

# 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 Baptist 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<sup>+</sup> Channel Blocker**  
Yasuomi Miyashita, Toshio Moriya, Masato Kawasaki, Satoshi Ogasawara, Naruhiko Adachi, Satoshi Yasuda, Tetsuichiro Saito, Toshiya Senda, Takeshi Murata  
 Developmental Biology, Graduate School of Medicine, Chiba University/Membrane Protein Research Center, Graduate School of Science, Chiba University
- \*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, Hideaki Tanaka, Genji Kurisu  
 Protein Crystallography Laboratory, Institute for Protein Research, Osaka University, Suita, Osaka Japan/Department of Macromolecular Sciences, Graduate School of Science, Osaka University, Toyonaka, Osaka, Japan

## Poster Sessions

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- \*26P-005**     **Symmetry Matched Protein – Macrocycle Assembly**  
Colin Wren, Ronan J. Flood, Niamh M. Mockler, Martin Savko, Qiang Shi, Peter B. Crowley  
School of Biological and Chemical Sciences, University of Galway, H91 TK33, Galway, Ireland
- \*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, Junta Tomono, Shozo Furumoto, Nobuyuki Okamura, Ryuichi Harada, Takeshi Yokoyama, Yoshikazu Tanaka  
Grad. Sch. Life Sci., Tohoku Univ., Miyagi, Japan.
- 26P-010**     **Cryo-EM structure of the zinc-activated channel (ZAC) in the Cys-loop receptor superfamily**  
Fei Jin, Yi-Yu Lin, Ru-Chun Wang, Yimeng Zhao, Cheng Shen, Danqi Sheng, Muneyoshi Ichikawa, Ye Yu, Jin Wang, Motoyuki Hattori  
Fudan University, Shanghai, 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

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- 26P-012**     **A novel blue-carotenoprotein from sponge**  
Momose Kuroda, Yui Fujita, Momoko Ishida, Satoko Matsunaga,  
 Mitsuru Jimbo, Takeshi Yokoyama, Yoshikazu Tanaka, Ryuichi Sakai  
 NIT, Hakodate College
- 26P-013**     **Structure-activity Relationship of a novel enzyme derived from marine Streptomyces**  
Takumi Oshiro, Shuta Uehara, Yoshikazu Tanaka, Takuya Ito,  
 Yoshio Kodera, Takashi Matsui  
 Grad. Sch. Sci., Kitasato Univ.

### Protein: Structure & Function

- \*26P-015**     **Proton conduction mechanism in FO rotary motor studied by quantum molecular dynamics simulation**  
Yukinari Kamiyama, Dan Parkin, Junichi Ono, Yoshifumi Nishimura,  
 Hiromi Nakai, Mitsunori Takano  
 Grad. Sci. Adv. Sci. & Eng., Waseda Univ., Tokyo, Japan
- \*26P-016**     **Time-resolved crystallography for the study of a B12-dependent photoreceptor using X-ray free-electron lasers**  
Ronald Rios Santacruz, Giorgio Schiro, David Leys, Nigel Scrutton,  
 Tosha Takehiko, Kensuke Tono, Derren Heyes, Harshwardhan Poddar,  
 Martin Weik  
 Univ. Grenoble Alpes, CEA, CNRS, Institut de Biologie Structurale, F-38044 Grenoble, France
- \*26P-017**     **Heterogeneity of Microtubule Lattices Revealed by Cryo-ET and Non-averaging Structural Analysis**  
Hanjin Liu, Hiroshi Yamaguchi, Masahide Kikkawa, Tomohiro Shima  
 Graduated School of Science, 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

## Poster Sessions

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- \*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
- \*26P-021**    **Crystal structure and proton transporting mechanism of viral heliorhodopsin, V2HeR3**  
Ritsu Mizutori, Nipawan Nuemket, Shoko Hososhima, Sayaka Ohashi, Satoshi Tsunoda, Yuji Furutani, Oded Baja, Eriko Nango, Kota katayama, Hideki Kandori  
Nagoya Institute of Technology
- \*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, Takahiro Muraoka  
Graduate School of Engineering, Tokyo University of Agriculture and Technology, Tokyo, Japan

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- \*26P-025** **Insights into the Cytochrome c Oxidase proton pumping mechanism from constant-pH MD simulations**  
Ines Domingos Silva Pires, António M. Baptista, Miguel Machuqueiro  
BioISI - Biosystems and Integrative Sciences Institute, Faculdade de Ciências, Universidade de Lisboa, Campo Grande, Ed. C8, Lisboa, Portugal
- \*26P-026** **Mass photometry as a novel single molecule approach to study immunoglobulin binding protein (BiP) oligomerization and function**  
Karina New, Miguel Lagos, Roi Asor, Zahra Alavi, Philipp Kukura, Christian Wilson  
Faculty of Chemical and Pharmaceutical Sciences, University of Chile, Santiago, Chile
- \*26P-027** **Catalytic mechanism of the cytosolic  $\theta$  type carbonic anhydrase from marine diatom *Phaeodactylum tricornutum***  
Hiroto Negoro, Hideaki Tanaka, Ginga Shimakawa, Hiroyasu Koteishi, Akihiro Kawamoto, Yusuke Matsuda, Genji Kurisu  
Institute for Protein Research, Osaka University/Department of Biotechnology, Graduate School of Engineering, Osaka University
- \*26P-028** **Structure of nitric oxide reductase dimer revealed by single particle cryo-electron microscopy**  
Ryohei Kawakami, Chai Gopalasingam, Hideki Shigematsu, Takehiko Toshi  
Grad. Sch. Sci., Univ. Hyogo, Hyogo, Japan/RIKEN SPring-8 Center, Hyogo, Japan
- 26P-029** **The glycation effect on structure and dynamics of human serum albumin**  
Prin Tadawattana, Sirin Sittivanitchai, 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, Yahui Liu, Chunyan Xu, Huan Zhou, Weiwei Wang, Bing Liu, Yan Liu, Xiaojian Hu, Jianhua He  
Shanghai Synchrotron Radiation Facility, Shanghai Advanced Research Institute, Chinese Academy of Sciences, Shanghai 201204, China

