muscle

27P-100 **Morphological discrimination of isolated sarcoplasmic reticulum vesicles in different Ca2+ concentrations using deep learning**

Katsuya Saito[1], Kenji Etchuya[2], Jun Nakamura[3], Chikara Sato[1,3,4,5], Makiko Suwa[1,2]

[1]Biological Science Course, Graduate School of Science and Engineering, Aoyama Gakuin University, Kanagawa, Japan, [2]Chem. Biological Science Course, Department. Science and Engineering, Aoyama Gakuin University, Kanagawa, Japan, [3]National Institute of Advanced Industrial Science and Technology (AIST), Ibaraki, Japan 4Division of Immune Homeostasis ,Department of Pathology and Microbiology, Nihon University School of Medicine, Tokyo, Japan, [4]Division of Immune Homeostasis ,Department of Pathology and Microbiology, Nihon University School of Medicine, Tokyo, Japan, [5]Division of Microbiology, Department of Pathology and Microbiology, Nihon University School of Medicine, Tokyo, Japan

Molecular motor

***27P-101** **Microscopic Choreography: Unraveling Molecular Properties of Cytoplasmic Dynein Shaping Collective Motion of Microtubules in vitro**

Yosuke Harada[1,2], Kazuhiro Oiwa[1,2]

[1]Department of Life Science, Graduate School of Science, University of Hyogo, Hyogo, Japan, [2]Advanced ICT Research Institute, National Institute of Information and Communications Technology, Hyogo, Japan

***27P-102** **Biochemical Characterization of C. elegans Kinesin Bmk-1**

Toru Kurosaka, Shunsuke Kumagai, Fofou Yonta Tostani, Shinsaku Maruta

Department of Biosciences, Graduate School of Science and Engineering Soka University, Hachioji, Tokyo JAPAN

Thursday, June 27

***27P-103** **Rejuvenating actin filaments: Direct observation of nucleotide exchange in actin filaments enhanced by myosin II**

Kenta Toshino, Taro QP Uyeda
Dept. Pure & Appl. Physics, Grad. Sch. Adv. Sci. & Eng., Waseda Univ.

***27P-104** **Molecular dynamics observation of rotational motion in the stator unit of the flagellar motor**

Takumi Matsumoto, Yukinari Kamiyama, Mitsunori Takano
Dept. of Pure & Appl. Phys., Grad. Sch. of Adv. Sci. and Eng., Waseda Univ., Tokyo, Japan

***27P-105** **Negative differential resistance of bio-molecular motor F1-ATPase**

Haruto Kimura, Shoichi Toyabe, Yohei Nakayama
Department of Applied Physics, Graduate School of Engineering, Tohoku University

27P-106 **V-ATPase rotation probed by Janus nanoparticle**

Akihiro Otomo[1,2], Jared Wiemann[3], Swagata Bhattacharyya[3], Yan Yu[3], Ryota Iino[1,2]
[1]Institute for Molecular Science, National Institutes of Natural Sciences, Okazaki, Japan, [2]Graduate Institute for Advanced Studies, SOKENDAI, Hayama, Japan, [3]Department of Chemistry, Indiana University, Bloomington, USA

27P-107 **Detecting conformations of F1-ATPase to elucidate the rotation mechanism**

Kenta Suga[1], Fumika Ogura[1], Hiroki Yamashita[1], Hiroki Kaizu[1], Ayari Tagawa[1], Mitsuhiro Sugawa[2], Nobukiyo Tanaka[1], Tomoko Masaike[1]
[1]Department of Applied Biological Science, Faculty of Science and Technology, Tokyo University of Science, Japan, [2]Graduate School of Arts and Sciences, The University of Tokyo

27P-108 **Cooperation among c-subunits of FoF1-ATP synthase in rotation-coupled proton translocation by hetero-mutated c-ring**

Noriyo Mitome[1], Shintaroh Kubo[2], Sumie Ohta[3], Hikaru Takashima[4], Yuto Shigefuji[4], Toru Niina[2], Shoji Takada[2]
[1]Faculty of Education, Tokoha University, [2]Department of Biophysics, Graduate School of Science, Kyoto University, [3]National Institute of Technoloby, Numazu College, [4]National Institute of Technoloby, Ube College

Poster Sessions

27P-109 **DNA Hybridization kinetics in Active Matter self-assembly**

Mst Rubaya Rahsid[1], Yamashina Takefumi[2], Kawamata Ibuki[1], Marie Tani[1], Masatoshi Ichikawa[1], Akira Kakugo[1]

[1]Department of Physics, Kyoto University, Japan, [2]Research Centre for Advanced Science and Technology, The University of Tokyo, Japan

Single Molecule Biophysics

***27P-110** **Microsecond single molecule dynamics measurement of SARS-CoV-2 Spike protein using Diffracted X-ray Tracking**

Daisuke Sasaki[1], Tatsuya Arai[1,2], Hiroshi Sekiguchi[3], Kazuhiro Mio[2], Yuji Sasaki[1,2,3]

[1]Graduate School of Frontier Sciences, The University of Tokyo, [2]AIST-UTokyo Advanced Operando Measurement Technology Open Innovation Laboratory (OPERANDO OIL), [3]Center for Synchrotron Radiation Research, JASRI

***27P-111** **REGULATORY MECHANISMS OF KINESIN FUNCTION AT VARYING PH**

Suvranta Tripathy, Fawaz Baig, Hassan Bazzi

University of Michigan Dearborn

***27P-112** **Impact of mutations on cadherin 23 functions and leads to hearing-loss disease**

Gaurav Kumar Bhati, Surbhi Garg, Pritam Saha, Sabyasachi Rakshit

Department of Chemical sciences, Indian Institute of Science Education and Research Mohali, India

***27P-113** **Direct observation of a single DNA molecule responding for the AC electric field and different physical environment.**

Yunosuke Fuji, Shin Tkano, Takuma Yoshinaga, Yuuta Moriyama, Toshiyuki Mitsui

Grad. Sch. of Sci. and Eng. Aoyama Gakuin Univ.

***27P-114** **Photothermal assisted ultra-low concentration detection using nanopore sensing**

Hirohito Yamazaki[1,2], Kota Kaito[2]

[1]Top Runner Incubation Center for Academia-Industry Fusion, Nagaoka University of Technology, Nagaoka, [2]Department of Mechanical Engineering, Nagaoka University of Technology

27P-115 **Single-molecule analysis of the behavioral dynamics of EGFR cancer mutants with resistance to anticancer drugs**

Michio Hiroshima[1,2], Masahiro Ueda[1,2]

[1]Osaka University, [2]RIKEN BDR

27P-116 **Mechanistic insight into the mechanical unfolding of integral membrane proteins**

Hao Yu

Huazhong University of Science and Technology

Cell biology: Adhesion

27P-117 **Study of adhesion factor in Acanthamoeba bunch formation caused by Hokutovirus infection**

Yuto Shimada[1], Masaharu Takemura[2], Kazuyoshi Murata[1,3]

[1]Exploratory Research Center on Life and Living Systems, National Institutes of Natural Sciences, [2]Tokyo University of Science, [3]National Institute for Physiological Sciences, National Institutes of Natural Sciences

Cell biology: Motility

***27P-118** **The mechanical properties of fibroblasts in co-culture system**

Arata Nagai, Kaito Kojima, Hiromu Kuwabara, Yuuta Moriyama, Toshiyuki Mitsui

Grad. Sch. of Sci. and Eng. Aoyama Gakuin Univ.

***27P-119** **Mechanism of bacterial actin driven motility reconstituted in a minimal synthetic bacterium**

Hana Kiyama[1], Shigeyuki Kakizawa[2], Daichi Takahashi[1,3], Makoto Miyata[1,4]

[1]Graduate School of Science, Osaka Metropolitan University, Osaka, Japan, [2]Bioproduction Research Institute, AIST, Tsukuba, Japan, [3]Research Institute for Interdisciplinary Science, Okayama University, Okayama, Japan, [4]The OMU Advanced Research Institute for Natural Science and Technology, Osaka Metropolitan Univ., Osaka, Japan

***27P-120** **Light-Induced Control of Archaellum Rotation in Haloacterium salinarum**

Ishii Kazuki[1], Ayaka Ihara[1], Daisuke Nakane[2], Takayuki Nishizaka[1]

[1]Gakushuin University, [2]University of Electro-Communications

Poster Sessions

***27P-121** **Haloplasma motility reconstituted in a minimal synthetic bacterium, JCVI-syn3B**

Mone Mimura[1], Hana Kiyama[1], Shingo Kato[2], Yuya Sasajima[1], Atsuko Uenoyama[1], Shigeyuki Kakizawa[3], André Antunes[4], Tomoko Miyata[5,6], Fumiaki Makino[5,6,7], Keiichi Namba[5,6], Makoto Miyata[1,8]
[1]Grad. Sch. Sci., Osaka Metropolitan Univ., Japan, [2]RIKEN BRC., JCM., Japan, [3]Bioproduction Res. Inst., AIST., Japan, [4]Macau Univ. of Sci. and Tech., China, [5]Grad. Sch. of Frontier Biosci., Osaka Univ., Suita, Japan, [6]JEOL YOKOGUSHI Res. Alliance Lab. Osaka Univ., Suita, Japan, [7]JEOL Ltd, Akishima, Tokyo, Japan, [8]OCARINA, Osaka Metropolitan Univ., Japan

***27P-122** **Gliding machinery of Mycoplasma mobile observed by electron cryotomography**

Minoru Fukushima[1], Tomoko Miyata[2,3], Takuma Toyonaga[1], Keiichi Namba[2,3], Makoto Miyata[1,4]
[1]Grad. Sch. Sci., Osaka Metropolitan Univ., Osaka, Japan, [2]Grad. Sch. Frontier Biosci., Osaka Univ., Suita, Osaka, Japan, [3]JEOL YOKOGUSHI Res. Alliance Lab. Osaka Univ. Suita, Osaka, Japan, [4]OCARINA, Osaka Metropolitan Univ., Osaka, Japan

***27P-123** **Rapid response of bacterial motility with pressure change**

Seiichiro Kinoshita, Masayoshi Nishiyama
Grad.Sch.Sci. and Eng., Kindai Univ.

***27P-124** **Visualization and analysis of MreBs driving Spiroplasma motility in minimal synthetic bacterium**

Yoshiki Tanaka[1], Hana Kiyama[1], Takuma Toyonaga[1,2], Makoto Miyata[1,2]
[1]Grad. Sch. Sci., Osaka Metro Univ., [2]OCARINA, Osaka Metro Univ.

***27P-125** **In vitro analysis of the bacterial actin MreB molecule that gives swimming motility to the minimal synthetic bacterium JCVI-syn3B.**

Satoshi Kanamori[1], Daichi Takahashi[2], Yuhei Tahara[1], Hana Kiyama[1], Makoto Miyata[1]
[1]Graduate School of Science, Osaka Metropolitan University, [2]Research Institute for Interdisciplinary Science, Okayama University

27P-126 **CryoEM structures of the growing end of the bacterial flagellar hook.**

Haruto Takeuchi[1], Sae Hashimoto[1], Tomoko Miyata[2,3], Fumiaki Makino[2,3,4], Keiichi Namba[2,3], Norihiro Takekawa[1], Katsumi Imada[1]
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27P-127 **Activation of the PomA/B flagellar stator by a site-specific chemical modification in the plug segment**

Hiroaki Koiwa[1], Akihiro Otomo[2], Yuki Tajimi[3], Tatsuro Nishikino[4], Michio Homma[3], Takayuki Uchihashi[3], Ryota Iino[2], Seiji Kojima[1]

[1]Department of Biological Science, Graduate School of Science, Nagoya University, [2]Institute for Molecular Science, [3]Department of Physics, Graduate School of Science, Nagoya University, [4]Department of Life Science and Applied Chemistry, Nagoya Institute of Technology

27P-128 **Analysis of the Virio alginolyticus lateral flagellar motor genes, lafT and lafU**

Kazuki Yokoyama[1], Norihiro Takekawa[2], Seiji Kojima[1]

[1]Department of biological science, Graduate school of Science, Nagoya University, [2]Department of macromolecular science, Graduate school of Science, Osaka University

27P-129 **Structural change of ATPase ring complex of the flagellar type III export apparatus revealed by cryoEM analysis and high-speed AFM**

Norihiro Takekawa[1], Asako Usui[1], Yuki Tajimi[2], Miki Kinoshita[3], Tohru Minamino[3], Takayuki Uchihashi[2], Katsumi Imada[1]

[1]Dept. of Macromol. Sci., Grad. Sch. of Sci., Osaka Univ., [2]Dept. of Phys. Sci., Grad. Sch. of Sci., Nagoya Univ., [3]Grad. Sch. of Frontier Biosci., Osaka Univ.

Cell biology: Cytoskeleton & Membrane skeleton

***27P-130** **Cryo-ET of vertebrate cilia revealed that Calaxin stabilizes the docking of outer arm dyneins onto ciliary doublet microtubule**

Hiroshi Yamaguchi, Motohiro Morikawa, Masahide Kikkawa

Department of Cell Biology & Anatomy, Grad. Sch. Med., The University of Tokyo, Tokyo, Japan

***27P-131** **Capping and severing mechanisms of Cytochalasin D to actin filament by TIRF observation**

Takahiro Mitani[1], Shuichi Takeda[2], Ikuko Fujiwara[1], Hajime Honda[1]

[1]Dep. of Material Sci. and Bioeng., Nagaoka Univ. of Tech., Niigata, Japan., [2]RIIS, Okayama Univ., Okayama, Japan.

Poster Sessions

***27P-132** **Physically specific domain at the plasma membrane induced by transmembrane phospholipid movement during myoblast cytokinesis**

Akira Murakami[1], Kotaro Hirano[1], Junya Sano[1], Kohki Okabe[2], Yuji Hara[1]
[1]School of Pharmaceutical Sciences, University of Shizuoka, [2]Graduate School of Pharmaceutical Sciences, The University of Tokyo

***27P-133** **Elucidating the Role of Spiroplasma fibril protein using synthetic bacterium, JCVI syn3**

Ali Ahsan, Hana Kiyama, Makoto Miyata
Osaka Metropolitan University, Graduate School of Science

27P-134 **Domain characterization of Archaea gelsolin for inhibiting actin polymerization by TIRF and crystal structure observations**

Horyo Mizuki[2], Shuichi Takeda[1], Robert Robinson[1], Ikuko Fujiwara[2]
[1]RIIS, Okayama Univ, [2]Materials Sciences and Bioengineering, Nagaoka University of Technology

27P-135 **Thermodynamic Analysis of Cofilin–F-actin Interaction**

Hideyuki Komatsu[1], Nayu Itou[1], Sinobu Sato[2], Shigeori Takenaka[2]
[1]Department of Bioscience and Bioinformatics, Kyushu Institute of Technology, [2]Department of Applied Chemistry, Kyushu Institute of Technology

27P-136 **The phase separation of EB and TEN2 promotes inhibitory synapse formation**

Sotaro Ichinose, Hirohide Iwasaki
Department of Anatomy, Gunma University Graduate School of Medicine, Gunma, Japan

Cell biology: Signal transduction & Cell membrane

***27P-137** **Aquaporin-3 and aquaporin-5 differentially modulate cell stiffness and cell-cell adhesion and promote cell migration**

Catarina Pimpão[1,2], Filomena A. Carvalho[3], Inês V. da Silva[1,2], Nuno C. Santos[3], Graça Soveral[1,2]
[1]Research Institute for Medicines (iMed.ULisboa), Faculty of Pharmacy, Universidade de Lisboa, 1649-003 Lisbon, Portugal, [2]Department of Pharmaceutical Sciences and Medicines, Faculty of Pharmacy, Universidade de Lisboa, 1649-003 Lisbon, Portugal, [3]Instituto de Medicina Molecular, Faculdade de Medicina, Universidade de Lisboa, 1649-028 Lisbon, Portugal

***27P-138** **Aquaporin-3 is involved in inflammasome activation contributing to the settings of inflammatory response in THP-1 cells**

Inês V. da Silva[1], Angela Casini[2], Pablo Pelegrin[3], Graça Soveral[1]

[1]Research Institute for Medicines (iMed.ULisboa), Faculty of Pharmacy, Universidade de Lisboa, 1649-003 Lisboa, Portugal, [2]Faculty of Chemistry, Technical University of Munich, Lichtenbergstr. 4, 85748, Garching b. München, Germany, [3]Molecular Inflammation Group, Biomedical Research Institute of Murcia (IMIB-Arrixaca), Hospital Clínico Universitario Virgen de la Arrixaca, Carretera Buenavista, 30120 Murcia, Spain

***27P-139** **Positive feedback regulation of excitable Ras by RasGEFX for spontaneous signal generation in cell migration**

Koji Iwamoto[1], Satomi Matsuoka[1,2,3], Masahiro Ueda[1,2,3]

[1]Grad. Sch. Sci., Osaka Univ, Osaka, Japan, [2]Grad. Sch. of Front. Biosci., Osaka Univ, Osaka, Japan, [3]BDR, RIKEN, Osaka, Japan

27P-140 **Phosphatidylserine enhances membrane localization and lateral diffusion of active form of Ras for excitability**

Satomi Matsuoka[1,2,3], Da Young Shin[2,3], Michio Hiroshima[1,3], Hiroaki Takagi[3,4], Masahiro Ueda[1,2,3]

[1]Graduate School of Frontier Biosciences, Osaka University, [2]Graduate School of Science, Osaka University, [3]Center for Biosystems Dynamics Research, RIKEN, [4]School of Medicine, Nara Medical University

Biological & Artificial membrane: Structure & Property

***27P-141** **Nanofluidic model cell membrane platform for molecular analysis of membrane-bound proteins**

Yu Yoshimura[1], Nanami Nagatsuka[1], Ryota Komatsu[1], Shin-ichi Yusa[2], Kenichi Morigaki[1,3]

[1]Graduate School of Agricultural Science, Kobe Univ, Hyogo, Japan, [2]Department of materials Science and Chemistry, University of Hyogo, Japan, [3]Biosignal Research Center, Kobe Univ, Hyogo, Japan

***27P-142** **Integrated model membrane arrays generated by self-spreading of lipid bilayers**

Masako Fujii[1], Kenichi Morigaki[1,2]

[1]Grad. of Agri. Sci., Kobe Univ., Hyogo, Japan., [2]Biosignal Res. Ctr., Kobe Univ., Hyogo, Japan.

Poster Sessions

***27P-143** **Field model for multistate lateral diffusion of various transmembrane proteins observed in living Dictyostelium cells**

Kazutoshi Takebayashi[1], Yoichiro Kamimura[2], Masahiro Ueda[1,3]
[1]Center for Biosystems Dynamics Research (BDR), RIKEN, [2]Nara Medical University, [3]Graduate School of Frontier Biosciences, Osaka University

***27P-144** **Membrane shapes, liquid-liquid interfaces, and elastocapillarity**

Lukas Hauer[1], Katharina Sporbeck[1], Amir H. Bahrami[2,3], Roland L. Knorr[1]
[1]Humboldt-Universitaet zu Berlin, Berlin, Germany, [2]Bilkent University, Ankara, Turkey, [3]MPI-Dynamics and Self-Organization, Goettingen, Germany

27P-145 **Study on the mechanism of double cooperative effect of antimicrobial peptide LL-37 with HNP1 by leakage assay**

Yuta Sekiya, Kaori Sugihara
The University of Tokyo, Institute of Industrial Science

27P-146 **Induction of Apoptosis by Ceramide Derivatives and Its Potential Mechanisms through Domain Formation**

Nobuaki Matsumori[1], Koya Tsujimura[1], Miho Yakabe[1], Hideaki Kano[1,2]
[1]Kyushu University, [2]Keio University

27P-147 **Structural effects of Cholesterol, Lanosterol, and Oxysterol on Model Biomembranes**

Ayumi Okayama, Tatsuya Hoshino, Kohei Wada, Takahashi Hiroshi
Biophysics Laboratory, Division of Pure and Applied Science, Gunma University, Maebashi, Japan

Biological & Artificial membrane: Dynamics

***27P-148** **Generation of autonomous rotors**

Veerpal Kaur[1], Charu Taneja[2], Subha Shree[3], Abhishek Chaudhuri[4], Sabyasachi Rakshit[5]
[1]Veerpal Kaur, Department of Chemical Sciences, Indian Institute of Science Education and Research Mohali, Mohali, Punjab, India, [2]Charu Taneja, Department of Chemical Sciences, Indian Institute of Science Education and Research Mohali, Mohali, Punjab, India, [3]Subhashree,Department of Physical Sciences, Indian Institute of Science Education and Research Mohali, Mohali, Punjab, India, [4]Abhishek Chaudhuri,Department of Physical Sciences, Indian Institute of Science Education and Research Mohali, Mohali, Punjab, India, [5]Sabyasachi Rakshit1,Department of Chemical Sciences, Indian Institute of Science Education and Research Mohali, Mohali, Punjab, India

***27P-149** **Molecular dynamics investigation of the dynamical response of the interfacial waters near DPPC bilayer to Hyaluronic acid**

Anirban Paul, Jaydeb Chakrabarti
S. N. Bose National Centre for Basic Sciences, Kolkata, India

***27P-150** **Optical Trapping of Membrane Proteins on the Supported Lipid Bilayers**

Yasushi Tanimoto, Shunya Moriyama, Kyoko Masui, Chie Hosokawa
Graduate School of Science, Osaka Metropolitan University

27P-151 **Structurally Stable Phospholipid Membrane Tube Developed by Self-assembly of Peptide Receptors**

Noriyuki Uchida[1], Ryu Ishizaka[1], Anju Kawakita[1], Masaki Okumura[2], Takahiro Muraoka[1,3]
[1]Tokyo University of Agriculture and Technology, [2]Tohoku University, [3]KISTEC

Biological & Artificial membrane: Transport & Signal transduction

27P-153 **Reconstituting G protein-coupled receptors into a supported lipid bilayer using meta-stable peptide nanodiscs**

Fumio Hayashi[1], Masato Koezuka[2], Kenich Morigaki[2,3]
[1]Grad Sch Sci, Kobe University, [2]Grad Sch Agri, Kobe University, [3]Biosignal Research Center, Kobe University

