

1日目 (11月14日(火)) / Day 1 (Nov. 14 Tue.) 17:00 ~ 19:00

01A. タンパク質：構造 / 01A. Protein: Structure

- 1Pos001 金属イオン結合により構造変化する α ヘリカルペプチドにおける疎水性コア形成残基の影響
Effects of hydrophobic core residues on conformational changes of α -helical peptides induced upon metal-ion binding
Shinya Nishatani¹, Yumi Kitagawa², Satoshi Nagao³, Hiroshi Sekiguchi³, Masayuki Oda^{1,2} (¹Faculty Life. Environ. Sci., Kyoto Pref. Univ, ²Grad. Sch. Life Environ. Sci., Kyoto Pref. Univ, ³Japan Synchrotron Radiation Research Institute (JASRI))
- 1Pos002 AlphaFold 構造データベースからの「二刀流 NTPase」の発見
Dual-wield NTPases: a novel protein family mined from AlphaFold protein structure database
Koya Sakuma¹, Ryotaro Koike¹, Motonori Ota^{1,2} (¹Grad. Sch. Informatics, Nagoya University, ²Inst. for Glyco-core Research, Nagoya University)
- 1Pos003 乾眼クマシのリボソーム in-situ 構造解析
In-situ Structural Analysis of Tardigrades Ribosomes in Anhydrobiotic State
Hiroko Takazaki¹, Taiga Horii², Takayuki Kato¹ (¹IPR, Univ. Osaka, ²Grad. Sch. Sci., Univ. Osaka)
- 1Pos004 Real-time imaging and analysis of human SAA aggregation using quantum dots
Liangquan Shi, Tuya Gegen, Masahiro Kuragano, Kiyotaka Tokuraku (*Muroran Institute of Technology University*)
- 1Pos005 量子ドットを用いたアミリン凝集体のリアルタイム 3D イメージングと阻害解析
Real-time 3D Imaging and Inhibition Analysis of Amylin Aggregations Using Quantum Dots
Xiaoyu Yin, Ziwei Liu, Tuya Gegen, Hayate Sawatari, Keiya Shimamori, Masahiro Kuragano, Kiyotaka Tokuraku (*Muroran Institute of Technology*)
- 1Pos006 マイクロフルイディックチップを使った室温条件下でのフェリチンの構造決定
Structure determination of Ferritin at room temperature in microfluidic chips
Yusuke Kono¹, Leonard Chavas^{1,2} (¹Dept. of Appl. Phys., Nagoya Univ., ²Synchrotron Radiation Center, Nagoya Univ.)
- 1Pos007 Map ping an enzyme active site with time-resolved serial femtosecond crystallography by mixing injectors
Fangjia Luo¹, Michihiro Sugahara², Tetsunari Kimura³, Takanori Nakane⁴, Keitaro Yamashita⁵, Kazuya Hasegawa¹, Ayumi Yamashita^{2,6}, Tomoyuki Tanaka^{2,6}, Toshi Arima^{2,6}, Rie Tanaka^{2,6}, Eiichi Mizohata⁴, Mamoru Suzuki⁴, Tetsuya Masuda⁷, Kensuke Tono¹, So Iwata^{2,6}, Eriko Nango^{2,8} (¹JASRI, ²RIKEN Harima, ³Kobe University, ⁴Osaka University, ⁵MRC Laboratory of Molecular Biology, ⁶Kyoto University, ⁷Ryukoku University, ⁸Tohoku University)
- 1Pos008 Damage-free Crystal Structure of Fluorescent Protein, mBanana Reveals the Actual Chromophore Conformation
Nipawan Nuemket^{1,2}, Fangjia Luo¹, Takaaki Fujiwara³, Norimichi Nomura⁴, So Iwata^{2,4}, Eriko Nango^{2,3} (¹Japan Synchrotron Radiation Research Institute, ²RIKEN, ³Tohoku University, ⁴Kyoto University)
- 1Pos009 時計タンパク質 KaiA-KaiC 複合体の溶液構造解析
Structural analysis of clock protein KaiA-KaiC complex in solution
Ken Morishima¹, Masahiro Shimizu¹, Yasuhiro Yunoki¹, Lionel Porcar², Anne Martel², Rintaro Inoue¹, Masaaki Sugiyama¹ (¹Institute for Integrated Radiation and Nuclear Science, Kyoto University, ²Institut Laue-Langevin)

- 1Pos010 左巻き $\beta\alpha\beta$ モチーフを含む新規フォールドタンパク質のデノボデザイン
De novo design of left-handed $\beta\alpha\beta$ -motifs-containing proteins
Hirotto Murata¹, Riu Hirano¹, Swagatha Ghosh¹, Leonard Chavas^{1,2}, George Chikenji¹ (¹*Dept of Appl. Phys., Grad. Sch of Eng., Nagoya Univ.*, ²*Synchrotron Radiation Research Center, Nagoya Univ.*)
- 1Pos011 Cryo-EM structure of the Mfa1 minor type V pilus from the periodontal pathogen *Porphyromonas gingivalis*
Satoshi Shibata^{1,2}, Mikio Shoji³, Hideyuki Matsunami², Matthias Wolf² (¹*Div. Bacteriology, Fac. Med., Tottori Univ.*, ²*Mol. cryo-EM unit, OIST*, ³*Grad. Sch. Biomed. Sci., NagaNagasaki Univ.*)
- 1Pos012 Crystal Structures of AMPA Receptor Complexed with a Ligand by X-ray Free Electron Laser
Hansel Adriel¹, Takaaki Fujiwara¹, Kyohei Soga², Fangjia Luo³, Shigeki Kiyonaka², Eriko Nango^{1,3}
(¹*Institute of Multidisciplinary Research for Advanced Materials, Tohoku University, Katahira 2-1-1, Aoba-ku, Sendai, Japan, 980-8577*, ²*Graduate School of Engineering, Nagoya University, Furo-cho, Chigusa-ku, Nagoya, Japan, 464-8603*, ³*RIKEN SPring-8 Center, 1-1-1 Kouto, Sayo-cho, Sayo-gun, Hyogo 679-5148, Japan*)

01B. タンパク質：構造機能相関／01B. Protein: Structure & Function

- 1Pos013 ヒスタミン H₁ 受容体に対する E/Z-Doxepin 立体異性体の結合評価
Binding properties of E/Z-Doxepin isomers to histamine H₁ receptor
Hiroto Kaneko¹, Ryunosuke Korenaga¹, Ryota Nakamura², Shinnosuke Kawai², Tadashi Ando², **Mitsunori Shiroishi**¹ (¹*Dept. of Biol. Sci. and Technol., Tokyo Univ. of Sci.*, ²*Dept. of Appl. Electronics, Tokyo Univ. of Sci.*)
- 1Pos014 ヒスタミン H₁ 受容体に対する E/Z-Doxepin 立体異性体の結合自由エネルギー計算
Free energy calculations of E- and Z-doxepin isomers binding to histamine H₁ receptor
Ryota Nakamura¹, Shinnosuke Kawai¹, Hiroto Kaneko², Ryunosuke Korenaga², Tadashi Ando¹, Mitsunori Shiroishi² (¹*Dept. of Appl. Electronics., Tokyo Univ. of Sci.*, ²*Dept. of Biol. Sci. and Technol., Tokyo Univ. of Sci.*)
- 1Pos015 Glu48 と His124 の変異による大腸菌リボヌクレアーゼ HI の金属イオン配位解析
Metal-ion coordination in *Escherichia coli* ribonuclease HI, as revealed by mutation analyses of Glu48 and His124
Yumi Kitagawa¹, Zengwei Liao¹, Takuji Oyama², Kosuke Morikawa¹, Masayuki Oda¹ (¹*Grad. Sch. Life Environ. Sci., Kyoto Pref. Univ.*, ²*Faculty Life Environ. Sci., Yamashashi Univ.*)
- 1Pos016 重鎖 CDR3 ループ内ジスルフィド結合が抗原結合や安定性に与える影響
Role of a disulfide bond in H-CDR3 loop of antibody for antigen binding and stability
Mutsumi Yoshida¹, Yumi Kitagawa¹, Masayuki Oda¹, Nobutaka Numoto², Nobutoshi Ito² (¹*Grad. Sch. Life. Environ. Sci., Kyoto Pref. Univ.*, ²*Med. Res. Inst., Tokyo Med. Dent. Univ.*)
- 1Pos017 ショウジョウバエの左右非対称性を制御する MyoIC と MyoID の解析
Analysis of MyoIC and MyoID controlling left-right asymmetry in *Drosophila*
Suguru Sato¹, Kohe Yoshimura¹, Takeshi Haraguchi², Asuka Yamaguchi³, Kenji Matsuno³, Kohji Ito²
(¹*Grad. Sch. Sci., Univ. Chiba*, ²*Sch. Sci., Univ. Chiba*, ³*Grad. Sch. Sci., Univ. Osaka*)
- 1Pos018 電荷ペプチドタグ付き抗 EGFR-VHH 抗体の生物物理学的解析と EGFR への結合評価
Biophysical characterization of charged peptide-tagged anti-EGFR-VHHs and evaluation of their binding to EGFR
Yukako Shimatake¹, Md. Golam Kibria¹, Sawaros Onchaiya¹, Yoko Akazawa², Yoshihisa Hagihara², Yutaka Kuroda¹ (¹*Grad. Sch. Eng., TUAT*, ²*Kansai Inst., AIST*)

- 1Pos019 時間分解蛍光異方性測定による緑色蛍光タンパク質 eGFP の蛍光共鳴エネルギー移動の観測
FRET processes of enhanced green fluorescent protein (eGFP) observed by picosecond time-resolved fluorescence anisotropy measurements
Yuna Kinoshita¹, Mamoru Shigeno¹, Haruko Hosoi^{1,2} (¹*Grad. Sch. Sci., Toho Univ.*, ²*Fac. Sci., Toho Univ.*)
- 1Pos020 Crystallographic, SAXS and simulation studies on LTA4 hydrolases reveal conformational differences related to catalytic mechanism
Mahmudul Hasan^{1,2}, **Sandhya P. Tiwari**², Jesper Z. Haeggström³, Gert-Jan Bekker², Kenji Mizuguchi², Marjolein Thunnissen⁴ (¹*Biochemistry and Structural Biology, Lund University, Sweden*, ²*Institute for Protein Research, Osaka University*, ³*Medical Biochemistry and Biophysics, Karolinska Institute, Stockholm, Sweden*, ⁴*MAX IV Laboratory, Lund University, Sweden*)

01C. タンパク質：物性 / 01C. Protein: Physical Property

- 1Pos021 分子動力学計算による変性剤中におけるタンパク質の熱力学的研究
Molecular dynamics study of thermodynamics of proteins in denaturants
Hitomi Baba¹, Mafumi Hishida², Go Watanabe^{1,3,4} (¹*Grad. Sch. Sci., Kitasato Univ.*, ²*Sch. Sci., Tokyo Univ. Sci.*, ³*Sch. Front. Eng., Kitasato Univ.*, ⁴*KISTEC*)
- 1Pos022 X線小角散乱解析による磁場応答蛋白質の構造学的研究
Structural studies of magnetic field-responsive proteins by small-angle X-ray scattering analysis
Shigeki Arai¹, Rumi Shimizu¹, Motoyasu Adachi¹, Mitsuhiro Hirai² (*Institute for Quantum Life Science, QST*, ²*Gunma University*)
- 1Pos023 ニワトリ卵白由来リゾチームの熱凝集の前駆体とされる不可逆的なオリゴマーの物性解析
Physicochemical characterization of irreversible oligomers considered precursors of thermal aggregation of hen egg white lysozyme
Tomonori Saotome, Shun-ichi Kidokoro (*Nagaoka Univ. of Tech.*)
- 1Pos024 日本脳炎ウイルス由来 ED3 タンパク質と金属イオンの相互作用による会合体形成の物理化学的解析
Physicochemical analysis of aggregation of Japanese encephalitis virus-derived ED3 protein with metal ions
Nanaka Morikoshi, MD. Din Islam, Subbaian Brindha, Takahiro Yosizue, Yutaka Kuroda (*Grad. Sch. Eng., TUAT*)
- 1Pos025 Bacterial expression of the influenza A H1N1 receptor-binding domain protein
Le Ngoc Thao Tu, Tharangani Rathnayaka, Yutaka Kuroda (*Grad. Sch. Eng. TUAT*)
- 1Pos026 ペプチド結合平面性の部位特異的緩和がβタンパク質の熱安定性に及ぼす影響
Effect of site-specific relaxation of peptide bond planarity on thermal stability of beta-proteins
Kaori Chiba¹, Tomonori Saotome² (¹*Indust. Eng. Natl. Inst. Tech, Ibaraki Coll.*, ²*Dept. of Mate. Sci. and Bio., Nagaoka Univ. of Tech.*)
- 1Pos027 高圧 native 電気泳動速度法を用いたオリゴマータンパク質の安定性に関する研究
The thermodynamical and kinetic studies on the stability of oligomeric protein by using high-pressure native PAGE velocity method
Ryo Ishiguro, **Tetsuro Fujisawa** (*Fac. Eng., Gifu Univ.*)
- 1Pos028 クモ糸フィブロインから再構成されたナノファイバーを用いたフィルムの調製
Preparation of films with nanofibers reconstructed from spider silk fibroin
Haruya Kajimoto¹, Kento Yonezawa², Takehiro Sato³, Yoichi Yamazaki¹, Sachiko Toma-Fukai¹, Hironari Kamikubo^{1,2} (¹*NAIST, MS*, ²*NAIST, CDG*, ³*Spiber Inc.*)

- 1Pos029 アミロイド β タンパク質の分子構造動態と凝集に D-アスパラギン酸が与える影響
Effect of D-Aspartic Acid on the Conformational Dynamics and Aggregation of Amyloid-β₁₋₄₂ Protein
Yu Fukuda¹, Takeru Kameda¹, Shin-ichi Tate³, Yuichi Togashi^{1,2} (¹*Coll. Life Sci., Ritsumeikan Univ.*, ²*Riken BDR*, ³*Grad. Sch. Integ. Sci. Life, Hiroshima Univ.*)
- 1Pos030 ミトコンドリアにおけるタンパク質膜挿入の構造基盤
Structural basis of the protein membrane insertion by the mitochondrial protein assembly gate
Hironori Takeda (*Grad. Sch. Sci. Tech. Inno., Kobe Univ.*)

01D. タンパク質：機能 / 01D. Protein: Function

- 1Pos031 Investigation of the effect of ATP/ADP for formation of 2-Cys peroxiredoxin (Prx2) high molecular weight complex
NgocTrang Tran¹, Hiroki Konno² (¹*Grad. Sch. Frontier Science Initiative, Kanazawa Univ.*, ²*WPI Nano Life Science Institute, Kanazawa Univ.*)
- 1Pos032 Orchestration of proteins in a Kai clock system 2
Masaaki Sugiyama¹, Ken Morishima¹, Yasuhiro Yunoki¹, Rintaro Inoue¹, Hirokazu Yagi², Koichi Kato³ (¹*KURNS*, ²*Grad. Sch. Phar., Nagoya City Univ.*, ³*ExCELLS*)
- 1Pos033 エネルギー再生系酵素であるポリリン酸キナーゼ 2 クラス III の広い基質特異性のメカニズムの解明
Characterization of promiscuity of energy regeneration enzyme polyphosphate kinase 2 class III
Ako Kagawa¹, Ryusei Matsumoto², Takayoshi Watanabe¹, Liam Longo¹, Tomoaki Matsuura¹ (¹*ELSI, Tokyo Tech*, ²*Dept. Life Sci. Tech., Tokyo Tech*)
- 1Pos034 ファージディスプレイ法によるポリエチレンテレフタレート吸着タンパク質の開発
Development of polyethylene terephthalate binding protein by phage display method
Yoshihito Hashino¹, Akihiko Nakamura^{1,2} (¹*Faculty of Agriculture, Shizuoka University*, ²*Institute for Molecular Science*)
- 1Pos035 高活性 PET 分解酵素の高速スクリーニング法の確立と実証
Development and demonstration of high-throughput screening method for highly active PET hydrolase
Yui Ogura¹, Akihiko Nakamura^{1,2} (¹*Faculty of Agriculture, Shizuoka University*, ²*Institute for Molecular Science*)
- 1Pos036 一過的な静水圧印加後における GEF ドメイン存在時の Ras の遅発的活性化
Delayed activation of Ras in the presence of GEF after application of transient hydrostatic pressure
Teruhiko Matsuda¹, Minki Chang², Yuki Taninaka², Katsuko Furukawa², Takashi Ushida³, Taro QP Uyeda¹ (¹*Dept. Pure & Appl. Physics, Grad. Sch. Adv. Sci. & Eng., Waseda Univ.*, ²*Dept. Bio Eng., Fac. Eng., Univ. Tokyo*, ³*Dept. Mech. Eng., Fac. Eng., Univ. Tokyo*)
- 1Pos037 Clarification of the color tuning mechanism between GPR and BPR by FTIR spectroscopy
Tatsuro Nishikino¹, Teppei Sugimoto¹, Hideki Kandori^{1,2} (¹*Department of Life Science and Applied Chemistry, Nagoya Institute of Technology*, ²*OptoBioTechnology Research Center, Nagoya Institute of Technology*)
- 1Pos038 QM/MM metadynamics を使った EcoRV の DNA 加水分解における複数の反応経路
Reaction Pathways in DNA Hydrolysis of EcoRV Calculated by QM/MM Metadynamics
Itaru Onishi¹, Mika Mitsumatsu¹, Ryoutarou Matsuda¹, Norio Yoshida², Fumio Hirata³, **Masayuki Irisa**¹ (¹*Comp. Sci. and Sys. Eng., Kyushu Inst. Tech.*, ²*Grad. Sch. Inform., Nagoya Univ.*, ³*Inst. Mol. Sci.*)

- 1Pos039 深層学習を用いた GIST マップの高速計算：リガンド結合に伴う水の自由エネルギー変化の計算への応用
A Fast Computation of GIST Maps Using a Deep Learning: Application to the Computation of Free-Energy Change of Water upon Ligand Binding
Yusaku Fukushima, Yuki Ito, **Takashi Yoshidome** (*Dep. of Appl. Phys., Tohoku Univ.*)
- 1Pos040 二次元蛍光寿命相関分光法による酵素反応観測の試み：CRISPR-Cas13a の RNA 分解反応
An attempt to detect enzymatic reaction by two-dimensional fluorescence lifetime correlation spectroscopy: RNA cleavage by CRISPR-Cas13a
Tsukasa Tokita¹, Bidyut Sarkar¹, Hajime Shinoda², Kunihiko Ishii^{1,3}, Rikiya Watanabe², Tahei Tahara^{1,3}
(¹*Molecular Spectroscopy Laboratory, RIKEN, Japan*, ²*Molecular Physiology Laboratory, RIKEN, Japan*, ³*RIKEN Center for Advanced Photonics, Japan*)
- 1Pos041 全光子記録方式による二色蛍光相関分光法：ナノ秒からミリ秒領域におけるタンパク質ダイナミクスの観測
Lossless photon recording of two-color fluorescence correlation spectroscopy for protein dynamics investigations from nano to milliseconds
Yutaka Sano^{1,2}, Yuji Itoh^{1,2}, Atsuhito Fukasawa³, Hiroyuki Oikawa^{1,2}, Satoshi Takahashi^{1,2} (*¹Institute of Multidisciplinary Research for Advanced Materials, Tohoku University*, *²Department of Chemistry, Graduate School of Science, Tohoku University*, *³Hamamatsu Photonics K. K.*)
- 1Pos042 リコンビナント LOX-1,CD36 および LDL 受容体に結合する LDL の硬さ特性
Physical properties of low-density lipoproteins recognized by recombinant LOX-1,CD36 and LDL receptor
Seiji Takeda¹, Kanako Ushirogata², Takechiro Kikuchi¹, Yunoshin Sasaki¹, Subagyo Agus³, Taichi Takasuka² (*¹Dept. Pharm., Hokkaido Univ. of Sci.*, *²Grad. Sch. GFR., Hokkaido University*, *³Grad. Sch. Info. Sci.Tech., Hokkaido University*)
- 1Pos043 非生物発光タンパク質における擬似ルシフェラーゼ活性の発見と利用
Discovery and utilization of pseudo-luciferase activities in non-bioluminescent proteins
Ryo Nishihara^{1,2}, Ryoji Kurita¹ (*¹National Institute of Advanced Industrial Science and Technology (AIST)*, *²Japan Science and Technology Agency (JST), PRESTO*)
- 1Pos044 Advancing X-ray Diffraction: Versatile Capabilities and Future Prospects of BL2S1 at the Aichi Synchrotron
Leonard MGH Chavas, Yasufumi Umena, Hiroki Onoda (*Nagoya University Synchrotron-radiation Research center*)
- 1Pos045 グラファイト上におけるペプチドの自己組織化を利用した EggPC 脂質膜の展開
Utilizing Peptide Self-Assembly on Graphite for the formation of EggPC Lipid Membranes
Soichiro Kato¹, Kantaro Kikuchi¹, Takayuki Watanabe², Tomoaki Matsuura², Yuhei Hayamizu¹ (*¹Dept. of Mat. Sci. and Eng., Tokyo Tech.*, *²ELSI, Tokyo Tech.*)
- 1Pos046 Automated Density Extraction of Isomorphous Difference map and Occupancy-estimation for Conformer Fitting
Sriram Srinivasa Raghavan¹, Osamu Miyashita¹, Tama Florence^{1,2,3} (*¹RIKEN Center for Computational Science, Kobe, Japan*, *²Institute of Transformative Biomolecules (WPI-ITbM), Nagoya University, Aichi, Japan*, *³Department of Physics, Graduate School of Science, Nagoya University, Aichi, Japan.*)

- 1Pos047 タンパク質ディスプレイとマイクロウェルアレイチップを組み合わせた、個別生化学的評価型タンパク質スクリーニングシステムの開発
Protein screening system based on individual biochemical evaluation by the combination of protein display and microwell array chip
Shingo Ueno¹, Fumi Toshioka¹, Shoichi Tsuchiya¹, Takanori Ichiki^{1,2} (¹*iCONM, Kawasaki Inst. Industry. Promo.*, ²*Grad. Sch. Eng., Univ. Tokyo*)
- 1Pos048 ファインチューニング済み言語モデルを用いた VHH 抗体配列のベイズ最適化
Bayesian optimization of nanobody sequences with a fine-tuned language model
Hironori Matsubara, Yasuhiro Matsunaga (*Grad. Sch. Sci. Eng., Saitama Univ.*)
- 1Pos049 L グルタミン酸化酵素の基質認識の構造基盤
Structural basis of substrate recognition of L-glutamate oxidase
Yuka Ueda¹, Natsume Nakayama², Yoshika Yano², Kenji Inagaki², Takekawa Norihiro¹, Katsumi Imada¹ (¹*Dept. Macromol. Sci., Grad. Sch. Sci., Osaka Univ.*, ²*Grad. Sch. Env. & Life Sci.*)
- 1Pos050 非天然アミノ酸を用いたペプチド生合成を目指した AzpC の改変体の計算デザイン
Computational design of modified AzpC for peptide biosynthesis using nonnatural amino acids
Koki Miyake, Takashi Maruyama, Yoshitaka Moriwaki, Yohei Katsuyama, Yasuo Ohnishi, Tohru Terada (*The Graduate School of Agricultural and Life Sciences, The University of Tokyo*)
- 1Pos051 Development of fluorescent peptide aptamer targeting the SARS-CoV-2 spike protein using ribosome display
Shin Woong Kim^{1,2}, Yoshito Ito³, Noriko Minagawa³, Akiko Yumoto³, Yoshihiro Ito^{1,2,3}, Takanori Uzawa^{2,3} (¹*Department of Biological Sciences, Tokyo Metropolitan University*, ²*Nano Medical Engineering Laboratory, RIKEN Cluster for Pioneering Research*, ³*Emergent Bioengineering Materials Research Team, RIKEN Center for Emergent Matter Science*)
- 1Pos052 3D ドメインスワッピングに基づいた計算機設計による安定な c 型シトクロム 2 量体の創製
Construction of stable c-type cytochrome dimers utilizing computational design inspired by 3D domain swapping
Naoya Kobayashi¹, Yuma Yoshida¹, Hideaki Ogata², Tsuyoshi Mashima¹, Shun Hirota¹ (¹*NAIST, Mat. Sci.*, ²*Univ. Hyogo, Grad. Sch. Sci.*)
- 1Pos053 立体的に類似した構造モチーフを介した構造ドメイン組換えによるヘテロオリゴマータンパク質のコンビナトリアル設計法
Combinatorial design of heterooligomeric proteins by recombination of structural domains through sterically analogous structure motifs
Marino Yamamoto, Naoya Kobayashi, Shun Hirota (*Mat. Sci., NAIST*)
- 1Pos054 ペプチドアプタマー選出に向けたサイバー・フィジカルシステムの構築
Development of a cyber-physical system for peptide aptamer selection
Yoshito Ito, Noriko Minagawa, Akiko Yumoto, Yoshihiro Ito, **Takanori Uzawa** (*RIKEN*)

03. 膜タンパク質／03. Membrane proteins

- 1Pos055 膜内切断プロテアーゼ RseP のネイティブ質量分析による特性解析
Characterization of the intramembrane-cleaving protease RseP by native mass spectrometry
Michiko Tajiri, Tomoya Shida, Terukazu Nogi, Satoko Akashi (*Yokohama City Univ.*)
- 1Pos056 高速 AFM による多剤排出トランスポーター P-gp の機能ダイナミクス解析
HS-AFM Observation of Conformational Dynamics of ABC transporter P-gp
Yuto Nonaka¹, Norie Hamaguchi², Fumi Nakagawa², Takeshi Murata², Takayuki Uchihashi¹ (¹*Grad. Sch. Phys., Univ. Nagoya*, ²*Grad. Sch. sci., Univ. Chiba*)

- 1Pos057 異なる膜様環境下でのプロトンポンプ型ロドプシン RxR の物性、構造および機能の解析
Analysis of the physical properties, structure and function of proton-pumped rhodopsin RxR under different membrane-mimetic environments
Chihiro Kikuma¹, Rika Suzuki¹, Keiichi Kojima², Yuji Tokunaga³, Koh Takeuchi³, Yuki Sudo², Hideo Takahashi¹ (¹Grad. Sch. Med. Life Sci., YCU, ²Grad. Sch. Msd., Dent. and Pharma Sci., Univ. Okayama, ³Grad. Sch. Pharma Sci., Univ. Tokyo)
- 1Pos058 液胞膜内 delta-rhodopsin 発現酵母による光を用いた H⁺ 輸送と物質生産能の向上
Enhancement of H⁺ transport and bioproduction capacity by light for yeast expressing delta-rhodopsin in vacuolar membrane
Kaoru Daicho, Yoko Hirono, Hiroshi Kikukawa, Kentaro Tamura, Kiyotaka Hara (Grad.Sch.Integr.Pharm. Nutr. Sci., Univ. Shizuoka)
- 1Pos059 アデニン A2a 受容体と G タンパク質との結合のダイナミクスの解明：分子動力学シミュレーション研究による
Unveiling the dynamics of Adenosine A2a receptor coupling to the G proteins: a molecular dynamics simulation study
PhuocDuy Tran, Sari Hagimoto, Akio Kitao (Sch. Life Sci. Tech., TokyoTech)
- 1Pos060 高フッ素化ジパルミトイルホスファチジルコリン膜に再構成したバクテリオロドプシンの構造・機能の特徴
Structural and functional properties of bacteriorhodopsin reconstituted in highly fluorinated dipalmitoylphosphatidylcholine membranes
Daiki Kojima¹, Ai Nakagawara¹, Takafumi Shimoaka¹, Takashi Kikukawa², Toshiyuki Takagi³, Hiroshi Takahashi¹, Hideki Amii^{1,4}, Masashi Sonoyama^{1,4,5} (¹Grad. Sch. Sci. Tech., Gunma Univ., ²Fac. Adv. Life Sci., Hokkaido Univ., ³AIST, ⁴GLAR, Gunma Univ., ⁵GUCFW, Gunma Univ.)
- 1Pos061 リガンド結合の有無による MAO-B 二量体のダイナミクスの違い
The differences between the dynamics in MAO-B dimer with/without a ligand binding
Yoshitaka Tadokoro¹, Naoyuki Miyashita^{1,2} (¹Grad. Sch. BOST, KINDAI Univ., ²BOST, KINDAI Univ.)