## Poster Sessions

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- 26P-031**     **Mechanism of Formate Oxidation by NAD-dependent Formate Dehydrogenase: Computational Studies on Near-Attack Conformations**  
Jiri Kozelka, Yevgen Yurenko, Jan Novotný, Radek Marek  
Department of Condensed Matter Physics, Faculty of Science, Masaryk University, Brno, Czech Republic/Université Paris Cité, DSIMB UMR\_S U1134, Paris, France
- 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, Muroan Institute of Technology
- 26P-033**     **Real-time Imaging and Inhibition Analysis of Amylin Aggregations Using Quantum Dot nanopores**  
Xiaoyu Yin, Ziwei Liu, Tuya Gegen, Hayate Sawatari, Keiya Shimamori, Masahiro Kuragano, Kiyotaka Tokuraku  
Graduate School of Engineering, Muroan Institute of Technology
- 26P-034**     **Structural and functional analyses of YeeE/YeeD complex in thiosulfate uptake pathway**  
Mai Ikei, Ryoji Miyazaki, Keigo Monden, Yusuke Naito, Azusa Takeuchi, Yutaro S. Takahashi, Yoshiki Tanaka, Keina Murata, Takaharu Mori, Muneyoshi Ichikawa, Tomoya Tsukazaki  
Fudan University
- 26P-035**     **TRANSPLANTATION OF ENZYMATIC FUNCTION BY EXCHANGE OF FUNCTION ELEMENTS**  
Mikio Kataoka, Yoichi Yamazaki, Yasushi Imamoto, Hironari Kamikubo  
Nara Institute of Science and Technology

### 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, Issei Suzuki, Shogo Fukazawa, Kosuke Miki, Heinrich Roder, Kosuke Maki  
 Grad. Schl. Sci., Nagoya Univ., Aichi, Japan/Fox Chase Cancer Ctr., Pennsylvania, United States
- 26P-039**     **$\alpha$ B-crystallin prevents aging of  $\alpha$ -synuclein droplets**  
Kenji Fujitsuka, Keisuke Yuzu, Yuki Michiue, John A. Carver, Eri Chatani  
 Graduate School of Science, Kobe University, Kobe, Japan
- \*26P-040**    **The function of multiple aggregates formed by the tumor suppressor protein p53**  
Emi Hibino, Reiji Hijikata, Takeshi Tenno, Hidekazu Hiroaki  
 Grad. Sci. Pharm. Sci, Nagoya Univ.
- \*26P-041**    **Spatiotemporal formation of a single liquid-like condensate of  $\alpha$ -synuclein and subsequent aging by optical trapping**  
Keisuke Yuzu, Ching-Yang Lin, Po-Wei Yi, Chih-Hao Huang, Hiroshi Masuhara, Eri Chatani  
 Graduate School of Science, Kobe University, Kobe, Japan/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, Kento Yonezawa, Takehiro Sato, Kok Sim Chan, Kiichi Hyashi, Takuya Sawai, Yusuke Okamoto, Rakuri Aiba, Yoichi Yamazaki, Sachiko Toma-Fukai, Hironari Kamikubo  
 Division of Materials Science, Graduate School of Science and Technology, Nara Institute of Science and Technology, 8916-5, Takayama, Ikoma, Nara, Japan

### Protein: Function

- \*26P-043**    **pH-gating mechanism of the bacterial inner membrane urea channel HpUrel of *Helicobacter pylori***  
Sahar Shojaei, Anna Stoib, Tobias Putz, Nada Stević, Christine Siligan, Andreas Horner  
 Institute of Biophysics, Johannes Kepler University Linz, Gruberstr. 40, 4020 Linz, Austria

## Poster Sessions

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- \*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, Tatsuya Arai, Sakae Tsuda, Kazuhiro Mio, Yuji C. Sasaki  
Graduate School of Frontier Sciences, the University of Tokyo, Chiba, Japan
- 26P-046**    **Towards longer luminescence lifetime of the minimal luciferase picALuc**  
Yuki Ohmuro-Matsuyama, Genta Kamiya, Kento Motoyama, Mitsuru Hattori, Ryogo Takai, Nobuo Kitada, Takeharu Nagai, Shojiro Maki, Hayato Matsui, Tadaomi Furuta  
Technology Research Laboratory, Shimadzu Corporation
- 26P-047**    **High-speed atomic force microscopy reveals functional dynamics of FnCas9**  
Hideaki Tsukada  
Mikihiro Shibata

### 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, Soichiro Kato, Jingyi Tang, Insyeerah Jauhari, Yuji Furutani  
Graduate School of Engineering, Nagoya Institute of Technology, Aichi, Japan



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- \*26P-050**    **Nanopore-based peptidome analysis based on the protein-protein interactions.**  
Misa Yamaji, Ayaka Nakada, Kota Naito, Yoshikazu Tanaka, Ryuji Kawano  
Department of Biotechnology and Life Science, Tokyo University of Agriculture and Technology, Tokyo, Japan.
- 26P-051**    **Protein Acetylation Tracked using UV-Visible Absorption, Luminescence Spectroscopy and TD-DFT calculations**  
Rajaram Swaminathan, Himanshi Devi, Simangka Borsaikia, Apoorva Badaya, Ravindra Venkatramani  
Department of Biosciences and Bioengineering, Indian Institute of Technology Guwahati, Assam, India
- 26P-052**    **Development of cysteine-specific modification technique for the quantitative analysis**  
Arisa Suto, Yoshio Kodera, Takashi Matsui  
Grad. Sch. Sci., Kitasato Univ.
- 26P-053**    **Analysis of membrane translocation of Clostridioides difficile binary toxin using electrophysiological techniques**  
Yuki Mitani, Sotaro Takiguchi, Ryuji Kawano, Hideaki Tsuge  
Graduate School of Life Science, Kyoto Sangyo University, Kyoto, Japan.
- 26P-054**    **Simple and Efficient Detection Scheme of Two-Color Fluorescence Correlation Spectroscopy for Protein Dynamics Investigation from Nanoseconds to Milliseconds**  
Yutaka Sano, Yuji Itoh, Atsuhito Fukasawa, Hiroyuki Oikawa, Satoshi Takahashi  
Tohoku University

### 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  $\beta$ -barrel structure**  
Mana Sato, Shoko Fujita, Tomoaki Matsuura, Ryuji Kawano  
Department of Biotechnology and Life Science, Tokyo University of Agriculture and Technology, Tokyo, Japan