Membraneless Organella, autophage, Liquid-liquid phase separation

***27P-155** **TMAO and urea effects on liquid-liquid phase separation of fused in sarcoma**

Keiji Kitamura[1], Ayano Ohshima[1], Fuka Sasaki[1], Yutaro Shiramasa[1], Soichiro Kitazawa[2], Ryo Kitahara[1,2]
[1]Graduate School of Pharmacy, Ritsumeikan University, Shiga, Japan, [2]College of Pharmaceutical Sciences, Ritsumeikan University, Shiga, Japan

***27P-156** **Coarse-Grained Molecular Dynamics Study of Coacervate Formation using Elastin-like Polypeptides with Varying Hydrophobicity**

Haruto Takegahara[1], Yasunori Okamoto[3], Kenichi Funamoto[2], Takuya Mabuchi[2,3]
[1]Graduate School of Biomedical Engineering, Tohoku University, [2]Institute of Fluid Science (IFS), Tohoku University, [3]Frontier Research Institute for Interdisciplinary Sciences (FRIS), Tohoku University

Poster Sessions

***27P-157** **Raman spectroscopic study of liquid-liquid phase separation in Lysozyme/Ovalbumin mixture system**

Taiga Sano, Toshiki Nakao, Minoru Kato
Ritsumeikan University

27P-158 **Liquid-liquid phase separation of the P53 core domain**

Amanda Santos Palma[1], Carlos Henrique Inácio Ramos[2], Leandro Ramos Souza Barbosa[3]
[1]University of São Paulo, São Paulo, Brazil, [2]State University of Campinas, Campinas, Brazil, [3]Brazilian Center for Research in Energy and Materials, CNPEM, Campinas, Brazil

27P-159 **Theoretical studies of protein accumulation during mitosis with Flory-Huggins free energy**

Yuuki Karube, Yuuki Norizoe, Takuya Saito, Takahiro Sakaue
Department of Physical Sciences, Aoyama Gakuin University

27P-160 **Quantitative Analytical Method Based on Machine Learning by Classification of Condensate Forming Cells by Glycolytic Enzymes in Saccharomyces cerevisiae**

Natsuko Miura[1,2], Ryuta Saito[3], Yuki Yoshimura[2], Kohei Tanaka[3], Michihiko Kataoka[1,2]
[1]Graduate School of Agriculture, Osaka Metropolitan University, [2]Graduate School of Life and Environmental Sciences, Osaka Prefecture University, [3]Discovery Technology Laboratories, Mitsubishi Tanabe Pharma Corporation

Neuroscience & Sensory systems

***27P-161** **Controlling Tau Aggregation Using Light-Induced Cellular Models of Tau Oligomers**

Tomoya Uchida[1], Naoki Kato[1], Shigeo Sakuragi[1], Akito Hattori[1], Yoshiyuki Soeda[2], Hideaki Yoshimura[3], Akihiko Takashima[2], Hiroko Bannai[1]
[1]Waseda University, School of Advanced Science and Engineering, Tokyo, Japan, [2]Gakushuin University, Faculty of Science, Tokyo, Japan, [3]The University of Tokyo, School of Science, Tokyo, Japan

27P-162 **Specification of Smallest Neural Cell Colony Size for Measurement of Firing or Burst Firing**

Takumi Yamaguchi[1], Kentaro Kito[2], Masahito Hayashi[1,2], Tomoyuki Kaneko[1,2]

[1]LaRC, Dept. Frontier Biosci., Hosei Univ., Tokyo, Japan, [2]LaRC, FB, Grad. Sch. Sci. & Eng., Hosei Univ., Tokyo, Japan

Neuronal circuit & Information processing

27P-164 **Classifying Dynamics of Ising Interaction Networks by Structure of Traffic Diagrams**

Yoshiaki Horiike[1,2], Shin Fujishiro[3], Masaki Sasai[3,4]

[1]Department of Applied Physics, Nagoya University, Nagoya, Japan, [2]Department of Neuroscience, University of Copenhagen, Copenhagen, Denmark, [3]Fukui Institute for Fundamental Chemistry, Kyoto University, Kyoto, Japan, [4]Department of Complex Systems Science, Nagoya University, Nagoya, Japan

Behavior

***27P-165** **Quantitative Description and Investigation into the Mechanism of Gravitactic Swimming Behavior in Coral Larvae**

Asuka Takeda-Sakazume[1,2], Junko Honjo[6], Kanae Matsushima[1], Sachia Sasano[4,6], Yuuko Wada[3], Minori Oshima[1], Shoji A. Baba[2], Kei Yura[2], Yoshihiro Mogami[1,5], Masayuki Hatta[2]

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Photobiology: Vision & Photoreception

***27P-166** **The structural dynamics study of green-cone pigment by using spectroscpies**

Mizusa Kani[1], Sayaka Ohashi[1], Takuma Sasaki[1], Hiroo Imai[2], Hideki Kandori[1,3], Kota Katayama[1,3]

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Poster Sessions

***27P-167** **FTIR study of mutants of primate red and green pigments**

Sayaka Ohashi[1], Hiroo Imai[2], Hideki Kandori[1,3], Kota Katayama[1,3]

[1]Grad. Sch. Eng., Nagoya Inst. Tech., Aichi, Japan, [2]Center for the Evolutionary Origins of Human Behavior, Kyoto University, Aichi, Japan, [3]OptoBio Technology Research Center, Aichi, Japan

***27P-168** **Activation mechanism of light-sensitive Gs protein-coupled receptor, jellyfish rhodopsin**

Shino Inukai[1], Mitsumasa Koyanagi[2], Akihisa Terakita[2], Hideki Kandori[1,3], Kota Katayama[1,3]

[1]Graduate School of Engineering, Nagoya Institute of Technology., [2]Graduate School of Science, Osaka Metropolitan University., [3]OptoBioTechnology Research Center, Nagoya Institute of Technology.

***27P-169** **Spectroscopic analysis of the photoreaction of TAT rhodopsin in the presence of calcium ion**

Teppei Sugimoto[1], Kota Katayama[1,2], Hideki Kandori[1,2]

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27P-170 **Free energy profile analysis of natural anion channelrhodopsin GtACR1 in each state of the photocycle**

Takafumi Shikakura, Cheng Cheng, Shigehiko Hayashi

Graduate School of Science, Kyoto University, Kyoto, Japan

27P-171 **Production of a light-driven Cl--dependent Na+ pump: Implications for the binding and transport of distinctive ions**

Manami Hashimoto[1], Kano Suzuki[2], Marie Kurihara[1], Taiki Nakamura[3], Keiichi Kojima[4], Susumu Yoshizawa[5], Yasuhisa Mizutani[3], Takeshi Murata[2], Yuki Sudo[4]

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Photobiology: Photosynthesis

***27P-172** **Light factor-dependent Growth of Yellow Chlamydomonas**

Okviyoandra Akhyar[1], Soichiro Seki[2], Kazuhiro Yoshida[3], Chiyo Takagi[4], Yasuhiro Kamei[4], Ritsuko Fujii[1,2,3]

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***27P-173** **Robustness of photosynthetic light-harvesting antenna chlorosome against structural heterogeneity**

Shun Arai[1], Tomomi Inagaki[2], Jiro Harada[3], Chihiro Azai[4], Toru Kondo[1]

[1]Tokyo Institute of Technology, [2]Ritsumeikan University, [3]Kurume University, [4]Chuo University

***27P-174** **Energy Transfer Pathway in Chlorophyll-f Containing Photosystem I Revealed by Single-Molecule Spectroscopy**

Rin Taniguchi[1], Toshiyuki Shinoda[2], Tatsuya Tomo[2], Ye Shen[1], Yutaka Shibata[1]

[1]Department of Chemistry, Tohoku University, Miyagi, Japan,, [2]Department of Biology, Tokyo University of Science, Tokyo, Japan

27P-175 **Post-translational conversion of amino acids in the O2-evolving complex of photosystem II: Formation of carboxylate ligands from aliphatic amino acids**

Hatsune Mizue[1], Takehiro Suzuki[2], Takumi Matsubara[1], Tomomi Kitajima-Ihara[1], Minako Hirano[1], Yuichiro Shimada[1], Yuki Kato[1], Naoshi Dohmae[2], Takumi Noguchi[1]

[1]Department of Physics, Graduate School of Science, Nagoya University, [2]Biomolecular Characterization Unit, RIKEN Center for Sustainable Resource Science

27P-176 **Modification of chlorophyll pigments in photosynthetic light-harvesting proteins**

Yoshitaka Saga, Shota Kawato, Kohei Hamanishi, Moe Sumura

Kindai University

Poster Sessions

Photobiology: Optogenetics & Optical control

***27P-177** **Effect of photoactivated adenylyl cyclase expression in Salmonella**

Keisuke Sakai, Yusuke V. Morimoto
Graduate School of Computer Science and Systems Engineering, Kyushu Institute of Technology, Fukuoka, Japan

***27P-178** **Novel Optogenetic Strategy for Regulating Insulin Signaling in the Deep Tissues of Living Mice**

Qi Dong, Mizuki Endo, Takeaki Ozawa
The University of Tokyo

27P-179 **Relationship between Responsiveness of Cardiomyocytes Stimulated by Laser Irradiation and Cell Population Status**

Takaaki Nishikawa[1], Furuie Yasumasa[1], Kentaro Kito[2], Masahito Hayasi[1,2], Tomoyuki Kaneko[1,2]
[1]LaRC, Dept. Frontier Biosci., Hosei Univ., Tokyo, Japan, [2]LaRC, FB, Grad. Sci. & Eng., Hosei Univ, Tokyo, Japan

27P-180 **The "fifth" color switch of microbial rhodopsin**

Rei Abe-Yoshizumi[1], Hideki Kandori[1,2]
[1]Grad. Sch. of Eng., Nagoya Inst. of Tech., [2]OptoBioTech. Res. Cent., Nagoya Inst. of Tech.

Radiobiology & Active oxygen

27P-181 **Cell-killing caused by direct and indirect actions of high-LET particles in Boron Neutron Capture Therapy (BNCT)**

Ryoichi Hirayama[1], Yu Sanada[2], Akiko Uzawa[1], Yoshitaka Matsumoto[3], Atsushi Ito[4], Shin-ichiro Masunaga[5], Hiroki Tanaka[2], Yoshinori Sakurai[2], Minoru Suzuki[2], Sumitaka Hasegawa[1]
[1]Institute for Quantum Medical Science, National Institutes for Quantum Science and Technology, [2]Institute for Integrated Radiation and Nuclear Science, Kyoto University, [3]Department of Radiation Oncology, Clinical Medicine, Faculty of Medicine, University of Tsukuba, [4]Department of Nuclear Engineering, School of Engineering, Tokai University, [5]BNCT Research Center, Metropolitan University

Thursday, June 27

Origin of life & Evolution

***27P-182** **Droplets in PEG / salt solution as primitive compartments at the origin of life**

Yota Tabata, Masahito Hayashi, Tomoyuki Kaneko
LaRC, FB, Grad. Sch. Sci. & Eng., Hosei Univ., Tokyo, Japan

***27P-183** **Adaptive Laboratory Evolution of Minimal Genome Bacterium to Low Temperature**

Masaki Mizutani[1], Minoru Moriyama[1], Ryuichi Koga[1], Takema Fukatsu[1,2,3], Shigeyuki Kakizawa[1]
[1]Bioproduction Research Institute, National Institute of Advanced Industrial Science and Technology, Tsukuba, Japan, [2]Department of Biological Sciences, The University of Tokyo, Japan, [3]Graduate School of Life and Environmental Sciences, University of Tsukuba, Japan

***27P-184** **Stability, structure, and interactions of prebiotic fatty acid membranes**

Taren Elizabeth Buddle Ginter[1,2], Akiko Baba[3], Masayuki Imai[3], Maikel Rheinstädter[4,5], Kosuke Fujishima[1,6]
[1]Earth-Life Science Institute, Tokyo Institute of Technology, Tokyo, Japan, [2]School of Life Science and Technology, Tokyo Institute of Technology, Tokyo, Japan, [3]Department of Physics, Tohoku University, Sendai, Japan, [4]Department of Physics and Astronomy, McMaster University, Hamilton, Canada, [5]Origins Institute, McMaster University, Hamilton, Canada, [6]Graduate School of Media and Governance, Keio University, Fujisawa, Japan

Synthetic biology & Artificial cells

***27P-185** **Induction of Dynamic Formation of ATPS-based membrane-less Artificial Cell Compartment by Thermal Control**

Mirai Sasaki, Yoshihiro Minagawa, Hiroyuki Noji
Department of Applied Chemistry, The University of Tokyo, Tokyo, Japan

Poster Sessions

***27P-186** **Microtubule/kinesin complexes spontaneously emerge vortices in cell-sized droplet generated by water/water phase separation**

Hiroki Sakuta[1,2], Naoki Nakatani[3], Takayuki Torisawa[4], Yutaka Sumino[5], Kanta Tsumoto[6], Kazuhiro Oiwa[7,8], Kenichi Yoshikawa[3]

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***27P-187** **Regulation of Stochastic Cell Re-differentiation Ratio of Genetic Toggle Switch with Minute Expression Balancing Control of Repressor Proteins**

Sota Okuda, Kohei Uetsuka, Masaki Takeda, Daisuke Kiga

School of Electrical Engineering and Bioscience, Department of Advanced Science and Engineering, Waseda University, Tokyo, Japan

***27P-188** **Zombie cells produced from the minimal synthetic bacterium JCVI-syn3B**

Nanase Oda[1], Hana Kiyama[1], Makoto Miyata[1,2]

[1]Graduate School Science, Osaka Metropolitan University, Japan, [2]The OMU Advanced Research Institute for Natural Science and Technology, Osaka Metropolitan Univ., Japan

***27P-189** **Large coiled-coil protein of Mycoplasma pneumoniae induces morphological changes in a minimal synthetic bacterium by inhibiting septum formation**

Muhammad Algiffari[1], Hana Kiyama[1], Daisuke Nakane[2], Tsuyoshi Kenri[3], Makoto Miyata[1,4]

[1]Graduate School of Science, Osaka Metropolitan University, Osaka, Japan, [2]Graduate School of Informatics and Engineering, Electro-Communications University, Tokyo, Japan, [3]Department of Bacteriology II, National Institute of Infectious Diseases, Tokyo, Japan, [4]The OMU Advanced Research Institute for Natural Science and Technology, Osaka Metropolitan University, Osaka, Japan

27P-190 **Efficient Proliferation of Synthetic Minimal Cells with Low Energy Costs**

Ken Takagi, Minoru Kurisu, Toshihiro Kawakatsu, Masayuki Imai

Department of Physics, Tohoku University, Sendai, Japan

Thursday, June 27

Computational biology: Bioinformatics

***27P-191** **Elucidation of mechanistic details of copper chaperoning to Superoxide Dismutase (SOD) using a novel free-energy computation technique and cross-validated with Molecular Dynamics Simulations**

Sharayu Umakant Ghodeswar, Debashree Bandyopadhyay

Birla Institute of Technology and Science, Pilani - Hyderabad Campus, Telangana, India

27P-192 **Computational analysis of OPRD1-OPRM1 heterodimer ligands**

Ryota Takishima[1], Aoi Fukushima[1], Wataru Nemoto[1,2]

[1]Grad. Sci. & Eng., Tokyo Denki Univ., Saitama, Japan, [2]Dept. Sci & Eng., Tokyo Denki Univ., Saitama, Japan

Computational biology: Molecular simulation

***27P-193** **A Gradient-Based Approach for Optimizing Molecular Structures using Atomic Force Microscopy Images and Normal Mode Analysis**

Xuan Wu[1], Osamu Miyashita[2], Florence Tama[1,2,3]

[1]Department of Physics, Nagoya University, [2]RIKEN Center for Computational Science, [3]Institute of Transformative Bio-Molecules, Nagoya University

***27P-194** **PINning down the elevator-type mechanism of auxin transport**

Lorena Zuzic[1], Bjørn Panyella Pedersen[2], Birgit Schiøtt[1]

[1]Department of Chemistry, Aarhus University, Aarhus, Denmark, [2]Department of Molecular Biology and Genetics, Aarhus University, Aarhus, Denmark

***27P-195** **The Effect of Tricaprylin Surface on The Lid Region Dynamics of Candida antarctica Lipase B**

Tegar Nurwahyu Wijaya[1,2], Akio Kitao[1]

[1]School of Life Science and Technology, Tokyo Institute of Technology, Tokyo, Japan, [2]Department of Chemistry, Universitas Pertamina, Jakarta, Indonesia

***27P-196** **Development of drug discovery platform technology based on a generalized-ensemble simulation method -Evaluation of SARS CoV-2 PLpro candidate inhibitors-**

Masashi Muramoto[1], Suzuka Saitou[1], Simon Hikiri[2], Junichi Higo[3], Takuya Takahashi[2]

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Poster Sessions

***27P-197** **Unraveling the Catalytic Mechanism of EPS1 in Salicylic Acid Biosynthesis Using Computational Modeling**

Tianjie Li, Yi Wang
The Chinese University of Hong Kong

***27P-198** **Complementary Analysis between 4D Crystallography and Extensive MD Simulation Captures Transient IF1-Ribosome Dynamics in Translation Initiation**

Shun Yokoi[1,2,3], Ilkin Yapici[4], E. Han Dao[5], Ebru Destan[4], Esra Ayan[4], Alaleh Shafei[4], Fatma Betul Ertem[4], Cahine Kulakman[4], Merve Yilmaz[4], Bilge Tosun[4], Halilibrahim Ciftci[4,6,7], Abdullah Kepceoglu[2,3,4], Jerome Johnson[4], Omur Guven[4], Ali Ergul[4,8], Brandon Hayes[9], Yashas Rao[9], Christopher Kupitz[9], Frederic P. Poitevin[9], Mengling Liang[9], Mark S. Hunter[9], Pohl Milon[10], Raymond G. Sierra[9], Ayori Mitsutake[1], Soichi Wakatsuki[2,3], Hasan DeMirci[4,5]
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***27P-199** **The Regulatory Role of p53 C-Terminal Domain Acetylation in Modulating the Dynamics of SIR2's NAD+ Binding Pocket**

Zhen Bai, Tatsuhiro Kimizono, Akio Kitao
Tokyo Institute of Technology

***27P-200** **An Open Source de novo Drug Design Workflow with Active Learning and Enamine REAL**

Ben Cree
Newcastle University

Thursday, June 27

***27P-201** **Studying the role of protonation in the (de)activation mechanism of class A GPCRs**

João Vitorino[1], Carlos Barreto[2], Irina Moreira[2,3], Miguel Machuqueiro[1]
[1]BioISI: Biosystems and Integrative Sciences Institute, Faculdade de Ciências, Universidade de Lisboa, Portugal, [2]Center for Neuroscience and Cell Biology, Center for Innovative Biomedicine and Biotechnology, University of Coimbra, Portugal, [3]Department of Life Sciences, University of Coimbra, Portugal

***27P-202** **Molecular Dynamics simulation of the complex of the multiple distinctive structurral regions in the WNV envelope and human monoclonal antibody.**

Masahito Yoshikawa[1], Hideyuki Masaki[1,2], Ryuuichi Kato[3], Tatsuhiko Ozawa[4], Naoyuki Miyashita[1,2]
[1]Department of Biological System Engineering, Graduate School of Biology-Oriented Science and Technology, KINDAI University, [2]Department of Computational Systems Biology, Faculty of Biology-Oriented Science and Technology, KINDAI University, [3]Structural Biology Research Center, Photon Factory, Institute of Materials Structure Science, High Energy Accelerator Research Organization (KEK), Ibaraki, Japan., [4]Department of Immunology, Faculty of Medicine, Academic Assembly, University of Toyama, Toyama, Japan

***27P-203** **Identifying and Characterizing Ligands for Mutant p53 as Potential Breast Cancer Therapy**

Rifqa Fikriya Rahasri, Kazutomo Kawaguchi, Hidemi Nagao
Kanazawa University

***27P-204** **Molecular Docking, Molecular Dynamics, And MM-PBSA Analysis of Quinolone Antibiotics Againts FmtA of Staphylococcus aureus**

Citra Hasanah, Hidemi Nagao, Kazutomo Kawaguchi
Graduate School of Natural Science and Technology, Kanazawa University

***27P-205** **Computational analysis on binding structure of limonin to a bitter taste receptor TAS2R38**

Masamune Kashihara[1], Daiki Hayashi[1], Shigenori Tanaka[2], Yoshiko Aihara[1]
[1]Graduate School of Agricultural Science, Kobe University, Kobe, Japan, [2]Graduate School of System Informatics, Kobe University, Kobe, Japan

27P-206 **Molecular Dynamics Study of the Unfolding Processes of Proteins with Highly Similar Native Structure**

Souta Kadowaki, Takashi Yoshidome
Department of Applied Physics, Graduate School of Engineering, Tohoku University, Japan

Poster Sessions

27P-207 **Dynamic structure analysis of superoxide dismutase 1 protein upon Cys111 oxidation using molecular dynamics simulation**

Yuta Hori[1], Ayaka Sato[2], Kowit Hengphasatporn[1], Yasuteru Shigeta[1]

[1]Center for Computational Sciences, University of Tsukuba, [2]Degree Programs in Pure and Applied Sciences, Graduate School of Science and Technology, University of Tsukuba

27P-208 **Investigation of the effect of the 2-OH group of in Arabidopsis thaliana ceramide on plant cell membranes using MD simulation**

Tsujii Keigo[1], Minoru Nagano[2], Simon Hikiri[2], Takuya Takahashi[2]

[1]Graduate School of Life Sciences, Ritsumeikan University, Kusatsu, Japan, [2]College of Life Sciences, Ritsumeikan University, Kusatsu, Japan

27P-209 **Dynamin-1 membrane tubule constriction mechanism revealed by coarse-grained MD simulations**

MD. Iqbal Iqbal Mahmood[2], Shintaroh Kubo[1], Kei-ichi Okazaki[2]

[1]Graduate School of Medicine, The University of Tokyo, Japan., [2]Research Center for Computational Science, Institute for Molecular Science, National Institutes of Natural Sciences, Okazaki, 444-8585, Japan.