04. DNA・DNA 結合タンパク質 / 04. DNA & DNA binding proteins

- 1Pos062 Hop2-Mnd1 and Swi5-Sfr1 Stimulate Dmc1 Filament Assembly Using Distinct Mechanisms
Hung-Wen Li¹, Wei Lee¹, Hiroshi Iwasaki², Hideo Tsubouchi² (¹Chemistry, Nat'l Taiwan Univ., ²Institute of Innovative Research, Tokyo Institute of Technology)
- 1Pos063 分子動力学シミュレーションによるインターカレーションした DNA の構造解析
Analysis of conformation of intercalated DNA using molecular dynamics simulations
Hisashi Ishida¹, Hidetoshi Kono^{1,2} (¹National Institutes for Quantum Science and Technology, ²Chiba University)
- 1Pos064 高速原子間力顕微鏡による FnCas9 の機能動態解明
High-speed atomic force microscopy reveals functional dynamics of Francisella novicida Cas9
Hideaki Tsukada¹, Mikihiko Shibata^{2,3} (¹Grad. Sch. Math. & Phys., Kanazawa Univ., ²WPI-NanoLSI, Kanazawa Univ., ³InFiniti, Kanazawa Univ.)
- 1Pos065 大腸菌 UvrD C 末端非構造化領域全欠損変異体の DNA 結合・巻き戻しダイナミクス
Dynamics of DNA binding and unwinding by *Escherichia coli* UvrD lacking the entire unstructured C-terminal region
Hiroaki Yokota (Grad. Sch. Creation New Photon. Indust.)
- 1Pos066 高速原子間力顕微鏡による転写因子 Photozipper の DNA 上での動態過程の観察
Dynamic process of a transcription factor, Photozipper, on DNA observed by high-speed atomic force microscopy
Akihiro Tsuji¹, Hayato Yamashita¹, Osamu Hisatomi², Masayuki Abe¹ (¹Grad. Sch. Eng. Sci., Osaka Univ., ²Grad. Sch. Sci., Osaka Univ.)

- 1Pos067 スピンラベル ESR によるヘテロクロマチンタンパク質 HP1 の動的構造研究：リン酸化・DNA・H3K9me3・相分離の効果
Structural dynamics of heterochromatin protein HP1 by spin labeling ESR: Effects of phosphorylation, DNA, H3K9me3, and phase separation
Isao Suetake^{2,3}, Kazunobu Sato⁴, Tomoaki Sugishita³, Yuichi Mishima³, Takeji Takui⁴, Hironobu Hojo³, Yoh Matsuki³, Toshimichi Fujiwara³, Makoto Miyata¹, **Toshiaki Arata**^{1,3} (¹*Dept. Biol., Grad. Sch. Sci., Osaka Met. Univ.*, ²*Nakamura Gakuen Univ.*, ³*IPR, Osaka Univ.*, ⁴*Dept. Chem., Grad. Sch. Sci., Osaka Met. Univ.*)
- 1Pos068 RNA ポリメラーゼ II がクロマチン構造を壊さずにヌクレオソームを通過する粗視化分子シミュレーション
Coarse-grained molecular simulations of RNA polymerase II passing through nucleosomes without disruption of chromatin
Takafumi Yamauchi, Fritz Nagac, Genki Shino, Tsuyoshi Terakawa, Giovanni Brandani, Shoji Takada (*Kyoto University*)

08. クロマチン・染色体 / 08. Chromatin & Chromosomes

- 1Pos069 Effect of the molecular crowding environment on the structure of polynucleosome
Tomoko Sunami¹, Amarjeet Kumar¹, Hidetoshi Kono^{1,2} (¹*National Institutes for Quantum Science and Technology*, ²*Chiba University*)
- 1Pos070 生きた細胞核内での粘弾性測定
Measurement of Viscoelasticity in Nucleus of Living Cell
Akinori Miyamoto^{1,2}, Ryota Orii³, Tetsuya Hiraiwa^{2,4}, Hirokazu Tanimoto³, Yoshihiro Murayama¹ (¹*Department of Applied Physics, Tokyo University of Agriculture and Technology, Japan*, ²*Mechanobiology Institute, National University of Singapore, Singapore*, ³*Department of Science, Yokohama City University, Japan*, ⁴*Department of Physics, Academia Sinica, Taiwan*)
- 1Pos071 Building a Coarse-Grained Model to Investigate the Effects of Post-Translational Modifications on Nucleosome Packing and Gene Expression
Wai Soon Chan¹, Giovanni B. Brandani², Shoji Takada², Hidetoshi Kono¹ (¹*Molecular Modeling and Simulation Team, iQLS, QST, Japan*, ²*Department of Biophysics, Graduate School of Science, Kyoto University, Japan*)
- 1Pos072 Decoding the Mg²⁺ Ion Effects on Polynucleosomal Array Dynamics: Insights from Single-Molecule Optical Tweezers
Amarjeet Kumar¹, Tomoko Sunami¹, Shoko Sato², Hitoshi Kurumizaka², Hidetoshi Kono^{1,3} (¹*Institutes for Quantum Life Science, National institutes for Quantum Science and Technology, Chiba, Japan*, ²*Institute for Quantitative Biosciences, The University of Tokyo, Tokyo, Japan*, ³*Graduate School of Science, Chiba University, Chiba, Japan*)
- 1Pos073 クロマチンの高次構造はクロマチンの局所的な動きとクロマチンのかたさを制御する
Higher order structure of chromatin regulates local chromatin motion and chromatin stiffness
Shiori Iida^{1,2}, Masahito Tanaka³, Sachiko Tamura¹, Masato Kanemaki^{2,4}, Yuta Shimamoto^{2,3}, Kazuhiro Maeshima^{1,2} (¹*Genome Dynamics Lab., Natl. Inst. of Genetics*, ²*Graduate Institute for Advanced Studies, SOKENDAI*, ³*Physics and Cell Biology Lab., Natl. Inst. of Genetics*, ⁴*Molecular Cell Engineering Lab., Natl. Inst. of Genetics*)

- 1Pos074 The electrical spike of *Escherichia coli*
Chiao-Chen Chuang¹, Fan Bai^{2,3}, Chien-Jung Lo¹ (¹*Department of Physics and Center for Complex Systems, National Central University, ZhongLi, Taoyuan 32001, Republic of China.*, ²*Biomedical Pioneering Innovation Center (BIOPIIC), School of Life Sciences, Peking University, Beijing, China.*, ³*Beijing Advanced Innovation Center for Genomics (ICG), Peking University, Beijing, China.*)
- 1Pos075 酸素耐性を持つ[NiFe]ヒドロゲナーゼの電子・幾何構造に基づく理論的考察
 Theoretical investigation into the electronic and geometrical structures for the oxidation tolerance of [NiFe]-hydrogenases
Yuta Hori¹, Ayaka Sato², Yasuteru Shigeta¹ (¹*Center for Computational Sciences, Univ. Tsukuba.*, ²*Grad. Sch. Sci. Tech., Univ. Tsukuba*)

- 1Pos076 高い透水性をもつ細胞を用いた凍結保存過程における脱水の効果に関する研究
 Study on the effects of dehydration in the cryopreservation process by using high water permeability cells
Sumire Matsuo¹, Kenji Yamazaki², Masato Yasui³, Youichiro Abe³, Tsutomu Uchida² (¹*Graduate school of engineering, Hokkaido University.*, ²*Faculty of Engineering, Hokkaido University.*, ³*School of Medicine, Keio University*)
- 1Pos077 構造予測法と統計熱力学を組み合わせた「ペプチド薬デザイン法」の開発
 A methodology for designing peptide drugs by combining structure prediction methods and statistical thermodynamics
Shunsuke Miyamoto, Tomohiko Hayashi (*Grad. Sch. Sci. and Tech., Niigata Univ.*)
- 1Pos078 機械学習をもちいた水の構造記述子による溶液の低密度-高密度構造の検出
 A structural descriptor for liquid water constructed by machine-learning method that detects low-density and high-density structure
Taku Mizukami¹, Nguyen Viet Cuong², Dam Hieu Chi³ (¹*JAIST, Materials Science.*, ²*HPC systems.*, ³*JAIST Knowledge Science*)
- 1Pos079 ペプチドおよびタンパク質周囲の水和ダイナミクスの分子動力学シミュレーションによる解明
 Elucidation of hydration dynamics around peptides and proteins by molecular dynamics simulation
Takuya Takahashi¹, Ryutarō Inou², Yui Nakamura², Shingo Nobunaga², Simon Hikiri¹ (¹*Coll. Life Sci., Ritsumeikan Univ.*, ²*Grad. Sch. Life Sci., Ritsumeikan Univ.*)
- 1Pos080 テラヘルツ分光で解き明かす細胞内の水の世界
 Exploring the world of intracellular water with terahertz spectroscopy
Keiichiro Shiraga^{1,2}, Suzune Nagao³ (¹*Grad. Sch. Agri., Kyoto Univ.*, ²*JST PRESTO.*, ³*Dep. Agri., Kyoto Univ.*)
- 1Pos081 酵素反応における水の役割の解明に向けたタンパク質周りの水和状態の検証
 Investigation of hydration state around proteins to elucidate the role of water in enzyme reactions
Mizuki Yamamoto¹, Naoshi Kondo², Yuichi Ogawa², Keiichiro Shiraga^{2,3} (¹*Dep. Agri., Kyoto Univ.*, ²*Grad. Sch. Agri., Kyoto Univ.*, ³*JST PRESTO*)

- 1Pos082 トレハローストランスポーター TRET1 発現細胞を用いた接着状態での凍結保存技術の開発
Study on the development of cryopreservation technology in an adherent state using cells expressing trehalose transporter TRET1
Koki Watanabe¹, Takahiro Kikawada^{2,3}, Kenji Yamazaki⁴, Tsutomu Uchida⁴ (¹Graduate School of Engineering, Hokkaido University, ²National Agriculture and Food Research Organization (NARO), ³Graduate School of Frontier Sciences, The University of Tokyo, ⁴Faculty of Engineering, Hokkaido University)

14. 分子モーター / 14. Molecular motor

- 1Pos083 粗視化 MD 計算を用いた F_0F_1 ATPase の F_0 モーターと F_1 モーターの回転対称性のミスマッチに関する理論研究
Theoretical study on rotational symmetry mismatch between F_0 and F_1 motor of F_0F_1 ATPase using coarse-grained MD simulation
Shintaroh Kubo, Yasushi Okada (*Grad. Sch. Med., Univ. Tokyo*)
- 1Pos084 高速 AFM によるべん毛 III 型分泌装置の ATPase FilII の動態観察
Observation of flagellar type III secretion system ATPase FilII by HS-AFM
Yuki Tajimi¹, Asako Usui², Tatsunari Yano², Norihiro Takekawa², Katsumi Imada², Takayuki Uchihashi^{1,3} (¹Department of Physics, Nagoya University, ²Department of Macromol, Osaka University, ³ExCELLS)
- 1Pos085 織毛打中のクシクラゲ櫛板の軸糸からのミリ秒時間分解 X 線回折像記録
Millisecond time-resolved recordings of X-ray diffraction patterns from axonemes in beating comb plates of ctenophore
Hiroyuki Iwamoto¹, Mio Kosaka², Ryo Yokoya², Kei Jokura², Kazuhiro Oiwa³, Kazuo Inaba² (¹SPRING-8, JASRI, ²Univ. Tsukuba, Shimoda Marine Research Ctr., ³NICT · Bio-ICT)
- 1Pos086 細菌鞭毛馬達分布
Bacterial Flagellar Motor Distribution
Chien-Jung Lo (*National Central University*)
- 1Pos087 キネシン 1 のネックリンカーが頭部のメカノケミカルサイクルを制御する仕組み
How the neck linker controls mechanochemical cycle of kinesin-1's catalytic domain
Yamato Niitani², Kohei Matsuzaki^{1,2}, Erik Jonsson³, Ron Vale³, **Michio Tomishige**¹ (¹Dept. Phys. Sci., Aoyama Gakuin Univ., ²Dept. Appl. Phys., Univ. Tokyo, ³Dept. Cell. Mol. Pharmacol., UCSF)
- 1Pos088 モータータンパク質の運動の理解を目指した第一通過時間による負荷を伴う化学反応速度の計算
Chemical reaction rates with loads calculated from first-passage time towards understanding motions of motor proteins
Takakuni Fukumoto¹, Hideo Higuchi¹, Kazuo Sasaki² (¹Grad. Sch. Sci., Univ. Tokyo, ²Grad. Sch. Eng. Univ. Tohoku)
- 1Pos089 QCM によるモータータンパク質の ATPase と結合解離の計測
Measurement of motor protein ATPase and binding dissociation by QCM
Taiki Nishimura¹, Honoka Kobayashi¹, Hideki Ashizawa², O. Yuhei Tahara^{3,4}, Makoto Miyata^{3,4}, Hajime Honda¹, Ikuko Fujiwara¹ (¹Dept. Matl. Sci. Bioeng., Nagaoka Univ. Tech., ²RIVER ELETEC CORPORATION, ³Grad. Sch. Sci., Osaka Metropolitan Univ., ⁴OCARINA, Osaka Metropolitan Univ)
- 1Pos090 水頭症マウスの免疫染色法による内腕ダイニンのタンパク質発現量の解析
Analysis of protein expression levels of inner arm dynein in hydrocephalus mice by immunostaining
Riko Ota, Madoka Kondo, Hironori Ueno (*Edu., Aichi Univ. Edu.*)
- 1Pos091 マウスにおける内腕ダイニンの組織依存的発現解析とストーク部位発現
Tissue-dependent expression analysis of inner arm dynein and stalk expression in mice
Yuka Iwasa, Mio Kosaka, Nozomu Ida (*Edu., Aichi Univ. Edu.*)

- 1Pos092 Active Buckling of Microtubule Driven by Kinesin Motor
Douglas K. Ng'ang'a, Takahiro Nitta (*Applied physics, Gifu Univ.*)
- 1Pos093 Cooperativity in force generation by kinesin propelled microtubule 's swarm using an electromagnetic tweezer
Mst Rubaya Rashid¹, Mousumi Akter², Arif Md. Rashedul Kabir², Kazuki Sada², Akira Kakugo¹
 (¹*Division of Physics and Astronomy, Kyoto University*, ²*Graduate School of Science, Hokkaido University*)
- 1Pos094 QCM はミオシンの結合と解離によって起こるアクチンフィラメントの変化を検出する可能性がある
 ある
 QCM may detect changes in actin filaments brought by the association and dissociation of myosin
Honoka Kobayashi¹, Taiki Nishimura¹, Naoki Matsumoto², Hideki Ashizawa³, Ikuko Fujiwara^{1,2}, Hajime Honda^{1,2} (¹*Dept. of Matl. Sci. and Bioeng., Nagaoka Univ. of Tech.*, ²*Dept. of Bioeng., Nagaoka Univ. of Tech.*, ³*RIVER ELETEC CORPORATION*)
- 1Pos095 圧力変化によるべん毛モーターの回転コントロール
 Control of flagellar rotation with pressure change
Seiichiro Kinoshita, Masayoshi Nishiyama (*Grad.Sch.Sci. and Eng., Kindai Univ.*)
- 1Pos096 Whole structural modeling of budding yeast condensin complex by high-speed atomic force microscopy and semi-automatic analysis
Hiroki Koide¹, Noriyuki Kodera², Mayu Terakawa¹, Shoji Takada¹, Tsuyoshi Terakawa¹ (¹*Faculty of Science, Kyoto University*, ²*Biophysics Group, Kanazawa University*)

15A. 細胞生物学的課題：接着／15A. Cell biology: Adhesion

- 1Pos097 生細胞内における応力伝播
 Stress propagation in a living cell
Ayama Tokuyasu, Hirokazu Tanimoto (*Grad. Sch.Nanobioscience., Yokuhama City Univ.*)
- 1Pos098 接着性 GPCR、CELSR が細胞間に形成する分子複合体の解析
 Stably formed trans protein complex of adhesion GPCR at the cell-cell interface
Rinshi Kasai¹, Shigetaka Nishiguchi², Takayuki Uchihashi³ (¹*Natl. Cancer Ctr. Res. Inst.*, ²*Osaka U.*, ³*Nagoya U.*)

15B. 細胞生物学的課題：運動／15B. Cell biology: Motility

- 1Pos099 大腸菌単一細胞における走化性応答時の走化性タンパク質の細胞内動態の観察
 Observation of intracellular dynamics of chemotaxis proteins during chemotactic response in a single *E. coli* cell
Hajime Fukuoka, Yumiko Uchida, Yong-Suk Che, Akihiko Ishijima (*Grad. Sch. Front Biosci., Osaka Univ.*)
- 1Pos100 アーキアべん毛モーターは周期光刺激に応答して回転方向を変える
 Archeallar motor changes the direction of rotation in response to periodic light stimuli
Azusa Kage¹, Ayaka Ihara¹, Daisuke Nakane², Takayuki Nishizaka¹ (¹*Dept. Physics, Gakushuin Univ.*, ²*Dept. Engineering Science, The Univ. of Electro-Communications*)
- 1Pos101 キイロシヨウジヨウバエ精子鞭毛の2重らせん波形成と伝播
 The extremely long flagellum of *Drosophila melanogaster* spermatozoon beats with small helical waves superimposed on large helical waves
 Sho Tamai¹, Kosei Sato^{1,2}, **Kazuhiro Oiwa**^{1,2} (¹*Grad. Sch. Sci., Univ.Hyogo*, ²*Natl. Inst. Info. Commun. Technol.*)

- 1Pos102 真核生物の走化性における β -arrestin を介した濃度レンジの拡張
 β -arrestin mediates the extension of the concentration ranges in eukaryotic chemotaxis
Masaki Muromoto¹, Satomi Matsuoka^{1,2,3}, Masahiro Ueda^{1,2,3} (¹*Grad. Sch. of Front. Biosci., Osaka University.*, ²*Grad. Sch. Sci., Osaka University.*, ³*BDR, RIKEN*)
- 1Pos103 Amyloid β aggregation inhibits cell motility of human brain microvascular endothelial cells through the disruption of actin cytoskeleton
Masahiro Kuragano¹, Takuma Maeda^{1,2,3}, Keiya Shimamori¹, Hiroki Kurita³, Kiyotaka Tokuraku¹
(¹*Graduate School of Engineering, Muroran Institute of Technology*, ²*Ohkawara Neurosurgical Hospital*, ³*Department of Cerebrovascular Surgery, International Medical Center, Saitama Medical University*)
- 1Pos104 腸炎ビブリオの乳酸・ピルビン酸・短鎖脂肪酸への走化性応答
Chemotaxis to lactate, pyruvate, and short-chain fatty acid (SCFA) in *Vibrio parahaemolyticus*
Hiroyuki Terashima, Toshio Kodama (*Dept. Bacteriol., Inst. Trop. Med.(NEKKEN), Nagasaki Univ.*)
- 1Pos105 セミインタクト化マウス気管上皮細胞の3次元繊毛運動解析
3D tracking of ciliary beating in semi-intact murine tracheal epithelial cells
Tatsuya Ichikawa¹, Kentaro Seri¹, Nobukiyo Tanaka¹, Koji Ikegami², Tomoko Masaie¹ (¹*Dept. Appl. Biol. Sci., Tokyo Univ. of Sci.*, ²*Dept. Anatomy and Dev. Biol., Sch. Med., Hiroshima U.*)
- 1Pos106 ケラトサイト細胞はムチンの高濃度域へ移動する
Cultured keratocytes showed a migratory response to the area of high mucin concentration
Seira Tachibana, Hitoshi Tatsumi (*Department of Applied Bioscience, Kanazawa Inst. of Technol., Ishikawa, Japan*)
- 1Pos107 海洋性ビブリオ菌べん毛モーター固定子 PomB のプラグ領域への化学修飾による固定子活性化の検討
Flagellar stator activation by a site-specific chemical modification in the plug region of PomB
Hiroaki Koiwa, Michio Homma, Seiji Kojima (*Grad. Sch. Sci., Univ. Nagoya*)
- 1Pos108 ゼブラフィッシュ原腸形成過程において観察された特徴的な細胞ブレブ挙動
Characteristic cell membrane blebs observed in zebrafish gastrulation
Ayaka Miyahara, Toshiyuki Mitsui, Yuuta Moriyama (*Aogaku Univ. Dept. of Phys.*)
- 1Pos109 ヒト原腸形成の自己組織化を模倣する：ヒト iPS 細胞のマイクロパターン培養
Mimicking the self-organization movement of human gastrulation: micro pattern culture of human iPS cells
Hazuki Tsuboi¹, Miyu Mori¹, Chihiro Takeuchi¹, Kiyoshi Ohnuma² (¹*Grad. Sch. Eng., Univ. Nagaoka Tech.*, ²*Inn., Univ. Nagaoka Tech*)
- 1Pos110 細胞性粘菌の運動に関するグラフ理論を用いた解析
Analysis on the movement of crawling amoeba cells based on graph theory
Kazuko Hamaoka¹, Shinya Fujita², Hirokazu Tanimoto¹ (¹*Grad. Sch. Nanobioscience, Yokohama City Univ.*, ²*Grad. Sch. Data Science, Yokohama City Univ.*)
- 1Pos111 適応を担う2種類の酵素である CheR と CheB の細胞内動態の比較
Comparison of the intracellular dynamics of CheR and CheB, the two enzymes responsible for adaptation in chemotaxis system
Taketo Oshima, Yumiko Uchida, Yong-Suk Che, Akihiko Ishijima, Hajime Fukuoka (*Grad. Sch. Frontier Biosci. Osaka Univ.*)
- 1Pos112 魚類表皮ケラトサイト集団のリーダー細胞のフォロワーへの脱落
Demotion of leader cells to followers during the late stages of re-epithelialization in wound repair
Chika Okimura, Yoshiaki Iwadate (*Department of Biology, Yamaguchi University.*)

15C. 細胞生物学的課題：細胞骨格・膜骨格 / 15C. Cell biology: Cytoskeleton & Membrane Skeleton

- 1Pos113 デスミン中間径線維と相互作用するアクチン線維の指向的挙動
Oriented behavior of single actin filaments interacting with single desmin intermediate filaments
Kuniyuki Hatori, Takumi Ishizaka (*Yamagata Univ. Grad. Sci., Eng.*)

- 1Pos114 Jaspalakinolide または Phalloidin を結合させたアクチンフィラメントの内部状態を FRET 観察によって理解する
Understanding the orientation of actin subunits conjugating with jaspalakinolide or phalloidin by FRET measurements
Ai Takahashi¹, Miku Nezasa¹, Ichiro Nishikata², Kenji Kamimura³, Ikuko Fujiwara¹, Hajime Honda¹
(¹Dept. of Matl. Sci. and Bioeng., Nagaoka Univ. of Tech., ²ACEM., NIT. Nagaoka college, ³Dept. of Elect. Ctrl. Eng., NIT. Nagaoka College)
- 1Pos115 原子間力顕微鏡による粘膜下層由来線維芽細胞 (SMFs) および漿膜下層由来線維芽細胞 (SPFs) のレオロジー特性
Rheological properties of Submucosal and subperitoneal fibroblasts measured by atomic force microscopy
Haruka Yamasaki¹, Kaori Kuribaysdhi-shigetomi¹, Motohiro Kojima², Takaharu Okajima¹ (¹Hokkaido University, ²National Cancer Center Exploratory Oncology Research & Clinical Trial Center)
- 1Pos116 Physical integration of microtubule and actin cytoskeletons
Ryota Orii, Hirokazu Tanimoto (*Grad. Sch. Nanobioscience, Yokohama City University*)
- 1Pos117 微小管星状体の細胞内移動に伴う細胞質流れ場の測定
Measurement of the cytoplasmic flow field associated with microtubule aster centration
Mao Ikeda, Hirokazu Tanimoto (*Grad. Sch. Nanobioscience, Yokohama City Univ*)
- 1Pos118 Regulation of muscle membrane robustness against mechanical stress by membrane remodelling proteins
Kenshiro Fujise, Kohji Takei, **Tetsuya Takeda** (*Grad. Sch. Med. Dent. Pharma. Sci., Okayama Univ.*)
- 1Pos119 ラメリポディアアクチン流動の自己組織化機構
Self organization of rearward actin flow in lamellipodia
Tomomi Tani¹, Nori Nakai², Keisuke Sato², Sumio Terada² (¹National Institute of Advanced Industrial Science and Technology, ²Tokyo Medical and Dental University)