## Poster Sessions

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- \*26P-057**    **The molecular basis through which Fv-supercharging affects the physicochemical properties of antibodies**  
Keisuke Kasahara, Daisuke Kuroda, Jose Caaveiro, Satoru Nagatoishi, Kouhei Tsumoto  
Department of Bioengineering, 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, Atsumi Hando, Satoshi Takahashi, Keisuke Ikeda, Kiyoto Kamagata  
Institute for Multidisciplinary Research for Advanced Materials, Tohoku University, Sendai, Japan/Department of Chemistry, Graduate School of Science, Tohoku University, Sendai, Japan
- 26P-061**    **Development of various fluorescence lifetime sensors using mTurquoise2 platform**  
Chongxia Zhong, Satoshi Arai, Yasushi Okada  
1. WPI Nano Life Science Institute, Kanazawa University, Kanazawa, Japan/2. Laboratory for Cell Polarity Regulation, RIKEN Center for Biosystems Dynamics Research, RIKEN, Osaka, Japan
- 26P-062**    **Darwinian ultrahigh-throughput evolution of biomolecules with in vitro compartmentalized gene amplification races**  
Taro Furubayashi, Thibault Di Meo, Yoshihiro Minagawa, Hiroyuki Noji, Yannick Rondelez  
The University of Tokyo, Tokyo, Japan
- 26P-063**    **Magnetic bead-based protein display screening system for quantitative selection and evolution of functional proteins**  
Shingo Ueno, Fumi Toshioka, Shoichi Tsuchiya, Takanori Ichiki  
Innovation Center of NanoMedicine (iCONM), Kawasaki Institute of Industrial Promotion

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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, Nakajima Kichitaro, Yamaguchi Keiichi, Goto Yuji,  
Ogi Hirotsugu  
Osaka University, Graduate School of Engineering
- \*26P-065**    **The role of phase transitions of biopolymers in the formation and functioning of A-bodies**  
Anastasiia Gavrilova, Yakov Mokin, Anna Fefilova, Aleksander Fonin  
Laboratory of structural dynamics, stability and folding of proteins, Institute of  
Cytology, Russian Academy of Sciences, St. Petersburg 194064, Russia
- \*26P-066**    **High-Speed Atomic Force Microscopy Reveals Structural Dynamics of Microtubule-Associated Protein Tau Aggregation.**  
Tatsuya Kimura, Kenjiro Ono, Ken-ichi Umeda, Daiki Muramatsu,  
Hiroki Konno, Noriyuki Kodera, Toshio Ando, Takahiro Nakayama  
WPI-Nano Life Science Institute, Kanazawa University, Kanazawa, Japan
- 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, Mariela Pavan, Anat Ben-Zvi  
Ben-Gurion University Of The Negev, Faculty Of Natural Sciences, Life Sciences  
Department
- 26P-069**    **Purification and characterization of cholate-free cytochrome c oxidase from bovine heart**  
Kyoko Shinzawa-Itoh, Kenta Tsutumi, Tomohiro Ide, Seishiro Mori,  
Eiki Yamashita, Kazumasa Muramoto  
Graduate School of Science, University of Hyogo

## Poster Sessions

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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, Hideki Kandori, Yuji Furutani  
Graduate School of Engineering, 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  $\beta$ -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, Soichiro Kato, Ryo Yamamoto, Manish Singh, Hideki Kandori, Yuji Furutani  
Department of Life Science and Applied Chemistry, 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, Rei Abe-Yoshizumi, Toshiki Nakamura, Yuji Furutani, Tatsuro Nishikino, Hideki Kandori  
Grad. Sch. of Eng., Nagoya Inst. of Tech., Aichi, Japan
- 26P-076** Rottlerin as an aquaporin-3 inhibitor for cancer therapy  
Inês Paccetti Alves, Marta Baptista, Catarina Pimpão, Inês V. da Silva, Bruno L. Victor, Graça Soveral  
Research Institute for Medicines (iMed.U LISBOA), Faculty of Pharmacy, Universidade de Lisboa, Lisbon

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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](#), Tadaomi Furuta, Yui Kanaoka, Takayuki Uchihashi  
Exploratory Research Center on Life and Living Systems, National Institutes of Natural Sciences, Okazaki, Japan/Current affiliation: Department of Biotechnology, Osaka University, Suita, Japan
- 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](#), Hayato Yamashita, Osamu Hisatomi, Masayuki Abe  
Graduate School of Engineering 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](#), Jumpei Fukute, Taiji Adachi  
Department of Medicine and Medical Science, Graduate School of Medicine, Kyoto University, Japan/Laboratory of Biomechanics, Institute for Life and Medical Sciences, Kyoto University, Japan/Department of Micro Engineering, Graduate School of Engineering, Kyoto University, Japan/Department of Mammalian Regulatory Network, Graduate School of Biostudies, Kyoto University, Japan

## Poster Sessions

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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, Masahiro Takinoue  
Department of Computer Science, 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, Masahiro Takinoue, Hiroaki Onoe  
Keio University
- \*26P-088**    **Towards Rotary DNA Motor with Conformational Change**  
Akihiro Fukuda, Yusuke Sato, Takeshi Yokoyama, Yoshikazu Tanaka, Shoichi Toyabe  
Tohoku University
- \*26P-089**    **Liquid-liquid phase separation of computational DNA droplets on the gold surface**  
Koki Yoshida, Masahiro Takinoue  
Tokyo Institute of Technology

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## 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](#), Ignacio Perez Lopez, Stephen Farr, Jan Huertas, Rosana Collepardo-Guevara  
 Department of Physics, University of Cambridge, UK
- \*26P-093**    **Protein search processes mediated by chromatin topology**  
[Shuvadip Dutta](#), Adarshkrishnan R., Ranjith Padinhateeri, Mithun K. Mitra  
 Department of Physics, Indian Institute of Technology Bombay, Mumbai 400076, India
- 26P-094**    **Effect of the molecular crowding environment on the structure of poly-nucleosomes**  
[Tomoko Sunami](#), Amarjeet Kumar, Hidetoshi Kono  
 iQLS, QST
- 26P-095**    **From Sequence to Structure: Refining Chromatin Models with PTM and Contact Frequency Data**  
[Justin Chan](#), Giovanni Brandani, Shoji Takada, Kono Hidetoshi  
 Molecular Modeling and Simulation Team, iQLS, QST, Japan

## 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

## Poster Sessions

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**26P-097**      **Correlation analysis of co-solvation free energies in insulin dissociation**

Simon Hikiri, Nobuyuki Matubayasi

College of Life Sciences, Ritsumeikan University, Kusatsu, Japan

### 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

### Morphogenesis and Development

**\*26P-099**      **Nuclear softening triggers a transcriptional burst during early embryogenesis**

Masahito Tanaka, Rin Sakanoue, Atsushi Takasu, Yasuki Miyagawa, Naoko Watanabe, Kei Miyamoto, Yuta Shimamoto

Laboratory of Physics and Cell Biology, National Institute of Genetics, Shizuoka, Japan.