27P-210 **Heterogeneous organization in phase-separated transcription factors: Residue-revel molecular simulations**

Azuki Mizutani[1], Cheng Tan[2], Yuji Sugita[2], Shoji Takada[1]

[1]Grad. Sch. Of Science, Kyoto Univ., Kyoto, Japan, [2]RIKEN Compute. Sci., Kobe, Japan

27P-211 **Molecular dynamics simulation of the PWW domain of LEDGF protein and histone tail H3K36**

Hinako Suzuki[1,3], Itoh Satoru[2,3,4], Hisashi Okumura[2,3,4]

[1]Shinshu University, [2]Exploratory Research Center on Life and Living Systems, [3]Institute for Molecular Science, [4]Graduate University for Advanced Studies

27P-212 **MD-based in silico screening using supercomputer Fugaku**

Tomoya Nabetani[1], Toru Ekimoto[1], Tsutomu Yamane[2], Mitsunori Ikeguchi[1,2]

[1]Graduate School of Medical Life Science, Yokohama City University, [2]RIKEN Center for Computational Science, RIKEN

27P-213 **Effects of sodium ions on conformational changes of the adenosine A2A receptor by molecular simulations**

Akihiro Arisawa, Ayori Mitsutake

Meiji University,School of Science and Technology

27P-214 **Optimal transport maps for targeted free energy estimation**

Tsuyoshi Kawai, Yasuhiro Matsunaga

Graduate School of Science and Engineering, Saitama University, Saitama, Japan

27P-215 **Surface oleophilicity induced by UV-hydroxylation of titanium**

Gehoon Chung[1,2], Wonjoon Moon[1,2], Byeong-Min Lee[1,2], Shin Hye Chung[1,2]

[1]Seoul National University School of Dentistry, [2]Seoul National University Dental Research Institute

Computational biology: Biological modeling and simulation

***27P-216** **Looking for non-opioid analgesics using stochastic titration CpHMD with AMBER14SB**

João G. N. Sequeira[1], Adrian E. Roitberg[2], Miguel Machuqueiro[1]

[1]BioISI: Biosystems and Integrative Sciences Institute, 1749-016 Lisboa, Portugal, [2]Department of Chemistry, University of Florida, Gainesville 32603, USA

***27P-217** **Prediction of cross-fitness for adaptive evolution to different environmental conditions: Consequence of phenotypic dimensional reduction.**

Takuya Sato[1], Chikara Furusawa[1,2], Kunihiko Kaneko[3]

[1]BDR, RIKEN, [2]Universal Biology Institute, Graduate school of Science, The University of Tokyo, [3]The Niels Bohr Institute, University of Copenhagen, Copenhagen, Denmark.

***27P-218** **Theoretical model of cell shape control by cytoskeleton**

Vivek Semwal[1], Biplab Bhattacherjee[1], Michiko Takeda[2], Yu-Chiun Wang[2], Tatsuo Shibata[1]

[1]Laboratory for Physical Biology, RIKEN Center for Biosystems Dynamics Research, Kobe, Japan, [2]Laboratory for Epithelial Morphogenesis, RIKEN Center for Biosystems Dynamics Research, Kobe, Japan

***27P-219** **Universally conserved Mg-pinch motif in NTP processing enzymes**

Balint Dudas, Denes Berta, Edina Rosta

Department of Physics and Astronomy, University College London (UCL), United Kingdom

***27P-220** **A binding site for phosphoinositide modulation of voltage gated sodium channels described by multiscale simulations**

Yiechang Lin, Elaine Tao, James Champion, Ben Corry

Australian National University

Poster Sessions

27P-221 **Development of an Efficient Estimation Method for Maximum Tolerated Dose by Reinforcement Learning**

Ryosuke Takami[1], Koji Tabata[1,3], Yayoi Wada[2], Masahiro Sonoshita[2], Tamiki Komatsuzaki[1,3,4,5]

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***27P-222** **Study of the Allosteric Mechanism of Human Mitochondrial Phenylalanyl-tRNA Synthetase by Transfer Entropy via an Improved Gaussian Network Model and Co-evolution Analyses**

Zhongjie Han[1,2,3], Chunhua Li[3]

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27P-223 **Nucleosome-resolution modeling and simulation of singlegene level chromatin organization mechanisms**

Gu Chenyang, Shoji Takada, Giovanni Brandani

Grad. Sch. Sci., Kyoto university, Kyoto, Japan

27P-224 **Allosteric drugs: new principles and design approaches**

Wei-Ven Tee[1], Igor N Berezovsky[1,2]

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27P-225 **Study of Liquid–liquid Phase Separation of Tau fragment K18 via Coarse-grained Simulation**

Zhuqing Zhang, Qinglin Yan

College of Life Sciences, University of Chinese Academy of Sciences, Beijing 100049, China

27P-226 **Design principles of microtubule-associated proteins: exploring the role of lever arms and linker regions under directional loads**

Ilya B. Kovalenko[1], Vladimir A. Fedorov[1], Ekaterina G. Kholina[1], Philipp S. Orekhov[3], Egor M. Pozdnyakov[1], Fazoil I. Ataullakhanov[2,4], Nikita Gudimchuk[1,2]

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Computational biology: machine learning for molecules or cell systems

***27P-227** **A Machine Learning Approach to Classify Force Curves of Nuclear Elasticity Measurements.**

MD Fahim Newaz

Division of Nano Life Science, Kanazawa University, Kanazawa 920-1192, Japan

***27P-228** **Development of an Efficient Estimation Method for Maximum Tolerated Dose by Reinforcement Learning**

Ryosuke Takami[1], Koji Tabata[1], Yayoi Wada[2], Masahiro Sonoshita[2], Tamiki Komatsuzaki[1]

[1]Research Institute for Electronic Science, Hokkaido University, Sapporo, Japan, [2]Division of Biomedical Oncology, Institute for Genetic Medicine, Hokkaido University, Sapporo, Japan

***27P-229** **RVINN: Inference of gene regulation dynamics in the mRNA life cycle using Physics-Informed Neural Networks**

Osamu Muto[1,2], Zhongliang Guo[2], Rui Yamaguchi[1,2]

[1]Nagoya University, [2]Aichi Cancer Center Research Institute

Mathematical & Theoretical biology

***27P-230** **Active thermodynamic force drives mitochondrial equidistant distribution in axons**

Masashi K. Kajita[1], Yoshiyuki Konishi[1], Tetsuhiro Hatakeyama[2,3]

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Poster Sessions

***27P-231** **Global propagation of single-gene deletion effects through stoichiometry conservation relations**

Genta Chiba[1], Ken-ichiro F. Kamei[1], Arisa Oda[1,2], Kunihiro Ohta[1,2,3], Yuichi Wakamoto[1,2,3]

[1]Grad. Sch. Arts and Sci. Univ. Tokyo, Tokyo, Japan, [2]Res. Cent. Complex Syst. Biol., Univ. Tokyo, Tokyo, Japan, [3]UBI, Univ. Tokyo, Tokyo, Japan

***27P-232** **Pattern propagation driven by surface curvature**

Ryosuke Nishide, Shuji Ishihara

The University of Tokyo

27P-233 **Entangled gene regulatory networks with cooperative expression endow responses to unforeseen environmental changes**

Masayo Inoue

Graduate School of Engineering, Kyushu Institute of Technology

Nonequilibrium state & Biological rhythm

***27P-234** **Exploring dense active dynamics in suspension of ciliate Tetrahymena based on all cell tracking**

Kohei Okuyama, Masatoshi Ichikawa

Department of Physics, Kyoto University

27P-235 **Emergence of spontaneous oscillations in a liquid film of bacterial swimmers**

Lei-Han Tang

Hong Kong Baptist University, Hong Kong, China

Measurements

***27P-236** **Single EVs detection and analysis using a glass nanopore**

Izumi Shibayama, Kohei Hayashi, Ryuji Kawano

Department of Biotechnology and Life Science, Tokyo University of Agriculture and Technology

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***27P-237** **Ultra-low-noise and wide-bandwidth current detection for enhanced scanning ion conductance imaging rate in scanning ion conductance microscopy**

Shoma Kamei[1], Shinji Watanabe[2]

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27P-238 **Aptamer-based AI-driven nanopore measurement for the simultaneous detection of biomarkers for the cancer diagnosis**

Ryo Akita, Lysenko Artem, Shunsuke Ono, Hikaru Nozawa, Tatsuhiko Tsunoda, Sotaro Uemura

Graduate School of Science, The University of Tokyo

27P-239 **Analysis of the conformational dynamics of oligosaccharides using ion mobility spectrometry**

Hao Feng[1], Takumi Yamaguchi[1,2,3]

[1]School of Materials Science, Japan Advanced Institute of Science and Technology, [2]Graduate School of Pharmaceutical Sciences, Nagoya City University, [3]Exploratory Research Center on Life and Living Systems (ExCELLS), National Institutes of Natural Sciences

Bioimaging

***27P-240** **A bright and highly-response Ca2+ biosensor based on mScarlet: Progress toward fluorescence lifetime imaging**

Shosei Imai[1], Ryan Fink[2], Takuya Terai[1], Olivia A. Masseck[2], Robert E. Campbell[1]

[1]Department of Chemistry, Graduate School of Science, The University of Tokyo, Tokyo, Japan., [2]Synthetic Biology, University of Bremen, Bremen, Germany.

***27P-241** **Hydroxyquinoline-derived Multifunctional Small Molecule Turn-On Fluorescent Probe as a Theranostic Agent for Alzheimer's Disease**

Priyam Ghosh, Parameswar Iyer

Department of Chemistry, Indian Institute of Technology Guwahati, Guwahati, Assam 781039, India

Poster Sessions

***27P-242** **Precision-enhanced 1,000-fold faster 3D quantum thermometry in vivo**

Yurina Nakane[1], Haruka Maeoka[1], Ryuki Imamura[1], Ryuji Igarashi[2], Shin Usuki[3], Takuma Sugi[1]

[1]Program of Biomedical Science, Graduate School of Integrated Sciences for Life, Hiroshima University, Japan, [2]Quantum Science and Technology Organization, Japan, [3]Research Institute of Electronics, Shizuoka University, Japan

***27P-243** **Elucidation of neuronal differentiation mechanisms by thermal signaling through control of intracellular local temperature**

Shunsuke Chuma[1,2], Kohki Okabe[3,4], Yoshie Harada[2,5,6]

[1]Department of Biological Sciences, Graduate School of Science, Osaka University, Osaka, Japan,, [2]Institute for Protein Research, Osaka University, Osaka, Japan, [3]Graduate School of Pharmaceutical Sciences, The University of Tokyo, Tokyo, Japan, [4]apan Science and Technology Agency, Precursory Research for Embryonic Science and Technology, Saitama, Japan, [5]enter for Quantum Information and Quantum Biology, Osaka University, Osaka, Japan, [6]Premium Research Institute for Human Metaverse Medicine (WPI-PRIMe), Osaka University, Osaka, Japan

***27P-244** **Imaging and modeling of glycolytic oscillations**

Saaya Hario[1], Shosei Imai[1], Yudai Iyoda[2], Hikaru Sugimoto[3], Takuya Terai[1], Shinya Kuroda[4], Robert E. Campbell[1]

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***27P-245** **Development of selective plane activation structured illumination microscopy**

Kenta Temma[1,2,9], Ryosuke Oketani[1,3], Toshiki Kubo[1], Kazuki Bando[1], Shunsuke Maeda[1], Kazunori Sugiura[4], Tomoki Matsuda[4], Rainer Heintzmann[5,6], Tatsuya Kaminishi[7,9], Koki Fukuda[8,9], Maho Hamasaki[7,8], Takeharu Nagai[4], Katsumasa Fujita[1,2,9]

[1]Department of Applied Physics, Osaka Univeristy, [2]AIST Advanced Photo-BIO OIL, AIST-Osaka University, [3]Department of Chemistry, Kyushu University, [4]SANKEN, Osaka University, [5]Leibniz Institute of Photonic Technology, [6]Institute of Physical Chemistry and Abbe Center of Photonics, Friedrich-Schiller University Jena, [7]Department of Genetics, Graduate School of Medicine, Osaka University, [8]Laboratory of Intracellular Membrane Dynamics, Graduate School of Frontier Biosciences, Osaka University, [9]Institute for Open and Transdisciplinary Research Initiatives, Osaka University

***27P-246** **High-speed, high-resolution computational phase microscopy visualizing organelles**

Yugo Inutsuka[1,2], Yasushi Okada[1,2]

[1]The University of Tokyo, [2]RIKEN

27P-247 **Extraction of dependent spatial or spectral features from different disease states in Raman images**

Ryoya Kondo[1], Yuta Mizuno[1,2,3], Jean-Emmanuel Clement[2,3], Kentaro Mochizuki[4], Katsumasa Fujita[5], Yoshinori Harada[4], Tamiki Komatsuzaki[1,2,3]

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***27P-248** **Quantification of Spatial and Spectral Information Dependent on Measurement Methods and Disease States in Raman Images**

Ryoya Kondo[1], Yuta Mizuno[1,2,3], Jean-Emmanuel Clement[2,3], Kentaro Mochizuki[4], Katsumasa Fujita[5], Yoshinori Harada[4], Tamiki Komatsuzaki[1,2,3]

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Poster Sessions

27P-249 **Simultaneous measurement of average size and number of biomolecular condensates using spatial image correlation spectroscopy (SICS)**

Yuta Hamada[1], Akita Kitamura[2,3]

[1]Graduate School of Life Science, Hokkaido University, Sapporo, Japan, [2]Faculty of Advanced Life Science, Hokkaido University, Sapporo, Japan, [3]PRIME, AMED, Tokyo, Japan

27P-250 **Imaging of Biomolecules by Constant Thermal Fluctuation Mode Atomic Force Microscopy**

Daisuke Yamamoto

Faculty of Science, Fukuoka University

27P-251 **Development of small nanodiamonds that can be observed by optically detected magnetic resonance inside cells.**

Hirotaka Okita[1], Shingo Sotoma[2], Yuki S Kato[3], Yukiho Shimazaki[1,4], Hiroshi Abe[5], Seiichi Saiki[5], Madoka Suzuki[1], Yoshie Harada[1,5,6]

[1]Institute for Protein Research Osaka University, [2]Faculty of Molecular Chemistry and Engineering Kyoto Institute of Technology, [3]Deparment of Biological Sciences, School of Science, Osaka University, [4]Graduate school of Science Osaka University, [5]Center for Quantum Information and Quantum Biology Osaka University, [6]Premium Research Institute for Human Metaverse Medicine, Osaka University

27P-252 **Volumetric imaging of micrometer-scale cellular dynamics in centimeter-scale multicellular systems**

Taro Ichimura[1], Taishi Kakizuka[2], Keiko Itano[2], Kaoru Seiriki[3], Hitoshi Hashimoto[1,3], Yuki Sato[4], Hiroya Itoga[5], Shuichi Onami[1,5], Takeharu Nagai[1,2]

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27P-253 **Multi-color fluorescence lifetime biosensors for quantifying Ca2+, ATP, and GTP/GDP ratio in live cells**

Cong Quang Vu

WPI-NanoLSI, Kanazawa University

Thursday, June 27

Bioengineering

***27P-254** **Cell-free synthesis of hydrophobic peptides that form nanopores in bilayer lipid membranes**

Shoko Fujita[1], Izuru Kawamura[2], Ryuji Kawano[1]

[1]Department of Biotechnology and Life Science, Tokyo University of Agriculture and Technology, Tokyo, Japan, [2]Graduate School of Engineering Science, Yokohama National University, Yokohama, Japan

27P-255 **Morphological Difference in Hydrogel Induced Cancer Stem Cell in Synovial Sarcoma Model Cells**

Zannatul Ferdous[1], Jean-Emmanuel Clément[1], Jian Ping Gong[1,3], Shinya Tanaka[1,2], Masumi Tsuda[1,2,3], Tamiki Komatsuzaki[1,4]

[1]Institute for Chemical Reaction, Design and Discovery (WPI-ICReDD), Hokkaido University, [2]Department of Cancer Pathology, Faculty of Medicine, Hokkaido University, [3]Faculty of Advanced Life Science, Hokkaido University, [4]Graduate School of Chemical Sciences and Engineering, Hokkaido University

***27P-256** **Novel approach for anticancer peptides carried by nanoparticles**

Roberta Moisa

Horia Hulubei National Institute for Physics and Nuclear Engineering

***27P-257** **Stereo 3D reconstruction of a dragonfly flapping motion and its quantification using fine grid spotlight**

Natsuki Yamamoto

Akita Prefectural University

27P-258 **Microscopic toxicity assay of human organoids in microfluidic devices advanced by quantum beam technologies**

Kotaro Oyama[1], Tomoko G Oyama[1], Hiroki Hamaguchi[1], Yusuke Kimura[1], Atsushi Kimura[1], Kimio Yoshimura[1], Masaaki Omichi[1], Yuuji Ueki[1], Akihiro Hiroki[1], Hiroyuki Hoshina[1], Yasuhiro Oshima[1], Michiyo Suzuki[1], Shinichiro Mori[2], Noriaki Seko[1], Noriko Ishioka[1], Mitsumasa Taguchi[1]

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Poster Sessions

Crystal growth & Crystallization technique

***27P-259** **High-Speed AFM investigation of structured fats' crystallization dynamics**

Anis Chikhoune[1], Jan Kyselka[2], Djamel Eddine Chafai[3]

[1]Équipe PVNTA, Laboratoire ALIMENTS, École Supérieure des Sciences de l'Aliment et des Industries Agroalimentaires (ESSAIA), Avenue Ahmed Hamidouche Route de Beaulieu, El Harrach 16200, Alger, Algeria, [2]Department of Dairy, Fat and Cosmetics, University of Chemistry and Technology, 166 28, Prague, Czech Republic, [3]WPI Nano Life Science Institute (WPI-NanoLSI), Kanazawa University, Kakuma-machi, Kanazawa 920-1192, Japan

27P-260 **Advancing Structural Biology: Innovations and Applications of In Vivo Macromolecular Crystallography at Nagoya University**

Etsuko Tokunaga[1], Swagatha Ghosh[2], Hiroki Onoda[1], Yasufumi Umena[1], Leonard M.G. Chavas[1,2]

[1]NUSR, Nagoya Univ., Aichi, Japan, [2]Dept. of Appl. Phys., Grad. Sch. of Eng., Nagoya Univ., Aichi, Japan

Virus structure, function, SARS-CoV-2

***27P-261** **Cryo-EM structure of infectious and non-infectious Human Astrovirus and insights into its maturation process**

Kentaro Hiraka[1,2], Raymond Burton-Smith[1,2], Chihong Song[1,2], Kana Miyamoto[3], Kei Haga[3], Reiko Todaka[3], Kazuhiko Katayama[3], Kazuyoshi Murata[1,2]

[1]National Institute for Physiological Sciences, National Institutes of Natural Sciences, [2]Exploratory Research Center on Life and Living Systems (ExCELLS), National Institutes of Natural Sciences, [3]Kitasato University

***27P-262** **Structural basis for antiviral activity of a nucleoside analogue targeting dengue virus RNA-dependent RNA polymerase**

Shiori Ito[1], Shunsuke Kita[1], Kentaro Uemura[1,2,3,4], Yuki Iwama[1], Takashi Tadokoro[5], Hirofumi Sawa[2,6], Akihiko Sato[2,3,6], Akira Matsuda[1], Katsumi Maenaka[1,2,6]

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27P-263 **DEVELOPING BROAD SPECTRUM ANTIVIRALS: PEPTIDE-PORPHYRIN CONJUGATES ACTION, FROM MOLECULAR SCALE TO IN VIVO**

Miguel A. R. B. Castanho

IMM, Instituto de Medicina Molecular, Lisbon, Portugal

27P-264 **Conformational dynamics of SARS-CoV-2 spike protein investigated by single molecule fluorescence spectroscopy**

Yuji Itoh[1,2], Taisei Mori[1,2], Tateki Suzuki[3], Takao Hashiguchi[3], Satoshi Takahashi[1,2]

[1]IMRAM, Tohoku Univ., Miyagi, Japan, [2]Grad. Sch. Life Sci., Tohoku Univ., Miyagi, Japan, [3]LiMe, Kyoto Univ. Kyoto, Japan

Mechanosensing and Mechanobiology, Biological Temperature

***27P-265** **Investigation of the mechanism of neurite outgrowth using nuclear heating**

Yukiho Shimazaki[1,2], Shunsuke Chuma[1,2], Kohki Okabe[3], Yoshie Harada[2,4,5]

[1]Department of Biological Sciences, Graduate School of Science, Osaka University, Osaka, Japan, [2]Institute for Protein Research, Osaka University, Osaka, Japan, [3]Graduate School of Pharmaceutical Science, The University of Tokyo, Tokyo, Japan, [4]Center for Quantum Information and Quantum Biology, Osaka University, Osaka, Japan, [5]Premium Research Institute for Human Metaverse Medicine (WPI-PRIMe), Osaka University, Osaka, Japan

***27P-266** **Small-molecule FLIM sensors for visualization of temperature in calcium cycling of sarcoplasmic reticulum**

Takeru Yamazaki[1], Kayoko Nomura[1], Toshiko Yamazawa[2], Satoshi Arai[1]

[1]WPI Nano Life Science Institute (WPI-NanoLSI), Kanazawa Univ., Ishikawa, Japan, [2]Core Research Facilities, The Jikei Univ. Sch. of Med., Tokyo, Japan

27P-267 **Differential roles of a periplasmic tension sensor and a cytoplasmic one in the channel opening of MscL**

Takeshi Nomura[1], Yasuyuki Sawada[2], Masahiro Sokabe[3]

[1]School of Human Science and Environment, University of Hyogo, Hyogo, Japan, [2]Institute of Materials Innovation, Institutes of Innovation for Future Society, Nagoya University, Nagoya, Japan, [3]Human Information Systems Laboratory, Kanazawa Institute of Technology, Ishikawa, Japan

Poster Sessions

Biophysics of disease

***27P-268** **Tau Inclusions in Soma Induce Neuronal Death in Human iPSC-derived Neurons**

Naoki Kato[1], Sumihiro Maeda[2], Hideyuki Okano[2], Hiroko Bannai[1]
[1]School of Advanced Science and Engineering, Waseda University, [2]School of Medicine, Keio University

***27P-269** **Reversible tangle formation of Alzheimer's disease-fold Tau filaments by conformational changes of the fuzzy coat region**

Shingo Tamai[1,2], Takashi Nomura[1], Ryohei Kojima[3], John Burke[1], Atsushi Yamagata[4], Mikako Shirouzu[4], Takeshi Fukuma[3], Motomasa Tanaka[1,2]
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27P-270 **Lead and Mercury poisoning promote cardiac dysfunction in isolated hearts affecting cardiac ion channels and intracellular calcium homeostasis.**

Gonzalo R. Ferreira[1], Romina Cardozo[1], Axel Santander[1], Luisina Chavarria[1], Santiago Sastre[1], Milagros Benitez[1], Nicolas Mujica[1], Lucia Dominguez[1], Garth Lamb Nicolson[2]
[1]Laboratory of Ion channels, Biological Membranes and Cell Signaling. Department of Biophysics. Facultad de Medicina. Montevideo. Universidad de la Republica. Uruguay., [2]The Institute for Molecular Medicine. Huntington Beach. San Diego. CA. USA.