15D. 細胞生物学的課題：情報伝達・細胞膜 / 15D. Cell biology: Signal transduction & Cell membrane

- 1Pos120 培地中 K⁺濃度上昇による心筋細胞シートの伝導速度遅延
Slowing of conduction velocity in cardiomyocytes by increasing concentration of K⁺ in cultured medium
Kentaro Kito, Masahito Hayashi, Tomoyuki Kaneko (*LaRC, FB, Grad. Sch. Sci. & Eng., Hosei Univ.*)
- 1Pos121 近赤外レーザーを用いた環状心筋ネットワークの伝導制御
Control of initiation site of excitation in Circular Cardiomyocyte Network Using Near-Infrared Laser
Momo Akada, Kentaro Kito, Masahito Hayashi, Tomoyuki Kaneko (*LaRC, Dept. Frontier Biosci., Hosei Univ.*)
- 1Pos122 PI3K-PAK1 シグナル伝達は S-G2 期における ERK の活性化ダイナミクスを制御する
PI3K-PAK1 signaling regulates the activation dynamics of ERK in S-G2 phase
Ryo Yoshizawa, Nobuhisa Umeki, Yasushi Sako (*Wako Inst., Riken*)
- 1Pos123 同種の受容体からなる受容体アレイがもたらす短い適応時間
Short adaptation time brought about by receptor arrays composed of homogeneous species of receptors
Saki Ueda, Yumiko Uchida, Yong-Suk Che, Akihiko Ishijima, Hajime Fukuoka (*Grad. Sch. Front Sci., Osaka Univ.*)
- 1Pos124 シグナル伝達を惹起する細胞膜 EGFR 動態の 1 分子解析
Single-molecule analysis of EGFR behavior inducing signal transduction in the plasma membran
Michio Hiroshima^{1,2,3}, Masahiro Ueda^{1,2} (¹Grad. Sch. FBS., Osaka Univ., ²RIKEN BDR, ³RIKEN CPR)

- 1Pos125 Promotion of cancer stem cell-like formation by administration of anticancer drugs
Akane Sato^{1,2}, Etsuro Ito^{1,2} (¹*Department of Biology, Waseda University*, ²*BioPhenoMA Inc.*)
- 1Pos126 Geometric correlation of simultaneous plural phagocytoses on single macrophage
Maiha Ando (*ASE., Univ.Waseda*)

16A. 生体膜・人工膜：構造・物性 / 16A. Biological & Artificial membrane: Structure & Property

- 1Pos127 長鎖セラミドは一価不飽和リン脂質の相転移温度を生理的温度まで上昇させる
Long chain ceramides raise the chain-melting transition of monounsaturated phospholipids to physiological temperature
Hiroshi Takahashi^{1,2}, Tomohiro Hayakawa², Asami Makino², Kunihiko Iwamoto², Kazuki Ito³, Satoshi B. Sato^{2,4}, Toshihide Kobayashi^{2,5} (¹*Grad.Sch.Sch. &Tech. Gunma Univ.*, ²*Wako Inst., Riken*, ³*SPRING-8, Riken*, ⁴*Grad. Sch. Sci., Kyoto Univ.*, ⁵*UMR, CNRS, Univ. Strasbourg*)
- 1Pos128 長さの異なるアシル鎖をもつスフィンゴミエリンが脂質ラフト様相分離膜に及ぼす影響
Impact of sphingomyelin acyl chain heterogeneity upon properties of raft-like membranes
Masanao Kinoshita, Kana Hirano, Nobuaki Matsumori (*Grad. Sch. Sci., Kyushu Univ.*)
- 1Pos129 1本の疎水鎖末端にパーフルオロアルキル基を導入した新規二本鎖部分フッ素化 Hybrid 脂質の二分子膜の熱物性
Thermophysical properties of bilayers of double-chain-hybrid phospholipids with perfluoroalkyl groups at the end of one hydrophobic chain
Ai Nakagawara¹, Takafumi Shimoaka¹, Toshiyuki Takagi², Hiroshi Takahashi¹, Hideki Amii^{1,3}, Masashi Sonoyama^{1,3,4} (¹*Grad. Sch. Sci. Tech., Gunma Univ.*, ²*AIST*, ³*GLAR, Gunma Univ.*, ⁴*GUCFW, Gunma Univ.*)
- 1Pos130 光誘起マイクロバブルによる超長尺チューブ状リポソーム形成
Formation of ultralong liposome tubes by laser-induced microbubble
Akemi Noguchi, Ken-ichi Yuyama, Chic Hosokawa, Yasushi Tanimoto, Yasuyuki Tsuboi (*Grad. Sch. Sci., Univ. Osaka Metropolitan*)
- 1Pos131 神経芽腫細胞を用いた局所麻酔薬による脂質ラフトの形成抑制
Local anesthetics suppress the formation of lipid rafts in mouse neuroblastoma (Neuro2a) cell membranes
Aoi Nishimura, Yasuhiro Tanaka, Masanao Kinoshita, Kohei Torikai, Takayuki Kawai, Nobuaki Matsumori (*Grad. Sch. Sci. Kyushu Univ.*)
- 1Pos132 Vesosome-Based Drug Carrier for Controlled and Sustained Release of Multiple Components
Tae-Joon Jeon¹, Deborah Lee¹, Seoyoon Song¹, Suheon Kim¹, Mina Lee¹, Eunsoo Kim¹, Sunhee Yoon¹, Han-ul Kim², Sejin Son¹, Hyun Suk Jung², Yun Suk Huh¹, Sun Min Kim¹ (¹*Department of Bioengineering and Biological Sciences, Inha University, Korea*, ²*Department of Biochemistry, Kangwon National University, Korea*)

16D. 生体膜・人工膜：輸送・情報伝達 / 16D. Biological & Artificial membrane: Transport & Signal transduction

- 1Pos133 改変型 β バレルナノポアタンパク質のリポソーム上での機能検討
Investigating the function of modified β-barrel nanopore protein on liposome
Toshiyuki Tosaka, Koki Kamiya (*Grad. Sch. Sci. & Tech., Gunma Univ.*)

- 1Pos134 膜タンパク質膜挿入に関わる糖脂質 MPLase と基質タンパク質の相互作用解析
Intermolecular Interactions between Membrane Proteins and Glycolipids Essential for Membrane Protein Integration
Shoko Mori¹, Kaoru Nomura¹, Kohki Fujikawa¹, Tsukiho Osawa¹, Ken-ichi Nishiyama², Keiko Shimamoto^{1,3} (¹Bioorg. Res. Inst., Suntory Fdn. Life Sci., ²Fac. Agric., Iwate Univ., ³Grad. Sch. Sci., Osaka Univ.)
- 1Pos135 支持脂質二層膜に GPCR を方向性を制御して組み込む [I] 共役する G タンパク質を使って Reconstituting GPCR into supported lipid bilayer with controlled orientation. [II] Prebinding of the G protein transducin
Fumio Hayashi¹, Masato Koezuka², Kenichi Morigaki^{2,3} (¹Grad. Sch. Sci., Univ. Kobe, ²Grad. Sch. Agri., Univ. Kobe, ³Biosignal Research Center, Univ. Kobe)
- 1Pos136 リボソーム膜を介した DNA 配列情報伝達に向けた分子トランスデュースの研究
DNA Sequence Information Transfer Across Liposome Membrane Using Designed Molecular Transducers
Kai Yoshida¹, Shinichiro Nomura¹, Satoshi Murata¹, Ibuki Kawamata¹, Hideaki Matubayashi¹, Shogo Hamada² (¹Graduate School of Engineering, Tohoku University, ²School of Computing, Tokyo Institute of Technology)

18 神経・感覚 / 18 Neuroscience & Sensory systems

- 1Pos137 高速 AFM による CaMKII オリゴマー間に生じる分子間相互作用の解析
Interaction between inter CaMKII holoenzymes revealed by high-speed AFM
Taisei Suzuki¹, Hideji Murakoshi², Mikihiro Shibata³ (¹Grad. Sch. NanoLS, Kanazawa Univ., ²Supportive Center for Brain Research, NIPS., ³WPI-NanoLSI, Kanazawa Univ.)
- 1Pos138 High-speed atomic force microscopy revealed structural dynamics of CaMKII β at single-molecule level
Keisuke Matsushima¹, Hideji Murakoshi², Mikihiro Shibata^{3,4} (¹Grad. Sch. Math. & Phys., Kanazawa Univ., ²Supportive Center for Brain Research, NIPS., ³WPI-NanoLSI, Kanazawa Univ., ⁴InFiniti, Kanazawa Univ.)
- 1Pos139 カエル神経筋接合部シナプスにおける短期可塑性各成分間の数学的関係性：増進・増強・促進成分の関係性は積なのか和なのか
Relationship of components of short-term synaptic plasticity: Are augmentation, potentiation, and facilitation multiplicative or additive?
Naoya Suzuki (Dept. physics, Sch. Sci., Nagoya Univ.)
- 1Pos140 ゲノム編集によるタウ標識とタウ凝集過程の生細胞観察
Labeling of Tau by genome editing and live cell imaging analysis of tau aggregation process
Iona Katayama¹, Shigeo Sakuragi², Yoshiyuki Soeda³, Akihiko Takashima³, Hiroko Bannai² (¹Dept. of Elec. Eng. Biosci., Grad. Sch. of Adv.Sci.Eng., Waseda univ., ²Fac. of Sci. Eng., Waseda univ., ³Fac. of Sci., Gakusyuin univ.)
- 1Pos141 Effects of CPTX on Dendritic Spines in Primary Cultures of Rat Hippocampal Neurons
Boxiao Zhao¹, Hiroko Bannai¹, Michisuke Yuzaki² (¹Grad. Sch. of Adv. Sci. Eng., Waseda univ., ²Sch. of Med., Keio Univ.)
- 1Pos142 イソフルランによる AMPA・GABA_A 受容体クラスターの分布変化
Isoflurane-induced changes in AMPA and GABA_A receptor cluster distribution
Shigeo Sakuragi¹, Taro Katagiri², Junichiro Ono^{3,4}, Hiroko Bannai¹ (¹Fac. Sci. Eng., Waseda Univ., ²Dept. Elec. Eng. Biosci., Grad. Sch. Adv. Sci. Eng., Waseda Univ., ³KKR Takamatsu Hosp., ⁴Dep. Anesthesiol., Fac. Med., Kagawa Univ.)

- 1Pos143 有効打と回復打からなるボルボックスの繊毛運動の粘弾性依存性
Viscoelasticity dependence of ciliary motion consisting of effective and recovery strokes in *Volvox*
Saki Tamura, Yoshihiro Murayama (*Tokyo Univ. of Agri. and Tech.*)
- 1Pos144 体細胞の状態変化がボルボックスの走光性に及ぼす影響
Effect of change of somatic cell state on phototaxis of *Volvox*
Mitsuki Sato, Yoshihiro Murayama (*Tokyo Univ. of Agri. and Tech.*)
- 1Pos145 リスク下にある真性粘菌の脱出行動における質量, 経路幅, リスク強度の依存性
Dependence of mass, escape path width, and risk intensity on escape behavior of true slime mold under risk
Tomoki Fukuhara (*Grad. Sch, Sys. info. Sci., Future University Hakodate*)

21A. 光生物 : 視覚・光受容 / 21A. Photobiology: Vision & Photoreception

- 1Pos146 アニオンチャンネルロドプシンのゲート閉鎖過程と過渡的なプロトン放出反応の同時性
Synchronicity of gate closing and transient proton release from Asp234 in *Guillardia theta* anion channelrhodopsin 1
Miu Sudo¹, Sayo Inoko¹, Takuma Watanabe¹, Makoto Demura^{1,2}, Takashi Kikukawa^{1,2}, Takashi Tsukamoto^{1,2} (¹*Division of Macromolecular Functions, Department of Biological Science, School of Science, Hokkaido University*, ²*Faculty of Advanced Life Science, Hokkaido University*)
- 1Pos147 Electrophysiological characterization of the ion transport mechanism of proton pump rhodopsin in rhizobacteria
Zikun Lyu, Shunki Takaramoto, María del Carmen Marín, Hiromu Yawo, Keiichi Inoue (*ISSP, Univ. Tokyo*)
- 1Pos148 ウニオプシンの分子特性の比較解析
Comparative analysis of the molecular properties of sea urchin opsins
Atsushi Horiuchi¹, Kazumi Sakai¹, Shion Aoki¹, Junko Yaguchi², Shunsuke Yaguchi², Takahiro Yamashita¹ (¹*Grad. Sch. Sci., Univ. Kyoto*, ²*Shimoda Marine Res. Cent., Univ. of Tsukuba*)
- 1Pos149 ラマン光学活性分光を用いたクロライドポンプ微生物型ロドプシンの活性部位構造に関する研究
Structure and Heterogeneity of Retinal Chromophore in Chloride Pump Rhodopsins Revealed by Raman Optical Activity
Masashi Unno¹, Masaiku Ohya¹, Takashi Kikukawa², Junpei Matsuo¹, Takashi Tsukamoto², Ryota Nagaura¹, Tomotsumi Fujisawa¹ (¹*Department of Chemistry and Applied Chemistry, Saga University*, ²*Faculty of Advanced Life Science, Hokkaido University*)
- 1Pos150 ナトリウムポンプロドプシンにおけるレチナル Schiff 塩基の配座変化
Configurational change of retinal Schiff base chromophore in a sodium pump rhodopsin
Tomotsumi Fujisawa¹, Kouta Kinoue¹, Ryouhei Seike¹, Takashi Kikukawa², Masashi Unno¹ (¹*Fac. Sci. Eng., Saga Univ.*, ²*Fac. Adv. Life Sci., Hokkaido Univ.*)
- 1Pos151 双安定性かつ G タンパク質双共役性を示すオプシン
Characterization of an opsin having bi-stable and bi-coupling properties
Tomoki Kawaguchi, Hisao Tsukamoto (*Department of Biology, Graduate School of Science, Kobe University*)

- 1Pos152 哺乳類メラノプシンと特異的アンタゴニストとの相互作用の生化学的・理論的解析
Biochemical and computational analyses of interactions between mammalian melanopsins and a specific antagonist
Kohei Obayashi¹, Ruisi Zou^{2,3}, Toshifumi Mori³, Hisao Tsukamoto¹ (¹*Department of Biology, Graduate School of Science, Kobe University*, ²*Interdisciplinary Graduate School of Engineering Sciences, Kyushu University*, ³*Institute for Materials Chemistry and Engineering, Kyushu University*)
- 1Pos153 リン酸化ロドプシンとの相互作用における桿体アレスチン 4 量体の役割
Role of Tetramer of Rod Visual Arrestin in the Interaction with Phosphorylated Rhodopsin
Yasushi Imamoto¹, Keiichi Kojima^{1,2}, Toshihiko Oka³, Ryo Maeda¹, Yoshinori Shichida⁴ (¹*Grad. Sch. Sci., Kyoto Univ.*, ²*Fac. Med. Dent. Pharm. Sci., Okayama Univ.*, ³*Grad. Sch. Sci., Shizuoka Univ.*, ⁴*Ritsumeikan Univ.*)
- 1Pos154 分子センサーを用いた、無脊椎動物型オプシンによる G タンパク質の活性化・下流のシグナル伝達キネティクスの解析
Analysis of invertebrate-type opsin-mediated G protein activation and downstream signaling kinetics using luminescent biosensors
Marina Narimiya, Michihiro Ohta, Hisao Tsukamoto (*Grad. Sch. Sci., Kobe Univ.*)
- 1Pos155 溶液 NMR 法によるプロトンポンプ型ロドプシン RxR のアルギニン残基の機能における役割の解析
Roles of the conserved arginine residue in a proton pumping rhodopsin RxR revealed by solution NMR spectroscopy
Reika Hironishi¹, Rika Suzuki¹, Masahumi Hirohata¹, Keiichi Kojima², Toshio Nagashima³, Toshio Yamazaki³, Yuki Sudo², Hideo Takahashi¹ (¹*Grad. Sch. of Med. Life Sci., YCU*, ²*Grad. Sch. of Med., Dent. and Pharma. Sci., Univ. of Okayama*, ³*BDR, RIKEN*)
- 1Pos156 ラマン分光法による青/橙色シアノバクテリオクロムの青色吸収型の構造解析
Structural analysis of the blue-absorbing form of blue/orange cyanobacteriochrome by Raman spectroscopy
Ryoka Seto¹, Masako Hamada², Yuu Hirose², Tomotsumi Fujisawa¹, Masashi Unno¹ (¹*Department of Chemistry and Applied Chemistry, Faculty of Science and Engineering, Saga University*, ²*Department of Applied Chemistry and Life Science, Toyohashi University of Technology*)
- 1Pos157 ラマン分光法およびアミノ酸置換体を用いたシアノバクテリオクロム RcaE における Lys261 の役割の解明
Role of Lys261 in Cyanobacteriochrome RcaE Studied by Mutagenesis and Raman Spectroscopy
Taisei Koga¹, Masako Hamada², Yuu Hirose², Tomotsumi Fujisawa¹, Masashi Unno¹ (¹*Department of Chemistry and Applied Chemistry, Faculty of Science and Engineering, Saga University*, ²*Department of Applied Chemistry and Life Science, Toyohashi University of Tecnology*)

21B. 光生物：光合成 / 21B. Photobiology: Photosynthesis

- 1Pos158 光合成カルボニルカロテノイド、シフォナキサンチンの発光準位の同定：蛍光スペクトルの溶媒効果
Characterization of the emissive state of a photosynthetic carbonyl carotenoid, siphonaxanthin: Solvent effect of fluorescence spectra
Ritsuko Fujii^{1,2,5}, **Kazuhiro Yoshida**¹, Soichiro Seki², Yumiko Yamano³, Naohiro Oka⁴ (¹*Grad. Sch. Sci., Osaka Metropolitan Univ.*, ²*Grad. Sch. Sci., Osaka City Univ.*, ³*Edu. Res. Ctr., Kobe Pharm. Univ.*, ⁴*Bio-Innovation Res. Ctr., Tokushima Univ.*, ⁵*Research Ctr. for Artificial Photosynth., Osaka Metropolitan Univ.*)
- 1Pos159 高速原子間力顕微鏡を用いた植物光合成膜におけるタンパク質複合体の動態観察
Dynamics of protein complexes in plant photosynthetic membrane observed by high-speed atomic force microscopy
Yudai Nishitani, Daisuke Yamamoto (*Fac. Sci., Fukuoka Univ.*)

- 1Pos160 1 分子励起-蛍光スペクトル分光法による光化学系 I のアンテナ分子への観察
Access to the Antenna System of Photosystem I via Single-Molecule Excitation -Emission Spectroscopy
XianJun Zhang¹, Joachim Martin Seibt², Rin Taniguchi¹, Ryo Nagao³, Tatsuya Tomo⁴, Takumi Noguchi⁵, Shen Ye¹, Thomas Renger², Yutaka Shibata¹ (¹Tohoku University, ²Johannes Kepler University Linz, ³Shizuoka University, ⁴Tokyo University of Science, ⁵Nagoya University)
- 1Pos161 AutoDock vina を用いた *T. elongatus* 光化学系 I のキノン結合サイトにおける分子結合シミュレーション
Molecular Docking Simulations at Quinone Binding Site of Photosystem I from *T. elongatus* Using AutoDock vina
Ayumu Takagi¹, Shigeru Itoh², Akihiro Kimura², Hirotake Kitoh¹ (¹Grad. Sch. Sci. Eng., Kindai Univ., ²Dept. Phys., Grad. Sch. Sci., Univ. Nagoya)
- 1Pos162 Purification and characterization of a new thermophilic purple sulfur bacterium *Caldichromatium japonicum*
Akane Minamino¹, K. Saini Mohit³, Shinji Takenaka¹, Zheng-Yu Wang-Otomo², Yukihiro Kimura¹ (¹Department of Agrobioscience, Graduate School of Agriculture, Kobe University, ²Faculty of Science, Ibaraki University, ³Centre Algatech)
- 1Pos163 紅色光合成細菌の辺縁光捕集タンパク質のバクテリオクロロフィル a のスペクトル特性に対する色素脱離と界面活性剤の影響
Spectral changes of bacteriochlorophyll a in peripheral antenna proteins of purple photosynthetic bacteria by B800 removal and detergents
Yoshitaka Saga, Syota Kawato, Kohei Hamanishi, Yuhi Sasamoto (*Fac. Sci. Eng., Kindai Univ.*)
- 1Pos164 ベイズ最適化による光合成 I 型反応中心 3 種の励起子モデルの修正
Modification of the exciton models of three photosynthetic type-I reaction centers with Bayesian optimization
Wataru Shimooka¹, Hirotake Kitoh², Shigeru Itoh¹, Akihiro Kimura¹ (¹Grad. Sch., Nagoya Univ., ²Fac. Sci. and Eng., Kindai Univ.)
- 1Pos165 光化学系 II の酸素発生系における翻訳後アミノ酸変換：脂肪酸アミノ酸の変換
Post-translational amino acid conversion in the O₂-evolving complex of photosystem II: Conversion of aliphatic amino acids
Hatsune Mizue¹, Takehiro Suzuki², Takumi Matsubara¹, Tomomi Kitajima-Ihara¹, Minako Hirano¹, Yuichiro Shimada¹, Yuki Kato¹, Naoshi Dohmae², Takumi Noguchi¹ (¹Grad. Sch. Sci., Univ. Nagoya, ²RIKEN CSRS)
- 1Pos166 光化学系 II におけるクロロフィル励起三重項状態の消光機構
Quenching mechanism of the excited triplet state of chlorophyll in photosystem II
Mizuki Yokokawa, Yuki Kato, Takumi Noguchi (*Grad. Sch. Sci, Univ. Nagoya*)
- 1Pos167 Q-band パルス電子常磁性共鳴 (EPR) 法による光化学系 II マンガンクラスターの S₂ High Spin 状態の構造
Structure of S₂ High-Spin State Manganese Cluster of Photosystem II by Q-band Pulsed Electron Paramagnetic Resonance (EPR) Spectroscopy
Shinya Kosaki, Hiroyuki Mino (*Grad. Sch. Sci., Nagoya Univ.*)
- 1Pos168 *Synechocystis* PCC 6803 フィコビリソームロッドにおける周辺環境を含む発色団の光吸収スペクトルの理論的研究
Theoretical study of energy states of chromophores including the surrounding environment in *Synechocystis* PCC 6803 Phycobilisome rod
Hiroto Kikuchi (*Dept. of Phys. Nippon Med. Sch.*)

- 1Pos169 電子線照射による細胞伸長は ROS が原因か
Is ROS the main factor for cell elongation caused by electron beam irradiation?
Junya Katai¹, Yuta Nagano¹, Kenshi Suzuki², Tetsuo Narumi¹, Masaki Shintani¹, Yosuke Tashiro¹, Yoshimasa Kawata³, Wataru Inami³, Hiroyuki Futamata⁴ (¹*Dept. Appl. Chem. Biological Eng., Univ. Shizuoka*, ²*Grad. Sch. Scie. Tech., Univ. Shizuoka*, ³*Res. Inst. Elect., Univ. Shizuoka*, ⁴*Res. Inst. Green. Sci. Tech., Univ. Shizuoka*)
- 1Pos170 人工多能性幹細胞とラマン顕微鏡を用いた放射線感受性の個人差推定法
Estimation of human individual radiosensitivity using Raman spectroscopy and iPSC
Hideaki Fujita¹, Kensuke Sasaki², Tomonobu Watanabe^{1,2} (¹*Department of Stem Cell Biology, Research Institute for Radiation Biology and Medicine, Hiroshima University*, ²*Laboratory for Comprehensive Bioimaging, RIKEN Center for Biosystems Dynamics Research*)
- 1Pos171 一分子観察による DNA 二本鎖切断の定量的解析：抗酸化物質の保護効果
Quantitative Evaluation on the Kinetics of Double-Strand Breaks of DNA from Single Molecule Observation: Protective Effect of Antioxidants
Haruto Ogawa¹, Takashi Nishio^{1,2}, Yuko Yoshikawa¹, Koichiro Sadakane¹, Kenichi Yoshikawa¹ (¹*Facul. Life. Med. Sci., Doshisha Univ.*, ²*Pol., TU Dresden*)

- 1Pos172 細胞を創る研究から見えてきた生命の仕組み
Characteristics of living cells revealed by cell reconstitution studies
Kei Fujiwara (*Dept. Biosci. Info., Keio Univ.*)
- 1Pos173 Design and construction of artificial DNA condensates with nanoscale biomolecules
Nathan Nunes Evangelista, Masahiro Takinoue (*Sch. Life Sci., Tokyo Tech*)
- 1Pos174 リボソーム生合成の細胞外における再構成
Reconstitution of ribosome biogenesis outside of cells
Yuishin Kosaka^{1,2}, Yumi Miyawaki¹, Megumi Mori¹, Shunsuke Aburaya³, Mao Fukuyama^{4,5}, Mitsuyoshi Ueda^{1,6}, Wataru Aoki^{5,6,7} (¹*Division of Applied Life Sciences, Graduate School of Agriculture, Kyoto University, Kyoto, Japan*, ²*Research Fellow of JSPS, Tokyo, Japan*, ³*Division of Metabolomics, Medical Institute of Bioregulation, Kyushu University, Fukuoka, Japan*, ⁴*Institute of Multidisciplinary Research for Advanced Materials, Tohoku University, Sendai, Japan*, ⁵*JST FOREST, Tokyo, Japan*, ⁶*Kyoto Integrated Science & Technology Bio-Analysis Center, Kyoto, Japan*, ⁷*Department of Biotechnology, Graduate School of Engineering, Osaka University, Osaka, Japan*)
- 1Pos175 機械刺激依存性チャネルを用いた脂質-タンパク質非対称膜小胞内への分子輸送
Molecular transportations via mechanosensitive channels into the asymmetric lipid-protein vesicles
Kotaro Baba, Koki Kamiya (*Graduate School of Science and Technology, Gunma University*)
- 1Pos176 大腸菌細胞集団における走化性誘導の自己組織的パターン形成
Self-organized pattern formation induced by chemotaxis in *E. coli* cell populations
Hironori Fujita^{1,2} (¹*Astrobiology Center*, ²*National Institute for Basic Biology*)
- 1Pos177 外部刺激に応答したリボソームの非対称膜形成制御システムの開発
Development of Controllable System of Lipid Asymmetry in Liposome by External Stimulations
Sumin Lee, Koki Kamiya (*Grad. Sch. Sci. Tec., Gunma Univ.*)