### Muscle

**\*26P-100**      **Cardiac cycle-dependent alterations in redox states revealed by cryo-Raman spectral analysis**

WenJin Ho, Yoshinori Harada, Kentaro Mochizuki, Yasuaki Kumamoto, Masahito Yamanaka, Katsumasa Fujita, Hideo Tanaka

Department of Pathology and Cell Regulation, Kyoto Prefectural University of Medicine

**26P-101**      **Effects of Near-Infrared Laser Irradiation on Circular Cardiomyocyte Network**

Momo Akada, Kentaro Kito, Masahito Hayashi, Tomoyuki Kaneko

LaRC, FB, Grad. Sch. Sci. & Eng., Hosei Univ., Tokyo, Japan



## Wednesday, June 26

### Molecular motor

- \*26P-102**    **Directionality on kinesin-1 motility can be determined depending on the anchor points**  
Rieko Sumiyoshi, Masahiko Yamagishi, Junichiro Yajima  
Department of Life Sciences Graduate School of Arts and Sciences, The University of Tokyo, Tokyo, Japan/JSPS Research Fellow
- \*26P-103**    **Three-dimensional motility of myosin IC bound to lipid membrane**  
Yusei Sato, Kohei Yoshimura, Kyohei Matsuda, Takeshi Haraguchi, Akisato Marumo, Masahiko Yamagishi, Suguru Sato, Kohji Ito, Junichiro Yajima  
Department of Life Sciences, Graduate School of Arts and Sciences, The University of Tokyo
- \*26P-104**    **Energetics of engineered FoF1-ATP synthase with high H<sup>+</sup>/ATP ratio**  
Kiyoto Yasuda, Riku Marui, Hiroshi Ueno, Hiroyuki Noji  
The University of Tokyo, Graduate school of Engineering, Department of Bioengineering, Noji Lab.
- \*26P-105**    **Biomolecular motors use two asymmetries to generate unidirectional movement**  
Shintaro Nakayama, Akane Furuta, Maki Yoshio, Misako Amino, Kazuhiro Oiwa, Ken'ya Furuta  
Advanced ICT Research Institute, National Institute of Information and Communications Technology, Hyogo, Japan/Department of Life Science, Graduate School of Science, University of Hyogo, Hyogo, Japan
- 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

## Poster Sessions

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**26P-109**      **Flagellar rotation-speed difference observed in the same bacterial cells**

[Tsubasa Ishihara](#), Shuichi Nakamura  
Grad. Sch. Eng., Tohoku Univ.

### Single Molecule Biophysics

**\*26P-110**      **Enhanced Interpretation of STED-FCS Diffusion Law Plot Dependencies**

[Barbora Svobodova](#), Radek Sachl  
Faculty of Mathematics and Physics, Charles University, Prague, Czech Republic/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, Tromsø, Norway

**\*26P-113**      **Single-molecule manipulation of genome integrity guardians**

[María Ortiz](#), Roberto Galleto, Borja Ibarra  
IMDEA Nanociencia, Faraday 9, 28049, Madrid, Spain

**\*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

## Wednesday, June 26

- 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

### Cell biology: Adhesion

- 26P-117**     **Dynamics and function of adhesion GPCR**  
[Rinshi Kasai](#), Shigetaka Nishiguchi, Takayuki Uchihashi  
National Cancer Center Research Institute

### Cell biology: Motility

- \*26P-118**     **Sheet-like structure of bacterial actin MreBs driving helicity switching by cryo electron tomography**  
[Haruka Yuasa](#), Yuya Sasajima, Hana Kiyama, Daichi Takahashi,  
Takuma Toyonaga, Tomoko Miyata, Fumiaki Makino, Keiichi Namba,  
Makoto Miyata  
Graduate School of Science, Osaka Metropolitan University, Osaka, Japan
- \*26P-119**     **Rotation of bacterial cell-bodies in different species capable and incapable of flagellar wrapping**  
[Naoki Ogura](#), Aoba Yoshioka, Daisuke Nakane, Hirofumi Wada  
Department of Biomedical Engineering, Tokyo University of Agriculture and Technology
- \*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](#), Naoya Chiba, Masatada Tamakoshi, Daisuke Nakane  
Department of Engineering Science, The University of Electro-Communications,  
Tokyo, Japan

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- \*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, Shigetomo Fukuhara, Kazushi Ikeda, Yuichi Sakumura  
Nara Institute of Science and Technology
- \*26P-124**     **Suppressing Bacterial Surface Colonization and Motility with Biosurfactants**  
Li Xiaojie, Andrew Utada  
Grad. Sch. Of Sci. and Tech. Univ. of Tsukuba, 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, Miki Kinoshita, Motoshi Sakai, Takayuki Uchihashi, Norihiro Takekawa, Katsumi Imada, Keiichi Namba  
Graduate School of Frontier Biosciences, Osaka University
- 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, Kasim Waraichi, Miki Kinoshita, Tomoko Miyata, Tohru Minamino, Keiichi Namba  
Graduate School of Frontier Biosciences, Osaka University, Suita, Osaka, Japan/JEOL YOKOGUSHI Research Alliance Laboratories, Osaka University, Suita, Osaka, Japan

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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, Yosuke Yamazaki, Kazuhiro Aoki, Makito Miyazaki  
 RIKEN Center for Biosystems Dynamics Research, Yokohama, Japan
- 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, Michael Shribak, Zenki Ikeda, Naobumi Okada,  
 Tomomi Tani, Gohta Goshima, Rudolf Oldenbourg, Akatsuki Kimura  
 Marine Biological Laboratory, Woods Hole, Massachusetts, USA/National Institute of Genetics, Mishima, Japan/Sokendai, Mishima, Japan
- 26P-134**    **Construction of a mechanical model for *C. elegans* gastrulation**  
Tokitaka Katayama, Akatsuki Kimura  
 National Institute of Genetic (NIG)/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, Chikoo Oosawa, Takuo Yasunaga, Yusuke V Morimoto  
 Grad. Sch. Comp. Sci. and Sys. Eng., Kyushu Inst. Tech., Fukuoka, Japan
- \*26P-136**    **Cellular Guardianship Symphony by the Dynamic Duo of LL37 and HNP-1**  
Jing Zhang, Kaori Sugihara  
 The University of Tokyo