Miscellaneous topics

***27P-271** **Novel antibacterial agents to treat Multidrug resistant bacteria causing wound infections in diabetic patients**

Mithali Raj Marla[2], Shailaja Raj Marla[1], Maria Shajan[1]
[1]St. Francis College for Women, [2]Kamineni Institute of Medical Sciences

27P-272 **An Interactive 3-D Graph Tool to Visualize Electromagnetic Waves on Web Browsers for Physics Education**

Satoshi Yamaguchi, Masayuki Irisa
Comp. Sci. and Sys. Eng., Kyushu Inst. Tech., Japan

Friday, June 28

Presentation time is organized by whether the last part (suffix) of Poster Session number is odd/even.
Odd number: 13:50-14:50 Even number: 14:50-15:50

Abstracts marked with * in the abstract number eligible for IUPAB2024 Student and Early Career Researcher Poster Award voting
Ex) *25P-999

Protein: Structure

28P-001 **Cryo-EM analysis of human GLUT9**

Daiki Matsushita[1], Yongchan Lee[1], Yu Toyoda[2,3], Teppei Takada[3], Tomohiro Nishizawa[1]

[1]Graduate School of Medical Life Science, Yokohama City University, Yokohama, Japan, [2]Department of Integrative Physiology and Bio-Nano Medicine, National Defense Medical College, Tokorozawa, Japan, [3]Department of Pharmacy, The University of Tokyo Hospital, Tokyo, Japan

28P-002 **Molecular basis of substrate recognition in human y+LAT1-CD98hc complex**

Juntaro Nakahara[1], Yongchang Lee[1], Natsumi Yoshida[1], Pattama Wiriyasermkul[2], Ryo Ekimoto[1], Mitsunori Ikeguchi[1], Sushi Nagamori[2], Tomohiro Nishizawa[1]

[1]Graduate School of Medical Life Science, Yokohama City University, [2]Department of Laboratory Medicine, The Jikei University School of Medicine

28P-003 **Particle formation for nanofiber elongation in Fibroin artificial sequence**

Kento Yonezawa[1,2], Chan Kok Sim[2], Takehiro Sato[3], Haruya Kajimoto[2], Kiichi Hayashi[2], Takuya Sawai[2], Yusuke Okamoto[2], Rakuri Aiba[2], Yuki Nakatani[2], Kenta Kimura[2], Yoichi Yamazaki[2], Sachiko Toma-Fukai[2], Yugo Hayashi[2], Hironari Kamikubo[1,2]

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Poster Sessions

28P-004 **Cryo-EM analysis of mouse b0,+AT-rBAT complex**

Aoi Maeda[1], Yongchan Lee[1], Pattama Wiriyasermkul[2], Sushi Nagamori[2], Tomohiro Nishizawa[1]

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28P-005 **Cryo-EM Structure of MexB-MexY Chimera Protein MexBYB Multidrug Efflux Pump**

Jiye Wang[1], Kenta Tsutsumi[1], Ryosuke Nakashima[2], Kunihiko Nishino[2], Eiki Yamashita[1], Atsushi Nakagawa[1]

[1]Institute for Protein Research, Osaka University, Osaka, Japan, [2]SANKEN, Osaka University, Osaka, Japan

28P-006 **Investigation of the effect of ATP/ADP for formation of 2-Cys peroxiredoxin (Prx2) high molecular weight complex**

Trang Ngoc Tran[1], Ryusei Yamada[2], Hiroki Konno[3]

[1]Graduate School of Frontier Science Initiative, Kanazawa University, Kanazawa, Japan, [2]Graduate School of Natural Science and Technology, Kanazawa University, Kanazawa, Japan, [3]WPI Nano Life Science Institute (WPI-NanoLSI), Kanazawa University, Kanazawa, Japan

28P-007 **Comprehensive analysis of different fold proteins with similar interfaces**

Takumi Sekine, Kazuo Fujiwara, Masamichi Ikeguchi

Department of Biosciences, Soka University, Hochioji, Japan

28P-008 **Solution structure of clock protein complex KaiA-KaiC**

Ken Morishima[1], Masahiro Shimizu[1], Ritsuki Sakamoto[2], Yasuhiro Yunoki[1], Rintarao Inoue[1], Masaaki Sugiyama[1]

[1]Institute for Integrated Radiation and Nuclear Science, Kyoto University, [2]Graduate School of Science, Kyoto University

28P-010 **The brain metabolites, betaine and dimethyl glycine disrupt acetylcholinesterase activity and enhance the inhibitory effect of Donepezil, Rivastigmine, and Galantamine**

Laishram Rajendrakumar Singh, Kritika Kumari

Dr. B. R. Ambedkar Center for Biomedical Research, University of Delhi, Delhi-110007, India

28P-011 **Towards serial femtosecond crystallography of metalloproteins with sub-ångström details**

Faisal Koua[1], Tiankun Zhou[2], Jay-How Yang[3], Marcin Sikorski[1], Jayanath Koliyadu[1], Mohammed Vakili[1], Johan Bielecki[1], Richard Bean[1], Tokushi Sato[1], Adrian Mancuso[1,2,4]

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28P-012 **Structural basis of main proteases of HCoV-229E bound to inhibitor PF-07304814 and PF-07321332**

Qisheng Wang

Shanghai Advanced Research Institute, Chinese Academy of Sciences, Shanghai, 201204, China

Protein: Structure & Function

28P-014 **Evidence for an alternative YidC-assisted insertion mode - Exploring a putative parallel YidC dimer.**

Denis Knyazev[1], Lukas Winter[1], Andreas Vogt[2,3,4], Sandra Posch[1], Yavuz Öztürk[2], Christine Siligan[1], Nikolaus Goessweiner-Mohr[1], Nora Hagleitner-Ertugrul[1], Hans-Georg Koch[2,3], Peter Pohl[1]

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28P-015 **Modeling of Photoswitchable Ligands Linked to Physiology**

Wieslaw A Nowak

Department of Biophysics, Institute of Physics, N. Copernicus University in Torun, Poland

Poster Sessions

28P-016 **Identifying functional hotspot residues for activation in M2 muscarinic receptor**

Yuya Sugiura[1], Tatsuya Ikuta[3], Yuji Sumii[1], Hirokazu Tsujimoto[5], Ryoji Suno[4,5], Putri Nur Arina Binti Mohd Ariff[1], So Iwata[5], Norio Shibata[1], Asuka Inoue[3], Takuya Kobayashi[4,5], Hideki Kandori[1,2], Kota Katayama[1,2]

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28P-017 **Aqp5 mutations in patients suffering from palmoplantar keratoderma (Bothnian type)**

Christine Siligan, Helena Zich, Nikolaus Gössweiner-Mohr, Anna Stoib, Peter Pohl

Institute of Biophysics, Johannes Kepler University, Linz, Austria

28P-018 **pH-Induced Conformational Dynamics and Oligomeric Assembly of Peroxiredoxin 6: Insights into Catalytic Mechanisms**

Hamidur Rahaman, Shahnaj Sharifun, Kakchingtabam Pushpa

Department of Biotechnology, Manipur University, Indo Myanmar Road, Canchipur, Imphal, India-795003

28P-019 **Exploring Covalent Bond Electron Densities in the Active Site of the EcoRV-DNA Complex through QM/MM Metadynamics**

Hiroki Sato, Itaru Onishi, Mika Mitsumatsu, Ryotarou Matsuda, Masayuki Irisa

Comp. Sci. and Sys. Eng., Kyushu Inst. Tech., Japan

28P-020 **Fantastic Enzymes and where to find them**

Ehmke Pohl[1], Katy Cornish[1], Stefanie Freitag-Pohl[1], Arnthór Aevarsson[2]

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28P-021 **Theoretical study on allosteric control mechanism of a luminescent reaction of bioluminescent protein Aequorin**

Tomohiro Ando[1], Toshiya Funahashi[2], Toru Nakatsu[3], Shigehiko Hayashi[1]

[1]Grad. Sch. of Sci. Kyoto Univ., [2]Grad. Sch. of Pharm. Sci. Kyoto Univ., [3]Sch. of Pharm. Sci. Wakayama Med. Univ.

28P-022 **Correlating single molecule studies with Cryo-EM structures to understand the inner workings of ATP synthase.**

Meghna Sobti[1,2], Hiroshi Ueno[3], Simon Brown[4], Hiroyuki Noji[3], Alastair Stewart[1,2]

[1]Molecular, Structural and Computational Biology Division, The Victor Chang Cardiac Research Institute, Darlinghurst, Australia, [2]St Vincent's Clinical School, Faculty of Medicine, UNSW Sydney, Kensington, Australia., [3]Applied Chemistry, Graduate School of Engineering, The University of Tokyo, Tokyo, Japan, [4]Molecular Horizons, University of Wollongong and Illawarra Health and Medical Research Institute, Wollongong, NSW 2522, Australia.

28P-023 **Molecular basis for heat-hypersensitive mutants of ryanodine receptor type 1**

Liu Chujie[1], Yamazawa Toshiko[2], Oyama Kotaro[3], Murayama Takashi[4], Kobayashl Takuya[4], Harada Yoshie[1,5], Suzuki Madoka[1]

[1]Institute for Protein Research, Osaka University, [2]Core Research Facilities, The Jikei University School of Medicine, [3]Foundational Quantum Technology Research Directorate, National Institutes for Quantum Science and Technology, [4]Department of Cellular and Molecular Pharmacology, Juntendo University Graduate School of Medicine, [5]Center for Quantum Information and Quantum Biology, Osaka University

28P-024 **Proton-coupled electron transfer dynamics and ligand binding in the mycobacterial respiratory supercomplex III2IV2**

Ana Patricia Gamiz-Hernandez, Daniel Riepl, Terezia Kovalova, Sylwia M. Król, Dan Sjöstrand, Martin Högbom, Peter Brzezinski, Ville R. I. Kaila

Department of Biochemistry and Biophysics, The Arrhenius Laboratories for Natural Sciences, Stockholm University, SE-106 91, Stockholm, Sweden.

28P-025 **High-speed AFM observation of collagen degradation process by Grimontia hollisae collagenase**

Hayato Yamashita[1], Keisuke Tanaka[2], Yuko Ushiki-Kaku[2], Akihiro Tsuji[1], Shunji Hattori[2], Masayuki Abe[1]

[1]Graduate School of Engineering Science, Osaka University, [2]Nippi Research Institute of Biomatrix

Poster Sessions

28P-026 **Structural basis for the pH-dependent functional regulation of cytochrome b6f complex from Chlamydomonas reinhardtii**

Akihiro Kawamoto[1], Hatsuki Tanabe[1], Shin-Ichiro Ozawa[2], Hideaki Tanaka[1], Yuichiro Takahashi[3], Genji Kurisu[1]

[1]Institute for Protein Research, Osaka University, Japan, [2]Institute of Plant Science and Resources, Okayama University, Japan,, [3]Research Institute for Interdisciplinary Science, Okayama University, Japan

28P-027 **Structural insights into the elongation complex of RNA polymerase II paused at the +1 nucleosome entrance**

Masahiro Naganuma[1], Tomoya Kujirai[1,2], Haruhiko Ehara[1], Tamami Uejima[1], Tomoko Ito[2], Mie Goto[1], Mari Aoki[1], Masami Henmi[1], Sayako Miyamoto-Kohno[1], Mikako Shirouzu[1], Hitoshi Kurumizaka[1,2], Shun-ichi Sekine[1]

[1]RIKEN Center for Biosystems Dynamics Research, Yokohama, Japan, [2]Laboratory of Chromatin Structure and Function, Institute for Quantitative Biosciences, The University of Tokyo, Tokyo, Japan

28P-028 **Positive allosteric modulation of cytochrome c oxidase activity**

Yuya Nishida[1], Takumi Tateno[2], Takemasa Nagao[1], Yasunori Shintani[1,2]

[1]National Cerebral and Cardiovascular Center, Osaka, Japan, [2]Osaka University Graduate School of Medicine, Osaka, Japan

28P-029 **The structure and function of the ghrelin receptor coding for drug actions**

Yuki Shiimura[1,2], Dohyun Im[2], Ryosuke Tany[3], Hidetsugu Asada[2], Ryoji Kise[3], Hideko Wakasugi-Masuho[3], Kazuma Matsui[1], Jun-ichi Kishikawa[5], Takayuki Kato[5], Masayasu Kojima[1], So Iwata[2], Ikuo Masuho[3,4]

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28P-030 **Cracking the code: A computational expedition into neurodegenerative polypeptides and innovative therapies**

Ioana Mariuca Ilie[1], Simone Ruggeri[2]

[1]University of Amsterdam, The Netherlands, [2]University of Wageningen, The Netherlands

28P-031 **Structural and Functional Elucidations of Druggable Viral Macrodomains**

Chun-Hua Hsu
National Taiwan University, Taipei, Taiwan

28P-032 **Synthesis of versatile neuromodulatory molecules by a gut microbial glutamate decarboxylase**

Pavani Dadi[1,2], Clint Pauling[1,3], Abhishek Shrivastava[1,2], Dhara D. Shah[1,3]
[1]Biodesign Center for Fundamental and Applied Microbiomics, Arizona State University, Tempe, AZ, USA., [2]School of Life Sciences, Arizona State University, Tempe, AZ, USA., [3]School of Mathematical and Natural Sciences, Arizona State University, Glendale, AZ, USA.

28P-033 **An integrated approach using sequential and structural features for precise prediction of protein-protein binding affinity**

Zhongliang Guo[1], Osamu Muto[1,2], Rui Yamaguchi[1,2]
[1]Aichi Cancer Center Research Institute, [2]Nagoya University

28P-034 **Structure of the human 80S ribosome at 1.9 Å resolution – the molecular role of chemical modifications and ions in RNA**

Charles Barchet[1,2,3,4], Samuel Holvec[1,2,3,4], Antony Lechner[1,2,3,4,5], Léo Fréchin[1,2,3,4], Nimali De Silva[1,2,3,4], Isabelle Hazemann[1,2,3,4], Philippe Wolff[5], Ottilie von Loeffelholz[1,2,3], Bruno Klaholz[1,2,3,4]
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Protein: Physical property

28P-035 **Amyloid formation of the β2-microglobulin variants, D76N and V27M: Diverse diseases via a common assembly mechanism**

Masatomo So[1,2], Roberto Martinez[1], Nicolas Guthertz[1], Martin Wilkinson[1], Sheena Radford[1]
[1]University of Leeds, Leeds, UK, [2]Kyoto University, Kyoto, Japan

Poster Sessions

28P-036 **Negative Charge Increment during Evolution of Ferritin**

Takumi Kuwata, Yusuke Murakami, Kazuo Fujiwara, Masamichi Ikeguchi
Department of Biosciences, Soka University

28P-037 **Prediction of detailed structures over the entire free energy landscape of protein folding using extended statistical mechanical models and restrained simulations**

Koji Ooka[1], Munehito Arai[1,2,3]
[1]College of Arts and Sciences, The University of Tokyo, Tokyo, Japan., [2]Department of Life Sciences, The University of Tokyo, Tokyo, Japan., [3]Department of Physics, The University of Tokyo, Tokyo, Japan.

28P-038 **Structural studies of protein condensates prepared by ultracentrifugation/air-drying**

Ryuga Someya[1], Akira Nomoto[1], Suguru Nishinami[2], Hiroka Sugai[3], Kentaro Shiraki[1]
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Protein: Function

28P-039 **SsUreI is a pH-gated urea channel from Streptococcus salivarius**

Anna Stoib, Xenia Fischer, Sandra Posch, Felix Wolkenstein, Sahar Shojaei, Christine Siligan, Nikolaus Goessweiner-Mohr, Andreas Horner
Institute of Biophysics, Johannes Kepler University Linz, Gruberstr. 40, 4020 Linz, Austria

28P-040 **Effect of the inorganic phosphate on the iron oxidation/mineralization activity of Escherichia coli non-heme ferritin A**

Takumi Kuwata, Kazuo Fujiwara, Masamichi Ikeguchi
Dept. of Biosci. Grad. Sch. of Sci. and Eng. Soka Univ., Tokyo, Japan,

28P-041 **Structural Changes of Poly(ethylene terephthalate) undergoing Enzymatic Degradation**

Daisuke Tadokoro, Tomoya Imai
Reserch Institute of Sustainable Humanosphere, Kyoto University

28P-042 **Mode of action of virulence factors of intracellular pathogens studied with time-resolved and high-resolution atomic force microscopy**

Christian Nehls[1,2], Thomas Gutsmann[1,2]

[1]Research Center Borstel, Division of Biophysics, Borstel, Germany,, [2]Centre for Structural Systems Biology, Hamburg, Germany

Protein: Measurement & Analysis

28P-043 **BioSAXS for solution protein structure analysis at SPring-8**

Satoshi Nagao[1], Hiroyasu Masunaga[1], Nobutaka Shimizu[2,3], Masaki Yamamoto[3], Hiroshi Sekiguchi[1]

[1]JASRI/SPring-8, [2]KEK, [3]RIKEN/SPring-8

28P-044 **Biomolecular Interactions with the NanoTemper Dianthus**

Stefanie Freitag-Pohl, Dorata Gasparikova, Kate V. Sowerby, Abbey M. Butler, Ehmke Pohl

Department of Chemistry, Durham University, Durham DH1 3LE, UK

28P-045 **Easy and fast LLPS size estimation using microplate reader**

Enomoto Mayu[1], Suai Anzawa[1], Tadashi Kodama[2], Kyoko Furuita[2], Wataru Togawa[1], Ryoga Kobayashi[3], Naotaka Sekiyama[3], Yohei Miyanoiri[2], Toshimichi Fujiwara[2], Hidehito Toshio[3], Chojiro Kojima[1,2]

[1]Yokohama National University, [2]Osaka University, [3]Kyoto University

28P-046 **Spatiotemporal and global profiling of DNA-protein interactions and substrates of lysine-modifying enzymes in living cells**

Minjia Tan, Hao Hu, Wei Hu, An-Di Guo, Linhui Zhai, Xiao-Hua Chen

State Key Laboratory of Drug Research, Shanghai Institute of Materia Medica, Chinese Academy of Sciences, Shanghai, China

28P-047 **EPR Spectroscopy Combined with Rapid Freeze-Quenching Reveals Relationship Between Temperature Dependence of Active Site Rearrangement and of Activity in Inorganic Pyrophosphatase**

Masaki Horitani[1], Hiroshi Sugimoto[2], Yuri Kasu[1]

[1]Saga University, [2]RIKEN

Poster Sessions

Protein: Design & Engineering

28P-048 **DNA replication triggered by small-molecule for in vitro auto-selection of enzymes**

Thibault Philippe Laurent Di Meo[1], Yannick Rondelez[2], Hiroyuki Noji[1]

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28P-049 **Generation of antibodies to an extracellular region of the transporters Glut1/Glut4 by immunization with a designed antigen**

Makoto Nakakido[1], Taichi Sumikawa[1], Ryo Matsunaga[1], Daisuke Kuroda[1,2], Satoru Nagatoishi[1], Kouhei Tsumoto[1]

[1]The University of Tokyo, [2]National Institute of Infectious Diseases

28P-050 **Heterocomponent protein tube formation via "Nature Inspired Protein Assembly Design (NIPAD)"**

Masahiro Noji[1,2], Yukihiko Sugita[3,4,5], Makito Miyazaki[6,7], Yuta Suzuki[6,8]

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28P-051 **Understanding the tussle between aggregation-prone proteins and chaperons; toward the development of an enzyme immobilization platform**

Nilanjana Bose

INDIAN INSTITUTE OF TECHNOLOGY, DELHI

28P-052 **De Novo Design of P-loop Harboring Protein**

Takahiro Kosugi[1,2,3,4], Nobuyasu Koga[2,5]

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28P-053 **De novo design of helical peptide binders targeting the KIX domain of CBP**

Shunji Suetaka[1], Munehito Arai[1,2,3]

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28P-054 **Red fluorescent proteins engineered from green fluorescent proteins**

Hiromi Imamura[1], Shiho Otsubo[2], Mizuho Nishida[1], Norihiro Takekawa[2], Katsumi Imada[2]

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28P-055 **A "Protein Structure Transformer" for integrative structural biology and molecular design**

Lucien Fabrice Krapp, Fernando Meireles, Luciano Abriata, Matteo Dal Peraro

Laboratory for Biomolecular Modeling, EPFL

28P-056 **Genetically encoded fluorescent biosensors for cellular metabolism**

Yusuke Nasu[1,2], Yuki Kamijo[1], Robert Campbell[1]

[1]Department of Chemistry, School of Science, The University of Tokyo, [2]PRESTO, Japan Science and Technology Agency

28P-057 **Role of "relaxed" peptide bond in protein structure and function**

Kaori Chiba[1], Masaru Hoshino[2], Hiromu Ohshima[1], Manami Suwa[1]

[1]National Institute of Technology, Ibaraki college, [2]Kyoto University

Protein: Intrinsic disorder

28P-058 **Deciphering the Role of GM1 Ganglioside-Bound Aβ Species in Alzheimer's Disease: Insights from Monoclonal Antibody 4396C and Advanced Biophysical Techniques**