- 1Pos178 人工細胞の粘性変化がもたらす新たな機能
Viscous changes in synthetic cells drive novel functionalities
Aileen Cooney^{1,2,4}, Tomoaki Matsuura¹, Yuval Elani³, Lorenzo Di Michele⁴ (¹*Earth-Life Science Institute: ELSI, Tokyo Institute of Technology*, ²*Department of Chemistry, Imperial College London*, ³*Department of Chemical Engineering, Imperial College London*, ⁴*Department of Chemical Engineering and Biotechnology, University of Cambridge*)
- 1Pos179 界面通過法によるリポソームへのチラコイド封入
Encapsulation of thylakoids into liposomes by emulsion transfer method
Shintaro Nishizaki, Masahito Hayashi, Tomoyuki Kaneko (*LaRC, FB, Grad. Sch. Sci. & Eng., Hosei Univ.*)
- 1Pos180 アフリカツメガエル卵抽出液を用いた人工細胞内核形成への挑戦
A challenge for nuclear assembly in synthetic cells using *Xenopus* egg extract
Sho Takamori¹, Hisatoshi Mimura¹, Toshihisa Osaki¹, Tomo Kondo², Miyuki Shintomi³, Keishi Shintomi⁴, Miho Ohsugi², Shoji Takeuchi^{1,5,6} (¹*Artificial Cell Membrane Systems Group, Kanagawa Institute of Industrial Science and Technology*, ²*Graduate School of Arts and Sciences, The University of Tokyo*, ³*Life Science Network, The University of Tokyo*, ⁴*Chromosome Dynamics Laboratory, RIKEN*, ⁵*Institute of Industrial Science, The University of Tokyo*, ⁶*Graduate School of Information Science and Technology, The University of Tokyo*)
- 1Pos181 リポソームの機能化を目的とした DNA ハイドロゲル裏打ち構造の構築に向けて
Toward construction of DNA hydrogel-based cortex-like structures for liposome functionalization
Takuro Yoshinaga¹, Yusuke Sato² (¹*Sch. Comp. Sci. Syst. Eng., Kyutech*, ²*Grad. Sch. Comp. Sci. Syst. Eng., Kyutech*)
- 1Pos182 動的な静止構造：人工細胞内に創られたチューリングパターン
Creation of Turing pattern in artificial cells by PAR system-like mutual inhibition network
Sakura Takada¹, Natsuhiko Yoshinaga^{2,3}, Nobuhide Doi¹, Kei Fujiwara¹ (¹*Dept. Biosci. and Info., Keio Univ.*, ²*AIMR, Tohoku Univ.*, ³*MathAM-OIL, AIST*)

25. ゲノム生物学 / 25. Genome biology

- 1Pos183 染色体動態と関連している因子は何か？
What factors are associated with chromosome dynamics?
Takuya Nara¹, Haruko Takahashi¹, Akinori Awazu², Y Kikuchi¹ (¹*Program of Basic Biology, Graduate School of Integrated Sciences for Life, Hiroshima University*, ²*Program of Mathematical and Life Sciences, Graduate School of Integrated Sciences for Life, Hiroshima University*)
- 1Pos184 インフルエンザウイルスゲノムの変異分布計測
Mutational distribution of influenza virus genomes
Kazuki Ikeda (*the university of tokyo*)

26A. 計算生物学: 生命情報学 / 26A. Computational biology: Bioinformatics

- 1Pos185 Analysis of structure–function correlation in the active sites of heme proteins
Hiroko X. Kondo¹, Hiroyuki Iizuka², Gen Masumoto³, Yusuke Kanematsu⁴, Yu Takano⁵ (¹*Fac. Eng., Kitami Inst. Tech.*, ²*CHAIN, Hokkaido Univ.*, ³*RIKEN R-IH*, ⁴*Grad. Sch. Adv. Sci. Eng., Hiroshima Univ.*, ⁵*Grad. Sch. Info. Sci., Hiroshima City Univ.*)

- 1Pos186 CARMIL と twinfilin-tail の結合がキャッピング蛋白質の揺らぎに与える影響；弾性ネットワークモデルによる網羅的解析
Elastic network model reveals distinct flexibilities of capping proteins bound to CARMIL and twinfilin-tail
Ryotaro Koike, Motonori Ota (*Grad. Sch. Info., Nagoya Univ.*)
- 1Pos187 電子顕微鏡を用いた肺がん検出に向けたディープラーニングのための各種データ量増強とYOLOバージョン評価
Various Data Volume Augmentation and YOLO Versions Evaluation for Deep Learning to Detect Lung Cancers Using Electron Microscopy
Tatsumi Mizoe¹, Kenji Etchuya², Makiko Suwa^{1,2}, Chikara Sato^{1,3} (¹*Grad. Biol. Sci., Aoyama Gakuin Univ.*, ²*Chem. Biol. Sci., Aoyama Gakuin Univ.*, ³*National Institute of Advanced Industrial Science and Technology*)
- 1Pos188 生成モデルによるタンパク質距離行列及び立体構造の生成
Generation of distance matrices and tertiary structures of proteins using a generative model
Ryo Okada¹, Yoshitaka Moriwaki¹, Kentaro Shimizu², Tohru Terada¹ (¹*Dept. of Biotechnol., Grad. Sch. of Agri and Life Science., The Univ. of Tokyo.*, ²*Agricultural Bioinformatics Research Unit, Grad. Sch. of Agri and Life Science., The Univ. of Tokyo*)
- 1Pos189 乳がんバイオマーカー候補の選定に有用な中心性指標の特定
Identification of useful centrality indicators for selection of breast cancer biomarker candidates
Saito Torii, Takanori Sasaki (*Grad. Sch. Adv. Math. Sci., Meiji Univ.*)
- 1Pos190 匂い地図シミュレータの構築と匂い分類への応用
Construction of odor map simulator and its application to odor classification
Kuria Takahashi¹, Kenji Etchuya², Makiko Suwa^{1,2} (¹*Biol. Sci., Grad. Sci. Eng., Aoyama Gakuin Univ.*, ²*Chem. Biol. Sci., Sci. Eng., Aoyama Gakuin Univ.*)
- 1Pos191 免疫炎症関連のがんホールマーク遺伝子群に基づいた乳がんの遺伝子相関ネットワーク解析および生存分析
Gene correlation network analysis and survival analysis of breast cancer with cancer hallmark genes related to inflammation and immunity
Ayaka Yakushi¹, Masahiro Sugimoto², Takanori Sasaki¹ (¹*Grad. Sch. Adv. Math. Sci., Meiji Univ.*, ²*Ins. Adv. Bio., Keio Univ.*)
- 1Pos192 マルチオミクス解析による海馬神経系細胞の刺激応答の不均一性を生み出すメカニズムの解
Multi-omics analysis of stimulus-response heterogeneity in hippocampal neural cells
Katsunari Saito¹, Ken Murakami¹, Kaho Ito¹, Yutaka Suzuki², Yukiko Goda³, Mariko Okada¹ (¹*Institute for Protein Research, Osaka University.*, ²*Graduate School of Frontier Sciences, The University of Tokyo.*, ³*Synapse Biology Unit, Okinawa Institute of Science and Technology Graduate University*)
- 1Pos193 遺伝子発現の量比保存構造の尺度として細胞ラマンスペクトルを最大限に活用する
Maximizing the potential of cellular Raman spectra as a proxy of the stoichiometry conservation structure of gene expression
Takashi Nozoe^{1,2}, Ken-ichiro F. Kamei¹ (¹*Grad. Sch. Arts Sci., Univ. Tokyo.*, ²*UBI, Univ. Tokyo*)

26B. 計算生物学: 分子シミュレーション / 26B. Computational biology: Molecular simulation

- 1Pos194 構造ゆらぎと薬剤結合モードに基づいたインシリコスクリーニングの高度化
Advancement of in silico screening based on protein structural fluctuation and drug binding mode
Hiroto Terada, Kei Moritsugu (*Grad. Sch. Sci., Osaka Pref. Univ.*)

- 1Pos195 ABC 多剤排出トランスポーター構造変化の最小自由エネルギーパス計算
Minimum free energy path calculation for the structural change of ABC multi-drug efflux transporter
Kei Moritsugu^{1,2}, Takumi Someya², Ryuji Ishida², Akinori Kidera² (¹*Grad. Sch. Sci., Omu*, ²*Grad. Sch. Med. Life Sci., Yokohama City Univ.*)
- 1Pos196 HIV-1 プロテアーゼの薬剤耐性機構に関する理論的研究：残基相互作用ネットワーク解析
Computational Study of HIV-1 Protease for Drug Resistance Mutations: Residue Interaction Network Analysis
Yuto Miyamoto, Norifumi Yamamoto (*Chiba Tech*)
- 1Pos197 ヌクレオチドに依存したアクチンの構造サンプリング
Structural samplings of actin that are dependent on the bound nucleotides
Kenta Omoto, Kei Moritsugu (*Grad.Sch.Sci., Osaka Pref.Univ*)
- 1Pos198 格子ポリマー鎖の負のエネルギー弾性に対する曲げエネルギーの効果
Effect of bending energy on negative energetic elasticity in a lattice polymer chain
Nobu C. Shirai¹, Naoyuki Sakumichi² (¹*Mie Univ.*, ²*Grad. Sch. Eng., Univ. Tokyo*)
- 1Pos199 グルタミンペプチドの自己集合構造に関する分子動力学的研究
A Molecular Dynamics Study on the Self-Assembled Structure of Glutamine Peptides
Daiki Miura¹, Itsuki Ajioka^{2,5}, Takahiro Muraoka^{3,5}, Go Watanabe^{1,4,5} (¹*Grad. Sch. Sci., Kitasato Univ.*, ²*CBIR., Tokyo Medical and Dental Univ.*, ³*Grad. Sch. Eng., Tokyo Univ. Agric. and Tech.*, ⁴*Sch. Front. Eng., Kitasato Univ.*, ⁵*KISTEC*)
- 1Pos200 オートファゴソーム脂質輸送の分子力学シミュレーション
Molecular dynamics of autophagosomal lipid transfer
Yuji Sakai¹, Kazuaki Matoba², N. Nobuo Noda³, Yuji Sugita⁴ (¹*Inst. Life Med. Sci, Kyoto Univ.*, ²*Inst. Microbial Chem.*, ³*Inst. Genetic Med, Hokkaido Univ.*, ⁴*RIKEN*)
- 1Pos201 Dynamin-1 assembly and membrane tubule constriction mechanism revealed by coarse-grained simulations
Md. Iqbal Mahmood¹, Shintaroh Kubo², Kei-ichi Okazaki¹ (¹*Research Center for Computational Science, Institute for Molecular Science, National Institutes of Natural Sciences, Okazaki*, ²*Graduate School of Medicine, The University of Tokyo, Japan.*)
- 1Pos202 レプリカ置換法によるポリグルタミンタンパク質の凝集に対するアルギニンの阻害機構の理論的解析
Theoretical analysis of the inhibition mechanism of arginine on polyglutamine protein aggregation by the replica permutation method
Shoichi Tanimoto¹, Hisashi Okumura^{1,2,3} (¹*ExCELLS*, ²*IMS*, ³*SOKENDAI*)
- 1Pos203 QM/MM 法によるプレニル基転移酵素 Fur7 の反応機構解析
QM/MM study on the catalytic mechanism of the aromatic prenyltransferase Fur7
Fan Zhao¹, Yoshitaka Moriwaki¹, Tomohisa Kuzuyama^{1,2}, Tohru Terada¹ (¹*Grad. Sch. of Agri. and Life Sci., Univ. of Tokyo*, ²*CRIM, Univ. of Tokyo*)
- 1Pos204 天然アニオンチャネルロドプシン GtACR1 の塩化物イオンの自由エネルギープロファイルとイオン輸送経路に関する理論的研究
Theoretical study on free energy profile of chloride ion and ion conducting pathway of natural anion channelrhodopsin GtACR1
Takafumi Shikakura, Shigehiko Hayashi (*Grad. Sch. Sci., Kyoto Univ.*)
- 1Pos205 生物発光タンパク質イクオリンの発光反応過程についての理論的研究
Theoretical study on the luminescent reaction process of bioluminescent protein Aequorin
Tomohiro Ando, Shigehiko Hayashi (*Grad. Sch. Sci., Kyoto Univ.*)
- 1Pos206 実験構造に基づく Ca_v1.2 イオンチャネルと薬剤間の結合自由エネルギー計算
Calculation of the binding free energies of drugs to the Ca_v1.2 ion channel based on the experimental structure
Tatsuki Negami, Tohru Terada (*Grad. Sch. Agri. and Life Sci., Univ. Tokyo*)

- 1Pos207 ラン藻由来アルカン合成酵素の基質結合と生成物解離ダイナミクスの分子動力学シミュレーション
Molecular dynamics simulations of substrate binding and product dissociation dynamics of a cyanobacterial alkane synthase
Masataka Yoshimura¹, Shino Oda¹, Munchito Arai^{1,2} (¹*Dept. Life Sci., Univ. Tokyo*, ²*Dept. Phys., Univ. Tokyo*)
- 1Pos208 How fast is fast enough: computer modeling of host-guest binding in a 3D cell-adaptable hydrogel network
Yi Wang (*Department of Physics, the Chinese University of Hong Kong*)
- 1Pos209 自由エネルギー解析によるトリプトファン合成酵素の β -reaction stage I と α -Ligand 結合との関係性の解明
Allosteric regulation of β -reaction stage I in tryptophan synthase by free energy analysis
Shingo Ito, Kiyoshi Yagi, Yuji Sugita (*Theor. Mol. Sci. Lab., CPR, RIKEN*)
- 1Pos210 経路探索手法によるヒトアミノ酸トランスポーター LAT1-CD98hc の構造変化の解析
Pathway sampling simulations to understand dynamically conformational changes in human amino acid transporter LAT1
Natsumi Yoshida¹, Masao Inoue¹, Toru Ekimoto¹, Tsutomu Yamane², Mitsunori Ikeguchi^{1,2} (¹*Grad. Sch. Med. Life Sci., Yokohama City Univ.*, ²*RIKEN R-CCS*)
- 1Pos211 Accelerated molecular dynamics and AlphaFold discover a conformational state of transporter protein OxIT
Jun Ohnuki, Kei-ichi Okazaki (*Institute for Molecular Science*)
- 1Pos212 Theoretical Study of Solvent Effect and Stability of Complex Structure of Aspirin and Hydroxypropyl- β -Cyclodextrin by MD Simulation
Helmia Jayyinnunnisya, Dedy Rendrawan, Lince Meriko, Kazutomo Kawaguchi, Hidemi Nagao (*Grad. Sch. Nat. Sci. Tech, Kanazawa Univ.*)
- 1Pos213 Evaluation of MD-based high-throughput screening methods using supercomputer Fugaku
Tomoya Nabetani¹, Toru Ekimoto^{1,2}, Tsutomu Yamane³, Mitsunori Ikeguchi^{1,2,3} (¹*Dept. Sci, Yokohama City Univ.*, ²*Grad. Sch. Med. Life Sci., Yokohama City Univ.*, ³*RIKEN R-CCS*)
- 1Pos214 Characterization of dynamic conformation of high mannose-type oligosaccharides based on molecular simulation and data clustering
Yue Zhang¹, Takumi Yamaguchi^{1,2,3} (¹*Sch. Materials Sci., JAIST*, ²*Grad. Sch. Pharm. Sci., Nagoya City Univ.*, ³*ExCELLS, NINS*)
- 1Pos215 銅含有アミン酸化酵素における反応自由エネルギーの QM/MM 解析
QM/MM Free energy simulation for the catalytic reaction of bacterial copper amine oxidase
Mitsuo Shoji¹, Takeshi Murakawa², Yuta Hori¹, Yasuteru Shigeta¹, Hideyuki Hayashi², Toshihide Okajima³ (¹*CCS U.Tsukuba*, ²*OMPU*, ³*Sanken Osaka U.*)

26C. 計算生物学：生体モデリングとシミュレーション / 26C. Computational biology: Biological modeling and simulation

- 1Pos216 NRK による CK2 活性制御の構造モデリングと解析
Structural modeling and analysis of NRK-mediated regulation of CK2 activity
Rena Yoshimura¹, Beni Lestari², Toshiaki Fukushima², Kei Moritsugu¹ (¹*Grad. Sch. Sci., Osaka Pref. Univ.*, ²*IIR, Tokyo Inst. Tech.*)
- 1Pos217 Unraveling the mechanisms of drug resistance in the MAPK pathway using structure-based modeling
Hiroaki Imoto¹, Nora Rauch¹, Ayaka Ichikawa², Mariko Okada^{2,3}, Oleksii Rukhlenko¹, Boris Kholodenko^{1,4,5} (¹*Systems Biology Ireland, University College Dublin*, ²*Institute for Protein Research, Osaka University*, ³*WPI Premium Research Institute for Human Metaverse Medicine (WPI-PRIME), Osaka University*, ⁴*Conway Institute of Biomolecular & Biomedical Research, University College Dublin*, ⁵*Department of Pharmacology, Yale University School of Medicine*)

- 1Pos218 細胞がクラスターとなって移動する仕組みを解き明かす膜モデル
A cell membrane model that reproduces single and cluster cell migration
Katsuhiko Sato (*RIES, Hokkaido Univ.*)
- 1Pos219 Predicting the placement of biomolecular structures on AFM substrates based on electrostatic interactions
Romain Amyot, Noriyuki Kodera, Holger Flechsig (*NanoLSI, Kanazawa University*)
- 1Pos220 カルマンフィルタによる上皮組織の力推定
Kalman force inference for epithelial deformation: a force inference method for time-lapse movies
Goshi Ogita¹, Shuji Ishihara², Kaoru Sugimura³, Tatsuo Shibata¹ (¹*Riken BDR*, ²*Grad. Sch. Arts and Sci., U Tokyo*, ³*Grad. Sch. Sci., U Tokyo*)
- 1Pos221 A Gradient-Based Approach for Optimizing Molecular Structures using Atomic Force Microscopy Images and Normal Mode Analysis
Xuan Wu¹, Osamu Miyashita², 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*)
- 1Pos222 Theoretical analysis of fruiting body development by *Dictyostelium discoideum*
Seiya Nishikawa¹, Shuji Ishihara^{1,2} (¹*Dept. of Integrated Sci., Grad. Sch. of Arts and Sci., The Univ. of Tokyo*, ²*Universal Biol. Inst., The Univ. of Tokyo*.)
- 1Pos223 タンパク質-RNA 複合体のリファインメントのための AI に基づくモデリングとフレキシブルドッキング
Integrated AI-based Modeling and Flexible Docking for Protein-RNA Complexes Refinement
Kowit Hengphasatporn, Yasuteru Shigeta, Ryuhei Harada (*Center for Computational Sciences, University of Tsukuba, 1-1-1 Tennodai, Tsukuba, Ibaraki 305-8577, Japan*)
- 1Pos224 ハイブリッド QM/MM 自由エネルギー法によるタンパク質機能発現の理解
Understanding of protein functional expression using hybrid QM/MM free energy method
Masahiko Taguchi^{1,2,3}, Ryo Oyama², Masahiro Kaneko², Cheng Cheng², Chika Higashimura², Yoshihiro Uchida², Shun Sakuraba³, Justin Chan³, Shigehiko Hayashi², Hidetoshi Kono³ (¹*IMRAM, Tohoku Univ.*, ²*Grad. Sch. Sci., Kyoto Univ.*, ³*iQLS, QST*)

28. 生態／環境／28. Ecology & Environment

- 1Pos225 微生物群集の機能的役割分担が複合微生物系の機能的恒常性を可能にする
Functional sharing of microbial community enables homeostasis in complex microbial systems
Rei Ikeda¹, Masahiro Honjo², Nobuhiro Takahashi¹, Reika Mimoto³, Yasuhisa Saito⁴, Takashi Okada⁵, Motohiko Kimura¹, Yosuke Tashiro¹, Hiroyuki Futamata⁶ (¹*Grad. Sch. Integr. Sci. Technol., Shizuoka Univ.*, ²*Grad. Sch. Sci. Technol. Shizuoka Univ.*, ³*Fac. Eng. Shizuoka Univ.*, ⁴*Grad. Sch. Sci. Eng. Shimane Univ.*, ⁵*Inst. Med. Biol. Kyoto Univ.*, ⁶*Res. Inst. Green Sci. Technol., Shizuoka Univ.*)
- 1Pos226 *Rhodococcus qingshengii* A3-8 株による独立栄養条件下での有機酸生産機構の解析
Analysis of mechanism for organic acid production by *Rhodococcus qingshengii* strain A3-8 under autotrophic conditions
Nobuhiro Takahashi¹, Yosuke Tashiro¹, Hiroyuki Futamata² (¹*Department of Applied Chemistry and Biochemical Engineering, Graduate School of Engineering, Shizuoka University*, ²*Research Institution of Green Science and Technology, Shizuoka University*)

- 1Pos227 Selective IR measurement of fluorescent protein chromophores in aqueous solution by resonance IR spectroscopy
Hirona Takahashi, Makoto Sakai (*Faculty of Science, Okayama University of Science*)
- 1Pos228 Effects of heat and chemical treatments on human hair detected by IR super-resolution imaging based on non-linear optical processes
Hirona Takahashi, Natsuki Okano, Hiroka Ishikawa, **Makoto Sakai** (*Faculty of Science, Okayama University of Science*)
- 1Pos229 tRNA post-transcriptional modifications enhance tRNA structural stability
Kazuki Nagashima¹, Ren Nakazaki², Asuteka Nagao², Ryo Iizuka¹, Hirohito Yamazaki³, Tsutomu Suzuki², Sotaro Uemura¹ (¹*Grad. Sch. Sci., The Univ. of Tokyo*, ²*Grad. Sch. Eng., The Univ. of Tokyo*, ³*TRI, Nagaoka Univ. of Tech*)
- 1Pos230 3D structural determination of biomolecules using spatial correlations in X-ray free-electron laser data
Wenyang Zhao¹, Osamu Miyashita¹, Miki Nakano¹, Florence Tama^{1,2,3} (¹*RIKEN Center for Computational Science*, ²*Institute of Transformative Bio-Molecules, Nagoya University*, ³*Department of Physics, Nagoya University*)
- 1Pos231 交流音を受容した内耳感覚上皮帯に生じる直流動作の検出とその起源
Induction of the offset motion by sinusoidal acoustic stimuli in cochlear sensory epithelium
Takeru Ota, Hiroshi Hibino (*Grad. Sch. Med., Osaka Univ.*)
- 1Pos232 原子間力顕微鏡を用いた転移能の異なる生きたがん細胞内核膜硬さ測定
Measurement of nuclear membrane properties in living cancer cells with different metastatic abilities using atomic force microscopy
Takehiko Ichikawa¹, Kundan Sivashanmugan², Takeshi Shimi^{1,3}, Kojiro Ishibashi³, Takeshi Yoshida^{1,4}, Rikinari Hanayama^{1,4}, Eishu Hirata^{1,3}, Hiroshi Kimura^{5,6}, Takeshi Fukuma^{1,7} (¹*Kanazawa Univ., NanoLSI*, ²*Univ. Maryland Sch. Med.*, ³*Kanazawa Univ., Canc. Res. Inst.*, ⁴*Kanazawa Univ., Grad. Sch. Med. Sci.*, ⁵*Tokyo Inst. Tech., Inst. Inno. Res.*, ⁶*Tokyo Inst. Tech., Grad. Sch. Biosci. Biotech.*, ⁷*Kanazawa Univ., Dev. Nano Life Sci.*)
- 1Pos233 高速 AFM/ラマンマルチモーダル計測装置の開発
Development of high-speed AFM/Raman multimodal system
Keishi Yang¹, Feng-Yueh Chan², Hiroki Watanabe², Shingo Yoshioka¹, Prabhat Verma¹, Takayuki Uchihashi², Takayuki Umakoshi¹ (¹*Grad. Sch. Eng., Univ. Osaka*, ²*Grad. Sch. Sci., Univ. Nagoya*)
- 1Pos234 深層学習を用いた XFEL 単粒子解析実験の回折パターン選別
Deep learning strategy for identifying hit diffraction patterns in experimental single particle XFEL data
Miki Nakano¹, Bhaskar Dasgupta², Sandhya P. Tiwari³, Osamu Miyashita¹, Florence Tama^{1,4,5} (¹*RIKEN, R-CCS*, ²*UTokyo, RCAST*, ³*Osaka Univ., IPR*, ⁴*Grad. Sch. Sci., Nagoya Univ.*, ⁵*Nagoya Univ., ITbM*)
- 1Pos235 生細胞表面構造の動態計測に向けた走査型イオン伝導顕微鏡の電流ノイズの低減の検討
Current noise reduction of scanning ion conductance microscopy for visualizing structural dynamics of living cell membranes
Shoma Kamei¹, Shinji Watanabe² (¹*Grad. Sch. NanoLSI, Kanazawa Univ.*, ²*WPI-NanoLSI, Kanazawa Univ.*)

- 1Pos236 ダイナミックレンジを増大させた FRET 型 ATP バイオセンサーによる単一細胞 ATP 計測
FRET-based ATP biosensors with expanded dynamic range for single-cell ATP measurement with fluorescence microscopy and flow cytometry
Akane Yonemitsu, Mizuho Nishida, **Hiromi Imamura** (*Grad. Sch. Biost., Kyoto Univ.*)
- 1Pos237 標的タンパク質を高効率で光不活化する光増感蛍光タンパク質
A photosensitizing fluorescent protein for high efficiency light inactivation of target proteins
Hisashi Shidara, Taku Shirai, Susumu Jitsuki, Kiwamu Takemoto (*Grad. Sch. Med., Mie Univ.*)
- 1Pos238 雲母格子上に整列した単一ポリペプチド鎖の光熱オフレゾナンスモード AFM による観察
Observation of single polypeptide chains aligned on a mica lattice by using photothermal off-resonance tapping AFM
Ikuo Obataya (*Quantum Design Japan*)
- 1Pos239 3次元構造化照明顕微鏡の光軸方向分解能向上における画像取得枚数の減少
Reduction of image acquisition for the 3D-structured illumination microscopy with an axial resolution improvement
Wataru Minoshima, Yamato Matsuo, Atsushi Matsuda (*Adv. Res. Inst., NICT*)
- 1Pos240 荷電ペプチドを付加して最小ルシフェラーゼの活性を高める: picALuc2.0
Adding a charged peptide to enhance the activity of a minimal luciferase: picALuc2.0
Yuki Ohmuro-Matsuyama¹, Hayato Matsui¹, Masaki Kanai¹, **Tadaomi Furuta**² (¹*Shimadzu Corporation*, ²*Sch. Life Sci Tech., Tokyo Tech*)
- 1Pos241 リソソーム周辺の局所的な細胞質 ATP 濃度イメージング
Imaging local ATP concentrations at the cytoplasmic surface of lysosomes
Momoko Aoyama¹, Taiichi Tsuyama², Hiromi Imamura³, Ken Yokoyama^{1,2} (¹*Graduate School of Life Science, Kyoto Sangyo University*, ²*Faculty of Life Science, Kyoto Sangyo University*, ³*Graduate School of Biostudies, Kyoto University*)
- 1Pos242 超高速 AFM の実現に向けたカンチレバーの変位検出レーザースポットの最小化
Miniaturization of the laser spot for cantilever deflection detection to realize ultra-high-speed AFM
Karen Kamoshita¹, Kenichi Umeda², Noriyuki Kodera² (¹*Grad. Sch. Math. & Phys., Kanazawa Univ.*, ²*WPI-NanoLSI, Kanazawa Univ.*)
- 1Pos243 生細胞における転写中の RNA ポリメラーゼ II 分子の力学的特性
Mechanical properties of single RNA Polymerase II molecules during transcription in living cells
Yuma Ito, Makio Tokunaga (*Sch. Life Sci. Tech., Tokyo Tech*)
- 1Pos244 Glow 発光する最小サイズ発光酵素 picALuc 変異体の作製
Glow-type conversion of a minimal luciferase, picALuc
Yuki Ohmuro-Matsuyama¹, Hayato Matsui¹, Masaki Kanai¹, Tadaomi Furuta² (¹*Technol. Res. Lab., Shimadzu Co., Ltd.*, ²*Sch. Life Sci Tech., Tokyo Tech*)
- 1Pos245 Effects of the astaxanthin against amyloid β aggregation on SH-SY5Y cells
Sahithya Hulimane Ananda, Gegen Tuya, Masahiro Kuragano, Kiyotaka Tokuraku (*Graduate School of Engineering, Muroran Institute of Technology*)
- 1Pos246 高速拡散 1 分子の位置推定精度向上にむけた軌跡追跡シミュレーション解析
Simulation analysis of improved trajectory tracking of single molecules undergoing fast diffusion
Hodaka Abiko, Yuma Ito, Makio Tokunaga (*Sch. Life Sci. Tech., Tokyo Tech*)
- 1Pos247 C2C12 筋芽細胞の分化過程における核内 1 分子動態の変化
Changes in single-molecule dynamics in the nucleus during differentiation of C2C12 myoblasts
Masanori Hirose, Yuma Ito, Makio Tokunaga (*Sch. Life Sci. Tech., Tokyo Tech*)