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- 26P-137**     **Slow diffusion and signal amplification on membranes regulated by phospholipase D**  
Gen Honda, Satoshi Sawai, Miho Yanagisawa  
Department of Basic 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, Yusuke Sato, Eriko Yamaguchi, Naoko Komura, Hiromune Ando, Yasunari Yokota, Kenichi G.N. Suzuki  
iGCORE, Gifu Univ., Japan

### Biological & Artificial membrane: Structure & Property

- \*26P-139**     **Membrane tension and its effect on a membrane structure**  
Zuzana Johanovská, David Štastný, Radek Šachl, Martin Hof  
Heyrovský Institute of Physical Chemistry, Czech Academy of Sciences, Prague, Czech Republic/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, Toshiki Tsujii, Hiroaki Saito, Keisuke Ikeda, Minoru Nakano  
Faculty of Pharmaceutical Sciences, University of Toyama, Toyama, Japan
- 26P-143**     **Mechanism of action and lipid-mediated synergistic interactions of antimicrobial peptides: New regulatory mechanisms also for membrane proteins?**  
Burkhard Bechinger  
University of Strasbourg / CNRS, Chemistry UMR7177/Institut Universitaire de France IUF

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- 26P-144**     **Impact of Acetonitrile Molecules on Miscibility Transition Temperature of Multicomponent Lipid Vesicles**  
Shota Matsuzawa, [Kazunari Yoshida](#)  
Graduate School of Science and Engineering, Yamagata University/Faculty of 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  $\beta$ -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](#), Moka Ito, Mahito Kikumoto, Masahito Hayashi, Kingo Takiguchi  
Nagoya Univ., Grad. Sch. Sci., Dept. Bio Sci.
- 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

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## Biological & Artificial membrane: Excitation & Channels

**26P-150**      **Development of a high-throughput device for recording channel currents using agarose gel beads**

Mami Asakura, Wang Shuyan, Minako Hirano, Toru Ide  
Dept. of Comp. Tech. Soln., 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, autophagy, 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, Jesse Rudd-Schmidt, Oana Sanislav, Jinyun Zou, Tze Cin Owyong, Ebony Monson, Karla Helbig, Paul Fisher, Ian Ganley, Kazuhide Shaun Okuda, Ilia Voskoboinik, Yuning Hong  
Department of Biochemistry and Chemistry, La Trobe Institute for Molecular Science, La Trobe University, Melbourne, 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, Hiroshi Kamizawa, Takumi Yamada, Biplab K C, Teruki Nii, Takeshi Mori, Yoshiki Katayama, Akihiro Kishimura  
Graduate School of Systems Life Sciences, Kyushu University



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- 26P-156** **Tunable Wetting Properties in Multicomponent Protein Condensates**  
Ding Wang, Lei-Han Tang  
Department of Physics, Hong Kong Baptist University, Hong Kong SAR, China/  
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, Yoshihiro Minagawa, Hiroyuki Noji  
University of Tokyo/Tokyo University of Agriculture and Technology

### Neuroscience & Sensory systems

- \*26P-159** **High-speed AFM reveals activity-dependent stable complexes of kinase domains in CaMKII $\beta$**   
Keisuke Matsushima, Hideji Murakoshi, Mikihiro Shibata  
Graduate School of Natural Science and Technology, Kanazawa University, Ishikawa,  
Japan
- \*26P-160** **Molecular mechanism of classical conditioning in earthworm**  
Sukehiro Kabayama, Yoshiichiro Kitamura  
Kanto-Gakuin University
- 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, Igor Sokolov, Anastasia Lavrova, Dmitry Postnov  
Kursk State University

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### Neuronal circuit & Information processing

- \*26P-163**    **Outgrowth order in breaking symmetry of immature neurites is another regulation factor of neuronal polarity formation**  
Soya Hagiwara, Ryohei Yamazaki, Nanami Abe, Naoya Takada, Kenji Yasuda  
Dept. Phys., Sch. 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, Pooja Gusain, Makiko Taketoshi, Yoko Tominaga  
Institute of Neuroscience, Tokushima Bunri University, Sanuki, Japan/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, Katsuhiko Sato, Toshiyuki Nakagaki, Yukinori Nishigami  
RIES Hokkaido University, Sapporo, 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, Hiroo Imai, Hideki Kandori, Kota Katayama  
Graduate school of Engineering, Nagoya Institute of Technology, Aichi, Japan

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- \*26P-168**    **Time-resolved crystallography uncovering cryptochrome signal transduction mechanism**  
Yuhei Hosokawa, Po-Hsun Wang, Mai Nakamura, Nicolas Caramello, Sylvain Engilberge, Antoine Royant, Lars-Oliver Essen, Ming-Daw Tsai, Junpei Yamamoto, Manuel Maestre-Reyna  
National Taiwan University, Taipei, Taiwan/Academia Sinica, Taipei, Taiwan/Osaka University, Osaka, Japan
- \*26P-169**    **Light-induced difference FTIR analysis of xenorhodopsin from Nanosalina at 77 K**  
Yuma Ito, Tatsuro Nishikino, Hideki Kandori, Yuji Furutani  
Department of Life Science and Applied Chemistry, Nagoya Institute of Technology
- 26P-170**    **Spectroscopic and functional characterization of novel viral rhodopsins**  
Takashi Nagata, Shunki Takaramoto, Andrey Rozenberg, Oded Bèjà, Keiichi Inoue  
The Institute for Solid State Physics, The University of Tokyo, Japan
- 26P-171**    **Modulation of intracellular calcium responses using photocyclic vertebrate visual pigments**  
Kazumi Sakai, Shion Aoki, Takahiro Yamashita  
Kyoto University

### Photobiology: Photosynthesis

- \*26P-172**    **Carotenoids binding effect of the photoreaction processes on Xanthorhodopsin**  
Shota Itakura, Yosuke Mizuno, Kota Katayama, Rei Abe-Yoshizumi, Ariel Chazan, Oded Bèjà, Hideki Kandori  
Graduate School of Engineering, Nagoya Institute of Technology, Aichi, Japan
- \*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