Maho Yagi-Utsumi[1,2], Satoru G. Itoh[2,3], Yui Kanaoka[4], Shogo Miyajima[4], Katsuhiko Yanagisawa[5], Katsuyuki Nishimura[3], Hisashi Okumura[2,3], Takayuki Uchihashi[2,4], Koichi Kato[1,2,3]

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Poster Sessions

Membrane proteins

28P-060 **Strategies for Cancer Therapy by Regulating Intracellular Dynamics of Antibody Drugs**

Kazuya Kabayama[1,2,3], Yoshiyuki Manabe[2,3], Atsushi Toyoshima[1,3], Kazuko Kaneda[2,3], Tadashi Watabe[4], Koichi Fukase[1,2,3]

[1]Institute for Radiation Sciences, Osaka University, [2]Department of Chemistry, Graduate School of Science, Osaka University, [3]FRC, Graduate School of Science, Osaka University, [4]Graduate School of Medicine, Osaka University

28P-061 **Differential molecular responses of PIEZO1 to membrane tension and ligand binding observed with diffracted X-ray tracking**

Mei Ishii[1], Kayoko Kawaguchi[2], Mayui Sugiura[2], Hiroshi Sekiguchi[3], Tatsuya Arai[1], Kazuhiro Mio[2], Yuji Sasaki[1]

[1]The Graduate School of Frontier Sciences, The Univ. of Tokyo, [2]National Institute of Advanced Industrial Science and Technology, [3]JASRI

28P-062 **Thermodynamic Analysis of pH-Dependent Substrate Binding in the Multidrug Transporter, EmrE**

Kazumi Shimono[1,2], Keisuke Matsuda[2], Shoko Suzuki[2], Shuichi Miyamoto[1], Seiji Miyauchi[2]

[1]Sojo University, [2]Toho University

28P-063 **INTRAMOLECULAR DOMAIN DYNAMICS OF LIGHT-HARVESTING PROTEIN LH1-RC OBSERVED BY THE DIFFRACTED X-RAY TRACKING METHOD**

Tatsunari Ohkubo[1,2], Tatsuya Arai[2,3], Hiroshi Sekiguchi[4], Kazuhiro Mio[1,2], Yuji C. Sasaki[2,3]

[1]Grad. Sch. Med Life Sci, Yokohama City University, [2]OPERANDO-OIL, AIST, [3]Dept Adv Matl Sci, Univ Tokyo, [4]JASRI

28P-064 **NMR and modelling study of interaction of spider Cys-knot toxins with membrane and cationic ion-channels of P-loop superfamily**

Zakhar Shenkarev[1,2], Pavel Mironov[2,3], Eugene Kovalenko[2,3], Dmitrii Kulbatskii[2,3], Alexander Paramonov[2,3], Mikhail Shulepko[1], Maxim Zaigraev[2], Ekaterina Lyukmanova[1,2,3]

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28P-066 **Diffusion and Oligomerization of GPCRs in Live Cells – The Impact of Ligands and Membrane Disruptors**

Claudiu Gradinaru

University of Toronto, Canada

28P-067 **Usability of the novel detergent NDT-C11 in cryoEM**

Christoph Gerle[3], Chimari Jiko[1], Jiannan Li[2], Chai Gopalasingam[3], Hideki Shigematsu[4], Pilseok Chae[5]

[1]Kyoto University, Kyoto, Japan, [2]Osaka University, Osaka, Japan, [3]Riken SPring-8 Center, Sayo, Japan, [4]JASRI, Sayo, Japan, [5]Hanyang University, Ansan, Korea

28P-068 **The functional role of the pleckstrin homology domains of dynamins in evolution and disease**

Isabel Pérez-Jover[1,2], Javier Espadas[1,2], Irune Ornos[1,2], Julene Ormaetxea Guisasola[1,2], Isaac Santos-Pérez[3], Vadim Frolov[1,4], Anna Shnyrova[1,2]

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DNA & DNA binding proteins

28P-069 **The conformational analysis of DNA and nucleosome with doxorubicin analyzed by molecular dynamics simulation**

Hisashi Ishida[1], Hidetoshi Kono[1,2]

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28P-070 **DNA-binding and -unwinding Dynamics of the nonhexameric Escherichia coli UvrD helicase lacking C-terminal amino acids**

Hiroaki Yokota

The Graduate School for the Creation of New Photonics Industries

Poster Sessions

28P-071 **Role of Long-range Interactions in Protein-DNA Recognition**

Anastasia A. Anashkina[1,2]

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28P-072 **In-cell NMR analysis on base-pair opening dynamics and interactions with ligands of nucleic acids in living human cells**

Yudai Yamaoki[1,2], Takashi Nagata[1,2], Tomoki Sakamoto[2], Omar Eladl[2], Keiko Kondo[1], Masato Katahira[1,2]

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RNA & RNA binding proteins

28P-073 **Theoretical study on an enzymatic reaction of the hammerhead ribozyme**

Ayaka Matsuyama[1], Masahiko Taguchi[2], Shigehiko Hayashi[1]

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DNA/RNA nanotechnology

28P-074 **RNA droplets perform 'AND' logic operation upon an input of targeted microRNAs**

Hirotake Udono[1], Minzhi Fan[1], Yoko Saito[1], Hirohisa Ohno[2], Shin-ichiro M. Nomura[3], Yoshihiro Shimizu[4], Hirohide Saito[2], Masahiro Takinoue[1]

[1]Tokyo Institute of Technology, [2]Kyoto University, [3]Tohoku University, [4]Riken

28P-075 **Use of aptamers to control nucleic acid phase separation**

Samuel Hauf, Yohei Yokobayashi

Okinawa Institute of Science and Technology

28P-077 **Experimental investigation of a modified Whiplash PCR driven by successive primer extension for massively parallel Implementation of DNA-based state machines**

Ken Komiya, Koji Sakamoto

Japan Agency for Marine-Earth Science and Technology (JAMSTEC)

28P-078 **Construction of giant unilamellar vesicle type molecular robots that uses cargo/component-holding DNA hydrogel**

Shoji Iwabuchi, Ryuji Kawano
Tokyo University of Agriculture and Technology

28P-079 **Dimeric DNA origami nanocapsules for controllable cargo accessibility**

Yusuke Sakai, Joanna Markiewicz, Martyna Adamiak, Dmitry Ghilarov, Piotr Stepien, Jonathan G Heddle
Malopolska Centre of Biotehcnology, Jagiellonian University, Poland

Chromatin & Chromosomes

28P-080 **Brownian dynamics with exact solutions of diffusion in 3D for chromatin dynamics**

Yukitaka Ishimoto
Grad. Sch. of Sci. Eng., Saga University

Water & Hydration & Electrolyte

28P-081 **Nonthermal excitation effects of sub-terahertz radiation on transcription by RNA polymerase**

Masahiko Imashimizu
AIST

28P-082 **Role of hydration water on the stability of proteins**

Mafumi Hishida
Tokyo University of Science

28P-083 **Liquid water structure by means of molecular dynamic simulation and machine-learning**

Taku Mizukami[1], Nguyen Viet Cuong[2], Dam Hieu Chi[3]
[1]School of Materials Science, Japan Advanced Institute of Science and Technology, [2]HPC Systems, [3]School of Knowledge Science, Japan Advanced Institute of Science and Technology

Poster Sessions

Morphogenesis and Development

28P-084 **Epithelial Morphogenesis Analysis Using Texture Tensor**

Toshinori Namba[1,2], Kaoru Sugimura[1,3,4], Shuji Ishihara[1,2]

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Molecular motor

28P-085 **KIF6 is essential for male fertility through the ATP production pathway within sperm flagella**

Tsukasa Makino[1], Chizuru Ito[2], Takeshi Masuda[3], Kazuho Ikeda[1], Daisuke Takao[1,4], Yasushi Okada[1,5], Kiyotaka Toshimori[2], Masahide Kikkawa[1]

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28P-086 **Exploring Efficient Control of F1-ATPase**

Takahide Mishima[1], Yohei Nakayama[1], David A. Sivak[2], Shoichi Toyabe[1]

[1]Department of Applied Physics, Graduate School of Engineering, Tohoku University, [2]Department of Physics, Simon Fraser University

28P-087 **Product inhibition slow down the moving velocity of processive chitinase and sliding-intermediate state blocks re-binding of product**

Yoshiko Tanaka[1], Takayuki Uchihashi[2], Akihiko Nakamura[1,3]

[1]Shizuoka University, [2]Nagoya University, [3]Institute for Molecular Science

28P-088 **Decoding Volvox Swimming: Out-of-Phase Metachronal Waves Drive Oscillating Speed and Rotational Steering**

Katsuya Shimabukuro, Natsume Takeda, Tatsuya Suehiro, Naoki Uemura

National Institute of Technology, Ube College

28P-090 **The Force-Generating State of Myosin Detected by Quasielastic Neutron Scattering**

Satoru Fujiwara[1], Shinsaku Maruta[2], Yasunobu Sugimoto[3], Kai Nishikubo[1], Taiki Tominaga[4], Akio Inoue[5], Hidetaka Furuya[6], Katsuzo Wakabayashi[6], Toshiaki Arata[7]

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28P-091 **Rotation-dependent inhibition and activation mechanism of ATPase inhibitory factor 1 for mitochondrial ATP synthase from atomistic simulation**

Ryohei Kobayashi, Kei-ichi Okazaki

Research Center for Computational Science, Institute for Molecular Science, Aichi, Japan

28P-092 **CryoEM structure of dimeric F1-like ATPase in Mycoplasma mobile suggests a rotary catalytic mechanism for the gliding motility**

Takuma Toyonaga[1,2,3,4], Takayuki Kato[5], Akihiro Kawamoto[5], Tomoko Miyata[6,7], Keisuke Kawakami[8], Junso Fujita[6,7,9,10], Tasuku Hamaguchi[3,4], Keiichi Namba[6,7], Makoto Miyata[1,2]

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28P-093 **Processive movement of myosin II HMM oligomers along actin filaments**

Taro QP Uyeda, Hideya Hayashi

Department of Physics and Applied Physics, Graduate School of Advanced Science and Engineering, Waseda University

Single Molecule Biophysics

28P-094 **CHEMICAL FRICTION ALONG THE MINOR GROOVE OF DNA FACILITATES ENZYMATIC TRANSLOCATION OF λ EXONUCLEASE VIA ELECTROSTATIC RATCHET**

Gwangrog Lee[1], Jungmin Yoo[1], HyeokJin Cho[1], Jejoong Yoo[2]

[1]Korea Advanced Institute of Science and Technology, [2]Sungkyunkwan University

Poster Sessions

28P-095 **Single-molecule level tracking of the CCT/TRiC chaperonine mediated functional cycle**

Kazutaka Araki[1], Takahiro Watanabe-Nakayama[2], Daisuke Sasaki[3], Yuji Sasaki[3], Kazuhiro Mio[1]

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28P-097 **Multidisciplinary Platforms to Study Biological Questions**

Hsiufang Fan

Institute of Biomedical Science, National Sun Yat-sen University, Taiwan

28P-098 **deepFLUOR: Deep Learning Classification of Single-Molecule Signals**

Jinseob Lee[1], Byungju Kim[2], Yeongkyoung Park[3,4], Yoonki Kim[3,4], Jongbong Lee[1,2]

[1]School of Interdisciplinary Bioscience and Bioengineering, POSTECH, Republic of Korea, [2]Physics, POSTECH, Republic of Korea, [3]Creative Research Initiatives Center for Molecular biology of Translation, Korea University, Republic of Korea, [4]School of Life Sciences, Korea University, Republic of Korea

Cell biology: Adhesion

28P-099 **Stress propagation in a living cell**

Ayama Tokuyasu

Grad. Sch. Nanobioscience, Yokohama city university, Kanagawa, Japan

28P-101 **S100A11 promotes focal adhesion disassembly via myosin II-driven contractility and Piezo1-mediated Ca2+ entry**

Tareg Omer Mohammed[1], You-Rong Lin[1], Kai Weissenbruch[2], Kien Xuan Ngo[1], Yanjun Zhang[1], Noriyuki Kodera[1], Martin Bastmeyer[2,3], Yusuke Miyanari[1,4], Azuma Taoka[1,5], Clemens M. Franz[1]

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Friday, June 28

Cell biology: Motility

28P-102 **Wave dynamics and collective behavior of swimming flagellar apparatus isolated from the green algae C. reinhardtii**

Azam Gholami[1], Sai Venkata Ramana[1], Albert Bae[2]
[1]NYU Abu Dhabi, UAE, [2]Lewis & Clark College, Portland, Oregon, USA

28P-103 **Symbiotic bacteria break through narrow passage by flagellar wrapping**

Aoba Yoshioka[1], Tetsuo Kan[2], Kazutaka Takeshita[3], Hirofumi Wada[4], Yoshitomo Kikuchi[5], Daisuke Nakane[1]
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28P-104 **The effect of TGF-β-induced EMT on the establishment of epithelial collective migration**

Tomoaki Nagai[1], Hirokazu Kaji[2], Michiru Nishita[1]
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28P-106 **Characteristics and mechanics of the crawling of the tested amoeba Arcella sp.**

Genta Matsumoto[1], Katsuhiko Sato[1,2], Toshiyuki Nakagaki[1,2], Yukinori Nishigami[1,2]
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28P-107 **Shape coupled bifurcation of an amoeba cell brings ballistic movement in amoeboid migration**

Hiroyuki Ebata[1], Yukinori Nishigami[2,3], Hisanori Fujiwara[4], Satoru Kidoaki[1], Masatoshi Ichikawa[4]
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Poster Sessions

28P-108 **Ciliary waveform conversion is induced by the shape change of doublet microtubule accompanied by the modification of outer-arm dynein motor activity**

Toshiki Yagi, Ai Sumiyoshi, Shogo Sawada
Prefectural University of Hiroshima

28P-109 **Viewing the swimming motion of a unicellular organism in extreme environmental conditions.**

Masayoshi Nishiyama
Kindai University

28P-110 **The Calcium Sensitive Helical Arrangement of Axonemal Components in Chlamydomonas Flagella**

Hitoshi Sakakibara[1], Kenta Ishibashi[1], Hiroyuki Iwamoto[2], Hiroaki Kojima[1], Kazuhiro Oiwa[1,3]
[1]Bio-ICT Lab. NICT, Hyogo, Japan, [2]SPring-8, JASRI, Hyogo, Japan, [3]Life Sci. Univ. Hyogo, Hyogo, Japan

28P-111 **Utilizing Wavelet Analysis Features for the Simplified Prediction of Enhanced Cellular Stress Fluctuations on the Matrix with Stiffness Heterogeneity**

Satoru Kidoaki
IMCE, Kyushu University

28P-112 **Gliding direction of Mycoplasma mobile correlates with the curved configuration of its cell shape**

Kana Suzuki[1], Daisuke Nakane[2], Takayuki Nishizaka[1]
[1]Gakushuin University, [2]University of Electro-Communications

28P-113 **Functional exploration of Candidatus Izimaplasma MreB using the minimal synthetic bacterium JCVI-syn3B.**

Ryu Takaishi, Mone Mimura, Hana Kiyama, Makoto Miyata
Osaka Metropolitan University

Cell biology: Cytoskeleton & Membrane skeleton

28P-114 **Preparation of Dictyostelium discoideum NAA80 knockout strain**

Tomoko Tsuji[1], Akira Nagasaki[2], Taro Uyeda[1]
[1]Department of Physics, Faculty of Advanced Science and Engineering, Waseda University, Tokyo, Japan, [2]Biomedical Research Institute, National Institute of Advanced Industrial Science and Technology, Ibaraki, Japan

28P-115 **Visualization of intracellular structure of D. discoideum during unicellular and multicellular phases**

Yuki Gomibuchi, Yukihisa Hayashida, Yusuke V. Morimoto, Takuo Yasunaga
Grad. Sch Comp. Sci and Sys. Eng., Kyushu Inst. Tech., Fukuoka, Japan

28P-116 **Direct measurement of the physical properties of ER**

Mao Ikeda
Yokohama City University

28P-117 **Visualization of GTP hydrolysis in microtubules**

Tomohiro Shima, Hanjin Liu
Graduate School of Science, The University of Tokyo

28P-118 **Void space around microtubules**

Shinji Kamimura[1], Tomohiro Shima[2], Yasushi Okada[3,4,5], Hiroyuki Iwamoto[6]
[1]Department of Biological Sciences, Faculty of Science and Engineering, Chuo University, Tokyo, Japan, [2]Department of Biological Sciences, Graduate School of Science, The University of Tokyo, Tokyo, Japan, [3]Laboratory for Cell Polarity Regulation, RIKEN Center for Biosystems Dynamics Research, Osaka, Japan, [4]Department of Cell Biology, Graduate School of Medicine, The University of Tokyo, Tokyo, Japan, [5]Department of Physics, Universal Biology Institute and the International, Research Center for Neurointelligence, The University of Tokyo, Tokyo, Japan, [6]Scattering and Imaging Division, SPring-8, Japan Synchrotron Radiation Research Institute, Hyogo, Japan

Cell biology: Signal transduction & Cell membrane

28P-120 **Application of Single-Molecule Tracking to Drug Discovery**

Daisuke Watanabe[1,2], Michio Hiroshima[1,2], Masahiro Ueda[1,2]
[1]Laboratory of Single Molecule Biology, Graduate School of Frontier Biosciences, Osaka University; Suita, Osaka, Japan, [2]Laboratory for Cell Signaling Dynamics, Center for Biosystems Dynamics Research, RIKEN; Suita, Osaka, Japan

Poster Sessions

28P-121 **Investigation of cellular localization of opioid receptors: A combined biochemical assay and microscopy study**

Ming Chi Chen[1], Guan Yu Zhuo[1], Tzu Yu Lin[2], Shih Ting Lin[3], Daniel Tzu Li Chen[4,5], Cynthia Wei Sheng Lee[2,5]

[1]Institute of Translational Medicine and New Drug Development, China Medical University, Taichung 40402, Taiwan, [2]Center for Drug Abuse and Addiction, China Medical University Hospital, Taichung 40447, Taiwan, [3]Integrative Stem Cell Center, China Medical University Hospital, Taichung 40447, Taiwan, [4]School of Chinese Medicine, China Medical University, Taichung 40402, Taiwan, [5]Graduate Institute of Biomedical Sciences, China Medical University, Taichung 40402, Taiwan

28P-122 **Quantification of repellent response of single E. coli cell through the change in polar localization of adaptation enzyme CheB and flagellar motor rotation**

Hajime Fukuoka, Yumiko Uchida, Yong-Suk Che, Akihiko Ishijima

Grad. Sch. Frontier Biosci., Osaka Univ.

28P-123 **Lamellipodia-like membrane protrusions maintain the integrity of epithelial cell-cell junctions**

Yosuke Senju

Research Institute for Interdisciplinary Science (RIIS), Okayama University

28P-124 **Unilateral-bidirectional regulation of electrical synapse formation in C. elegans**

Zan Wu, Lin Pang, Mei Ding

Institute of Genetics and Developmental Biology, Chinese Academy of Sciences

Biological & Artificial membrane: Structure & Property

28P-125 **Curcumin Exerts the Membrane Raft Modulating Activity via Phase Separation and Induces CD44 Shedding in Tumor Cells**

Toshiyuki Murai[1], Yoshikazu Masaki[2], Kazuma Yasuhara[2]

[1]Osaka University, [2]Nara Institute of Science and Technology

28P-126 **The effect of different lateral packing stress in acyl chains on KcsA orientation and structure in lipid bilayer**

Eri Saki H. Hayakawa[1], Misuzu Ueki[2], Elmukhtar Alhatmi[3], Shigetoshi Oiki[4], Fuyuki Tokumasu[5], Masayuki Iwamoto[2], Drake C. Mitchell[3]

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28P-127 **Probing the supramolecular aggregation state of bacterial endotoxin to reveal the basis of biological recognition and endotoxin masking in drug formulations**

Andra B Schromm[1], Nicolas Gisch[2], Wilmar Correa[3], Walter Richter[4], Guillermo Martinez-de-Tejada[5], Klaus Brandenburg[6], Friedrich von Wintzingerode[7]

[1]Division of Immunobiophysics, Research Center Borstel, Leibniz Lung Center, Borstel, Germany, [2]Division of Bioanalytical Chemistry, Research Center Borstel, Leibniz Lung Center, Borstel, Germany, [3]Division of Biophysics, Research Center Borstel, Leibniz Lung Center, Borstel, Germany, [4]Electron Microscopy Centre, University Hospital Jena, Jena, Germany, [5]Department of Microbiology and Parasitology, University of Navarra, Pamplona, Spain, [6]Brandenburg Antiinfektiva GmbH, Borstel, Germany, [7]Genentech, Inc. A member of the Roche Group, South San Francisco, CA, USA

Biological & Artificial membrane: Dynamics

28P-128 **Non-equilibrium patterns in phase-separated lipid membranes under shear flow**

Tsutomu Hamada[1], Shino Mizuno[1], Hiroyuki Kitahata[2]

[1]Japan Advanced Institute of Science and Technology, [2]Chiba University

Biological & Artificial membrane: Excitation & Channels

28P-129 **Towards elucidating the tension effects on water flux across lipid bilayers and aquaporins: An attempt using water-in-oil microdroplets**

Misuzu Ueki, Takahisa Maki, Masayuki Iwamoto

Dep. Mol. Neurosci., Facul. Med. Sci., Univ. Fukui

Poster Sessions

28P-130 **Light-evoked channel activity using photolipids**

Rohit Yadav, Juergen Pfeffermann, Nikolaus Goessweiner-Mohr, Peter Pohl
Johannes Kepler University, Linz, Austria

Membraneless Organella, autophage, Liquid-liquid phase separation

28P-131 **The role of promyelocytic leukemia protein (PML) in the regulation of calcium homeostasis in HeLa cells**

Alexander Fonin[1], Rinat Sharipov[2]
[1]Laboratory of Protein Structural Dynamics, Stability and Folding, Institute of Cytology, St. Petersburg, 194064, Russia, [2]Institute of General Pathology and Pathophysiology, Moscow, Baltiskaya st., 8, 125315 Russia

28P-132 **Effect of F-actin, myosin and its fragments on the morphology and stability of PEG/DEX droplets**

Tatsuyuki Waizumi[1], Hiroki Sakuta[2], Mahito Kikumoto[1], Masahito Hayashi[3], Kanta Tsumoto[4], Kingo Takiguchi[1], Kenichi Yoshikawa[5]
[1]Grad. Sch. Sci., Nagoya Univ., [2]Grad. Sch. Arts and Sci., Univ. Tokyo, [3]Dept. Frontier Bio. Sci., Hosei Univ., [4]Grad. Sch. Eng., Mie Univ., [5]Sci Ctr. Self-Organization., Doshisha Univ.