- 1Pos248 神経分化における細胞内発熱の寄与
Implication of Intracellular Thermogenesis in Neuronal Differentiation
Shunsuke Chuma^{1,2}, Kohki Okabe^{3,4}, Yoshie Harada^{2,5,6} (¹*Grad. Sch. Sci., Osaka Univ.*, ²*IPR, Osaka Univ.*, ³*Grad. Sch. Pharm. Sci., The Univ. Tokyo*, ⁴*JST PRESTO*, ⁵*QIQB Osaka Univ.*, ⁶*WPI-PRIME Osaka Univ.*)
- 1Pos249 カフェインがニワトリ胚心臓の発生に及ぼす影響の SS-OCT による観察
Cardiac development in chick embryos exposed to caffeine imaged with swept source OCT
Ryuichiro Yamazaki, Takashi Yamaoka, Tomoya Tanaka, Yuuta Moriyama, Toshiyuki Mitsui (*Aogaku Univ. Dept. of Phys.*)

2 日目 (11 月 15 日 (水)) / Day 2 (Nov. 15 Wed.) 16:50 ~ 18:50

01A. タンパク質：構造 / 01A. Protein: Structure

- 2Pos001 海洋放線菌由来新規酵素の構造解析
Structural analysis of a novel enzyme from marine *Streptomyces*
Takumi Oshiro¹, Shuta Uehara¹, Yoshikazu Tanaka², Takuya Ito³, Yoshio Kodera^{1,4}, Takashi Matsui^{1,4} (¹*Grad. Sch. Sci., Kitasato Univ.*, ²*Grad. Sch. Life Sci., Tohoku Univ.*, ³*Fac. Farm., Osaka Ohtani Univ.*, ⁴*Center for Disease Proteomics, Sch. Sci., Kitasato Univ.*)
- 2Pos002 ディープラーニングによる電子顕微鏡画像中の生体分子の同定手法の開発
Identification of biomolecules in electron microscopy images with deep learning
Atsushi Matsumoto (*Institute for Quantum Life Science, National Institutes for Quantum Science and Technology*)
- 2Pos003 ヒト・ノイラミニダーゼ 1 (hNeu1) の構造特定に向けたモデル作成
Model creation for structure determination of human neuraminidase1(hNeu1)
Takeru Nakajima¹, Leonard Chavas^{1,2}, Swagatha Ghosh¹, Hiroki Onoda² (¹*Grad. Sch. Appl. Phys., Nagoya Univ.*, ²*NUSTR, Nagoya Univ.*)
- 2Pos004 硫酸還元細菌 *Desulfovibrio vulgaris* Miyazaki F 株由来 APS 還元酵素の結晶構造
Crystal structure of APS reductase from *Desulfovibrio vulgaris* Miyazaki F.
Rio Hamada, Koji Nishikawa, Hideaki Ogata (*Grad. Sch. Sci., Univ. Hyogo*)
- 2Pos005 海洋性ビブリオ菌べん毛モーター固定子タンパク質 PomB のリンカー領域の役割
Roles of linker region of PomB, flagellar stator protein in *Vibrio alginolyticus*
Yusuke Miyamura¹, Tatsuro Nishikino², Hiroaki Koiwa¹, Kanji Takahashi³, Yuki Tajimi³, Michio Homma³, Takayuki Uchihashi³, Seiji Kojima¹ (¹*Dept. Biol. Sci., Grad.*, ²*Det. Life Sci., Appl. Chem., Nagoya Inst. Tech.*, ³*Dept. Phys., Grad. Sch. Sci., Nagoya Univ.*)
- 2Pos006 F_oF₁-ATPase の非触媒部位の機能
Function of the non-catalytic site of F_oF₁-ATPase
Ren Kobayashi, Atsuki Nakano, Ken Yokoyama (*Faculty of Life Science, Kyoto Sangyo University*)
- 2Pos007 Studying structural and dynamic properties of urinary human serum albumin fragments: simulation studies
Chanya Archapraditkul¹, Kanokwan Janon¹, Deanpen Japrung², Prapasiri Pongprayoon^{1,3} (¹*Department of Chemistry, Faculty of Science, Kasetsart University, Bangkok 10900, Thailand*, ²*National Nanotechnology Center, National Science and Technology Development Agency, Thailand Science Park, Khlong Luang, Pathum Thani, Thailand*, ³*Center for Advanced Studies in Nanotechnology for Chemical, Food and Agricultural Industries, KU Institute for Advanced Studies, Kasetsart University, Bangkok, Thailand*)

- 2Pos008 Computational studies of inhibitory effect of brazilin and hematein from *Caesalpinia sappan* Linn. against *Cutibacterium acnes*
Maneenuch Pengsawang¹, Apaporn Boonmee², Phoom Chairatana³, Prapasiri Pongprayoon¹
 (¹Department of Chemistry, Faculty of Science, Kasetsart University, Bangkok 10900, Thailand, ²Department of Chemistry, Faculty of Science and Technology, Rambhai Barni Rajabhat University, Chanthaburi 22000, Thailand, ³Department of Microbiology, Faculty of Medicine Siriraj Hospital, Mahidol University, Bangkok 10700, Thailand)
- 2Pos009 持続可能なフードシステムに向けたエネルギー豊富なタンパク質の構造決定
 Structural characterization of energy-rich proteins for sustainable food systems
Yuuma Tanaka¹, Swagatha Ghosh¹, Leonard Chavas^{1,2} (¹Dept. of Appl. Phys., Grad. Sch. of Eng., Nagoya Univ., ²Synchrotron Radiation Research Center, Nagoya Univ.)
- 2Pos010 Analysis of the electronic state of the metal sites of cytochrome c oxidase using simultaneous XES and XRD measurements
Keigo Tsuiki¹, Takahumi Kamei¹, Takanori Nakane², Tetsuo Katayama³, Atsuhiko Shimada¹ (¹Dept. Appl. Life Sci., Fac. Appl. Biol. Sci., Univ. Gifu, ²Inst. Protein Res., Univ. Osaka, ³JASRI)
- 2Pos011 Electron transfer mechanism proposed by the cryo-EM structure of cytochrome c and cytochrome c oxidase complex
Yuto Taguchi¹, Daisuke Kouzai², Haruna Naitou¹, Kouki Nishikawa^{3,4}, Yoshinori Huziyoshi^{3,4}, Kazutoshi Tani⁵, Kouichirou Ishimori⁶, Atsuhiko Shimada¹ (¹Dept. Appl. Life Sci., Fac. Appl. Biol. Sci., Univ. Gifu, ²Inst. Cellular and Structural Physiology, Univ. Nagoya, ³Inst. Adv. Res., Univ. Tokyo Medical and Dental, ⁴CeSPIA Inc., ⁵Grad. Sch. Med., Univ. Mie, ⁶Faculty of science, Univ. Hokkaidou)

01B. タンパク質：構造機能相関／01B. Protein: Structure & Function

- 2Pos012 膜内切断プロテアーゼ RseP の結晶構造及び基質の進入と切断を制御する新規ゲーティング機構モデル
 Crystal structure and novel gating mechanistic model to regulate substrate entry and its cleavage of the intramembrane protease RseP
Yohei Hizukuri¹, Yuki Imaizumi², Kazunori Takanuki², Takuya Miyake¹, Tatsuya Kobayashi¹, Tatsuhiko Yokoyama¹, Rika Oi², Terukazu Nogi², Yoshinori Akiyama¹ (¹Inst. Life Med. Sci., Kyoto Univ., ²Grad. Sch. Med. Life Sci., Yokohama City Univ.)
- 2Pos013 インバース共溶媒分子動力学法によるタンパク質-化合物部分構造相互作用の定量的評価手法の開発
 Quantitative Evaluation of Protein-Chemical Substructure Interaction with Inverse Mixed-Solvent Molecular Dynamics Simulation
Keisuke Yanagisawa¹, Ryunosuke Yoshino^{2,3}, Genki Kudo⁴, Takatsugu Hirokawa^{2,3} (¹Comput. Sci., Sch. Comput., Tokyo Tech, ²Faculty Med., Univ. Tsukuba, ³TMRC, Univ. Tsukuba, ⁴Appl. Sci., Grad. Sch. Sci. Tech., Univ. Tsukuba)
- 2Pos014 フラボ酸化還元酵素の光化学的性質を利用したタンパク質構造ダイナミクス解析
 Investigation of protein dynamics using photochemistry of a flavin prosthetic group in oxidoreductase
Daisuke Seo¹, Bo Zhuang², Alexey Aleksandrov², Marten Vos² (¹Division of Material Science, Graduate School of Natural Science and Technology, Kanazawa University, ²LOB, CNRS, INSERM, École Polytechnique, Institut Polytechnique de Paris)
- 2Pos015 A synthetic biology approach to reconstituting defined amyloid fibrils for FAD-related Aβ that reproduce features of cotton-wool plaque
 Mohammad Jafar Tehrani¹, Isamu Matsuda¹, Atsushi Yamagata², Tatsuya Matsunaga^{1,2}, Mikako Shirouzu², **Yoshitaka Ishii**^{1,2} (¹School of Life Science and Technology, Tokyo Institute of Technology, ²RIKEN Center for Biosystems Dynamics Research)

- 2Pos016 海洋生物由来の抗 SARS-CoV-2 活性を有するタンパク質の血球凝集活性を抑制するタンパク質工学的手法
Protein engineering for suppressing hemagglutination activity of anti-SARS-CoV-2 protein from marine organism
Mami Okabe¹, Hiromi Watari², Yokoyama Takeshi¹, Ayato Takada³, Ryuichi Sakai², Yoshikazu Tanaka¹
(¹Graduate School of Life Science, Tohoku University, ²Faculty of Fisheries Sciences, Hokkaido University, ³International Institute for Zoonosis Control, Hokkaido University)
- 2Pos017 CD28 結合における Gads SH2 の構造機能特性
Structural and functional properties of Gads SH2 dimer in CD28 binding
Yusuke Sakakibara, Saki Ochi, Masayuki Oda (*Grad. Sch. Life Environ. Sci., Kyoto Pref. Univ.*)
- 2Pos018 細菌の運動と形態を規定する細胞内べん毛の in situ 構造解析
In situ structural analysis of the periplasmic flagella that regulates bacterial motility and morphology
Akihiro Kawamoto¹, Toshiki Kuribayashi², Masatomo Morita³, Shuichi Nakamura², Nobuo Koizumi³
(¹IPR., Univ. Osaka, ²Grad. Sch. Engineer., Univ. Tohoku, ³NIID)

01C. タンパク質：物性 / 01C. Protein: Physical Property

- 2Pos019 タンパク質の液液相分離に対する尿素とトリメチルアミン N-オキシドの効果
Effects of small molecular compounds on protein liquid-liquid phase separation: Urea and trimethylamine N-oxide (TMAO)
Keiji Kitamura¹, Ryo Kitahara^{1,2} (¹Graduate School of Pharmacy, Ritsumeikan University, ²College of Pharmaceutical Sciences, Ritsumeikan University)
- 2Pos020 タンパク質の高分解能熱流解析：2次構造の役割
High resolution heat current analysis of proteins: Role of secondary structure
Yoichi Arita, Tingting Wang, Wataru Sugiura, Shigure Saito, Takahisa Yamato (*Grad. Sci., Nagoya Uni.*)
- 2Pos021 中性子準弾性散乱により明らかとなった α -シヌクレインの内部ダイナミクス
Internal dynamics of α -synuclein revealed by quasielastic neutron scattering
Satoru Fujiwara¹, Kai Nishikubo², Taiki Tominaga³ (¹Inst. Quantum Life Science, QST, ²Ibaraki Univ., ³Neutron R&D Div., CROSS)
- 2Pos022 タンパク質の熱流計算：アミノ酸残基間コミュニケーションの原子レベル観測
Computational study of heat flow in proteins: Observation of residue-residue communication at the atomic level
Shigure Saito, Tingting Wang, Wataru Sugiura, Yoichi Arita, Takahisa Yamato (*Grad. Sch. Sci., Univ. Nagoya*)
- 2Pos023 ケージ状蛋白質に閉じ込めた蛋白質の安定性
Stability of the proteins inside the caged protein
Shuji Kanamaru (*Dep. of Life Sci. and Tech., Tokyo Inst. of Tech.*)
- 2Pos024 2つの変性タンパク質が互いに結合してフォールディングする反応機構の統計力学モデルによる予測
Predicting mechanisms of mutual synergistic folding by a statistical mechanical model
Shun Nagai¹, Koji Ooka², Runjing Liu³, Munchito Arai^{1,2,3} (¹Dept. Phys., Univ. Tokyo, ²Col. Arts & Sci., Univ. Tokyo, ³Dept. Life Sci., Univ. Tokyo)
- 2Pos025 α B クリスタリンによる早期アミロイド形成阻害の分子機構
Molecular mechanism of early inhibition of amyloid formation by α B-crystallin
Yuki Kokuo¹, Keisuke Yuzu¹, Naoki Yamamoto², Ken Morishima³, Aya Okuda³, Rintaro Inoue³, Masaaki Sugiyama³, Junna Hayashi⁴, John A. Carver⁴, **Eri Chatani**¹ (¹Grad. Sch. Sci., Kobe Univ., ²Grad. Sch. Med., Jichi Med. Univ., ³KURNS., Kyoto Univ., ⁴Res. Sch. Chem., Austral. Natl. Univ.)

- 2Pos026 統計力学モデルによるタンパク質のフォールディング経路の理論的デザイン
Theoretical design of protein folding pathways by a statistical mechanical model
Sae Kato¹, Koji Ooka², Runjing Liu¹, Munechito Arai^{1,2,3} (¹*Dept. Life Sci., Univ. Tokyo*, ²*Col. Arts & Sci., Univ. Tokyo*, ³*Dept. Phys., Univ. Tokyo*)
- 2Pos027 RNA 結合タンパク質 FUS による液-液相分離と不可逆凝集：高圧吸光度法と蛍光顕微鏡によるアプローチ
Liquid-liquid phase separation and irreversible aggregation of FUS: High-pressure UV-visible spectrophotometry and fluorescence microscopy
Ryu Yamamoto (*Graduate School of Pharmacy, Ritsumeikan University*)

01D. タンパク質：機能 / 01D. Protein: Function

- 2Pos028 Photoregulation of Ras GTPase Activity using regulatory Factor GAP modified with azobenzene derivatives
Rajib Ahmed, Nobuyuki Nishibe, Alrazi Islam MD, Kazunori Kondo, Shinsaku Maruta (*Department of Biosciences, Graduate School of Science and Engineering Soka University, Hachioji, Tokyo.*)
- 2Pos029 脂肪酸結合タンパク質 FABP4 と脂肪酸における網羅的な結合特性に関する研究
A comprehensive study of binding properties between fatty acid binding protein FABP4 and fatty acids
Haruka Terawaki¹, Hazuki Namiki¹, Shun Tokudome¹, Fumio Hayashi², Yusuke Inoue^{1,3}, Shigeru Sugiyama⁴, Shigeru Matsuoka⁵, Michio Murata⁶, Masashi Sonoyama^{1,3,7} (¹*Grad. Sch. Sci. Tech., Gunma Univ.*, ²*Ctr. Inst. Analysis, Gunma Univ.*, ³*GUCFW, Gunma Univ.*, ⁴*Fac. Sci. Tech., Kochi Univ.*, ⁵*Fac. Med., Oita Univ.*, ⁶*Grad. Sch. Sci., Osaka Univ.*, ⁷*GIAR, Gunma Univ.*)
- 2Pos030 プロピオン酸菌由来乳清発酵物質によるダイオキシン受容体 AhR 活性化を介した免疫賦活化機構の解析
Analysis of immunostimulatory mechanism through activation of dioxin receptor AhR by fermented whey derived from propionic acid bacteria
Yukihiko Narita¹, Atsuko Miura^{1,2}, Taku Sugawara², Hiroaki Shimizu¹, Hideaki Itoh³ (¹*Akita University Graduate School of Medicine/Department of Neurosurgery*, ²*Akita Cerebrospinal and Cardiovascular Center*, ³*Graduate School of Agricultural and Life Sciences, The University of Tokyo*)
- 2Pos031 Antifreeze proteins possibly control cellular water transport to protect cells from hypothermic damage
Yue Yang¹, Tatsuya Arai^{1,2}, Yuji C. Sasaki^{1,2} (¹*Grad. Sch. of Fron. Sci., Univ. Tokyo*, ²*AIST-UTokyo*)
- 2Pos032 Guanidine/Biguanide 系薬剤とミトコンドリア呼吸鎖末端酵素の相互作用解析
Interaction analysis between Guanidine/Biguanides and a terminal enzyme of mitochondrial respiratory chain
Seungwan Woo¹, Gerald I Shulman², Atsuhiko Shimada³ (¹*Grad. Sch. Nat. Sci. Tech., Univ. Gifu*, ²*Sch. Med., Univ. Yale*, ³*Fac. Appl. Biol. Sci., Univ. Gifu*)
- 2Pos033 大腸菌フェリチンの鉄酸化活性に及ぼす無機リン酸の影響
Effect of inorganic phosphate on the iron oxidation activity of *Escherichia coli* ferritin A
Takumi Kuwata, Kazuo Fujiwara, Masamichi Ikeguchi (*Dept. of Biosci., Grad. Sch. of Sci and Eng., Soka Univ.*)
- 2Pos034 TAT ロドプシンが 77K で示すプロトン移動反応に対する分光解析
Spectroscopic analysis of proton transfer reaction of TAT rhodopsin at 77 K
Tepei Sugimoto¹, Kota Katayama^{1,2}, Hideki Kandori^{1,2} (¹*Graduation school of Engineering, Nagoya institute of technology*, ²*OptoBio Technology Research Center, Nagoya institute of technology*)

- 2Pos035 A platform for testing the properties of peptide-based siderophore mimics using computational and biophysical methods
Piotr Sebastian Maj, Uladzislava Tsylents, Monika Wojciechowska, Joanna Trylska (*Centre of New Technologies, University of Warsaw, Poland*)
- 2Pos036 生細胞中の CRAF は 14-3-3 との相互作用を介して 2 種類の閉構造をとる
CRAFs in living cells adopt two types of closed conformations through interaction with 14-3-3
Kenji Okamoto, Yasushi Sako (*RIKEN CPR*)
- 2Pos037 ラマン分光法を用いた心臓アミロイドーシスの鑑別診断
Differential diagnosis of cardiac amyloidosis using Raman spectroscopy
Mizuki Yoshimoto¹, Takeshi Honda², Hiroki Takanari³, Shin-ichiro Yanagiya³, Hirokazu Miki⁴
(¹Graduate school of medicine, Tokushima university, ²Graduate school of sciences and technology for innovation, Tokushima university, ³Institute of Post-LED Photonics, Tokushima university, ⁴Tokushima university Hospital)
- 2Pos038 高効率で特異的なシステインの修飾法の開発
Development of Highly efficient and specific modification technique for Cys residue
Arisa Suto¹, Yoshio Kodera^{1,2}, Takashi Matsui^{1,2} (¹Grad. Sch. Sci., Kitasato Univ., ²Center for Disease Proteomics, Sch. Sci., Kitasato Univ)
- 2Pos039 MDCC 標識リン酸結合タンパクを含む droplet chamber array による高感度無機リン酸検出
Highly sensitive detection of inorganic phosphate using droplet chamber arrays containing MDCC-labeled phosphate-binding protein
Tomohiro Aoyama¹, Yoshihiro Minagawa², Hiroshi Ueno², Nobukiyo Tanaka¹, Hiroyuki Noji², Tomoko Masaiki¹ (¹Dept. Appl. Biol. Sci., Tokyo Univ. of Sci., ²Dept. Appl. Chem., Sch. Eng., Univ. of Tokyo)
- 2Pos040 原子間力顕微鏡像の探針形状推定法計算の高速化
Accelerating end-to-end differentiable blind tip reconstruction algorithm for fast reconstruction of molecular surfaces
Ryuhei Oshima, Yasuhiro Matsunaga (*Grad. Sch. Sci. Eng., Saitama Univ.*)
- 2Pos041 アミロイド β42 と 40 検出のためのチオ NAD サイクリング ELISA 法の開発
Development of thio-NAD cycling ELISA for detection of amyloid beta 42 and 40
Yuta Kyosei¹, Etsuro Ito^{1,2} (¹Department of Biology, Waseda University, ²BioPhenoMA Inc.)

- 2Pos042 単量体化した人工赤色蛍光蛋白質 AzamiRed の構造
Structure of monomerized AzamiRed, an artificial red fluorescent protein engineered from AzamiGreen
Shiho Otubo¹, Hiromi Imamura², Isamu Nagatomi¹, Norihiro Takekawa¹, **Katsumi Imada**¹ (¹Grad. Sch. Sci., Osaka Univ., ²Grad. Sch. Biost., Kyoto Univ.)
- 2Pos043 MD シミュレーション・レプリカ交換モンテカルロ法と機械学習によるデータ効率的なタンパク質機能改良
Data Efficient Protein Function Improvement by Machine Learning with MD Simulation and Replica Exchange Monte Carlo Method
Teppi Deguchi^{1,2}, Shinji Iida³, Yutaka Saito^{1,2,3} (¹Grad. Sch. FS., Univ. Tokyo, ²AIRC, AIST, ³Sch. FR., Univ. Kitasato)

- 2Pos044 深層学習による小型 PD-1 アンタゴニストの理論的設計
Theoretical design of a small PD-1 antagonist with deep learning
Shinya Inoue¹, Shunji Suetaka¹, Munchito Arai^{1,2} (¹*Dept. Life Sci., Univ. Tokyo*, ²*Dept. Phys., Univ. Tokyo*)
- 2Pos045 内包分子を鋳型としたウイルス模倣粒子の構築
Assembly of virus-like architectures directed by cargo molecules
Kenya Tajima, **Naohiro Terasaka** (*Earth-Life Science Institute, Tokyo-Tech*)
- 2Pos046 ダーウィン進化を用いたスクリーニング不要の in vitro 指向性進化系の実現に向けて
Toward screening-free in vitro directed evolution with natural selection
Taro Furubayashi¹, Thibault Di Meo¹, Yoshihiro Minagawa¹, Hiroyuki Noji¹, Yannick Rondelez²
(¹*Grad. Sch. Eng., Univ. Tokyo*, ²*ESPCI, Paris*)
- 2Pos047 カルモジュリンを利用した G タンパク質 Ras のイオノクロミック制御
Iono-chromic control of G-protein Ras using calmodulin
Ziyan Zhang¹, Yassine Sabek¹, Nobuyuki Nishibe¹, Kazunori Kondo², Sinsaku Maruta^{1,2} (¹*Grad. Sch. Sci., Univ.Soka, ²Sci., Univ. Soka*)
- 2Pos048 相互作用データのハイスループットな収集による抗体特異性制御残基の特定
Identification of residues which regulate antibody specificity by high-throughput collection of interaction data
Mayuko Inagaki¹, Ryo Matsunaga¹, Shigeru Okumura², Toshiaki Maruyama², Kevin Entzminger², Kouhei Tsumoto^{1,3,4} (¹*Department of Bioengineering, Graduate School of Engineering, The University of Tokyo*, ²*Abwiz Bio Inc.*, ³*Department of Chemistry and Biotechnology, Graduate School of Engineering, The University of Tokyo*, ⁴*The Institute of Medical Science, The University of Tokyo*)
- 2Pos049 ウシ由来抗菌ペプチドの高収率組換え発現系の構築及び機能の検討
Construction of a high-yield recombinant expression system of bovine antimicrobial peptides and elucidation of function and mode of action
Fumi Hirai¹, Mitsuki Shibagaki¹, Hao Gu¹, Yuya Hizume², Tomoyasu Aizawa^{1,2} (¹*Grad. Sch. Life Sci., Hokkaido Univ.*, ²*Sch. Sci., Hokkaido Univ.*)

01G. タンパク質：天然変性／01G. Protein: Intrinsic disorder

- 2Pos050 天然変性タンパク質の液液相分離に関する MD シミュレーション
MD simulation of liquid-liquid phase separation of intrinsically disordered proteins
Tetsu Koyama, Naoki Iso, Yuki Norizoe, Takuya Saito, Takahiro Sakaue (*Univ. Aoyama Gakuin*)
- 2Pos051 ストレスセンサーの会合を制御する多様な相互作用の分子機構
Molecular mechanisms of multiple interactions regulating stress sensor assembly
Soichiro Kawagoe¹, Takuya Mabuchi^{2,3}, Hiroyuki Kumeta⁴, Motonori Matsusaki¹, Munehiro Kumashiro¹, Koichiro Ishimori⁵, Tomohide Saio¹ (¹*Inst. of Adv. Med.Sci., Tokushima Univ.*, ²*Front. Res. Inst. for Interdiscip. Sci., Tohoku Univ.*, ³*Inst. of Fluid Sci., Tohoku Univ.*, ⁴*Fac. of Adv. Life Sci., Hokkaido Univ.*, ⁵*Dept. of Chem., Fac. of Sci., Hokkaido Univ.*)
- 2Pos052 Hyperphosphorylation of nucleolar protein Nopp140 drives mitotic nucleolar disassembly
Hisashi Shimamura¹, Yuki Norizoe², Takahiro Sakaue², Shige H. Yoshimura³ (¹*Fac. Int. Human Studies, Kyoto University*, ²*Col. Science and Engineering, Aoyama Gakuin University*, ³*Grad. Sch. Biostudies, Kyoto University*)
- 2Pos053 タンパク質液液相分離過程の細胞内と試験管での違いとその機構の解明
Exploring the mechanism to explain the difference in protein liquid-liquid phase separation (LLPS) processes between in vitro and in cells
Hitomi Kimura^{1,2}, Natsumi Tane¹, Kyota Yasuda^{1,2}, **Shin-ichi Tate**^{1,2} (¹*Grad. Sch. Int. Sci. Life, Hiroshima Univ.*, ²*WPI-SKCM2, Hiroshima Univ.*)

- 2Pos054 二機能的クリプトクロム C 末端領域における構造ダイナミクスの NMR 解析
NMR analysis of dynamics of the C terminal extension in bi-functional cryptochrome
Yuki Kaide, Satoshi Nagao, Wataru Sato, Minoru Kubo (*Grad. Sch. Sci., Univ. Hyogo*)
- 2Pos055 光誘起 TDP-43 IDR 凝縮体の細胞質における特徴的脱会合過程
Distinct disassemble process of light-induced condensates of TDP-43 intrinsically disordered region in the cytoplasm
Yuta Hamada¹, Akira Kitamura² (¹*Grad. Sch. of Life Sci., Hokkaido Univ.*, ²*Fac. of Adv. Life Sci., Hokkaido Univ*)
- 2Pos056 ストレス顆粒の形成・機能に必要な構成因子の近傍分子ラベルを用いた同定・解析
Proximity labeling identified a protein essential for the proper formation and function of stress granule
Kyota Yasuda (*Grad. Sch. Int. Life Sci. Hiroshima*)
- 2Pos057 α -シヌクレインの液-液相分離を誘導・制御する *de novo* ペプチドの開発
De novo peptides that induce and modulate the liquid-liquid phase separation of α -synuclein
Tatsuya Ikenoue¹, Masatomo So², Naohiro Terasaka¹, Wei-En Huang¹, Yasushi Kawata³, Yohei Miyanoiri⁴, Hiroaki Suga¹ (¹*Department of Chemistry, The University of Tokyo*, ²*Department of Future Basic Medicine, Nara Medical University*, ³*Department of Chemistry and Biotechnology, Tottori University*, ⁴*Institute for Protein Research, Osaka University*.)