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- \*26P-174**    **Excitation energy transfer dynamics among antenna pigments in the  $\Delta$ pshX-reaction center from *Heliomicrobium modesticaldum***  
Risa Kojima, Kevin E Redding, Daisuke Kosumi, Hirozo Oh-oka  
College of Life Science, Ritsumeikan University, Shiga, 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, Ryo Kanno, Kaisei Mori, Ryuta Seto, Yoshiki Matsuda, Shinji Takenaka, Hiroyuki Mino, Malgorzata Hall, Endang R. Purba, Akira Mizoguchi, Bruno M. Humbel, Michael T. Madigan, Zheng-Yu Wang-Otomo, Kazutoshi Tani  
Graduate School of Agriculture, Kobe University, Nada, Kobe, Japan
- 26P-176**    **Characterization of an LH1–RC photocomplex from a novel Japanese hot spring purple sulfur bacterium, *Caldichromatium japonicum***  
Akane Minamino, Mohit. K. Saini, Endang R. Purba, Malgorzata Hall, Shinji Takenaka, Vera Thiel, Bruno M. Humbel, Michael T. Madigan, Zheng-Yu Wang-Otomo, Kazutoshi Tani, Yukihiro Kimura  
Department of Agrobioscience, Graduate School of Agriculture, Kobe University, Nada, Kobe, Japan

### Photobiology: Optogenetics & Optical control

- \*26P-177**    **Channel gating mechanism of K<sup>+</sup> selective channelrhodopsin, KCR**  
Ryotaro Shimamura, Shoko Hososhima, Hideki Kandori, Satoshi Tsunoda  
Department of Life Science and Applied Chemistry, Nagoya Institute of Technology
- \*26P-178**    **In vivo single-cell 3D optogenetics technology with light-field microscopy**  
Tomoyoshi Inoue, Ryuki Imamura, Naoya Kataoka, Akihiro Fukushima, Shin Usuki, Takuma Sugi  
Program of Biomedical Science, Graduate School of Integrated Sciences for Life, Hiroshima University, Hiroshima, Japan
- 26P-179**    **Identification of the important region for photoactivity in photoactivated adenyl cyclase**  
Minako Hirano, Masumi Takebe, Hinase Kondo, Mami Asakura, Toru Ide  
Grad. Sch. Health Sys., Okayama University

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### 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, Ryoichi Hirayama, Ayumi Shiro, Mika Maeda, Masanori Tomita  
The Wakasa Wan Energy Research Center, Fukui, Japan

### Origin of life & Evolution

- \*26P-181**      **Observation of Fatty Acid Vesicle Condensation on the Surface of Simulated Hydrothermal Vent Minerals**  
Shunto Harada, Hye-Eun Lee, Yamei Li, Ryuhei Nakamura  
Earth-Life Science Institute (ELSI), Tokyo Institute of Technology/RIKEN Center for Sustainable Resource Science
- \*26P-182**      **Genome reduction increases parasite sensitivity and promotes the evolution of endosymbiotic mutualism**  
Yuki Kanai, Chikara Furusawa  
Department of Biological Sciences, Graduate School of Science, The University of Tokyo
- \*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  
Cambridge University

### 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

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- \*26P-186**     **Construction of enzymatically assembled gel-in-liposome as artificial Cell model**  
Wancheng Zhang, Aileen Cooney, Lorenzo Di Michele, Yuval Elani, Tomoaki Matsuura  
Earth-life Science Institute, Tokyo Institute of Technology
- \*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, Masaya Oki, Yuusuke Yamaguchi  
Department of Applied Chemistry and Biotechnology, Graduate School of Engineering, University of Fukui/Life Science innovation center, University of Fukui, Fukui, Japan
- 26P-190**     **Cation-selective pores from POSS-decorated amphiphilic diblock copolymers**  
Denis G Knyazev, Nora Hagleitner-Ertuğrul, Asad Ullah, Nikolaus Goessweiner-Mohr, Hazrat Hussain, Peter Pohl  
Institute of Biophysics, Johannes Kepler University Linz, Gruberstr. 40, 4020, Linz, Austria

### Computational biology: Bioinformatics

- \*26P-191**     **Learning What AlphaFold2 Learned**  
Nozaki Kosei  
Department of Applied Physics, Graduate School of Engineering, Nagoya University.

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- \*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, Yuri Matsuzaki  
Dept Network Design, Sch Interdiscip Math Sci, Meiji Univ.

### 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, Vi Toan Lam, Hao Thai Nguyen, Akio Kitao, Atsuko Yamashita  
Life Science & Technology, Tokyo Institute of Technology, Japan
- \*26P-198**    **Decoding Peptide Solvation Dynamics: Uncovering the Influence of Hydrophobic Forces and Addressing Solvation Complexity via Multiway Statistical Analysis Techniques.**  
Monika Phougat, Narinder Singh Sahni, Devapriya Choudhury  
School of Computational & Integrative Sciences, Jawaharlal Nehru University, New Delhi, India

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- \*26P-199**     **Ubiquinone/ubiquinol exchange pathway in the photosynthetic RC-LH1 supercomplex**  
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, Lucie Delemotte, Sara Liin  
Division of Neurobiology, Department of Biomedical and Clinical Sciences, Linköping University, Linköping, 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 Akmalayati Sulong  
Department of Chemistry, Quantum Information Science and Technology (QIST), Faculty of Science, University Malaya, 50603 Kuala Lumpur, Malaysia /Institute for Molecular Science, Myodajji, Okazaki 444-8787, Japan
- \*26P-203**     **Molecular Dynamics Study on the Solvent Influence and Stability of the Aspirin-Hydroxypropyl- $\beta$ -Cyclodextrin Complex Structure**  
Helmia Jayyinnisya, 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, Chishu Homma, Eiji Yamamoto, Yuhei Hayamizu  
Tokyo Tech
- \*26P-205**     **Docking and Molecular Dynamics Simulation Study of BAK1 and BRI1 Proteins in Arabidopsis thaliana Plant**  
Lince - Meriko, Helmia Jayyinnisya, Dedy Rendrawan,  
Kazutomo Kawaguchi, Hidemi Nagao  
Kanazawa University



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- 26P-206**     **Hydrogen Bond Energies in Helical Secondary Structures Dissected by Negative Fragmentation Approach and Density Functional Theory**  
Hiroko X Kondo, Haruki Nakamura, Yu Takano  
Kitami Institute of Technology
- 26P-207**     **Insight into structural propagating mechanism of photoactivated adenylate cyclase OaPAC by microsecond molecular simulation.**  
Akiya Fukuda, Masahiko Taguchi, Shun Sakuraba, Justin Chan, Eriko Nango, Hidetoshi Kono  
Graduate School of Science, Tohoku University
- 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, Puey Ounjai, Tanadet Pipatpolkai  
Department of Biology, Faculty of Science, Mahidol University, Bangkok, Thailand 10400
- 26P-210**     **Development and Application of a Protocol for Predicting Membrane Permeability of Cyclic Peptides Based on Molecular Dynamics Simulations**  
Masatake Sugita, Takuya Fujie, Keisuke Yanagisawa, Masahito Ohue, Yutaka Akiyama  
Department of Computer Science, School of Computing, Tokyo Institute of Technology, W3-34, 2-12-1, Ookayama, Meguro-ku, Tokyo, Japan/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, Kenji Mizuguchi  
Artificial Intelligence Center for Health and Biomedical Research, National Institutes of Biomedical Innovation, Health, and Nutrition, Osaka, Japan