28P-133 **Translation-coupled genomic RNA replication in fibril-stabilized all-aqueous droplet colonies**

Ryo Mizuuchi[1,2], Hidekazu Sono[1], Keiji Murayama[3], Norikazu Ichihashi[4,5,6]
[1]Department of Electrical Engineering and Bioscience, Faculty of Science and Engineering, Waseda University, Tokyo, Japan, [2]JST, FOREST, Saitama, Japan, [3]Department of Biomolecular Engineering, Graduate School of Engineering, Nagoya University, Nagoya, Japan, [4]Komaba Institute for Science, The University of Tokyo, Tokyo, Japan, [5]Department of Life Science, Graduate School of Arts and Science, The University of Tokyo, Tokyo, Japan, [6]Universal Biology Institute, The University of Tokyo, Tokyo, Japan

28P-134 **PRESSURE AND TEMPERATURE EFFECTS ON FUS LIQUID DROPLET OF AMYOTROPHIC LATERAL SCLEROSIS PATHOLOGICAL VARIANT, R495X**

Yutaro Shiramasa[1], Ryu Yamamoto[1], Fuka Sasaki[1], Soichiro Kitazawa[2], Tomoshi Kameda[3], Ryo Kitahara[1,2]
[1]Graduate School of Pharmacy, Ritsumeikan University, [2]College of Pharmaceutical Sciences, Ritsumeikan University, [3]Artificial Intelligence Research Center, National Institute of Advanced Industrial Science and Technology (AIST)

28P-136 **Micropolarity governs the structural organization of biomolecular condensates**

Songtao Ye[1], Chia-Heng Hsiung[1], Andrew Latham[2], Bin Zhang[2], Xin Zhang[1]

[1]Department of Chemistry, Westlake University, 600 Dunyu Road, Hangzhou 310030, Zhejiang Province, China, [2]Department of Chemistry, Massachusetts Institute of Technology, Cambridge, MA 02139

Chemoreception

28P-137 **Structural and biochemical analyses of SatA, a periplasmic binding protein involved in chemotactic response to serine with Mlp3 in Vibrio cholerae.**

Miyuki Aoyama[1], Norihiro Takekawa[1], So-ichiro Nishiyama[2], Hirotaka Tajima[3], Ikuro Kawagishi[3], Katsumi Imada[1]

[1]Dept. of Macromol. Sci., Grad. Sch. of Sci., Osaka Univ., [2]Fac. App. Life Sci., Niigata Univ. Pharm. App. Life Sci., [3]Dept. Front. Biosci., Hosei Univ.

Neuroscience & Sensory systems

28P-138 **Post-synaptic Effects of CPTX on Excitatory Synapses**

Boxiao Zhao[1], Akito Hattori[1], Shigeo Sakuragi[1], Hiroko Bannai[1], Michisuke Yuzaki[2]

[1]School of Advanced Science and Engineering, Waseda University, Tokyo, Japan, [2]School of Medicine, Keio University, Tokyo, Japan

28P-139 **Regulation of intracellular tau dynamics using optogenetic tools**

Shigeo Sakuragi[1], Akito Hattori[1], Boxiao Zhao[1], Yoshihiro Sakata[1], Gen Matsumoto[2], Akihiko Takashima[3], Yoshiyuki Soeda[3], Hideaki Yoshimura[4], Hiroko Bannai[1]

[1]Waseda University, School of Advanced Science and Engineering, [2]Nagasaki University, School of Medicine, [3]Gakushuin University, Faculty of Science, [4]The University of Tokyo, School of Science

Poster Sessions

Neuronal circuit & Information processing

28P-141 **Fast Intrinsic Optical Signal (FIOS) measurements of brain slices: no-stain, label-free and non-invasive fast optical signal measurements**

Yoko Tominaga[1], Maki Koike-Tani[2,3], Tomomi Tani[4], Takashi Tominaga[1,5]

[1]Inst. of Neurosci., Tokushima Bunri Univ., Sanuki, Japan, [2]Inst. for Open and Transdisciplinary ResearchInitiatives (OTRI), Osaka Univ. Suita, Japan, [3]Premium Res. Inst. for Human Metaverse Med. (WPI-PRIMe), Osaka Univ. Suita, Japan, [4]Biomed. Res. Inst., Natl. Inst. of Advanced Industrial Sci. and Technol. (AIST), Ikeda, Japan, [5]Kagawa Sch. of Pharmaceut. Sci., Tokushima Bunri Univerisity, Sanuki, Japan

28P-142 **Visualizing demyelination effects on interhemispheric communication with voltage-sensitive dye imaging in cuprizone-induced multiple sclerosis model mice**

Kyoka Tsukuda[1,2], Michiko Miwa[3], Makiko Taketoshi[2], Yoko Tominaga[2], Kentaro Nakashima[1,2,3], Takashi Tominaga[1,2,3]

[1]Grad. Sch. of Pharm. Sci., Tokushima Bunri Univ., Japan, [2]Inst. of Neurosci., Tokushima Bunri Univ., Japan, [3]Kagawa Sch. of Pharm. Sci., Tokushima Bunri Univ., Japan

Behavior

28P-143 **The Implications of microRNA, CaMK2A, and MeCP2 Signaling on Adolescent Cognitive Ability**

Ting-Kuang Yeh[1], Li-Ching Lee[1], Pei-Jung Lin[2], Chun-Yen Chang[1]

[1]National Taiwan Normal University, [2]National Taiwan University

Photobiology: Vision & Photoreception

28P-144 **The importance of water in membrane receptor function**

Anthony Watts

Biochemistry Department, University of Oxford, Oxford, OX1 3QU UK

28P-145 **Time-resolved detections of substrate release and uptake reactions of the light-driven chloride pump halorhodopsin**

Chihaya Hamada[1], Keisuke Murabe[1], Takashi Tsukamoto[1,2], Takashi Kikukawa[1,2]

[1]Grad. Sch. Life Sci., Hokkaido Univ., Sapporo, Japan, [2]Fac. Adv. Life Sci., Hokkaido Univ., Sapporo, Japan

Friday, June 28

28P-146 **Molecular characterization of opsins from a nematode**

Keiichi Kojima[1], Yuki Tanioka[2], Keita Sato[1], Yosuke Nishimura[3], Susumu Yoshizawa[4], Hideyo Ohuchi[1], Takahiro Yamashita[5], Yuki Sudo[1]

[1]Fac. Med. Dent. Pharm. Sci. Okayama Univ., Okayama, Japan, [2]Sch. Pharm. Sci. Okayama Univ., Okayama, Japan, [3]CeBN, JAMSTEC, Kanagawa, Japan, [4]AORI, Univ. Tokyo, Chiba, Japan, [5]Grad. Sch. Sci., Kyoto Univ, Kyoto, Japan

28P-147 **Study on the Mechanisms of High Fluorescence of Archaearhodopsin-3 (AR3) Mutants**

Masae Konno[1], Krystyna Herasymenko[2], Stefan Haacke[2], Keiichi Inoue[1]

[1]The Institute for Solid State Physics, University of Tokyo, Japan, [2]University of Strasbourg - CNRS, Strasbourg Institute of Material Physics and Chemistry, France

28P-148 **Analysis of the mechanism of photoreceptor RcPYP complex formation**

Yoichi Yamazaki[1], Yuna Kawabuchi[1], Kento Yonezawa[1,2], Sachiko Toma-Fukai[1], Hironari Kamikubo[1,2]

[1]Division of Materials Science, Nara Institute of Science and Technology, [2]Center for Digital Green-innovation, Nara Institute of Science and Technology

28P-149 **Driving force of proton pump rhodopsins revealed by electrophysiological study**

Satoshi Tsunoda[1,2], Akari Okuyama[1], Shoko Hososhima[1,2], Hideki Kandori[1,2]

[1]Graduate School of Engineering, Nagoya Institute of Technology, Nagoya, Japan, [2]OptoBio Technology Research Center, Nagoya Institute of Technology, Nagoya, Japan

28P-150 **Solid-state NMR characterization of histidine residues in Themoplasmatales archaeon heliorhodopsin**

Sari Kumagai[1], Toshio Nagashima[2], Toshio Yamazaki[2], Kota Katayama[3], Hideki Kandori[3], Izuru Kawamura[1]

[1]Yokohama National University, [2]RIKEN RSC, [3]Nagoya Institute of Technology

28P-151 **Characterization of the magnetic and geometrical structure of radical pairs in Serum Albumin by electron spin resonance**

Hiroki Nagashima[1,2], Masaki Kashiwazaki[1], Shuhei Arai[1], Kiminori Maeda[1]

[1]Graduate School of Science and Engineering, Saitama University, [2]Institute for Quantum Science and Technology, National institutes for Quantum Science and Technology

Poster Sessions

28P-152 **Novel green/red light-sensing mechanism in the phytochrome-superfamily protein**

Takayuki Nagae[1], Yuya Fujita[2], Tatsuya Tsuchida[3], Takanari Kamo[2], Ryoka Seto[4], Masako Hamada[2], Hiroshi Aoyama[1], Ayana Sato-Tomita[5], Tomotsumi Fujisawa[4], Toshihiko Eki[2], Yohei Miyanoiri[6], Yutaka Ito[7], Takahiro Soeta[3], Yutaka Ukaji[3], Masashi Unno[4], Masaki Mishima[1], Yuu Hirose[2]

[1]Tokyo University of Pharmacy and Life Sciences, [2]Toyohashi University of Technology, [3]Kanazawa University, [4]Saga University, [5]Jichi Medical University, [6]Osaka University, [7]Tokyo City University

Photobiology: Photosynthesis

28P-153 **Molecular Docking Simulations at Quinone Binding Site in Photosynthetic Reaction Centers**

Ayumu Takagi[1], Shigeru Itoh[2], Akihiro Kimura[2], Hirotaka Kitoh[1]

[1]Grad. Sch. Sci. Eng., Kindai Univ., [2]Dept. Phys., Grad. Sch. Sci., Nagoya Univ.

28P-154 **Fluorescence spectra of a photosynthetic carbonyl carotenoid, siphonaxanthin: Dual fluorescence observed only at ambient temperature in polar solvents**

Kazuhiro Yoshida[1], Soichiro Seki[2], Yumiko Yamano[3], Tetsuichi Wazawa[4], Takeharu Nagai[4], Ritsuko Fujii[1,2,5]

[1]Grad. Sch. Sci., Osaka Metropolitan Univ., Osaka, Japan, [2]Grad. Sch. Sci., Osaka City Univ., Osaka, Japan, [3]Kobe Pharmaceutical Univ., Kobe, Japan, [4]SANKEN, Osaka Univ., Osaka, Japan, [5]ReCAP, Osaka Metropolitan Univ., Osaka, Japan

28P-155 **Cryo-EM structure of marine green algal LHCII utilizing blue-green light**

Soichiro Seki[1], Tetsuko Nakaniwa[2], Pablo Castro-Hartmann[3], Kasim Sader[3], Akihiro Kawamoto[2,4], Hideaki Tanaka Tanaka[2,4], Qian Pu[3], Genji Kurisu[2,4], Ritsuko Fujii[1,5]

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28P-156 **Biohydrogen production from whiskey waste liquid by two-stage fermentation**

Masahiro Hibino, Kousei Miyamoto
Div. Sust. Enviro. Eng., Muroran Inst. Tech.

28P-157 **Energy gradient of the β82 chromophores established by the linker proteins in Synechocystis PCC 6803 Phycobilisome Rod**

Hiroto Kikuchi
Dept. of Phys., Nippon Medical School

28P-158 **Estimation of Local Antenna Sizes of Photosystem I in Chlamydomonas Cells**

Xianjun Zhang, Yuki Fujita, Rin Taniguchi, Shen Ye, Yutaka Shibata
Department of Chemistry, Graduate School of Science, Tohoku University

Photobiology: Optogenetics & Optical control

28P-159 **The effect of blue light on the proliferation of E. coli cells**

Nagomi Matsumoto, Osamu Hisatomi
Graduate School of Science, Osaka University, Toyonaka, Osaka, Japan

28P-160 **Photocontrol of small GTPase Ras fused with a photoresponsive protein**

Nobuyuki Nishibe[1], Ziyun Zhang[1], Kazunori Kondoh[2], Shinsaku Maruta[1,2]
[1]Department of Biosciences, Graduate School of Science and Engineering, Soka University Hachioji, Tokyo Japan, [2]Department of Science and Engineering for Sustainable Innovation, Faculty of Science and Engineering, Soka University, Hachioji, Tokyo Japan

28P-161 **Electrophysiological characterization of light-activated proton-transporting heliorhodopsins**

Shoko Hososhima[1,2], Satoshi Tsunoda[1,2], Hideki Kandori[1,2]
[1]Department of Life Science and Applied Chemistry, Nagoya Institute of Technology, Showa-ku, Nagoya 466-8555, Japan, [2]OptoBioTechnology Research Center, Nagoya Institute of Technology, Showa-ku, Nagoya 466-8555, Japan

28P-162 **Reconstitution of a light-activatable transcription factor, Photozipper, with extrinsic chromophores**

Osamu Hisatomi, Nagomi Matsumoto
Graduate School of Science, Osaka University, Toyonaka, Osaka, Japan

Poster Sessions

Radiobiology & Active oxygen

28P-163 **YAP/Aurora A-mediated ciliogenesis regulates ionizing radiation-induced senescence via Hedgehog pathway in tumor cells**

Jinpeng He[1,3], Wei Ma[1,3], Li Wei[2], Tongshan Zhang[1,3], Junrui Hua[1], Jufang Wang[1,3]

[1]Institute of Modern Physics, Chinese Academy of Sciences, [2]Gansu Provincial Hospital, [3]University of Chinese Academy of Sciences

28P-164 **Cadmium tolerance, accumulation and translocation in sweet sorghum irradiated by carbon beam**

Xicun Dong

Institute of Modern Physics, Chinese Academy of Sciences

Origin of life & Evolution

28P-165 **Analysis of evolutionary constraints using bacterial experimental evolution**

Astushi Shibai[1], Sumpei Sato[1], Chikara Furusawa[1,2]

[1]Center for Biosystems Dynamics Research, RIKEN, [2]Universal Biology Institute, The University of Tokyo

28P-166 **Mega-phylogenetic evolution of complex adaptive traits in thousands of bacterial species**

Takao K Suzuki, Wataru Iwasaki

Graduate School of Frontier Sciences, the University of Tokyo

28P-167 **Quantum evolution form electronic state of macro-biomolecules**

Masanori Yamanaka

Nihon University

28P-168 **The Relation Between Biology and Physics: Origins of Life Research and its Philosophical Implications**

Julieta Macome

History and Philosophy of Science Department, Cambridge University

Friday, June 28

Synthetic biology & Artificial cells

28P-169 **Spatially separated transcription and translation in the artificial cell with the artificial organelle**

Kanji Tomohara, Yoshihiro Minagawa, Hiroyuki Noji
Graduate School of Engineering, The University of Tokyo, Tokyo, Japan

28P-170 **Synthetic minimal cells with various vesicle-polymer compositions: Toward implementing evolution**

Taro Suzuki
Department of Physics, Graduate School of Science, Tohoku University, Japan.

28P-171 **Molecular tools aiming at arbitrary manipulation of micro-structures in living cells**

Hideki Nakamura[1,2,3]
[1]Hakubi Center for Advanced Research, Kyoto University, Kyoto, Japan,, [2]School of Engineering, Kyoto University, Kyoto, Japan, [3]JST PRESTO, Supra-Assembly of Biomolecule, Tokyo, Japan

28P-172 **Phase separation-induced actin bundle elongates filopodia-like tube on giant liposome from inside**

Masahito Hayashi[1,2], Tomoyuki Kaneko[1,2]
[1]LaRC, Dept. Frontier Biosci. Hosei Univ., Tokyo, Japan, [2]LaRC, FB, Grad. Sch. Sci. & Eng., Hosei Univ Tokyo, Japan

28P-173 **Pattern diversity emerges from a simple gene network**

Xiongfei Fu[1,2], Jingwen Zhu[1], Pan Chu[1,2]
[1]Key Laboratory for Quantitative Synthetic Biology, Shenzhen Institute of Synthetic Biology, Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, Shenzhen 518055, China, [2]University of Chinese Academy of Sciences, Beijing 100049, China

Genome biology

28P-174 **Insights into chromatin organization obtained by a rapid classification of A/B compartments from Hi-C data**

Takashi Sumikama[1,2], Hisashi Miura[3], Ichiro Hiratani[3], Takeshi Fukuma[2]
[1]PERSTO, JST, [2]Kanazawa University, [3]RIKEN BDR

Poster Sessions

Computational biology: Bioinformatics

28P-175 **Computational Evaluation of the Human Health Effects of the Main Compounds Found in Artemisia dracunculus**

Andrijana Pujicic, Adriana Isvoran
Department of Biology-Chemistry, West University of Timisoara, 16 Pestalozzi, 300115 Timisoara

28P-178 **Development of Prediction Methods for Class A GPCR and G-protein Coupling Selectivity Using Deep Learning**

Kento Fujishima[1], Kenji Etchuya[2], Ikuo Masuho[3,4], Makiko Suwa[1,2]
[1]Biol. Sci., Grad. Sci. Eng., Aoyama Gakuin Univ., Kanagawa, Japan., [2]Chem. Biol. Sci., Dept. Sci. Eng., Aoyama Gakuin Univ., Kanagawa, Japan., [3]Pediatrics and Rare Diseases Group, Sanford Research, Sioux Falls, South Dakota 57104, USA., [4]Department of Pediatrics, Sanford School of Medicine, University of South Dakota, Sioux Falls, South Dakota 57105, USA.

28P-179 **Consortium of "Consistent substitutions" on Influenza A(H1N1) viral proteome and its possible consequences on human host-viral interactions: A study using Multiple Sequence Alignments, text mining, and Molecular Dynamics Simulations**

Debashree Bandyopadhyay, Syeda Lubna
Birla Institute of Technology and Science, Pilani, Hyderabad Campus

28P-180 **Analysis of Partial Structural Similarity of ribonuclease and chymotrypsin based on their amino acid sequences**

Takeshi Kikuchi, Ahasanul Kabir, Takuya Takahashi
Ritsumeikan University

Computational biology: Molecular simulation

28P-181 **Gas-phase Structural Analysis of Biomolecules using Coarse-grained Molecular Dynamics Simulation**

Kazumi Saikusa[1,2], Satoko Akashi[2], Sotaro Fuchigami[3]
[1]National Metrology Institute of Japan, National Institute of Advanced Industrial Science and Technology, [2]Graduate School of Medical Life Science, Yokohama City University, [3]School of Pharmaceutical Sciences, University of Shizuoka

28P-183 **2D-replica exchange simulation of membrane permeation process of cyclic hexapeptides**

Tsutomu Yamane[1], Masateru Ota[1], Mitsunori Ikeguchi[1,2]

[1]Riken Center for Computational Science, [2]Graduate School of Medical Life Science, Yokohama City University

28P-184 **Classification of conformational dynamics of high mannose- type oligosaccharides by molecular simulation and data clustering**

Yue Zhang[1], Takumi Yamaguchi[1,2,3]

[1]School of Materials Science, Japan Advanced Institute of Science and Technology, [2]Graduate School of Pharmaceutical Sciences, Nagoya City University, [3]Exploratory Research Center on Life and Living Systems (ExCELLS), National Institutes of Natural Sciences

28P-185 **The role of water and cholesterols in APP cleavage by gamma-secretase**

Jinyoung Byun[1], Juyong Lee[1,2]

[1]College of Pharmacy, Seoul National University, Seoul, Republic of Korea, [2]Department of Molecular Medicine and Biopharmaceutical Sciences, Graduate School of Convergence Science and Technology, and College of Medicine, Seoul National University

28P-186 **Decoupling processes of the Adenosine A2A receptor from G-proteins through the lens of dPaCS-MD simulations**

Duy Phuoc Tran[1], Louis-Philippe Picard[2], Alexander Orazietti[3], Sari Hagimoto[1], Adnan Sljoka[4,5], R. Scott Prosser[2,3], Akio Kitao[1]

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28P-187 **PROTAC-mediated ternary complex structure distribution profiles using enhanced sampling methods**

Genki Kudo[1], Takumi Hirao[2], Takatsugu Hirokawa[3,4], Ryunosuke Yoshino[3,4]

[1]Physics Department, Graduate School of Pure and Applied Sciences, University of Tsukuba, [2]Master's Program in Medical Sciences, Graduate School of Comprehensive Human Sciences, University of Tsukuba, [3]Division of Biomedical Science, Faculty of Medicine, University of Tsukuba, [4]Transborder Medical Research Center, University of Tsukuba

Poster Sessions

28P-188 **3D Structure Prediction of the Odorant-bound Olfactory Receptor**

Takumi Hirao[1], Yusuke Ihara[2], Chiori Ijichi[2], Genki Kudo[3], Ryunosuke Yoshino[4,5], Takatsugu Hirokawa[4,5]

[1]Doctoral Program in Medical Sciences, Graduate School of Comprehensive Human Sciences, University of Tsukuba, [2]Institute of Food Sciences and Technologies, Food Products Division, Ajinomoto Co., [3]Physics Department, Graduate School of Pure and Applied Sciences, University of Tsukuba, [4]Division of Biomedical Science, Faculty of Medicine, University of Tsukuba, [5]Transborder Medical Research Center, University of Tsukuba

28P-189 **Quantitative Evaluation of Protein-Compound Substructure Interaction with Inverse Mixed-Solvent Molecular Dynamics Simulation**

Keisuke Yanagisawa[1,2], Ryunosuke Yoshino[3,4], Genki Kudo[5], Takatsugu Hirokawa[3,4]