05. RNA・RNA 結合タンパク質 / 05. RNA & RNA binding proteins

- 2Pos058 ハンマーヘッドリボザイムの酵素反応に関する理論的研究
Theoretical study on an enzymatic reaction of the hammerhead ribozyme
Ayaka Matsuyama¹, Masahiko Taguchi², Shigehiko Hayashi¹ (¹*Grad. Sch. Sci., Kyoto Univ.*, ²*IMRAM, Tohoku Univ.*)
- 2Pos059 ウイルス RNA 構造の理解のための RNA 構造の測定と推定
Investigation and prediction of RNA structure towards the understanding of viral RNA structure
Yuji Itoh^{1,2,3}, Takuya Katayama^{1,2}, Naoya Kaneda^{1,3}, Shrutarshi Mitra¹, Satoshi Takahashi^{1,2,3} (¹*IMRAM, Tohoku Univ.*, ²*Grad. Sch. Life Sci., Tohoku Univ.*, ³*Grad. Sch. Sci., Tohoku Univ.*)
- 2Pos060 Conformational elucidation of SARS-CoV-2 genomic RNA elements by single-molecule FRET measurements
Shrutarshi Mitra¹, Yuji Itoh^{1,2}, Takuya Katayama^{1,2}, Satoshi Takahashi^{1,2} (¹*Institute of Multidisciplinary Research for Advanced Materials (IMRAM), Tohoku University*, ²*Graduate School of Life Science, Tohoku University*)
- 2Pos061 NMR 法による DNA-RNA ハイブリッドグアニン四重鎖構造とペプチドの相互作用解析
Detection of the interaction between DNA-RNA hybrid G-quadruplex structure and G-quadruplex-binding peptide using NMR
Taisei Masunaga^{1,2}, Yudai Yamaoki^{1,2}, Chihiro Nakayama², Keiko Kondo¹, Takashi Nagata^{1,2}, Masato Katahira^{1,2} (¹*Institute of Advanced Energy, Kyoto University*, ²*Graduate School of Energy Science, Kyoto University*)

- 2Pos062 酵素を用いた時間遅れ反応による DNA 液滴ベース人工細胞の分裂制御
Controlled division of DNA droplet-based artificial cells coupled with enzymatic time delay circuit
Tomoya Maruyama¹, Ryohei Furuichi², Akihiro Yamamoto², Gong Jing¹, Masahiro Takinoue^{1,2,3}
(¹*School of Life science and Technology, Tokyo Institute of Technology*, ²*School of Computer Science, Tokyo Institute of Technology*, ³*Living Systems Materialogy (LiSM) Research Group, International Research Frontiers Initiative (IRFI), Tokyo Institute of Technology*)
- 2Pos063 Kissing-loop 相互作用により構築された RNA 液滴による AND 論理演算
'AND' logic operation of RNA droplets assembled via kissing-loop interaction
Hirotake Udono¹, Minzhi Fan¹, Yoko Saito¹, Hirohisa Ohno², M. Shin-ichiro Nomura³, Yoshihiro Shimizu⁴, Hirohide Saito², Masahiro Takinoue¹ (¹*Sch. Comp., Tokyo Tech.*, ²*CiRA, Kyoto Univ.*, ³*Sch. Eng., Tohoku Univ.*, ⁴*Riken*)
- 2Pos064 DNA 液滴のための相分離スイッチ素子の設計
Design of phase-separation switch element for DNA droplet
Yuta Aizaki¹, Masahiro Takinoue^{1,2} (¹*Department of Computer Science, Tokyo Institute of Technology*, ²*Living Systems Materialogy (LiSM) Research Group, International Research Frontiers Initiative (IRFI), Tokyo Institute of Technology*)
- 2Pos065 人工 DNA ナノ粒子モーターの高速化戦略
Strategy for acceleration of artificial DNA-nanoparticle motor
Takanori Harashima^{1,2}, Akihiro Otomo^{1,2}, Ryota Iino^{1,2} (¹*Institute for Molecular Science*, ²*SOKENDAI*)
- 2Pos066 DNA 液滴の時空間的形成の制御
Regulation of spatiotemporal formation of DNA droplets
Shogo Kai¹, Yusuke Sato² (¹*Sch. Comp. Sci. Syst. Eng., Kyutech*, ²*Grad. Sch. Comp. Sci. Syst. Eng., Kyutech*)
- 2Pos067 Toward a DNA origami-based motor with power stroke mechanism and tunable parameters
Akihiro Fukuda¹, Yusuke Sato², Takeshi Yokoyama^{3,4}, Yoshikazu Tanaka³, Shoichi Toyabe¹ (¹*Grad. Sch. Eng., Univ. Tohoku*, ²*Grad. Sch. Comp. Sci. Syst. Eng., Kyutech*, ³*Grad. Sch. Life Sci., Univ. Tohoku*, ⁴*JST PRESTO*)
- 2Pos068 3D DNA nanostructure-based assembled structures for the construction of chromatin-like heterogeneous system
Hong Xuan Chai¹, Masahiro Takinoue^{1,2} (¹*Tokyo Institute of Technology, School of Life Science and Technology*, ²*Tokyo Institute of Technology, School of Computing*)
- 2Pos069 DNA 液滴コンピュータによる核酸酵素反応の制御
Control of deoxyribozyme activity by computational DNA droplets
Naoki Yoshida¹, Masahiro Takinoue^{1,2} (¹*Grad. Sch. Life. Sci. & Tech., Tokyo Tech.*, ²*Grad. Sch. Comput., Tokyo Tech.*)
- 2Pos070 Functionalization of vertices on wireframe DNA origami polyhedron
Takuma Nishimura, Kanta Tsumoto, Yuki Suzuki (*Grad. Sch. Eng., Mie. Univ.*)

14. 分子モーター / 14. Molecular motor

- 2Pos071 細菌べん毛モーター固定子 MotB の L118P 変異がモーター負荷応答に与える影響
The L118P mutation in the stator protein MotB affects motor adaptation to load in the bacterial flagellar motor
Shuo Peng Wang¹, Tsubasa Ishida², Naoki Hidaka¹, Shoichi Toyabe³, Seiji Kojima⁴, Yoshiyuki Sowa^{1,2}
(¹*Dep. Front. Biosci., Hosei Univ.*, ²*Micro-Nano Tech., Hosei Univ.*, ³*Grad. Sch. Eng., Tohoku Univ.*, ⁴*Grad. Sch. Sci., Nagoya Univ.*)

- 2Pos072 哺乳類 V-ATPase の構造機能解明
Structure-function elucidation of mammalian V-ATPase
Yui Nishida¹, Atsuko Nakanishi², Atsuki Nakano¹, Shiori Saeki¹, Kaoru Mitsuoka², Ken Yokoyama¹
(¹*Grad. Sch. Bioscience., Kyoto Sangyo Univ.*, ²*Research Center for UHVEM., Osaka Univ.*)
- 2Pos073 細菌べん毛モーターにおけるステップ回転の固定子数依存性
Stator-number dependence of stepwise rotation in the bacterial flagellar motor
Shusuke Kuboi, Shuichi Nakamura (*Dept. Appl. Phys., Grad. Sch. Eng., Tohoku Univ.*)
- 2Pos074 光渦を用いた光ピンセットと DNA オリガミによる生体分子モーター F₁-ATPase の静止トルク測定
Quantitative force manipulation and measurement of F₁-ATPase via DNA Origami probe optically trapped with an optical vortex
Yu Hashimoto, Tomoko Otsu-Hyodo, Yoshiyuki Ohtake, Sayaka Kazami, Yuji Kimura, Hiroyasu Itoh (*Hamamatsu Photonics K.K. Central research laboratory*)
- 2Pos075 F₀F₁-ATP 合成酵素 c-サブユニットローター回転の熱力学的メカニズム
Thermodynamic mechanism underlying the rotation of the c-subunit rotor of F₀F₁-ATP synthase
Hideo Akutsu^{1,7}, Yasuto Todokoro², Su-Jin Kang³, Toshiharu Suzuki⁴, Takahisa Ikegami¹, Masatune Kainosho⁵, Masasuke Yoshida⁶, Toshimichi Fujiwara⁷ (¹*Grad. Sch. Med Life Sci., Yokohama City Univ.*, ²*Sch. Sci., Osaka Univ.*, ³*Seoul Natl. Univ.*, ⁴*Lab. Chem. Life Sci., Tokyo Inst. Tech.*, ⁵*Grad. Sch. Sci., Tokyo Metro. Univ.*, ⁶*Grad. Sch. Life Sci., Kyoto Sangyo Univ.*, ⁷*IPR, Osaka Univ.*)
- 2Pos076 Na⁺駆動型べん毛モーターキメラ固定子の動態観察
Stator dynamics of chimeric Na⁺-driven *E. coli* flagellar motor observed with fluorescent microscopy
Tomoya Shoji¹, Naoki Hidaka¹, Yong-Suk Che³, Yoshiyuki Sowa^{1,2} (¹*Department of Frontier Bioscience, Hosei University*, ²*Micro-Nano Technology, Hosei University*, ³*Graduate School of Frontier Bioscience, Osaka University*)
- 2Pos077 Deciphering the actin structure-dependent preferential cooperative binding of cofilin
Kien Xuan Ngo¹, Huong T Vu², Kenichi Umeda¹, Noriyuki Kodera¹, Taro Q.P. Uyeda³, Toshio Ando¹
(¹*WPI NanoLSI, Kanazawa Univ., Jpn.*, ²*Cent. Mechanochem. Cell Biol., Warwick Med. Sch., UK.*, ³*Fact. Sci. Eng., Waseda Uni., Jpn.*)
- 2Pos078 べん毛 III 型輸送 ATPase 複合体の CryoEM 構造
CryoEM structure of the ATPase ring complex of the flagellar Type III export apparatus
Asako Usui¹, Miki Kinoshita³, Yuki Tajimi², Takayuki Uchihashi², Tohru Minamino³, Norihiro Takekawa¹, Katsumi Imada¹ (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.*)
- 2Pos079 Physical pictures of rotation mechanisms of F₁- and V₁-ATPases: Leading roles of translational, configurational entropy of water
Satoshi Yasuda^{1,2}, Tomohiko Hayashi^{3,4}, Takeshi Murata^{1,2}, Masahiro Kinoshita^{4,5} (¹*Grad. Sc. Sci., Chiba Univ.*, ²*Membrane Protein Research and Molecular Chirality Research Centers, Chiba Univ.*, ³*Facul. Eng., Niigata Univ.*, ⁴*Institute of Advanced Energy, Kyoto Univ.*, ⁵*Center for the Promotion of Interdisciplinary Education and Research, Kyoto Univ.*)
- 2Pos080 ミトコンドリアまたは α プロテオバクテリアの共通祖先型 F₁-ATPase の 1 分子回転解析
Single-molecule analysis of the rotation of the common ancestral F₁-ATPase of mitochondria or α-proteobacteria
Hiroki Homma¹, Hiroshi Ueno¹, Ryutarō Furukawa², Satoshi Akanuma², Hiroyuki Noji¹ (¹*Dept. Appl. Chem., Grad. Sch. Eng., Univ. Tokyo*, ²*Facul. Human Sci., Waseda Univ.*)
- 2Pos081 深海環境における海洋微生物の運動能
Compounding deep sea physical impacts on marine microbial motility
Kelli K. Mullane¹, **Masayoshi Nishiyama**², Tatsuo Kurihara³, Douglas H. Bartlett¹ (¹*Scripps Inst. Oceanography, UCSD, USA*, ²*KINDAI Univ.*, ³*Kyoto Univ.*)

- 2Pos082 ADP 結合型細胞質ダイニンの2つのリンカー構造
Not one but two different cytoplasmic dynein ADP linker structures
Hiroshi Imai¹, Riko Kanazawa¹, Rieko Shimo-Kon¹, Shinji Kamimura², Naoko Kajimura³, Kaoru Mitsuoka³, Mika Hirose⁴, Takayuki Kato⁴, Takahide Kon¹ (¹*Dept. Biol. Sci., Grad.Sch.Sci., Osaka Univ.*, ²*Dept. Biol. Sci., Fac. Sci. & Eng., Chuo Univ.*, ³*Res. Ctr. for UHVEM, Osaka Univ.*, ⁴*Inst. for Protein Res., Osaka Univ.*)
- 2Pos083 10 nm ナノ粒子の散乱光イメージングによる F₁-ATPase の回転可視化
Visualization of rotation of F₁-ATPase based on scattering imaging of 10 nm nanoparticle
Keigo Shinoda (*Department of Applied Chemistry, Graduate School of Engineering, University of Tokyo.*)
- 2Pos084 腸球菌由来 V-ATPase はナトリウムイオン駆動力で ATP を合成する
Enterococcus hirae V-ATPase synthesizes ATP driven by the sodium ion motive force
Akihiro Otomo^{1,2}, Lucy Zhu³, Takanori Harashima^{1,2}, Ryota Iino^{1,2} (¹*Institute for Molecular Science*, ²*SOKENDAI*, ³*Chime ParisTech*)

15B. 細胞生物学的課題：運動／15B. Cell biology: Motility

- 2Pos085 Exploration of isoleucine recognition sites in chemoreceptor using chimeric receptors
Shinnosuke Kawahara, Yumiko Uchida, Yong-Suk Che, Akihiko Ishijima, Hajime Fukuoka (*Grad. Sch. Front Biosci, Osaka Univ.*)
- 2Pos086 遊泳性緑藻ボルボックス目におけるレイノルズ数と繊毛運動調節様式の連関
Reynolds-number-dependent ciliary regulation in the swimming green algae Volvocales
Noriko Ueki^{1,2}, Ken-ichi Wakabayashi^{2,3} (¹*Science Research Center, Hosei Univ, Tokyo, Japan*, ²*CLS, Tokyo Tech, Kanagawa, Japan*, ³*Faculty of Life Sciences, Kyoto Sangyo Univ, Kyoto, Japan*)
- 2Pos087 Emerging cell size transition modes of collective endothelial cell migration induced by geometrical wide-narrow-wide pathway constraints
Masaharu Endo (*Grad. Sch. Sci., Univ. Waseda*)
- 2Pos088 ベン毛 III 型分泌装置のポリペプチドチャンネル複合体のクライオ電子顕微鏡構造
CryoEM structure of the polypeptide channel complex of the bacterial flagellar type III secretion system
Miki Kinoshita¹, Tomoko Miyata¹, Fumiaki Makino^{1,2}, Takayuki Kato³, Katsumi Imada⁴, Keiichi Namba^{1,5,6}, Tohru Minamino¹ (¹*Grad. Sch. Frontier Biosci., Osaka Univ.*, ²*JEOL Ltd.*, ³*IPR, Osaka Univ.*, ⁴*Grad. Sch. Sci., Osaka Univ.*, ⁵*JEOL YOKOGUSHI, Osaka Univ.*, ⁶*RIKEN SPring-8*)
- 2Pos089 クシクラゲ 平衡器官形成における繊毛表面の細胞運動
Cell movement on ciliary surface during the statolith formation of Ctenophores
Naoki Noda (*Nihon Univ. School of Medicine*)
- 2Pos090 Evaluation of the dominant distance of the leader cells over the follower cells in collective migration using Y-shape micro-pathway assay
Miki Takei, Mitsuru Sentoku, Masaharu Endo, Yusuke Koshita, Kenji Yasuda (*Dept. Phys., Sch. Adv. Sci. & Eng., Waseda Univ.*)
- 2Pos091 スピロヘータ細菌の遊泳と形態変化の関係
Association of swimming and morphological variation in a spirochete bacterium
Souichi Ugawa¹, Kyosuke Takabe², Nobuo Koizumi², Shuichi Nakamura¹ (¹*Dept. Appl. Phys., Grad. Sch. Eng., Tohoku Univ.*, ²*Department of Bacteriology I, NIID, Japan*)

- 2Pos092 海洋性ビブリオ菌べん毛モーター固定子 PomB とストマチン様タンパク質 FliL との相互作用解析
Investigation of interaction between flagellar motor stator PomB and stomatin-like protein FliL in marine *Vibrio*
Michio Homma¹, Tatsuro Nishikino², Norihiro Takekawa³, Mitsuru Ikeda⁴, Yuki Tajimi¹, Kazuyoshi Murata⁴, Katsumi Imada³, Seiji Kojima⁵, Takayuki Uchihashi¹ (¹Physics, Grad. Sch. Sci., Nagoya Univ., ²Dep. Life Sci. Appl. Chem., Nagoya Inst. Tech., ³Dept. of Macromol. Sci. Grad. Sch. Sci., Osaka Univ., ⁴ExCELLS, Nat. Inst. Nat. Sci., ⁵Div. Biol. Sci., Grad. Sch. Sci., Nagoya Univ.)
- 2Pos093 細菌べん毛フック成長端の構造
Structure of the growing end of the bacterial flagellar hook
Sae Hashimoto¹, Tomoko Miyata², Fumiaki Makino^{2,3}, Keiichi Namba^{2,4}, Norihiro Takekawa¹, Katsumi Imada¹ (¹Grad. Sch. Sci., Osaka Univ., ²Grad. Sch. Frontier Biosci., Osaka Univ., ³JEOL Ltd., ⁴JEOL YOKOGUSHI Res. Alliance Lab., Osaka Univ.)
- 2Pos094 海洋性ビブリオ菌におけるべん毛本数制御因子 FliH と MS リング構成因子 FliF の相互作用の生化学的解析
Biochemical analysis for interactions between the flagellar number regulator FliH and the MS ring protein FliF in marine *Vibrio*
Yuria Fukushima¹, Seiji Kojima¹, Michio Homma² (¹Dept. Biol. Sci., Grad. Sch. Sci., Nagoya Univ., ²Dept. Phys., Grad. Sch. Sci., Nagoya Univ.)
- 2Pos095 ゼブラフィッシュ自己組織化細胞塊における細胞ダイナミクスの解析
Analysis of cell dynamics during the self-organizing process in zebrafish explant
Kosuke Hashimoto, Ryuta Watanabe, Toshiyuki Mitsui, Yuuta Moriyama (*Aogaku Univ. Dept. of Phys.*)
- 2Pos096 A novel swimming strategy of *Alivibrio fischeri* revealed by single-cell tracking microscopy
Xiang Yu Zhuang, Chien-Jung Lo (*Department of Physics, National Central University, Zhongli, Taoyuan, Taiwan 32001*)
- 2Pos097 共培養系における線維芽細胞の牽引力解析
Analysis of fibroblast's traction force in co-culture system
Arata Nagai, Kaito Kojima, Hiromu Kuwabara, Yuuta Moriyama, Toshiyuki Mitsui (*Aogaku Univ.*)
- 2Pos098 細菌べん毛フック-ジャンクション-フィラメントキャップ複合体の構造
Structure of the complex composed of the hook, junction, and filament-cap in the bacterial flagellum
Norihiro Takekawa¹, Kurumi Mori¹, Tomoko Miyata^{2,3}, Fumiaki Makino⁴, Keiichi Namba^{2,3}, Katsumi Imada¹ (¹Grad. Sch. Sci., Osaka Univ., ²Grad. Sch. Frontier Biosci., Osaka Univ., ³JEOL YOKOGUSHI Res. Alliance Lab., Osaka Univ., ⁴JEOL Ltd.)
- 2Pos099 回転方向に依存した大腸菌べん毛モーターの回転ゆらぎ
Rotational fluctuations of the *E. coli* depending on the rotational direction of their flagellar motor
Taisei Miyamoto, Yumiko Uchida, Yong-Suk Che, Akihiko Ishijima, Hajime Fukuoka (*Grad. Sch. Frontier Biosci. Osaka Univ.*)

15C. 細胞生物学的課題：細胞骨格・膜骨格 / 15C. Cell biology: Cytoskeleton & Membrane Skeleton

- 2Pos100 コフィリン-アクチン動態の熱力学的解析
Thermodynamic analysis of cofilin-induced actin dynamics
Nayu Itou, Yukino Yamada, Hideyuki Komatsu (*Department of Bioscience and Bioinformatics, Faculty of Systems Engineering and Computer Science, Kyushu Institute of Technology*)
- 2Pos101 細胞性粘菌のアクチンフィラメントの可視化に向けた取り組み
Challenges visualization of actin filaments in *Dictyostelium discoideum* cells
Yuki Gomibuchi, Yukihisa Hayashida, Yusuke V. Morimoto, Takuo Yasunaga (*Grad. Sch. Comp. Sci and Sys. Eng., Kyushu Inst. Tech.*)

- 2Pos102 Myosin or its fragments influences F-actin dynamics and deformation of droplets under the liquid-liquid phase separation
Tatsuyuki Waizumi¹, Hiroki Sakuta², Mahito Kikumoto¹, Masahito Hayashi³, Kanta Tsumoto⁴, Kingo Takiguchi¹, Kenichi Yoshikawa⁵ (¹*Grad. Sch. Sci., Univ. Nagoya*, ²*Grad. Sch. Arts and Sci., Univ. Tokyo*, ³*Dept. Frontier BioSci., Univ. Hosei*, ⁴*Grad. Sch. Eng., Univ. Mie*, ⁵*Sci Ctr. Self-Organization, Univ. Doshisha*)
- 2Pos103 Formation of lamellipodia-like and filopodia-like structures by self-organization of actin filaments
Masaya Fukui¹, Nen Saito^{1,2}, Naoki Honda^{1,2,3} (¹*Grad. Sch. Sci of life., Univ. Hiroshima*, ²*National Institutes of Natural Sciences, Exploratory Research Center on Life and Living Systems*, ³*Grad. Sch. Bio., Univ. Hiroshima*)
- 2Pos104 マイクロ流路を用いた多数の微小対象物への機械刺激
 Mechanical stimulation of a large number of micro objects using microfluidic channels
Masaru Kojima¹, Masahiro Totani¹, Mitsuhiro Horade², Toshihiko Ogura³, Tatsuo Arai⁴ (¹*Grad. Sch. Eng.Sci., Osaka Univ.*, ²*Grad. Sch. Sci. and Eng., NDA*, ³*IDAC, Tohoku Univ.*, ⁴*CNBE, UEC*)
- 2Pos105 マウス初期胚発生時の核膜 lamin B1 による核の構造、力学と遺伝子発現の動的変化
 Dynamic changes in the nuclear structure, mechanics, and gene expression by lamin B1 during early mouse embryogenesis
Masahito Tanaka¹, Rin Sakanoue², Atsushi Takasu², Yasuki Miyagawa², Naoko Watanabe¹, Kei Miyamoto², Yuta Shimamoto^{1,3} (¹*National Institute of Genetics.*, ²*Graduate School of Biology-Oriented Science and Technology, Kindai University*, ³*Department of Genetics, Sokendai University*)
- 2Pos106 Fatigue Failure of Microtubules Under Repetitive Mechanical Stress
Syeda Rubaiya Nasrin¹, Neda M. Bassir Kazeruni², Henry Hess², Akira Kakugo¹ (¹*Grad. Sch. Sci., Kyoto Univ.*, ²*Dept. of Biomed. Engg. Columbia Univ.*)

15D. 細胞生物学的課題：情報伝達・細胞膜／15D. Cell biology: Signal transduction & Cell membrane

- 2Pos107 *Dictyostelium* の走化性受容体 cAR1 は細胞前側でより緊密に集まる
 The *Dictyostelium* chemotaxis receptor cAR1 more tightly gathers on the front side of the cell
Atsuhiko Mii^{1,2}, Satomi Matsuoka^{1,2,3}, Masahiro Ueda^{1,2,3} (¹*Grad. Sch. Front. Biosci., Osaka Univ.*, ²*BDR, Riken*, ³*Dept. Biol. Sci., Grad. Sch. Sci., Osaka Univ.*)
- 2Pos108 ホスホリパーゼによる膜流動性の調節と信号増幅
 Slow diffusion and signal amplification on the membrane regulated by a phospholipase
Gen Honda¹, Satoshi Sawai^{2,3}, Miho Yanagisawa^{1,2,3} (¹*Komaba Institute for Science, Graduate School of Arts and Sciences, University of Tokyo*, ²*Department of Basic Science, Graduate School of Arts and Sciences, University of Tokyo*, ³*Research Center for Complex Systems Biology, Graduate School of Arts and Sciences, University of Tokyo*)
- 2Pos109 Unveiling the regulation mechanisms of AMPA receptors' synaptic dwell lifetimes by single-molecule imaging
Yuri L. Nemoto^{1,2,4}, Rinshei S. Kasai³, Hiroko Hijikata⁴, Taka A. Tsunoyama¹, Kazuma Naito⁴, Nao Hiramoto-Yamaki⁴, Takahiro K. Fujiwara⁴, Akihiro Kusumi^{1,4} (¹*Membrane Cooperativity Unit, OIST*, ²*Biosignal Research Center, Kobe University*, ³*National Cancer Center*, ⁴*WPI-iCeMS, Kyoto University*)
- 2Pos110 細胞が遊走後に形成するミグラソームが示す炎症誘導能の評価
 Evaluation of inflammation inducing ability of migrasomes formed by cells after migration
Koki Yoshikawa, Shogo Saito, Masayoshi Tanaka, Mina Okochi (*Sch. Mat. and Chem. Tech., Tokyo Tech*)