## Poster Sessions

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- 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, Norio Yoshida  
Institute for Materials Chemistry and Engineering, Kyushu University/Interdisciplinary Graduate School of Engineering Sciences, Kyushu 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
- 26P-215**     **Molecular dynamics method for studying a flow on lipid bilayer**  
Masaki Otawa, Satoru G. Itoh, Hisashi Okumura  
The Graduate University for Advanced Studies/Institute for Molecular Science

### Computational biology: Biological modeling and simulation

- \*26P-216**     **Metabolome Analysis in Mice Liver Using Thermodynamics**  
Takumi Abekawa, Satoshi Ohno, Shinya Kuroda  
Department of Biological Sciences, School of Science, University of Tokyo, Tokyo, Japan
- \*26P-217**     **INVESTIGATION OF FACTORS AFFECTING THE QUALITY OF SINGLE PHOTON EMISSION COMPUTED TOMOGRAPHY (SPECT) IMAGES: A MONTE CARLO SIMULATION STUDY**  
Mercy Amondj, Jared Ombiro, Sankara Aluko, Duke oeba  
School of Pure, Applied and Health Sciences, Maasai Mara University. P.O. Box 861-20500, Narok, Kenya. mercyamondi161@gmail.com
- \*26P-218**     **Elucidating the adaptive mechanical behaviors of actomyosin bundles in cells**  
Shihang Ding, Taeyoon Kim, Shinji Deguchi  
Graduate School of Engineering Science, Osaka University, Osaka, Japan

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- \*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
- \*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](#), Nen Saito, Shuji Ishihara  
Graduate School of Arts and Sciences, 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](#), Yusuke Himeoka, Tomoaki Matsuura, Yoshihiro Shimizu, Chikara Furusawa  
Department of Physics, Graduate School of Science, The University of Tokyo, Tokyo, Japan
- 26P-224**    **Coevolution of functionality and foldability of lattice proteins**  
Norifumi Maruyama, [Macoto Kikuchi](#)  
Cybermedia center, Osaka University/Department of Physics, Osaka University
- 26P-225**    **Live imaging-based inference of mechanical potential of cell-cell interaction in 3D-multicellular systems**  
[Hiroshi Koyama](#), Toshihiko Fujimori  
Div. Embryology, National Institute for Basic Biology, Japan/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](#), Rintaro Inoue, Ken Morishima, Masaaki Sugiyama  
Department of Physics, Faculty of Science and Technology, Keio University/RIKEN SPring-8 Center

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### 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, Atsuko H. Iwane, Yuichi Togashi  
Ritsumeikan University
- \*26P-228**    **Structure changes in the ABC transporter cycle using nonlinear morphing method, MOVE-DM.**  
Shota Shimogochi, Kazuhi Harai, Ryota Kiyooka, Naoyuki Miyashita  
Grad. Sch. BOST, KINDAI Univ.
- 26P-229**    **Predicting Novel PLP-binding Proteins Using Transfer Learning of Graph Neural Network-based Ligand-binding Site Prediction**  
Masafumi Shionyu, Momoka Nakamoto, Atsushi Hijikata,  
Takashi Nakamura, Yukio Mukai  
Graduate School of Bioscience, Nagahama Institute of Bio-Science and Technology,  
Shiga, Japan

### Mathematical & Theoretical biology

- \*26P-230**    **Population dynamics of generalist/specialist strategies in the feast-famine cycle**  
Rintaro Niimi, Chikara Furusawa, Yusuke Himeoka  
Graduate School of Science, the University of Tokyo
- \*26P-231**    **Mathematically deriving loop mobility for single protein structures**  
Virginia Apostolopoulou, Nicholas Pearce, Helen Ginn  
Hamburg Centre for Ultrafast Imaging, Universität Hamburg, Luruper Chaussee 149,  
DE-22761, Hamburg, Germany
- \*26P-232**    **Appearance and adaptive properties of bow-tie structures from simple metabolic networks**  
Yudai Iyoda, Chikara Furusawa, Yusuke Himeoka  
Graduate School of Science, The University of Tokyo, 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

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- 26P-234**     **Evaluation of different machine learning models applied to diagnostics and treatment success at the pulmonary tuberculosis**  
Anastasia Lavrova, Diljara Esmedlyaeva, Artem Veselsky, Pavel Gavrilov, Eugene Postnikov  
Saint-Petersburg State Research Institute of Phthysiopulmonology, 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, Frédéric van Wijland, Jean-Baptiste Fournier  
University of Tokyo

### 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
- 26P-239**     **3D structural determination of biological ensembles using high-order spatial correlations in single-particle X-ray scattering**  
Wenyang Zhao, Osamu Miyashita, Miki Nakano, Florence Tama  
RIKEN Center for Computational Science, Kobe, Japan

## Poster Sessions

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- 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, Koichiro M. Hirose, Miki Kanno, Yasunari Yokota, Kenichi G. N. Suzuki  
UGSAS, Gifu Univ. Gifu, Japan
- \*26P-243** Development of Fluorescent Thermometers Based on Carbon Quantum Dots with Various Detection Modes  
Yuki S. Kato, Shingo Sotoma, Yukiho Shimazaki, Shunsuke Chuma, Kohki Okabe, Madoka Suzuki, Yoshie Harada  
Department of Biological Sciences, School of Science, Osaka University, Osaka, Japan
- \*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, Kenichi Umeda, Noriyuki Kodera  
Grad. Sch. Math. & Phys., Kanazawa Univ.