[1]Department of Computer Science, School of Computing, Tokyo Institute of Technology, [2]Middle Molecule IT-based Drug Discovery Laboratory (MIDL), Tokyo Institute of Technology, [3]Faculty of Medicine, University of Tsukuba, [4]Transborder Medical Research Center, University of Tsukuba, [5]Degree Programs in Pure and Applied Sciences, Graduate School of Science and Technology, University of Tsukuba

28P-190 **Binding Free Energy Shifts of Protein Complexes due to Amino Acid Mutations**

Kazutomo Kawaguchi, Hidemi Nagao

Institute of Science and Engineering, Kanazawa University

28P-191 **Computational estimation of the free energy change of peptide- bond rotation induced by reduction of “plant-type” ferredoxin**

Tomoki Nakayoshi[1,2], Yusuke Ohnishi[3], Hideaki Tanaka[3], Genji Kurisu[3], Yu Takano[1]

[1]Graduate School of Information Sciences, Hiroshima City University, [2]Faculty of Pharmacy, Meijo University, [3]Institute for Protein Research, Osaka University

Friday, June 28

28P-192 **Dependence of the abnormal open states patterns in the ATXN2 gen on the number of CAG repeats**

Stepan Dzhimak[1,2], Mikhail Drobotenko[2], Oksana Lyasota[1], Jose Luis Hernandez-Caceres[3], Yuriy Nechipurenko[4], Alexandr Svidlov[1], Anna Dorohova[1]

[1]Laboratory of Problems of Stable Isotope Spreading in Living Systems, Southern Scientific Center of the Russian Academy of Sciences, Rostov-on-Don, Russia, [2]Department of Radiophysics and Nanothechnology, Kuban State University, Krasnodar, Russia,, [3]Cuban Center for Neurosciences, La Havana, Cuba, [4]Engelhardt Institute of Molecular Biology, Russian Academy of Sciences, Moscow, Russia

28P-193 **GPU-accelerated coarse-grained MD simulator and its application to postsynaptic density**

Yutaka Murata, Shoji Takada

Dept. Biophysics, Div. Biology, Grad. Sch. of Science, Kyoto University

28P-195 **Vibrational Dynamics of Water Molecules in FUS Protein Condensates: Molecular Interpretation**

Yotaro Takeda[1], Tatsuya Ishiyama[2], Eiji Yamamoto[1]

[1]Department of System Design Engineering, Keio University, Japan, [2]Department of Applied Chemistry, University of Toyama, Japan

28P-196 **Collagen-collagen interactions: Triple helix to helix-helix to fibrils.**

George Anthony Pantelopulos, Robert Best

National Institutes of Health

28P-197 **Analysis of Antigen-Antibody Interface Based on MD Simulations: Toward Antibody Design**

Takefumi Yamashita[1,2]

[1]Hoshi University, [2]The University of Tokyo

Poster Sessions

28P-198 **Simulation-based prediction and elucidation of the pathogenic mechanism of deafness in GJB2-encoded Cx26 channel protein**

Cheng-Yu Tsai[1,2], Ying-Chang Lu[2], Yen-Hui Chan[2,3], Chuan-Jen Hsu[2,3], Pei-Lung Chen[1,4], Chen-Chi Wu[2], Lee-Wei Yang[5,6]

[1]Graduate Institute of Medical Genomics and Proteomics, National Taiwan University College of Medicine, Taipei, Taiwan, [2]Department of Otolaryngology, National Taiwan University Hospital, Taipei, Taiwan, [3]Department of Otolaryngology, Buddhist Tzuchi General Hospital, Taichung, Taiwan, [4]Department of Medical Genetics, National Taiwan University Hospital, Taipei, Taiwan, [5]Institute of Bioinformatics and Structural Biology, National Tsing Hua University, Hsinchu, Taiwan, [6]PhD Program in Biomedical Artificial Intelligence, National Tsing Hua University, Hsinchu, Taiwan

28P-199 **Applications of Tree-Search-MD to drug target proteins: conformational changes between inactive and active structures of a kinase and a ligand binding to a GPCR**

Yukina Nakai[1], Toru Ekimoto[1], Tsutomu Yamane[2], Masao Inoue[1], Naoki Ogawa[1], Sun-Yong Park[1], Kei Terayama[1], Mitsunori Ikeguchi[1,2]

[1]Yokohama City University, [2]RIKEN R-CCS

28P-200 **Theoretical Insights into Drug Resistance Mechanisms of HIV-1 Protease: Residue Interaction Network Analysis**

Keidai Yamase

Chiba Institute of Technology

28P-201 **Molecular dynamics simulations of lipid adsorption by PLA2 of snake venom.**

Tatsuhiro Kawashima, Ryuta Imayoshi, Kazutomo Kawaguchi, Hidemi Nagao

Graduate School of Natural Science and Technology, Kanazawa University, Japan

28P-202 **Analysis of Protein Simulations Using Relaxation Mode Analysis**

Ayori Mitsutake

Meiji University

28P-203 **How the Membranes Fuse: From Spontaneous to Induced**

Hongxia Guo

Institute of Chemistry, Chinese Academy of Sciences

28P-204 **Impact of glycosylation on the structural features and hydration effects of glycoproteins**

Haeri Im[1], Song-Ho Chong[2], Isseki Yu[3], Yuji Sugita[1,4,5]

[1]RIKEN Cluster for Pioneering Research, Wako, Japan, [2]Global Center for Natural Resources Sciences, Faculty of Life Sciences, Kumamoto University, Kumamoto, Japan, [3]Department of Bioinformatics, Maebashi Institute of Technology, Maebashi, Japan, [4]RIKEN Center for Computational Science, Kobe, Japan, [5]RIKEN Center for Biosystems Dynamics Research, Kobe, Japan

28P-205 **Developing an IDP-Specific Force Field by Optimizing CMAP Parameters**

Haozhe Guo[1,2], Chen Song[1,2]

[1]Peking-Tsinghua Center for Life Sciences, Academy for Advanced Interdisciplinary Studies, Peking University, Beijing, China, [2]Center for Quantitative Biology, Academy for Advanced Interdisciplinary Studies, Peking University, Beijing, China

28P-206 **Coarse-Grained Co-transcriptional Folding Simulation of RNA Switch**

Akito Taneda

Hirosaki University

Computational biology: Biological modeling and simulation

28P-207 **Dynamic transitions in microtubules: role of flared ends and lattice repair in catastrophes and rescues**

Nikita Gudimchuk[1,2], Veronika Aleksandrova[1], Mikhail Anisimov[1,2]

[1]Lomonosov Moscow State University, Moscow, Russia, [2]Center for Theoretical Problems of Physico-Chemical Pharmacology, Russian Academy of Sciences, Moscow, Russia.

28P-208 **Analysis of fracture patterns in a vertex model including detachment of cells**

Nozomi Fujita[1], Yuichi Togashi[1,2]

[1]Ritsumeikan University, [2]RIKEN

28P-210 **Learning force field parameters from ensemble-averaged data with a differentiable approach**

Yohei Sako, Yasuhiro Matsunaga

Graduate School of Science and Engineering, Saitama University, Saitama, Japan.

Poster Sessions

28P-211 **Controlled Drug Delivery from Polymeric Surfaces: Harnessing Sonochemical Methods for Fluorouracil Nanoparticle Synthesis**

Paulina Chytrosz-Wrobel[1], Monika Golda-Cepa[1], Piotr Kubisiak[1], Waldemar Kulig[2], Lukasz Cwiklik[3], Andrzej Kotarba[1]

[1]Faculty of Chemistry, Jagiellonian University in Krakow, Krakow, Poland, [2]Department of Physics, University of Helsinki, Helsinki, Finland, [3]J. Heyrovsky Institute of Physical Chemistry, Czech Academy of Sciences, Prague, Czech Republic

28P-212 **Molecular modelling, homo-oligomerisation and membrane interactions of hepatitis E virus pORF1 replication polyprotein**

Thibault Tubiana, Sonia Fieulaine, Stéphane Bressanelli

Université Paris-Saclay, CEA, CNRS, Institute for Integrative Biology of the Cell (I2BC), 91198, Gif-sur-Yvette, France

28P-213 **Improving Structure-Based Virtual Screening using AlphaFold2 with Multi-State Modeling**

Woong-Hee Shin[1], Jinung Song[2], Junsu Ha[3], Juyong Lee[2], Junsu Ko[3]

[1]Department of Biomedical Informatics, Korea University College of Medicine, [2]College of Pharmacy, Seoul National University, [3]Arontier Co.

28P-214 **Flexible Fitting of Coarse-Grained Models to AFM Images of Intrinsically Disordered Proteins**

Sakura Homma, Yasuhiro Matsunaga

Saitama University

28P-215 **Structure formations induced by a non-reciprocal cell-cell interactions in a multicellular system.**

Biplab Bhattacherjee, Masayuki Hayakawa, Tatsuo Shibata

Laboratory for Physical Biology, RIKEN Center for Biosystems Dynamics Research, Kobe, Japan.

28P-216 **Universal existence of power-law correlations in homogeneous states of anisotropic active matter models**

Hiroyoshi Nakano[3], Kyosuke Adachi[1,2]

[1]RIKEN Interdisciplinary Theoretical and Mathematical Sciences Program, [2]RIKEN Center for Biosystems Dynamics Research, [3]Institute for Solid State Physics, University of Tokyo

28P-217 **Searching for the BET interactome through AI and Molecular dynamics simulations**

Alberto Perez[1,2]

[1]University of Florida, [2]Riken visiting JSPS fellow

28P-219 **Membrane fusion as a pathway to fission**

Russell k w Spencer, Marcus Müller

Georg-August Universitat Goettingen

Computational biology: machine learning for molecules or cell systems

28P-220 **Optimization of In Vitro Glycolytic Pathway Using Machine Learning**

Naosato Takagi, Daisuke Kiga

Waseda University, Tokyo, Japan

28P-221 **Development of the super-resolution Cryo-EM based on the Generative Adversarial Networks**

Xinyuan Li[1], Takayuki Kato[2]

[1]Graduate School of Frontier Biosciences (FBS), Osaka University, [2]Institute for Protein Research (IPR), Osaka University

28P-222 **Deep Learning-Based Water Molecule Displacement Prediction Method for Improving the Accuracy of Drug Discovery Docking Software**

Yuki Ito[1], Masateru Ohta[2], Mitsunori Ikeguchi[2,3], Takashi Yoshidome[1]

[1]Department of Applied Physics, Graduate School of Engineering, Tohoku University, Japan, [2]AI-Driven Drug Discovery Collaborative Unit, HPC- and AI-Driven Drug Development Platform Division, Center for Computational Science, RIKEN, Japan, [3]Graduate School of Medical Life Science, Yokohama City University, Japan

28P-223 **Construction of a physical reservoir computing device using active matter made from a swarm of biomolecular motors**

Yiming Gong[1], Gikyo Usuki[2], Arif Md. Rashedul Kabir[2], Kazuki Sada[2,3], Ibuki Kawamata[1], Nathanael Aubert-Kato[4], Masatoshi Ichikawa[1], Akira Kakugo[1]

[1]Graduate School of Science, Kyoto University, Kyoto, Japan, [2]Graduate School of Chemical Sciences and Engineering, Hokkaido University, Hokkaido, Japan, [3]Faculty of Science, Hokkaido University, Hokkaido, Japan, [4]Department of Information Sciences, Ochanomizu University, Tokyo, Japan

Poster Sessions

Mathematical & Theoretical biology

28P-224 **Spatial point processes with molecular density-dependent association-dissociation and cluster formation in signal transduction on the plasma membrane**

Hiroaki Takagi
Nara Medical University, Nara, Japan

28P-226 **Professor**

Chanho Park, Junil Kim, Julian Lee
Department of Bioinformatics and Life Science, Soongsil University

Data Sharing and Open Science

28P-227 **Crafting an Individual-Centric Genomics Platform**

Senkei Umehara, Atsushi Iida, Ken Yagi
GENEX, Inc. (Tokyo, Japan)

28P-228 **Serious accumulation of sequence errors in international public database searched by analyzing deposited plasmids in RIKEN-BRC Gene bank with high-throughput sequencing**

Yoshihiro Miwa, Tetsushi Iida, Junko Kijima, Shingo Nozaki, Shotaro Kishikawa
Gene-Eng-Div, BRC, RIKEN

Ecology & Environment

28P-229 **Ionic-strength and pH dependent reactivities of ascorbic acid and cysteine toward ozone in microdroplets studied by aerosol optical tweezers**

Yuan-Pin Chang
Department of Chemistry, National Sun Yat-sen University, Kaohsiung, Taiwan.

Friday, June 28

Nonequilibrium state & Biological rhythm

28P-230 **From cellular chirality to large-scale chirality: Emergence of chiral spiral in migrating cellular system**

Masayuki Hayakawa[1], Biplab Bhattacherjee[1], Lihao Guo[1], Hidekazu Kuwayama[2], Tatsuo Shibata[1]

[1]Laboratory for Physical Biology, RIKEN Center for Biosystems Dynamics Research, Kobe, Japan, [2]Faculty of Life and Environmental Sciences, University of Tsukuba, Tsukuba, Japan

28P-231 **Integrated Analysis of Circadian Clock in cyanobacteria**

Masaaki Sugiyama, Ken Morishima, Yasuhiro Yunoki, Rintaro Inoue

Institute for Integrated Radiation and Nuclear Science, Kyoto University

28P-232 **Computational Study of Peak Position in One Dimensional Mesoscopic Reaction Diffusion System**

Ryuta Imayoshi, Kazutomo Kawaguchi, Hidemi Nagao

Graduate School of Natural Science and Technology, Kanazawa University

28P-233 **Density-dependent state transitions and periodic advective flow in an active actomyosin system**

Tomoka Kashiwabara, Yusuke T. Maeda

Dept. of Phys. Kyushu Univ., Fukuoka, Japan

Measurements

28P-234 **Extracellular Potential Measurement of Cardiomyocytes in Hyperkalemic Conditions**

Kentaro Kito, Masahito Hayashi, Tomoyuki Kaneko

LaRC, FB, Grad. Sch. Sci. & Eng., Hosei Univ., Tokyo, Japan

28P-235 **Single Molecule Analysis of Perforin Dynamics Using Nanopore Measurements.**

Sotaro Nakamura, Kazuhiro Kobayashi, Ryo Iizuka, Hideaki Kato, Sotaro Uemura

The University of Tokyo

28P-236 **IR super-resolution micro-spectroscopy of keratin proteins in human nails**

Ayaka Nagaoka, Hirona Takahashi, Tetsuya Ida, Makoto Sakai

Okayama University of Science

Poster Sessions

28P-237 **Measurement of photocatalytic hydrogen production in titanium/manganese oxide film/hydrogenated amorphous silicon thin film stack using flavan molecules**

Yutaka Tsujiuchi[1,2], Kohei Saito[1], Kazunori Takada[1], Koyu Akiyama[1], Hiroshi Masumoto[2]
[1]Akita UNIV, [2]Tohoku UNIV

28P-238 **Current control using external blue-green light in an amino acid-containing gel stacked device in contact with a hydrogenated amorphous silicon thin film**

Kohei Saito[1], Yutaka Tsujiuchi[1,2], Hiroshi Masumoto[2]
[1]Akita UNIV, [2]Tohoku UNIV

Bioimaging

28P-240 **Coupling between vinculin and retrograde actin flow visualized by live-cell single-molecule imaging**

Ying Liu[1], Naoki Watanabe[1,2], Sawako Yamashiro[1,2]
[1]Laboratory of Single-Molecule Cell Biology, Kyoto University Graduate School of Biostudies, Kyoto, Japan, [2]Department of Pharmacology, Kyoto University Faculty of Medicine, Kyoto, Japan

28P-241 **Data-Driven Approaches in Single-Molecule Trajectory Analysis of Protein Mobility in Live Cells**

Yuma Ito, Makio Tokunaga
School of Life Science and Technology, Tokyo Institute of Technology

28P-242 **Monitoring the biofilm development of Escherichia coli BL21**

Alexander Karl Bullen, Tomohiro Shima
University of Tokyo

28P-243 **Label-free direct screening of “spectral biomarkers” of colorectal tumour-specific P. anaerobius via Raman mapping in combination with data mining**

Pooja Manik Badgujar, Yu-Chung Yu-Chung Lin, Zhe-Rui Zhe-Rui Lin, Kuan-Ting Wu, Chia-Liang Cheng
Department of Physics, National Dong Hwa University, Hualien 97401, Taiwan

28P-244 **Revisiting the 105 gap issue in cellular thermal biology by label-free mid-infrared photothermal microscopy**

Keiichiro Toda[1], Masaharu Takarada[2], Genki Ishigane[1], Hiroyuki Shimada[1], Venkata Ramaiah Badarla[1], Kohki Okabe[2], Takuro Ideguchi[1]

[1]The Univ. of Tokyo (Science), Tokyo, Japan, [2]The Univ. of Tokyo (Pharmacy), Tokyo, Japan

28P-245 **Visualization of exocytosis using video-rate bioluminescence imaging**

Satoru Yokawa[1], Shinji Fukuda[2], Takahiro Suzuki[2], Tadahide Furuno[1]

[1]Department of Analytical Chemistry and Biophysics, School of Pharmacy, Aichi Gakuin University, [2]Department of Biochemistry, School of Dentistry, Aichi Gakuin University

28P-246 **Topography considerations for high-speed atomic force microscopy based force mapping on bacteria**

Christian Ganser[1], Shigetaka Nishiguchi[2], Takayuki Uchihashi[1,3]

[1]National Institutes of Natural Sciences, ExCELLS, [2]Osaka University, Department of Biotechnology, [3]Nagoya University, Department of Physics

28P-247 **Optical Freshness Evaluation Method of Raw Fish Meat**

Yasuhiro Maeda, Go Shioi, Tomonobu Watanabe

Laboratory for Comprehensive Bioimaging, RIKEN, BDR, Japan

28P-248 **Nanopipette-based single-cell stimulation with non-thermal atmospheric pressure plasma**

Han Gia Nguyen[1], Linhao Sun[2], Shinya Kumagai[3], Shinji Watanabe[2]

[1]Grad. Sch. Nano Life Sci., Kanazawa University, Japan, [2]WPI-NanoLSI, Kanazawa University, Japan, [3]Meijo University, Japan

28P-249 **The role of receptor oligomerization in signal transduction investigated through single-molecule analysis**

Hideaki Yoshimura, Takeaki Ozawa

Department of Chemistry, School of Science, The University of Tokyo, Tokyo, Japan

28P-250 **Real-Time Imaging of Granzyme Secretion During CTL Assault on Cancer Cells**

Zhuohao Yang[1], Yuto Kurisu[2], Koji Nagaoka[3], Kazuhiro Kakimi[4], Takashi Funatsu[2], Yoshitaka Shirasaki[1]

[1]RCAST, Univ. Tokyo, [2]Grad. Sch. Pharm. Sci., Univ. Tokyo, [3]Univ. Tokyo Hospital, [4]Faculty of Medicine, Kindai Univ.

Poster Sessions

28P-251 **Advancing Severe Asthma Research through Live-Cell Imaging of Secretion Activity**

Yoshitaka Shirasaki[1], Mai Yamagishi[2], Kaede Miyata[3], Yumiko Tanaka[3], Hiroki Kabata[4], Misato Irie[4], Rie Baba[4], Takashi Kamatani[4,5,6], Kazuyo Moro[7], Koichi Fukunaga[4], Sotaro Uemura[3]

[1]Research Center for Advanced Science and Technology, The University of Tokyo, [2]Live Cell Diagnosis Ltd., [3]Department of Biological Sciences, Graduate School of Science, The University of Tokyo, [4]Division of Pulmonary Medicine, Department of Medicine, Keio University School of Medicine, [5]Department of AI Technology Development, M&D Data Science Center, Tokyo Medical and Dental University, [6]Division of Precision Cancer Medicine, Tokyo Medical and Dental University Hospital, [7]Laboratory for Innate Immune Systems, Department of Microbiology and Immunology, Graduate School of Medicine, Osaka University

28P-252 **Imaging of mitochondrial ATP in mouse sperm before and after capacitation using AMPK activators and inhibitors**

Takashi W Ijiri[1], Yuika Asanuma[1], Masamichi Yamamoto[2]

[1]Setsunan University, [2]National Cerebral Cardiovascular Center

28P-253 **Numerous-color simultaneous imaging with dozens of bioluminescence colors**

Mitsuru Hattori[1], Yuki Hiruta[2], Takeharu Nagai[1]

[1]SANKEN, Osaka University, Japan, [2]Department of Applied Chemistry Faculty of Science and Technology, Keio University, Japan

Bioengineering

28P-255 **Spiral Formation of Microtubules Driven by Kinesin Motors**

Douglas Ng'ang'a, Takahiro Nitta

Applied Physics Course, Faculty of Engineering, Gifu University

28P-256 **Sensitive detection of Salmonella with CRISPR–Cas13a system**

Svitlana Kovalchuk[2], Yoshihiro Minagawa[1], Hiroyuki Noji[1]

[1]The University of Tokyo, Tokyo, Japan, [2]The University of Tokyo, Tokyo, Japan/ National University of Food Technologies, Kyiv, Ukraine

28P-257 **Spectroscopic signature responsible for the life activity of regenerating worm A. viride studied using Raman spectroscopy and Two-Photon Fluorescence Lifetime Imaging**

Chia-Liang Cheng[1], Pooja Badgujar[1], Pei-Yang Huang[1], Artashes Karmenyan[1], Viktor Nikolayev[2], Jiun-Hong Chen[3]

[1]Department of Physics, National Dong Hwa University, Hualien 97401, Taiwan, [2]Department of Physics, Tomsk State University, Tomsk Oblast, 634050, Russia, [3]Department of Life Sciences, National Taiwan University, Taipei, Taiwan

28P-258 **Anticancer peptides delivery systems effects on model and natural lipid membranes**

Bogdan Zorila, Diana Lavinia Stan, Roberta (Stoica) Moisa, Mihaela Bacalum

Department of Life and Environmental Physics, Horia Hulubei National Institute for Physics and Nuclear Engineering

28P-259 **Spatiotemporal changes in single cell rheology of developing embryos unveiled by atomic force microscopy**

Takahiro Kotani[1], Yuki Miyata[1], Yosuke Tsuboyama[1], Yuki Fujii[1], Takaharu Okajima[2]

[1]Graduate School of Information Science and Technology, Hokkaido University, [2]Faculty of Information Science and Technology, Hokkaido University

Crystal growth & Crystallization technique

28P-260 **Assembly of Cage-Shaped Protein Dps Using Functional Peptides**

Mitsuhiro Okuda[1,2,3], Gabriela Pretre[2,3]

[1]Meiji University, [2]CIC-nanoGUNE, [3]Komie Corp.