- 2Pos111 自発運動する細胞の興奮系 Ras を抑制する GAP の同定
Identification of GAP that suppresses the excitatory Ras in spontaneous cell motility
Guangyu Cheng¹, Satomi Matsuoka^{1,2,3}, Masahiro Ueda^{1,2,3} (¹*Grad. Sch. Sci., Osaka University*, ²*Grad. Sch. of Front. Biosci., Osaka University*, ³*BDR, RIKEN*)
- 2Pos112 細胞外環境に暴露したミトコンドリアの機能変化
Functional changes in mitochondria during exposure to the extracellular environment
Chisato Negoro (*Grad.Sch.Eng.,Tokyo. Univ. Agr.& Tech.*)
- 2Pos113 ミトコンドリア投与が細胞増殖に及ぼす影響
Effects of mitochondrial administration on cell growth
Akiho Nishimura, Yoshihiro Ohta (*Grad.Sch.Eng.,Tokyo. Univ.Agr.& Tech*)
- 2Pos114 種々の培養条件におけるミトコンドリア電子伝達複合体活性の比較
Comparison of mitochondrial electron transfer complex activity under various culture conditions
Momoka Kutami, Yoshihiro Ohta (*Grad.Sch.Eng.,Tokyo. Univ. Agr.&Tech.*)

16A. 生体膜・人工膜：構造・物性 / 16A. Biological & Artificial membrane: Structure & Property

- 2Pos115 モデル生体膜における分子充填と膜間相互作用に対するコレステロールとラノステロールの影響比較
Comparison of the effects of cholesterol and lanosterol on the molecular packing of model membranes and their bilayer-bilayer interactions
Ayumi Okayama, Kohei Wada, Hiroshi Takahashi (*Graduate School of Science and Technology, Gunma University*)
- 2Pos116 ウイルス様粒子開発にむけた分子動力学シミュレーションによる SARS-CoV-2 膜タンパク質を含む膜の構造・性質変化の探索
Investigation of membrane properties including SARS-CoV-2 membrane proteins by molecular dynamics simulation for VLP development
Ryo Urano, Wataru Shinoda (*Okayama Univ. Res. Inst. Interdiscip. Sci.*)
- 2Pos117 蛍光プローブ Prodan を用いた蛍光測定によるラノステロールとコレステロールの生体膜への影響評価
Impact of lanosterol and cholesterol on model biomembranes evaluated by Prodan fluorescence measurement
Michael Postrado, Hiroshi Takahashi (*Biophysics Lab., Division of Pure and Applied Science, Graduate School of Science and Technology, Gunma University*)
- 2Pos118 Creation of liposomes intended to be phagocytosed by macrophages
Akari Saito, Masahito Hayashi, Tomoyuki Kaneko (*LaRC,FB,Grad.Sch.Sci.&Eng.,Hosei Univ.*)
- 2Pos119 三成分リポソームの相挙動に対するアセトニトリルの効果
Effect of acetonitrile on phase behaviors of ternary liposomes
Shota Matsuzawa¹, **Kazunari Yoshida**^{1,2} (¹*Fac. Eng., Yamagata Univ.*, ²*Grad. Sch. Sci. Eng., Yamagata Univ.*)
- 2Pos120 蛍光寿命相関解析に基づく脂質三成分相図における単層膜特異的脂質拡散
Leaflet-specific lipid diffusion on ternary phase diagram of lipids studied by fluorescence lifetime correlation analyses
Takuhiro Otosu, Miyuki Sakaguchi, Shoichi Yamaguchi (*Grad. Sch. Sci. Eng., Saitama Univ.*)

- 2Pos121 ポリリジン吸着が巨大リポソームの単層膜特異的脂質拡散に与える影響
The Effect of Polylysine Adsorption on the Leaflet-specific Lipid Diffusion in a Giant Unilamellar Vesicle
Kosei Shimizu, Miyuki Sakaguchi, Shoichi Yamaguchi, Takuhiro Otsu (*Grad. Sch. Sci. Eng., Saitama Univ.*)
- 2Pos122 Mechanism of membrane activity of NEMURI protein
Moynul Hasan¹, Yuta Ogasawara¹, Yuko Fujioka¹, Suguru Nishinami², Hirofumi Toda², Nobuo N. Noda¹ (¹*Hokkaido University*, ²*University of Tsukuba*)
- 2Pos123 抗菌ペプチドが誘起するナノポアに由来する巨大リポソームの破裂
Evolution of a nanopore induced by antimicrobial peptides to the rupture of giant unilamellar vesicles
Md. Masum Billah^{1,2}, Ahmed Marzuk¹, Masahito Yamazaki^{1,3,4} (¹*Grad. Sch. Sci. Tech., Shizuoka Univ.*, ²*Dept. Phys., Jashore Univ. Sci. Tech.*, ³*Res. Inst. Ele., Shizuoka Univ.*, ⁴*Grad. Sch. Sci., Shizuoka Univ.*)
- 2Pos124 抗菌ペプチドによる単一細菌の細胞膜損傷と単一細胞レベルでの細胞死の相関
Correlation between antimicrobial peptides (AMPs)-induced membrane damage of single bacterial cells and cell death at single-cell level
Md. Zahidul Islam^{1,2}, Farzana Hossain¹, Md. Hazrat Ali³, Masahito Yamazaki^{1,3,4} (¹*Res. Inst. Ele., Shizuoka Univ.*, ²*Dept. Biotech. Genetic Eng., Jahangirnagar Univ.*, ³*Grad. Sch. Sci. Tech., Shizuoka Univ.*, ⁴*Grad. Sch. Sci., Shizuoka Univ.*)
- 2Pos125 相分離した三成分ベシクルにグラフトされた高分子の膜流動性への影響
Effect of polymer chains grafted onto the phase-separated ternary GUVs on the membrane fluidity
Yuka Sakuma (*Grad. Sch. Sci., Tohoku Univ.*)
- 2Pos126 浸透圧ストレス下における脂質二重膜の挙動に対するアクチン封入の影響
Effect of actin encapsulation on the behavior of lipid bilayers under osmotic stress
Ken Bessho¹, Mahito Kikumoto¹, Yuki Mizutani², Moka Ito¹, Kingo Takiguchi¹ (¹*Grad. Sch. Sci., Nagoya Univ.*, ²*Sch. Sci., Nagoya Univ.*)

17. 化学受容 / 17. Chemoreception

- 2Pos127 コレラ菌の走化性を媒介するペリプラズム結合蛋白質 SatA の構造
Crystal structure of SatA, a periplasmic binding protein that mediates chemotaxis to serine in *Vibrio cholerae*
Miyuki Aoyama¹, Norihiro Takekawa¹, So-ichiro Nishiyama², Hiroataka Tajima³, Ikuro Kawagishi³, Katsumi Imada¹ (¹*Dept. Macromol. Sci., Grad. Sch. Sci., Osaka Univ.*, ²*Dept. Appl Life Sci, Niigata Univ of Pharm and Appl Life Sci.*, ³*Dept. Front Biosci., Hosei Univ.*)
- 2Pos128 大腸菌再構成系を用いたクロストリジウム属細菌走化性受容体の入力刺激の解明
Elucidation of input signals of *Clostridium* chemoreceptors by *E. coli* reconstitution system
So-ichiro Nishiyama, Nao Iwahashi, Shohei Koike (*Fac. App. Life Sci., Niigata Univ. Pharm. App. Life Sci.*)
- 2Pos129 腸炎ビブリオ由来走化性受容体 VP183 のリガンド結合メカニズム
Ligand binding mechanism of VP183, a chemotaxis receptor of *Vibrio parahaemolyticus*
Ririka Iida¹, Yuka Ueda², Norihiro Takekawa², Hiroyuki Terashima³, Mayuko Sakuma⁴, Katsumi Imada² (¹*Sch. Sci., Osaka Univ.*, ²*Grad. Sch. Sci., Osaka Univ.*, ³*Inst. of Tropical Medicine, Nagasaki Univ.*, ⁴*Dept. Pharm., Kinjo Gakuin Univ.*)

- 2Pos130 低温ラマン分光法によるシアノバクテリオクロム RcaE の緑色吸収型から赤色吸収型への光変換過程の研究
Cryogenic Raman study of photoconversion process from green to red absorbing state of the cyanobacteriochrome RcaE
Yasuhiro Jyojima¹, Masako Hamada², Yuu Hirose², Masashi Unno¹, Tomotsumi Fujisawa¹
(¹*Grad.Sch.Adv.Health Sci., Saga Univ.*, ²*Dep. App. Chem. Life Sci., Toyohashi Univ. Tech.*)
- 2Pos131 *Rhodospirillum centenum* 由来の photoactive yellow protein の低温分光分析
Low-temperature spectroscopy of photoactive yellow protein from *Rhodospirillum centenum*
Kirari Ogata¹, Tomotsumi Fujisawa², Wouter D Hoff³, Masashi Unno² (¹*Grad.Sch.Adv.Health Sci., Saga Univ.*, ²*Fac.Sci.Eng., Saga Univ.*, ³*Oklahoma state Univ.*)
- 2Pos132 新奇カチオンチャネルロドプシン HulaCCR の機能解析
Electrophysiological characterization of a novel cation channelrhodopsin HulaCCR with an ET(C)D motif
Shunki Takaramoto¹, Shai Fainsod², Takashi Nagata¹, Andrey Rozenberg², Oded Béjà², Keiichi Inoue¹
(¹*ISSP, Univ. Tokyo*, ²*Technion-Israel Inst. Tech.*)
- 2Pos133 脊椎動物が広くもつ紫外光感受性 Opn5 の吸収波長制御に関わるアミノ酸残基
Amino acid residue responsible for the spectral tuning of UV-sensitive vertebrate Opn5
Kazuyuki Asamoto, Kengo Fujii, Chihiro Fujiyabu, Takahiro Yamashita (*Grad. Sch. of Sci., Kyoto Univ.*)
- 2Pos134 ロドプシンダイマー列上における G 蛋白質トランスデューシンの 1 分子拡散過程
Single molecular diffusion process of G protein transducin on rhodopsin dimer rows
Hayato Yamashita¹, Akihiro Tsuji¹, Fumio Hayashi², Kenichi Morigaki^{3,4}, Masashi Fujii^{5,6}, Akinori Awazu^{5,6}, Masayuki Abe¹ (¹*Grad. Sch. Eng. Sci., Osaka Univ.*, ²*Grad. Sch. Sci., Kobe Univ.*, ³*Grad. Sch. Agr. Sci., Kobe Univ.*, ⁴*Biosignal Research Center, Kobe Univ.*, ⁵*Grad. Sch. Sci., Hiroshima Univ.*, ⁶*Grad. Sch. Int., Hiroshima Univ.*)
- 2Pos135 固体 NMR を用いた TaHeR のレチナル近傍の His23 と His82 の構造解析
Characterization of His23 and His82 near the retinal chromophore of *Thermoplasma* archaeon heliorhodopsin by solid-state NMR
Sari Kumagai¹, Toshio Nagashima², Toshio Yamazaki², Hideki Kandori³, Izuru Kawamura¹ (¹*Graduate School of Engineering Science, Yokohama National University*, ²*RIKEN RSC*, ³*Nagoya Institute of Technology*)
- 2Pos136 脊椎動物が持つレチナル光異性化酵素ロドプシン・RGR の吸収波長の多様性
Diversified absorption spectra in vertebrate retinal photo-isomerase rhodopsins
Takashi Nagata, Naoya Morimoto, Chunyang Li, Keiichi Inoue (*ISSP, Univ. Tokyo*)
- 2Pos137 RcPYP と PBP の多量体形成機構の解明
Elucidation of oligomer formation mechanism of RcPYP and PBP
Yoichi Yamazaki¹, Daiki Takenaka¹, Kento Yonezawa^{1,2}, Sachiko Toma-Fukai¹, Hironari Kamikubo^{1,2}
(¹*NAIST, MS*, ²*NAIST, CDG*)
- 2Pos138 光サイクル型脊椎動物ロドプシンを用いた細胞内セカンドメッセンジャーレベルの光依存的変化
Light-dependent changes in the intracellular second messenger levels using photocyclic vertebrate rhodopsin
Kazumi Sakai, Shion Aoki, Takahiro Yamashita (*Graduate school of Science, Kyoto University*)
- 2Pos139 イオンポンプ型ロドプシンの効率的功能改変の試み
Attempts to strategic functional modifications of ion pump rhodopsins
Kaito Hasegawa¹, Tomoya Maeda², Satoru Fukiya², Takashi Tsukamoto^{1,3}, Makoto Demura^{1,3}, Takashi Kikukawa^{1,3} (¹*Grad. Sch. Life Sci., Hokkaido Univ.*, ²*Res. Fac. Agric., Hokkaido Univ.*, ³*Fac. Adv. Life Sci., Hokkaido Univ.*)

- 2Pos140 ニワトリクリプトクロム4のC末端伸長領域は暗酸化反応と、その温度依存性を調節する
Carboxyl-terminal extension of chicken cryptochrome 4 modulates dark oxidation reaction and its temperature dependency
Tensho Yanagi, Takayuki Miyazaki, Hiroaki Otsuka, Keiko Okano, Toshiyuki Okano (*Dept. Elec. Eng., Grad. Sch. ASE., Waseda Univ.*)

21B. 光生物：光合成／21B. Photobiology: Photosynthesis

- 2Pos141 緑色硫黄細菌の光合成反応中心複合体におけるカロテノイドの三重項励起状態
Triplet-excited state of carotenoid in the photosynthetic reaction center complex of green sulfur bacteria
Tomomi Inagaki¹, Masatoshi Kida², Daisuke Kosumi³, Chihiro Azai⁴ (¹*Graduate School of Life Sciences, Ritsumeikan University*, ²*Graduate School of Science and Technology, Kumamoto University*, ³*Institute of Industrial Nanomaterials, Kumamoto University*, ⁴*Faculty of Science and Engineering, Chuo University*)
- 2Pos142 2次元パターン化ポリマー膜を支持体とした人工チラコイド膜の極低温顕微分光性能観察
Characterization of artificial thylakoid membrane supported by 2-D lattice of polymerized lipid bilayer by Cryogenic spectral microscopy
Hayata Sakai¹, Koki Takagi², Shen Ye¹, Kenichi Morigaki³, Yutaka Shibata¹ (¹*Graduate School of Science Tohoku Univ.*, ²*Faculty of Agriculture Kobe Univ.*, ³*Graduate School of Biosignal Reserch Center Kobe Univ.*)
- 2Pos143 I型光合成反応中心の多様性と光捕集機構
Photosynthetic Type-I Reaction Centers: Diversities and Light Harvesting Mechanisms
Akihiro Kimura¹, Hirotaka Kitoh², Shigeru Itoh¹ (¹*Grad. Sch. Sci., Nagoya Univ.*, ²*Fac. Eng. Sci., Kindai Univ.*)
- 2Pos144 Studies on energy transfer and charge separation mechanisms in heliobacterial reaction center with ultrafast time-resolved spectroscopy
Risa Kojima¹, Masatoshi Kida², Daisuke Kosumi³, Hirozo Oh-oka⁴ (¹*Col. Life Sci., Ritsumeikan Univ.*, ²*Grad. Sch. Sci. & Tech., Kumamoto Univ.*, ³*IIna, Kumamoto Univ.*, ⁴*CELAS, Osaka Univ.*)
- 2Pos145 クロロフィルfを含む光化学系Iの近赤外光吸収のレッドシフトメカニズム解明を目指した蛍光バンドの帰属
Assignment of fluorescence bands of chlorophyll-f in photosystem I to elucidate its mechanism of red-shift into near-infrared region
Rin Taniguchi¹, Toshiyuki Shinoda², Tatsuya Tomo², Shen Ye¹, Yutaka Shibata¹ (¹*Department of Chemistry, Graduate School of Science, Tohoku University*, ²*Department of Biology, Faculty of Science, Tokyo University of Science*)
- 2Pos146 光化学系IIの酸素発生中心におけるCaMn₄O₆クラスターのS₃状態から初期S₄状態のDFTとDLPNO-CC法による解析
DFT and DLPNO-CC investigation of the S₃ to early S₄ state of the CaMn₄O₆ clusters in the Kok cycle in the OEC of PSII
Koichi Miyagawa¹, Takashi Kawakami^{2,3}, Mitsuo Shoji¹, Kizashi Yamaguchi^{3,4,5}, Yasuteru Shigeta¹ (¹*Center for Computational Sciences, University of Tsukuba*, ²*Graduate School of Science, Osaka University*, ³*RIKEN Center for Computational Science*, ⁴*Center for Quantum Information and Quantum Biology, Osaka University*, ⁵*SANKEN, Osaka University*)
- 2Pos147 2.5億年前地層試料中の光合成色素の顕微分光分析
Microspectroscopic analysis of photosynthetic pigments in 250-million-years-old geological samples
Tomohiro Ishikawa¹, Ryosuke Saito², Toru Kondo¹ (¹*Dept. of Life Sci. and Tech. Tokyo Tech.*, ²*Dept. of Earth Sci., Yamaguchi Univ.*)

- 2Pos148 1 粒子レベルで見たリング型クロロフィル色素自己会合体の光物理学特性
Photophysical properties of ring-shaped self-aggregates of chlorophyll molecules at the single-particle level
Shinnosuke Masuda¹, Shun Arai¹, Tatsuma Ishii², Shogo Matsubara³, Toru Kondo¹ (¹*Dept. of Life Sci. and Tech., Tokyo Tech.*, ²*Grad. Sch. Life Sci., Ritsumeikan Univ.*, ³*Grad. Sch. Eng., Nagoya Tech.*)
- 2Pos149 暗発酵と光発酵の二段階発酵を用いたウイスキー廃液からのバイオ水素生産
Biohydrogen production from whiskey waste liquid by two stage of dark and photo fermentation
Masahiro Hibino¹, Moeka Fukushima² (¹*Div. Sust. Enviro. Eng., Muroran Inst. Tech.*, ²*Dept. Sci. Inf., Muroran Inst. Tech.*)
- 2Pos150 一次元状クロロフィル自己会合体における一粒子レベルでの光学特性
Optical properties of one-dimensional chlorophyll self-aggregates at the single-particle level
Yuki Kamiie¹, Shogo Matsubara², Toru Kondo¹ (¹*Dept. of Life Sci. and Tech., Tokyo Tech.*, ²*Grad. Sch. Eng., Nagoya Tech.*)

23. 生命の起源・進化 / 23. Origin of life & Evolution

- 2Pos151 天然および人工ランダムペプチドの量子分子進化指標
Quantum molecular evolution index for natural and artificial random peptides
Masanori Yamanaka (*CST, Nihon Univ.*)
- 2Pos152 遺伝子発現ノイズによる原始的適応の実験的検証
Experimental verification of primitive adaptation via gene expression noise
Miki Umetani^{1,2,3}, Asako Kitai⁴, Yuichi Wakamoto^{1,2,3} (¹*Graduate School of Arts and Sciences, The University of Tokyo*, ²*Research Center for Complex Systems Biology, The University of Tokyo*, ³*Universal Biology Institute, The University of Tokyo*, ⁴*School of Medicine, The University of Tokyo*)
- 2Pos153 機械学習を用いた RNA 分子のホストパラサイトネットワークの複雑性予測
Predicting Complexity of Host-Parasite Networks of RNA Molecules Using Machine Learning
Kei Nishida¹, Yusuke Himeoka², Chikara Furusawa^{1,2,3} (¹*Department of Physics, Graduate School of Science, The University of Tokyo*, ²*Universal Biology Institute, Graduate School of Science, The University of Tokyo*, ³*Center for Biosystems Dynamics Research, RIKEN*)
- 2Pos154 古生代ミオグロビンの分子進化
Myoglobin evolution in Paleozoic era
Yasuhiro Isogai¹, Antonio Tsuneshige², Mitsuki Mori¹, Miwa Yoshida¹, Hiroshi Imamura³, Tsuyoshi Shirai³ (¹*Dept. Pharmaceutical Engineering, Toyama Prefectural Univ.*, ²*Dept. Frontier Bioscience and Research Center for Micro-Nano Technology, Hosei University*, ³*Dept. Bio-science, Nagahama Inst. Bio-Science and Technology*)
- 2Pos155 表現型システム生物学：多要素構造システムのマクロ進化ダイナミクス
Phenotypic systems biology: Macro-evolutionary dynamics of multi-component systems
Takao K. Suzuki, Wataru Iwasaki (*Grad. Sch. Front. Sci., UTokyo*)
- 2Pos156 Proliferation of phospholipid vesicles induced by freeze and thaw cycles and its effect on the lipid composition
Tatsuya Shinoda¹, Kazumu Kaneko², Yoshikazu Tanaka³, Yasuhiro Sekine⁴, Tomoaki Matsuura⁴ (¹*Dept. Life Sci. Tech., Tokyo Tech.*, ²*Dept. Earth Planet. Sci., Tokyo Tech.*, ³*Grad. Sch. Life Sci., Tohoku Univ.*, ⁴*ELSI, Tokyo Tech*)
- 2Pos157 遺伝子発現制御ネットワークの進化における汎化能の解析
Computational analysis of generalization capacity in evolution of gene expression network
Chikara Furusawa (*BDR, RIKEN*)

- 2Pos158 Environment-driven structural phase transitions of primitive LLPS protocells
Tony Z. Jia^{1,2}, Tommaso Fraccia³, Chen Chen¹, Ruiqin Yi¹, Motoko Igisu⁴, Chie Sakaguchi⁵,
 Rehana Afrin¹, Christian Potiszi⁵, Tak Kunihiro⁵, Katsura Kobayashi⁵, Eizo Nakamura⁵, Yuichiro Ueno⁶,
 Andre Antunes^{2,7}, Anna Wang^{8,9,10}, Kuhan Chandru¹¹, Jihua Hao^{2,12} (¹Earth-Life Science Institute, Tokyo
 Institute of Technology, ²Blue Marble Space Institute of Science, ³Institut Pierre-Gilles de Gennes, CBI,
 ESPCI Paris, Université PSL, ⁴Institute for Extra-cutting-edge Science and Technology Avant-garde
 Research (X-star), Japan Agency for Marine-Earth Science and Technology (JAMSTEC), ⁵The Pheasant
 Memorial Laboratory for Geochemistry and Cosmochemistry, Institute for Planetary Materials,
 Okayama University, ⁶Department of Earth and Planetary Sciences, Tokyo Institute of Technology, ⁷State
 Key Laboratory of Lunar and Planetary Sciences, Macau University of Science and Technology (MUST),
⁸School of Chemistry, UNSW Sydney, ⁹Australian Centre for Astrobiology, UNSW Sydney, ¹⁰RNA
 Institute, UNSW Sydney, ¹¹Space Science Center (ANGKASA), Institute of Climate Change, National
 University of Malaysia, ¹²Deep Space Exploration Laboratory/CAS Laboratory of Crust-Mantle
 Materials and Environments, University of Science and Technology of China)
- 2Pos159 原始的な RNA 集団の調査から見つかった自己複製する最小の RNA
 Minimal RNA self-reproduction discovered from a random pool of oligomers
Ryo Mizuuchi^{1,2}, Norikazu Ichihashi^{3,4,5} (¹Fac. Sci. Eng., Waseda Univ., ²JST, FOREST, ³Grad. Sch. Arts
 and Sci., Univ. Tokyo, ⁴Komaba Inst. Sci., Univ. Tokyo, ⁵UBI, Univ. Tokyo)

24. 合成生物学・人工細胞 / 24. Synthetic biology & Artificial cells

- 2Pos160 DNA 液滴における選択的なリポソーム捕捉
 Selective liposome capture in DNA droplets
Ryoya Hasegawa¹, Jing Gong¹, M. Shin-ichiro Nomura², Masahiro Takinoue^{1,3,4} (¹Department of Life
 Science and Technology, Tokyo Institute of Technology, ²Department of Robotics, Graduate School of
 Engineering, Tohoku University, ³Department of Computer Science, Tokyo Institute of Technology,
⁴Living Systems Materialogy (LiSM) Research Group, International Research Frontiers Initiative)
- 2Pos161 リポソーム内無細胞タンパク質発現の転写と翻訳における脂質電荷の影響
 Lipid charge affects the protein transcription and translation inside Giant unilamellar vesicle
Akari Miwa¹, Masatoshi Wakamori², Takashi Umehara², Koki Kamiya¹ (¹Grad. Sch. Sci. Tech., Gunma
 univ., ²BDR., Riken)
- 2Pos162 LLPS-mediated artificial cell holding the artificial organelle with its interface stabilized
Kanji Tomohara, Yoshihiro Minagawa, Hiroyuki Noji (*Dept. Appl. Chem., Grad. Sch. Eng., Univ.
 Tokyo*)
- 2Pos163 コンパートメント化された刺激応答性ドラッグデリバリーのための脂質ベースの人工多細胞シ
 ステム
 Lipid Based Artificial Multicellular Systems for Compartmentalized and Stimuli-Responsive Drug
 Delivery
Tsuyoshi Inaba¹, James Richard Archer¹, Shogo Hamada², Hideaki Matsubayashi¹, Keita Abe¹,
 Ibuki Kawamata^{1,3}, Satoshi Murata¹, Shin-ichiro Nomura¹ (¹Grad.Sci.Eng., Tohoku Univ., ²Int. Grad.
 Sch. Sci. Eng., Tokyo Inst. Tech., ³Grad. Sch. Nat. Sci. Ochanomizu Univ.)
- 2Pos164 人工細胞光操作系を用いた基板の接着力と細胞運動の構成的理解
 Light-inducible artificial cell motility on diverse adhesion surfaces: a bottom-up approach to
 understanding cell migration
Daichi Nakajima¹, Shiva Razavi^{2,3}, Takanari Inoue², Shin-ichiro M. Nomura¹, Hideaki Matsubayashi^{2,4}
 (¹Grad. Sch. Robotics., Univ. Tohoku, ²Department of Cell Biology, Johns Hopkins University School of
 Medicine, ³Department of Biological Engineering, Massachusetts Institute of Technology, ⁴Frontier
 Research Institute for Interdisciplinary Sciences, Univ. Tohoku)