## Wednesday, June 26

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- \*26P-246**    **Live-cell imaging defines a threshold in CDK activity at the G2/M transition**  
Hironori Sugiyama, Yuhei Goto, Yohei Kondo, Damien Coudreuse, Kazuhiro Aoki  
The Exploratory Research Center on Life and Living Systems
- \*26P-247**    **Elucidation of various IL-1 $\alpha$ / $\beta$  release control mechanisms in cellular inflammatory responses by live-cell imaging of secretion activity.**  
Yu Peng, Zhuohao Yang, Masahiro Nagata  
Laboratory for Nanobiology, Institute for Protein Research, Osaka University
- \*26P-248**    **Cryogenic X-ray Ptychographic Imaging of Cultured Cells toward Visualization of Hierarchical Structures of Chromatin**  
Yuta Kinami, Kurumi Nishimagi, Kosei Harada, Masayoshi Nakasako, Yukako Oma, Masahiko Harata, Yuki Takayama  
Graduate School of Agricultural Science, Tohoku University, Sendai, Japan/RIKEN SPring-8 Center, Hyogo, Japan
- \*26P-249**    **X-ray diffraction imaging tomography at cryogenic temperature is powerful to reveal 3D structures of biological specimens**  
Kosei Harada, Yuki Takayama, Masayoshi Nakasako  
Faculty of Science and Technology, Keio University, Yokohama, Japan/RIKEN SPring-8 Center, Hyogo, Japan
- \*26P-250**    **Development of nano-endoscopic high-speed atomic force microscopy**  
Hikaru Ichida, Kenichi Umeda, Mohammad Shahidul Alam, Risa Omura, Kudo Makiko, Takehiko Ichikawa, Takeshi Fukuma, Takahiro Nakayama, Mikihiro Shibata, Noriyuki Kodera  
Grad. Sch. NanoLS., Kanazawa Univ.
- 26P-251**    **CTCF-mediated Chromatin Looping is Coupled to the Formation of Phase-separated Transcriptional Condensate**  
Ryanguen Lee, Moo-Koo Kang, Yong-Jin Kim, Bobae Yang, Hwanyong Shim  
Department of Biological Sciences, Korea Advanced Institute of Science and Technology (KAIST)

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- 26P-252**     **Mechanical properties of hiPSC derived-cardiomyocytes: investigating beating and non-beating cell's nucleus via Nanoendoscopy-AFM**  
Alexis S. Borowiak, T. Ichikawa, M. Ito, T. Shimi, Y. Kono, R. Nitta, T. Fukuma  
Nano Life Science Institute, Kanazawa University, Kakuma-machi, Kanazawa 920-1192, Japan
- 26P-253**     **New mode of intercellular communication: direct vesicle delivery to neighboring cells**  
Tomohiro Minakawa, Fumiyoshi Ishidate, Takahiro K. Fujiwara, Jun K. Yamashita  
Department of Cellular and Tissue Communication, Graduate School of Medicine, The University of Tokyo, Tokyo, 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

### Bioengineering

- \*26P-255**     **Direct and continuous monitoring of multi-component antibiotic gentamicin in blood**  
Chen Chen, Changjian Zhao, Yu Wang, Jia Geng  
Department of Laboratory Medicine, State Key Laboratory of Biotherapy and Cancer Center, West China Hospital, Sichuan University and Collaborative Innovation Center, Chengdu 610041 China./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, Shingo Sotoma, Madoka Suzuki, Yoshie Harada  
Institute for Protein Research, 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



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- \*26P-258**     **Redox-Active Liquid-Liquid Phase Separation Materials Promote Oxidative Protein Folding**  
Yukino Yamashita, Munehiro Kumashiro, Tomohide Saio, Takahiro Muraoka  
Department of Applied Chemistry, Graduate School of Engineering, Tokyo University of Agriculture and Technology
- 26P-259**     **SeeDB-Live: minimally invasive optical clearing media for fluorescence imaging of live tissue ex vivo and in vivo**  
Shigenori Inagaki, Nao Tamagawa, Yuki Kambe, Rei Yagasaki, Aki Teranishi, Misato Miyagawa, Hikari Takeshima, Shunki Tamura, Satoshi Fujimoto, Yuki Naito, Keisuke Ito, Hideki Enomoto, Katsuhiko Hayashi, Takashi Sato, Yoshiaki Tagawa, Satoru Okuda, Tatsuo Sato, Takeshi Imai  
Kyushu University

### Crystal growth & Crystallization technique

- \*26P-260**     **Emergence of order from proteins under nucleation**  
Dimitrios Triantafyllidis, Suraksha Smitha, Felix Lehmkuhler, Arwen R. Pearson  
Hamburg Centre for Ultrafast Imaging, Institute for Nanostructure and Solid State Physics, Universität Hamburg, Luruper Chaussee 149, 22761 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, Yuji Itoh, Naoya Kaneda, Satoshi Takahashi  
IMRAM, Tohoku Univ./Grad. Sch. Life Sci., Tohoku Univ.
- 26P-263**     **Pseudo-luciferase activity of the SARS-CoV-2 spike protein**  
Ryo Nishihara, Hisham M Dokainish, Yoshiki Kihara, Yuji Sugita, Ryoji Kurita  
Health and Medical Research Institute, National Institute of Advanced Industrial Science and Technology/Japan Science and Technology Agency, PRESTO

## Poster Sessions

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### Mechanosensing and Mechanobiology, Biological Temperature

- \*26P-264**    **Tracking of adipogenesis process of mesenchymal stem cells cultured in the spherical microwells**  
You-Hsuan Liu, Karen G. Rosal, Chon-In Cheong, Feng-Chiao Tsai, Keng-Hui Lin  
Institute of Physics, Academia Sinica, 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, Masayo Inoue, Noritaka Masaki, Masako Ohtaki, Taro Toyota  
Nagaoka University of Technology

### Biophysics of disease

- \*26P-267**    **Tissue Repair in Colorectal Cancer Organoids**  
Jimmy Van Hear, Yanlan Mao, Chris Tape  
Laboratory for Molecular Cell Biology, University College London
- \*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, Ryan Gouveia e Melo, Luís Mendes Pedro, Filomena Carvalho, Nuno C. Santos  
Instituto de Medicina Molecular, Faculdade de Medicina, Universidade de Lisboa, Lisbon, Portugal

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### 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, Yusuke Sato, Tetsuji Itoh, Seiichi Nishizawa  
Graduate School of Science, Tohoku University
- \*26P-271**     **Enhancing Tomato Shelf Life through Nanoparticle-Based Preservation Techniques**  
Kummari Swathi, CH.Shanthi Devi  
Research Scholar, Andhra University, Visakhapatnam/Assistant Professor, St. Francis College for Women, Hyderabad
- 26P-272**     **NOVEL ANTIBACTERIAL AGENTS IN TREATING MULTIDRUG RESISTANT BACTERIA CAUSING WOUND INFECTIONS IN DIABETIC PATIENTS**  
Shailaja Raj Marla, Mithali Raj Marla, Maria Shajan  
St. Francis College For Women