Poster Sessions

Virus structure, function, SARS-CoV-2

28P-261 **Rational in silico design and structure analysis of SARS-CoV-2 neutralizing antibody UT28K**

Shunsuke Kita[1], Tatsuhiko Ozawa[2,3], Kouki Ikeda[4], Liuan Chen[1], Yuki Anraku[1], Hideo Fukuhara[1], Emiko Igarashi[5], Yumiko Saga[5], Noriko Inasaki[5], Jiei Sasaki[6], Yuhei Kirita[7], Takao Hashiguchi[6], Hideki Tani[5], Hiroyuki Kishi[2,3], Hideki Niimi[2,3], Katsumi Maenaka[1]

[1]Facul. Pharm. Sci., Hokkaido Univ., Japan, [2]Facul. Med., Univ. of Toyama, Japan, [3]Center for Advanced Antibody Drug Development, Univ. of Toyama, Japan, [4]iCeMS, Kyoto Univ., Japan, [5]Department of Virology, Toyama Institute of Health, Japan, [6]LiMe, Kyoto Univ., Kyoto, Japan, [7]Grad. Sch. Med. Sci., Kyoto Prefectural University of Medicine, Kyoto, Japan

28P-262 **Verification of the effect of ligand and receptor flexibility on inhibitory activity by MD simulation**

Suzuka Saito[1], Masashi Muramoto[1], Simon Hikiri[2], Junichi Higo[3], Takuya Takahashi[2]

[1]Graduate School of Life Sciences, Ritsumeikan University, Kusatsu, Japan., [2]College of Life Sciences, Ritsumeikan University, Kusatsu, Japan., [3]Graduate School of Information Science, University of Hyogo, Kobe, Japan.

28P-263 **N-substituted anthranilic acid derivatives as PPI inhibitors between Syntenin-1 PDZ domain and SARS-CoV-2 Env protein**

Hidekazu Hiroaki[1,4,5], Ryusei Hamajima[1], Youichi Suzuki[2], Eiji Morita[3], Hong Wu[2], Yoshihiko Fujioka[2], Takeshi Tenno[1,5]

[1]Graduate School of Pharmaceutical Sciences, Nagoya University, [2]Department of Microbiology and Infection Control, Faculty of Medicine, Osaka Medical and Pharmaceutical University, [3]Faculty of Agriculture and Life Science, Hirosaki University, [4]Center for One Medicine Innovative Translational Research, Tokai National Higher Education and Research System, [5]BeCellBar LLC, Nagoya, Aichi, Japan

28P-264 **Molecular mechanisms of SARS-CoV-2 resistance to nirmatrelvir and the countermeasures**

Haitao Yang

Shanghai Institute for Advanced Immunochemical Studies, ShanghaiTech University, Shanghai, China

Friday, June 28

Mechanosensing and Mechanobiology, Biological Temperature

28P-265 **Analysis on the Role of the Periplasmic Loop of the Bacterial Mechanosensitive Channel MscL**

Yasuyuki Sawada[1], Takeshi Nomura[2], Masahiro Sokabe[3]

[1]Institute of Materials Innovation, Institutes of Innovation for Future Society, Nagoya University, [2]School of Human Science and Environment, University of Hyogo, [3]Human Information Systems Laboratory, Kanazawa Institute of Technology

28P-266 **Activation of chloride ion channel CLIC1 by mechanical external force using AFM in breast cancer cell**

Ayana Yamagishi[1,2], Samrat Mukherjee[1,2], Chikashi Nakamura[1,2]

[1]National Institute of Advanced Industrial Science and Technology (AIST), [2]Tokyo University of Agriculture and Technology

28P-267 **Mechanical properties of nestin tail domain analyzed by tensile test using AFM**

Ayana Yamagishi[1,2], Rina Tokuoka[1,2], Daijiro Takeshita[1], Chiaki Yoshikawa[3], Tomohiko Yamazaki[3], Taro Uyeda[4], Chikashi Nakamura[1,2]

[1]AIST, [2]Tokyo University of Agriculture and Technology, [3]National Institute for Materials Science, [4]Waseda University

28P-268 **Elucidation of the mechanism of intracellular temperature variation by high-speed temperature mapping**

Masaharu Takarada, Takashi Funatsu, Kohki Okabe

Graduate School of Pharmaceutical Sciences, The University of Tokyo

Biophysics of disease

28P-269 **Changes in the properties of rbcs in the process of extracorporeal membrane oxygenation by scanning flow cytometry**

Ekaterina Yastrebova[1], Valeri Maltsev[1], Gleb Moroz[2]

[1]V.V. Voevodsky Institute of Chemical Kinetics and Combustion of the Siberian Branch of the RAS, [2]Novosibirsk Research Institute of Circulation Pathology

Poster Sessions

28P-270 **Morphology of Cancer Organoids Reproduced by 3D Phase-Field Model**

Kotaro Kawamura[1], Toshikaze Chiba[1], Keita Yanagiya[1], Yutaka Oya[2], Toshihiro Kawakatsu[1], Tatsuaki Tsuruyama[1], Masayuki Imai[1]

[1]Department of Physics, Tohoku University, Aoba, Sendai, Japan, [2]Department of Materials Science and Technology, Tokyo University of Science, Katsushika, Tokyo, Japan

Miscellaneous topics

28P-271 **Investigation of boson peak like behaviors appeared in cysteine and related amino acids**

Hirofumi Nema, Yasuhiro Fujii, Akitoshi Koreeda

Ritsumeikan University

28P-272 **Interactions of Model Antimicrobial Peptides with Lipid Membranes**

Normand Voyer[1], Pierre-Alexandre Paquet-Côté[1], François Otis[1], Jochen Bürck[2], Patrick Lagüe[3], Anne S. Ulrich[2]

[1]1Département de chimie and PROTEO, Université Laval, Québec, Canada, [2]2Institute of Biological Interfaces (IBG-2), Karlsruhe Institute of Technology (KIT), Karlsruhe, Germany, [3]3Département de biochimie et de microbiologie and PROTEO, Université Laval, Québec, Canada

Sponsored Seminar

Sponsored Seminar Tuesday, June 25

Morning Seminar 1 (Avanti Polar Lipids)	Room A
8:00-8:50	**Delicious Molecules: A Primer on Lipids and Membrane Biophysics**
Chairs	Roberto Covino (Frankfurt Institute for Advanced Studies, Germany) Chiho Watanabe (Hiroshima University, Japan)
MS1-1	Roberto Covino[1], Chiho Watanabe[2] [1]Frankfurt Institute for Advanced Studies, Frankfurt am Main, Germany, [2]Graduate School of Integrated Life Sciences, Hiroshima University, Hiroshima, Japan

BP Seminar 1 (JEOL Ltd.)	Room A
12:35-13:35	**Microscope Technology that Realizes Structural Biology**
Chair	Akio Sekigawa (JEOL Ltd.)
BP1-1	**Introduction of high throughput and high flexible workflows of cryo-TEM** Naoki Hosogi JEOL Ltd., Tokyo, Japan
BP1-2	**Introduction of newly developed cryo-FIB for cryo-TEM** Noriaki Mizuno[1], Wataru Shigeyama, Naoki Hosogi, Hideki Matsushima [1]JEOL Ltd., Kyoto, Japan

BP Seminar 2 (Carl Zeiss Co., Ltd.)	Room B-1
12:35-13:35	**Investigate Molecular Dynamics in Live Cells and Organisms using Fluorescence Correlation-based Microscopy Methods**
Chair	Akira Sato (ZEISS Research Microscopy Solutions, Japan)
BP2-1	Xianke Shi ZEISS Research Microscopy Solutions, APAC, Singapore

Tuesday, June 25

BP Seminar 3 (Leica Microsystems K.K.) — Room B-2

12:35-13:35 **To The Future of Microscopy Imaging**

Chair Shintaro Tanaka (Leica Microsystems K.K.)

BP3-1 **Intracellular temperature mapping using high-speed fluorescence lifetime imaging microscopy**

Kohki Okabe[1], Suguru Osari[2]

[1]Graduate School of Pharmaceutical Sciences, The University of Tokyo, Tokyo, Japan, [2]Leica Microsystems K.K., Tokyo, Japan

BP Seminar 4 (Nakatani Foundation) — Room C-2

12:35-13:35 **Unveil the Spark: Explore the Decision Moment to become Biophysicists!**

Chairs Satoshi Takahashi (Tohoku University)

Seiji Kojima (Nagoya University)

Ikuko Fujiwara (Nagaoka Univresity of Technology)

BP4-1 Elizabeth Hinde[1], Yoshie Harada[2], Heeyoun Bunch[3]

[1]Sch. Phys., Univ. Melbourne, [2]Institute of Protein Res., Osaka Univ, [3]Kyungpook National Univ.

BP Seminar 5 (SIGMAKOKI CO., LTD.) — Room D

12:35-13:35 **A New World from Single Cells to Cell Populations Revealed by the Ultra-wide-field Microscope "AMATERAS"**

Chair Nobutoyo Oguni (SIGMAKOKI CO., LTD.)

BP5-1 **Development of trans-scale scope “AMATERAS” and direct observation of millions of cellular dynamics**

Taro Ichimura

Osaka University, Osaka, Japan

BP5-2 **Introducing a new product of wide-field microscope "CUS-WF" that can be installed in each laboratory**

Yuichi Inoue

SIGMAKOKI CO., LTD., Tokyo, Japan

Sponsored Seminar

BP Seminar 6 (On-chip Biotechnologies Co., Ltd) — Room E

12:35-13:35 **BarBIQ: a novel method for single-cell-based quantitative analysis of bacterial microbiota using droplets**

Chair Kageyasu Takanashi (On-chip Biotechnologies Co., Ltd.)

BP6-1 **BarBIQ: accurate identification and quantification of bacterial cells in the microbiota using droplets and cellular barcoding**

Katsuyuki Shiroguchi

RIKEN Center for Biosystems Dynamics Research (BDR), Japan

Sponsored Symposium 1: Physics and Mechanobiology in Cellular and Extracellular Systems — Room D

16:00-18:20 **Physics and Mechanobiology in Cellular and Extracellular Systems**

Sponsor: MEXT KAKENHI Grant-in-Aid for Transformative Research Area (A) "Material properties determine body shapes and their constructions" MEXT KAKENHI Grant-in-Aid for Transformative Research Area (A) "Integration of Extracellular Information by Multimodal ECM Activity"

Chairs Shinji Deguchi (Osaka University)

Yasuhiro Inoue (Kyoto University)

SS-1-1 **Molecular mechanisms regulating mechanotransduction at cell adhesions**

Cristina Bertocchi[1,2]

[1]Pontificia Universidad Católica de Chile, Chile, [2]Osaka University, Japan

SS-1-2 **Dissecting the Mechanical and Dynamic Behaviors of Cells in Silico**

Makito Miyazaki[2], June Hyung Kim[1], Taeyoon Kim[1]

[1]Weldon School of Biomedical Engineering, Purdue University, West Lafayette, USA, [2]RIKEN Center for Biosystems Dynamics Research, Yokohama, Japan

SS-1-3 **Statistical mechanics approach to cell-substrate interactions**

Shinji Deguchi, Yuika Ueda

Osaka University

SS-1-4 **The Role of Environmental Asymmetry in Epithelial Tissue**

Yasuhiro Inoue, Kentaro Morikawa

Department of Micro Engineering, Graduate School of Engineering, Kyoto University, Kyoto, Japan

Wednesday, June 26

Morning Seminar 2 (GeneFrontier) — Room A

8:00-8:50 **Introduction of the reconstituted cell-free protein synthesis system, the PURE system, for synthetic biology research**

Chair Takashi Kanamori (GeneFrontier Corporation)

MS2-1 **A reconstituted cell-free protein synthesis for synthetic biology research: gene regulation to artificial cell synthesis**

Tomoaki Matsuura
Earth-Life Science Institute, Tokyo Institute of Technology, Tokyo, Japan

BP Seminar 7 (Refeyn) — Room A

12:35-13:35 **Mass Photometry – Revolutionary Biophysical Characterization of Single Molecules**

Chair Kohei Shiba (Refeyn Japan, K.K.)

BP7-1

Tomás de Garay
Refeyn Ltd.

BP Seminar 8 (HAMAMATSU PHOTONICS K.K.) — Room B-1

12:35-13:35 **Nanoscale Quantum Biosensors: Imaging Techniques for Measurement**

BP8-1

Ryuji Igarashi[1,2,3]
[1]Institute for Quantum Life Science, National Institutes for Quantum Science and Technology, Chiba, Japan, [2]School of Life Science and Technology, Tokyo Institute of Technology, Tokyo, Japan, [3]Graduate School of Science and Engineering, Chiba University, Chiba, Japan

BP Seminar 9 (Yokogawa Electric Corporation) — Room D

12:35-13:35 **The Story behind the Invention of the Confocal Scanner CSU**

Chairs Toshiaki Endou (Yokogawa Electric Corporation)
Yoshitaka Sekizawa (Yokogawa Electric Corporation)

BP9-1 **The story behind the invention of the confocal scanner CSU**

Takeo Tanaami
Yokogawa Electric Corporation, Tokyo, Japan

Sponsored Seminar

BP Seminar 10 (Digital Bioassay Laboratory, The University of Tokyo and TOPPAN Holdings Inc.) Room E

12:35-13:35 **Digital Bioassay Laboratory in Univ. Tokyo**

Chair Yoichi Makino (Technical Research Institute, TOPPAN Holdings Inc.)

BP10-1 **Digital bioassay for analyzing Alzheimer's amyloid β-bound extracellular vesicles**

Kohei Yuyama[1], Hui Sun[1], Yoichi Makino[2]

[1]Faculty of Advanced Life Science, Hokkaido University, Sapporo, Japan, [2]Technical Research Institute, TOPPAN Holdings Inc., Saitama, Japan

BP10-2 **Applications of Digital Bioassay**

Yoshihiro Minagawa[1,2], Hiroshi Ueno[1,2], Hiroyuki Noji[1,2]

[1]Department of Applied Chemistry, Graduate School of Engineering, The University of Tokyo, Tokyo, Japan, [2]Digital Bioanalysis Laboratory, The University of Tokyo, Tokyo, Japan

Thursday, June 27

Morning Seminar 3 (Avanti Polar Lipids) — Room A

8:00-8:50 **PROTEIN AGGREGATION AND DISEASES**

Chair Motomasa Tanaka (RIKEN Center for Brain Science)

MS3-1 Motomasa Tanaka[1], Lukasz A. Joachimiak[2], Eri Chatani[3]

[1]RIKEN Center for Brain Science, Wako, Japan, [2]University of Texas Southwestern Medical Center, Dallas, Texas, USA, [3]Graduate School of Science, Kobe University, Kobe, Japan

BP Seminar 11 (NIKON SOLUTIONS CO.,LTD.) — Room A

12:35-13:35 **From VAAS to NSPARC: 15 Years of Super-Resolution Confocal Microscopy**

Chair Tatsuo Fukui (NIKON SOLUTIONS CO.,LTD.)

BP11-1 Yasushi Okada[1,2,3]

[1]RIKEN Center for Biosystems Dynamics Research (BDR), Osaka, Japan, [2]Department of Cell Biology, Graduate School of Medicine, the University of Tokyo, Tokyo, Japan, [3]Department of Physics, Universal Biology Institute (UBI) and International Research Center for Neurointelligence (WPI-IRCN), the University of Tokyo, Tokyo, Japan

BP Seminar 12 (Refeyn) — Room B-1

12:35-13:35 **Mass Photometry – Revolutionary Biophysical Characterization of Single Molecules**

Chair Kohei Shiba (Refeyn Japan, K.K.)

BP12-1 Kohei Shiba

Refeyn Japan, K.K.

BP Seminar 13 (Evident Corporation) — Room D

12:35-13:35 **Reconstitution of actin cytoskeletal dynamics and functions**

BP13-1 Makito Miyazaki[1,2]

[1]RIKEN Center for Biosystems Dynamics Research, Kanagawa, Japan, [2]Graduate School of Medicine, Science, and Technology, Shinshu University, Nagano, Japan

Sponsored Seminar

BP Seminar 14 (Twist Bioscience)	Room E
12:35-13:35	**WeMakeDNA - Approaches to Optogenetics Using Synthetic Genes**
Chair	Masanori Noguchi (Twist Bioscience)

BP14-1 **Structural and Functional Analysis of Light-Gated Ion Channels Assisted by Rapid DNA Synthesis Services**

Hideaki Kato

The University of Tokyo, Tokyo, Japan

Sponsored Symposium 2: Exploring the Dynamics of Biomolecular Supra-Assemblies	Room A
16:00-18:20	**Exploring the Dynamics of Biomolecular Supra-Assemblies:**
	Sponsor: JST PRESTO, Dynamic supra-assembly of biomolecular systems
Chairs	Hideki Nakamura (Kyoto University)
	Shunsuke Shimobayashi (Kyoto University)
	Eiji Yamamoto (Keio University)

SS-2-1 **Challenging the frontiers of single-molecule or super-resolution live-cell Imaging.**

Yasushi Okada[1,2]

[1]Dept Cell Biol, Grad Sch Med, Univ Tokyo, [2]RIKEN BDR

SS-2-2 **Liquid-liquid phase separation and synaptic plasticity**

Yasunori Hayashi

Kyoto University Graduate School of Medicine

SS-2-3 **Dynamics of phase separated protein condensate materials**

Yongwon Jung

Department of Chemistry, Korea Advanced Institute of Science and Technology, Daejon, Korea

SS-2-4 **Mega-scale experimental analysis of protein folding stability in biology and design**

Kotaro Tsuboyama[1], Gabriel Rocklin[2]

[1]IIS, UTokyo, [2]Feinberg Medical School, Northwestern University

Thursday, June 27

SS-2-5 **Manipulating and elucidating nucleation principles of biomolecular condensates in living cells**

Shunsuke Shimobayashi
Kyoto University, CiRA

SS-2-6 **Molecular dynamics of intrinsically disordered proteins within protein condensates**

Eiji Yamamoto
Department of System Design Engineering, Keio University

Sponsored Seminar Friday, June 28

BP Seminar 15 (The Biophysical Society of Japan & Acaric.co.ltd.)	Room A
12:35-13:35	**Beyond Borders: Insights into International Employment Opportunities**
Chairs	Takayuki Nishizaka (Committee for Gender Equality and Support for Young Researchers, The Biophysical Society of Japan) Daisuke Nakane (Committee for Gender Equality and Support for Young Researchers, The Biophysical Society of Japan)

BP15-1 **Global Employment Trends and Application Tips**

Toshiaki Kaminaka[1], Junko Tamaki[1], Daisuke Nakane[2], Takayuki Nishizaka[2]

[1]Acaric co. ltd., Tokyo Japan, [2]Committee for Gender Equality and Support for Young Researchers, The Biophysical Society of Japan

BP Seminar 16 (Nagoya Institute of Technology & SHIMADZU CORPORATION)	Room B-2
12:35-13:35	**Introduction of Mass Spectrometry Imaging Technology**
Chair	Kota Katayama (Graduate School of Engineering Nagoya Institute of Technology)

BP16-1 **Introduction of Mass Spectrometry Imaging Technology**

Eiichi Matsuo

Analytical & Measuring Instruments Division Shimadzu Corporation, Japan

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* Chair person Bold: Presenter

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Awards

The following awards will be offered by IUPAB, IUPAB2024 and Biophysical Society of Japan (BSJ).

Awards and Awardees

1. The Avanti Prize Lecture

Location: Room A
Date & time: Monday, June 24 17:00-17:40
Chairs: Manuel Prieto (University of Lisbon, Portugal)
Anthony Watts (University of Oxford, UK)
Awardee: Massimo Olivucci (University of Siena)

2. The Young Investigator Award Lecture

Location: Room A
Date & time: Wednesday, June 26 16:00-16:40
Chairs: Manuel Prieto (University of Lisbon, Portugal)
Anthony Watts (University of Oxford, UK)
Awardee: Hideaki Kato (The University of Tokyo)

3. The Bei Lecture

Location: Room A
Date & time: Thursday, June 27 18:30-19:10
Chair: Tao Xu (National Laboratory of Biomacromolecules, Guangzhou)
Awardee: Xiyun Yan (Institute of Biophysics, Chinese Academy of Sciences)

4. BPS Award Lecture

Location: Room B-1
Date & time: Wednesday, June 26 16:40-17:30
Chair: Kumiko Hayashi (The University of Tokyo)
Presenter: Jennifer Pesanelli (Biophysical Society)
Awardee: Jerelle A. Joseph (Princeton University)

5. ABA Young Investigator Award Lecture

Location: Room E
Date & time: Thursday, June 27 16:00-18:20

Awards

Chairs: Shang-Te Danny Hsu (President of ABA, member of Biophysical Society of R.O.C, Academia Sinica)
Haibin Su (Member of The Biophysical Society of Hong Kong, Hong Kong University of Science and Technology)
Awardee: Tetsuhiro S. Hatakeyama (Tokyo Institute of Technology)

6. The 20th Early Career Award in Biophysics Candidate Presentations
Location: Room A
Date & time: Tuesday, June 25 10:00-12:20
Up to five awardees of the Early Career Award in Biophysics will be selected from the candidates, and the rest of the candidates will be given the Early Career Presentation Award. The awardees will be announced at the Conference Dinner.

7. IUPAB2024 Student and Early Career Researcher Poster Award
The awardees will be selected by voting. Please access your “My Page” to vote. You can choose up to 10 nominees.
Names, titles and affiliations of the awardees as well as their presentation title will be announced at the Closing Ceremony of IUPAB2024.
Voting period: Monday, June 24 12:00 – Thursday, June 27 18:30

8. Nakatani Foundation Award
The awardee(s) will be announced at the Conference Dinner.

9. BPS-IUPAB Student Presentation Award
The awardee(s) will be announced at the Conference Dinner.

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