- 2Pos165 トランスファー RNA の自律合成系の試験管内構築に向けた合理的 tRNA 発現系の設計および実証
Rationally designed *in vitro* transfer RNA expression system for the construction of a tRNA self-reproductive system
Ryota Miyachi¹, Yoshihiro Shimizu², Norikazu Ichihashi^{1,3,4} (¹*Grad. Sch. Arts Sci., Univ. Tokyo*, ²*Riken BDR*, ³*Komaba Institute for Sci., Univ. Tokyo*, ⁴*Research Center for Complex System Biology, Universal Biology Institute Univ. Tokyo*)
- 2Pos166 合成ポリペプチド鎖とオリゴ核酸の設計に基づく固-液多相分離階層構造の開発
Development of the solid-liquid multiphase hierarchical structures based on chemically-designed polypeptides and oligonucleotides
Hiroshi Kamizawa¹, Yiwei Liu², Takumi Yamada¹, Kanjiro Miyata³, Teruki Nii², Takeshi Mori^{2,4}, Yoshiki Katayama^{2,4,5,6}, Akihiro Kishimura^{2,4,5} (¹*Grad. Sch. Sys. Life Sci., Kyushu Univ.*, ²*Dept. of Applied Chem., Fac. of Eng., Kyushu Univ.*, ³*Dept. of Materials Eng., The Univ of Tokyo*, ⁴*Ctr. for Future Chem., Kyushu Univ.*, ⁵*Ctr. for Molecular Systems, Kyushu Univ.*, ⁶*The Ctr. For Adv. Med. Innov., Kyushu Univ.*)
- 2Pos167 コンプレックスコアセルベートの電荷密度調節によるタンパク質内包機能をもつ人工生体分子凝縮体の設計
Charge density modulation in complex coacervate for protein sequestration to mimic biomolecular condensates
Ryoma Omae¹, Biplab K C¹, Teruki Nii¹, Takeshi Mori^{1,2}, Yoshiki Katayama^{1,2,3,4}, Akihiro Kishimura^{1,2,3} (¹*Dep. of Applied Chem., Faculty of Eng., Kyushu Univ.*, ²*Ctr. for Future Chem., Kyushu Univ.*, ³*Ctr. for Mol. Sys., Kyushu Univ.*, ⁴*Ctr. for Adv. Med. Innov., Kyushu Univ.*)
- 2Pos168 DNA オリガミマイクロカプセルと DNA ハイドロゲルでできた異種人工細胞間の通信
Communication between different types of artificial cells based on DNA origami microcapsules and DNA hydrogels
Nagi Yamashita¹, Marcos Masukawa², Mayumi Chano², Yusuke Sato³, Kanta Tsumoto⁴, Kenichi Yoshikawa⁵, Masahiro Takinoue^{1,2} (¹*School of Life Science and Technology, Tokyo Institute of Technology*, ²*School of Computing, Tokyo Institute of Technology*, ³*Graduate School of Computer Science and Systems Engineering, Kyushu Institute of Technology*, ⁴*Graduate School of Engineering, Mie University*, ⁵*Institute for Advanced Study, Kyoto University*)
- 2Pos169 多様な膜・高分子組成でのベシクル成長実験: 進化する人工ミニマルセルを目指して
Growth rates of synthetic cells with the various vesicle-polymer compositions: Toward implementing the evolution
Taro Suzuki (*Grad.Sch.Sci., Univ. Tohoku*)
- 2Pos170 自己生産する細胞のコンセプトを人工系で単純に再設計する: モデル実験系で繋ぐ物質と生命
Reproduction of a synthetic minimal cell: An experimental approach connecting matter and cell
Minoru Kurisu¹, Peter Walde², Masayuki Imai¹ (¹*Dept. Phys., Grad. Sch. Sci., Tohoku Univ.*, ²*Dept. Materials, ETH Zürich*)

26A. 計算生物学: 生命情報学 / 26A. Computational biology: Bioinformatics

- 2Pos171 グラフ NN による化学分子表現学習とその匂い認知予測への応用
Molecular Representation Learning by Graph Neural Networks and its Application to Odor Perception Prediction
Tetsuya Kobayashi¹, Mengji Zhang², Akira Funahashi³ (¹*IIS, UTokyo*, ²*Shanghai Jiao Tong University*, ³*Keio Univ.*)
- 2Pos172 敵対的生成ネットワークに基づくクライオ電子顕微鏡画像解像度改善法の開発
Development of the method to improve the resolution of cryo-EM map based on the Generative Adversarial Networks
Xinyuan Li (*FBS, Osaka Univ.*)

- 2Pos173 経験的アプローチによる酵素の機能予測
Predicting enzyme function using an empirical approach
Suguru Fujita, Tohru Terada (*Dept. of Biotechnol., Grad. Sch. of Agri. and Life Sci., Univ. of Tokyo*)
- 2Pos174 脳神経回路の配線規則を読み解くデータ駆動型解析
Data-driven analysis to decipher the wiring rules of brain neural circuits
Jigen Koike¹, Naoki Honda^{1,2,3} (¹*Grad. Sch. Int. Sci. Life, Hiroshima Univ.*, ²*Grad. Sch. Biostudies, Kyoto Univ.*, ³*ExCELLS*)
- 2Pos175 アンサンブルドッキングにおけるタンパク質相互作用表面の解析
Analysis of protein interaction surfaces in ensemble docking
Nobuyuki Uchikoga¹, Yuri Matsuzaki² (¹*Sch. Interdiscip. Math. Sci., Meiji Univ.*, ²*Acad. Leadership, Tokyo Inst. Tech.*)
- 2Pos176 構造比較を利用した不凍タンパク質の特徴付け
Characterization of Antifreeze proteins by using structural comparison
Yuki Konaka, Motonori Ota, Ryotaro Koike, Koya Sakuma (*Grad.Sch.Info., Univ. Nagoya*)
- 2Pos177 Basal-like 乳がんにおいて染色体間相互作用が消失した遺伝子ペア群のオントロジー解析
Ontology analysis for gene pairs with disrupted inter-chromosomal interactions in basal-like breast cancer
Yuta Shintani, Takanori Sasaki (*Fac. Adv. Math. Sci., Meiji Univ.*)
- 2Pos178 A multimer structure prediction method: generating multiple decoy structures via docking software and ranking confidence with AlphaFold2
Masaki Koyama¹, Hiroki Onoda², George Chikenji¹ (¹*Dept. of Appl. Phys., Grad. Sch. of Eng., Nagoya Univ.*, ²*Synchrotron Radiation Research Center, Nagoya Univ.*)
- 2Pos179 かゆみ伝達に関与するタンパク質の研究
Proteins involved in itch transmission
Kota Tsurumi, Motonori Ota, Ryotaro Koike (*Grad Sch. Inf., Univ. Nagoya*)

26B. 計算生物学: 分子シミュレーション / 26B. Computational biology: Molecular simulation

- 2Pos180 1分子 FRET 計測と分子動力学シミュレーションを統合した Protein G のフォールディング経路解析
Integrative modeling of protein G folding dynamics from single-molecule FRET and molecular dynamics simulations
Soichiro Oda, Yasuhiro Matsunaga (*Grad. Sch. Sci. Eng., Saitama Univ.*)
- 2Pos181 FRET-assisted structural modeling of dynamic protein ensembles
Bianca Reschke, Christian A. Hanke, Alexander Larbig, Claus A. M. Seidel (*Institute for Molecular Physical Chemistry, Heinrich Heine University, Duesseldorf, Germany*)
- 2Pos182 Gromacs ソフトウェアと Martini 粗視化力場を用いたタンパク質表面電荷分布とその溶解性の関係性の探索
Exploring the relationship between the surface charge of a protein and its solubility using the MARTINI model and GROMACS software
Ryusei Nomura¹, Hiromichi Turui², Yutaka Kuroda¹ (¹*Grad. Sch. Eng., TUAT*, ²*Grad. Sch. Med., Juntendo*)
- 2Pos183 拡張アンサンブル分子動力学シミュレーションに基づいた環状ペプチドの膜透過性予測技術の開発
Development 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 (*Sch. Computing, Tokyo Tech*)
- 2Pos184 グリッドを用いた主成分分析による分子集団の運動モードの解析
Cooperative modes for collective molecules using grid-based principal-component analysis
Koji Ogata, Kentaro Oishi (*Fac. Pharm. Sci., Sanyo-Onoda City Univ.*)

- 2Pos185 脂質二重膜における大腸菌 site-2 protease RseP の分子動力学シミュレーション
Molecular dynamics simulations of E. coli site-2 protease RseP in the lipid bilayer
Kenta Tanaka¹, Toru Ekimoto¹, Tsutomu Yamane², Terukazu Nogi¹, Mitsunori Ikeguchi¹ (¹*Grad. Sch. Med. Life Sci., Yokohama City Univ.*, ²*RIKEN R-CCS*)
- 2Pos186 Targeting G-Quadruplex Structures in SARS-CoV-2 Nsp3; SARS Unique Domain (SUD) as a Novel Target of Pyridostatine Against Covid-19
Rendrawan Dedy, Jayyinnunnsiya Helmia, Meriko Lince, Kazutomo Kawaguchi, Hidemi Nagao
(*Grad.Sch.Nat.Sci.Tech.,Kanazawa Univ.*)
- 2Pos187 Learning QM/MM Potential by Equivariant Multiscale Model
YaoKun Lei^{1,2}, Kiyoshi Yagi^{1,2}, Yuji Sugita^{1,2,3} (¹*Theoretical Molecular Science Laboratory, RIKEN Cluster for Pioneering Research, RIKEN*, ²*Computational Biophysics Research Team, RIKEN Center for Computational Science, RIKEN*, ³*Laboratory for Biomolecular Function Simulation, RIKEN Center for Biosystems Dynamics Research, RIKEN*)
- 2Pos188 Atomic-Level Characterization of Protein Kinase - Inhibitors binding through massive Molecular Dynamics Simulations
Ai Shinobu^{1,2}, Re Suyong^{1,3}, Hiraku Oshima^{1,4}, Yuji Sugita¹ (¹*RIKEN*, ²*Osaka University*, ³*National Institutes of Biomedical Innovation, Health, and Nutrition*, ⁴*University of Hyogo*)
- 2Pos189 SARS-CoV-2 スパイクタンパク質とユニバーサル中和抗体との相互作用：残基間相互作用ネットワークに基づく理論的解析
Interaction of the SARS-CoV-2 spike protein with a universal neutralizing antibody: Insights from Residue Interaction Network Analysis
Hirokazu Murata, Norifumi Yamamoto (*Chiba Tech*)
- 2Pos190 HIV-1 逆転写酵素の薬剤耐性機構に関する理論的研究：残基相互作用ネットワーク解析
Computational Study of HIV-1 Reverse Transcriptase for Drug Resistance Mechanism: Residue Interaction Network Analysis
Ryuki Hashimoto, Norifumi Yamamoto (*Chiba Tech*)
- 2Pos191 SOD1 変性過程に関する理論的研究：銅イオンと亜鉛イオンの解離に伴う残基間相互作用の変化
Insights into the denaturation process of SOD1: Changes in residue interactions associated with dissociation of Cu and Zn ions
Kento Takeuchi¹, Shinya Tahara², Takakazu Nakabayashi², Norifumi Yamamoto¹ (¹*Chiba Tech*, ²*Univ.Tohoku*)
- 2Pos192 SOD1 変性過程に関する理論的研究：分子内 S-S 結合の解離に伴う残基間相互作用の変化
Insights into the denaturation process of SOD1: Changes in residue interactions associated with dissociation of intramolecular SS bonds
Tomu Fukasawa¹, Shinya Tahara², Takakazu Nakabayashi², Norifumi Yamamoto¹ (¹*Chiba Tech*, ²*Univ.Tohoku*)
- 2Pos193 QM/MM 分子シミュレーションによるミオシンの ATP 加水分解反応機構に関する理論的研究
Insights into the Reaction Mechanism of ATP Hydrolysis in Myosin through QM/MM Molecular Simulations
Tatsuki Tominaga, Norifumi Yamamoto (*Chiba Tech*)
- 2Pos194 Theoretical study of the influence of solvent conditions on the structure and interaction of core region in LC domain of FUS
Suzuka Tokunaga, Isseki Yu (*Maebashi Institute of Technology Information Systems Program*)
- 2Pos195 インフルエンザウイルス・ノイラミニダーゼの薬剤耐性機構に関する理論的研究：残基相互作用ネットワーク解析
Computational study of the drug resistance of influenza virus neuraminidase: Residue interaction network analysis
Yuki Kagusa, Norihumi Yamamoto, Manabu Igarashi (*Chiba tech*)

- 2Pos196 メソスケールシミュレーションによるシナプス後肥厚タンパク質が形成する多相凝集体の次元比較
Mesoscale simulation demonstrates the dimensional comparison of multi-phased condensates formed by postsynaptic density proteins
Risa Yamada, Shoji Takada (*Grad. Sch. Sci., Kyoto Univ.*)
- 2Pos197 Molecular dynamics simulation of the substrate channeling in tryptophan synthetase
Isseki Yu¹, Shingo Ito², Kiyoshi Yagi², Yui Sugita² (¹*Maebashi Institute of Technology Information Systems Program*, ²*Riken Theoretical Molecular Science Laboratory*)
- 2Pos198 Exploring the Structural Characteristics of Erythropoietin Based on Glycosylation Patterns Using Molecular Dynamics Simulations
Haeri Im¹, Song-Ho Chong², Yuji Sugita^{1,3,4} (¹*Theoretical Molecular Science Laboratory, RIKEN Cluster for Pioneering Research, Wako, Japan*, ²*Global Center for Natural Resources Sciences, Faculty of Life Sciences, Kumamoto University, Kumamoto, Japan*, ³*Computational Biophysics Research Team, RIKEN Center for Computational Science, Kobe, Japan*, ⁴*Laboratory for Biomolecular Function Simulation, RIKEN Center for Biosystems Dynamics Research, Kobe, Japan*)
- 2Pos199 光駆動塩化物イオンポンプロドプシンの分子動力学シミュレーション
Molecular dynamics simulation of light-driven chloride ion pump rhodopsin
Akiya Moriuchi^{1,2}, Masahiko Taguchi^{1,2}, Hinano Ogawa^{1,2}, Takaaki Fujiwara^{1,2}, Osamu Miyashita³, Eriko Nango^{1,2} (¹*Graduate School of Science, Tohoku University.*, ²*Institute of Multidisciplinary Research for Advanced Materials, Tohoku University.*, ³*RIKEN Center for Computational Science*)
- 2Pos200 アデニル酸キナーゼの構造転移とアンフォールディングのカメレオンモデルによる研究
Conformational transition and unfolding of adenylate kinase studied by chameleon model
Tomoki P. Terada (*Grad. Sch. Eng., Nagoya Univ.*)
- 2Pos201 味覚受容体 1 型の全原子分子動力学シミュレーション
All-atom molecular dynamics simulations of Taste receptor type 1
Kazuma Okada, Yasuhiro Matsunaga (*Grad. Sch. Sci. Eng., Saitama Univ.*)

27. 数理生物学・理論生物学 / 27. Mathematical & Theoretical biology

- 2Pos202 構造感度解析を用いたドーパミン化学反応ネットワークの理論解析
Theoretical analysis of dopamine chemical reaction network using structural sensitive analysis
Shun Sawada, Kei Tokita (*Grad. Sch. Info., Nagoya Univ.*)
- 2Pos203 大脳皮質における組織特異的な血管パターン形成の数理モデル
Computational Model Exploring Characteristic Pattern Regulation in Periventricular Vessels
Hisako Takigawa-Imamura¹, Saito Hirano² (¹*Grad. Sch. Med. Sci., Kyushu Univ.*, ²*Yahata Kousei Hosp.*)
- 2Pos204 Chemical thermodynamics for growing compartments with stoichiometric constraints
Atsushi Kamimura, Yuki Sughiyama, Tetsuya J. Kobayashi (*IIS, The University of Tokyo*)
- 2Pos205 イオン輸送タンパク質による細胞中のジュール熱発生の理論的研究
Joule heating in cells involving ion transport proteins: A theoretical study
Tetsuichi Wazawa, Takeharu Nagai (*SANKEN, Osaka Univ.*)
- 2Pos206 ライブイメージング画像を用いた多細胞組織内の細胞間相互作用の力の推定
Live imaging-based inference of mechanical potential of cell-cell interaction in multicellular systems
Hiroshi Koyama^{1,2}, Toshihiko Fujimori^{1,2} (¹*Div. Embryology, NIBB*, ²*SOKENDAI (Grad. Univ. Advanced Studies)*)
- 2Pos207 Disruption of metabolic homeostasis: Responsiveness due to the cofactor dynamics and network sparsity
Yusuke Himeoka¹, Chikara Furusawa^{1,2} (¹*Grad. Sch. Sci., Univ. Tokyo*, ²*BDR, Riken*)

- 2Pos208 線虫の確率的行動選択に関する非線形神経回路モデル
Nonlinear neural circuit model of stochastic behavioral choice in *C. elegans*
Makoto Fukui, Yuishi Iwasaki (*Grad. Sch. Sci. Eng., Ibaraki Univ*)
- 2Pos209 遺伝子発現時系列データのモード分解解析
Data-driven study of gene expression time-series patterns
Masayo Inoue (*Grad. Sch. Eng., Kyushu Inst. Tech.*)
- 2Pos210 相互作用する動的可塑的結合力学系を用いた生物個体間コミュニケーションのモデル
A model of communication between individual organisms using dynamic-plastic coupled dynamical systems
Haruto Nakata, Akinori Awazu (*Graduate School of Integrated Sciences for Life, Univ. Hiroshima*)

30. 計測 / 30. Measurements

- 2Pos211 高速 AFM による Sec トランスロコンの 1 分子計測
Single molecule observation of Sec translocon by High Speed AFM
Yui Kanaoka¹, Takaharu Mori², Tomoya Tsukazaki³, Takayuki Uchihashi^{1,4} (¹*Graduate School of Science, Nagoya University*, ²*School of Science, Tokyo University of Science*, ³*Division of Biological Science, NAIST*, ⁴*ExCELLS*)
- 2Pos212 液液相分離を形成するペプチドと RNA の分子間相互作用を検知するグラフェンバイオセンサー
Molecular Interactions of Peptides and RNA Forming Liquid-Liquid Phase Separation Evaluated by Graphene Electrochemical Transistors
Kantaro Kikuchi, Yui Yamazaki, Yuhei Hayamizu (*Dept. of Mat. Sci. and Eng., Tokyo Tech.*)
- 2Pos213 Universality of single-cell rheology during cell division in developing embryo observed by atomic force microscopy
Takahiro Kotani, Yuki Miyata, Yosuke Tsuboyama, Megumi Yokobori, Tomohiro Matsuo, Yuki Fujii, Takaharu Okajima (*Grad. Sch. Inform. Technol., Hokkaido. Univ.*)
- 2Pos214 超高感度タンパク質 ELISA 測定法を用いた不活化ウイルスの測定
Ultrasensitive ELISA detection of inactivated viruses
Yuki Kobayashi^{1,2}, Etsuro Ito^{1,2} (¹*Department of Biology, Waseda University*, ²*BioPhenoMA Inc.*)
- 2Pos215 蛍光ビーズを用いた CLEM の研究
Research on CLEM method using fluorescent beads
Miho Nakafukasako¹, Tomoya Higo¹, Yuki Gomibuchi², Hiroko Takazaki³, Yusuke V. Morimoto², Takayuki Kato³, Takuo Yasunaga² (¹*Grad. Sch. Comp. Sci. Syst. Eng., Kyutech.*, ²*Dept. of Phys. Info. Tech., Kyutech.*, ³*IPR, Univ. Osaka*)
- 2Pos216 Development of a method for conformational analysis of oligosaccharides using ion mobility spectrometry
Hao Feng¹, Takumi Yamaguchi^{1,2,3} (¹*Sch. Materials Sci., JAIST*, ²*Grad. Sch. Pharm. Sci., Nagoya City Univ.*, ³*ExCELLS, NINS*)
- 2Pos217 原子間力顕微鏡を用いた大腸粘液層の力学的評価
Mechanical Evaluation of Colonic Mucus Layer by Atomic Force Microscopy
Momoka Horikiri¹, Mugen Taniguchi², Naritaka Kobayashi³, Hiroshi Y. Yoshikawa¹, Kiyoshi Takeda², Ryu Okumura², Takahisa Matsuzaki¹ (¹*Grad. Sch. Eng., Univ. Osaka*, ²*Grad. Sch. Med., Univ. Osaka*, ³*Sch. Eng., Univ. Shiga*)
- 2Pos218 DNA Origami Nanospring: Probing the Dynamics of Single Integrin motion, Force Magnitude and Orientation in Living Cells
Hitomi Matsubara¹, Hiroki Fukunaga², Takahiro Saito³, Keigo Ikezaki⁴, Mitsuhiro Iwaki² (¹*BDR, RIKEN*, ²*Adv ICT Res Inst, NICT*, ³*Grad. Sch. FBS., Univ. Osaka*, ⁴*Grad. Sch. Sci., Univ. Tokyo*)

- 2Pos219 ポリジメチルシロキサン膜で被覆したグラフェンセンサーを用いた電気的バイオセンシング
Electrical biosensing using graphene sensors covered with poly(dimethylsiloxane) membrane
Takao Ono¹, Miho Kannaka¹, Yasushi Kanai^{1,2}, Naruto Miyakawa³, Ayumi Shinagawa³, Shin-ichi Nakakita⁴, Yohei Watanabe⁵, Shota Ushiba³, Shinsuke Tani³, Yasuo Suzuki⁶, Masahiko Kimura³, Daichi Chiba^{1,2,7,8}, Kazuhiko Matsumoto¹ (¹*SANKEN, Osaka Univ.*, ²*OTRI, Osaka Univ.*, ³*Murata Manufacturing Co., Ltd.*, ⁴*Fac. Med., Kagawa Univ.*, ⁵*Grad. Sch. Med. Sci., Kyoto Pref. Univ. Med.*, ⁶*Sch. Pharm. Sci., Univ. Shizuoka*, ⁷*CSRN, Osaka Univ.*, ⁸*SRIS, Tohoku Univ.*)

31. バイオイメージング / 31. Bioimaging

- 2Pos220 pyroptosis における IL-1 β 放出動態の一細胞イメージング
Single-cell imaging of IL-1 β release dynamics in pyroptosis
Mika Kato¹, Zhuohao Yang², Nobutake Suzuki³, Mai Yamagishi³, Takashi Funatsu², Yoshitaka Shirasaki² (¹*Dep. Pharm., The Univ. of Tokyo*, ²*Grad. Pharm. Sci., The Univ. of Tokyo*, ³*Live Cell Diagnosis, Ltd.*)
- 2Pos221 Development of a fluorescence lifetime biosensor for quantitative imaging of intracellular GTP levels in living cells
Thi Ngoc Loan Nguyen, Quang Cong Vu, Satoshi Arai (*WPI Nano Life Science Institute, Kanazawa Univ.*)
- 2Pos222 Quantification of intracellular Ca²⁺ levels by Red/Green/Blue fluorescence lifetime biosensors
Cong Quang Vu¹, Yasushi Okada^{2,3}, Satoshi Arai¹ (¹*NanoLSI, Kanazawa Univ.*, ²*Laboratory for Cell Polarity Regulation, Center for Biosystems Dynamics Research, RIKEN*, ³*Department of Cell Biology, Department of Physics, The Univ. of Tokyo*)
- 2Pos223 Investigation of cell membrane exposed to nanopipette-based non-thermal atmospheric pressure plasma using scanning probe microscope
Han Gia Nguyen¹, Linhao Sun², Shinya Kumagai³, Shinji Watanabe² (¹*Grad. Sch. Nano Life Sci, Univ. Kanazawa*, ²*WPI NanoLSI, Univ. Kanazawa*, ³*Univ. Meijo*)
- 2Pos224 マウスノード不動繊毛は変形の向きを感知して左右軸を決定する
Immotile cilia mechanically sense the direction of fluid flow for left-right determination
Takanobu A. Katoh^{1,2}, Toshihiro Omori³, Katsutoshi Mizuno⁴, Takeshi Itabashi², Atsuko H. Iwane², Takuji Ishikawa³, Takayuki Nishizaka⁵, Hiroshi Hamada², Yasushi Okada^{1,2,6} (¹*Grad. Sch. Med., The Univ. of Tokyo*, ²*BDR, Riken*, ³*Grad. Sch. Eng., Tohoku Univ.*, ⁴*Fac. Med. Sci., Univ. of Fukui*, ⁵*Fac. Sci., Gakushuin Univ.*, ⁶*Grad. Sch. Sci., UBI, WPI-IRCN, The Univ. of Tokyo*)
- 2Pos225 Attempt of intracellular imaging by high-speed atomic force microscopy
Hikaru Ichida¹, Kenichi Umeda², Alam Mohammad Shahidul¹, Risa Omura², Makiko Kudo², Takehiko Ichikawa², Takeshi Fukuma², Takahiro Nakayama², Mikihiko Shibata^{2,3}, Noriyuki Kodera² (¹*Grad. Sch. NanoLS., Kanazawa Univ.*, ²*WPI-NanoLSI, Kanazawa Univ.*, ³*InFiniti, Kanazawa Univ.*)
- 2Pos226 Post-acquisition super resolution for cryo-EM
Raymond Burton-Smith^{1,2}, Kazuyoshi Murata^{1,2} (¹*Exploratory Center for Life and Living Systems (ExCELLS), National Institute of Natural Sciences, Okazaki*, ²*National Institute of Physiological Sciences, National Institute of Natural Sciences, Okazaki*)
- 2Pos227 透過型電子顕微鏡の最大感度をもたらす新規位相板 (II)
Novel Hilbert Phase Plates for Maximum Sensitivity in Transmission Electron Microscopy (II)
Kuniaki Nagayama (*N-EM Laboratories Inc.*)
- 2Pos228 蛍光グルコース誘導体を用いたグルコースの細胞内における局在解析
Analysis of intracellular glucose localization by fluorescent glucose analogs
Mio Yanagida, Hirofumi Nakano, **Hironori Ueno** (*Grad. Sch. Edu., Aichi Univ. Edu.*)

- 2Pos229 Investigation of the photophysical property of a fluorescent calcium-ion indicator, Yellow Cameleon 3.60, under cryogenic condition
Wakana Miyamura¹, Takumi Kunimoto¹, Masahito Yamanaka¹, Toshiki Kubo², Kosuke Tsuji¹, Kazunori Sugiura³, Shun-ichi Fukushima³, Nicholas Smith⁴, Takeharu Nagai^{3,5}, Katsumasa Fujita^{1,5,6}
 (¹Dept. Appl. Phys., Osaka Univ., ²Dept. Dermatol., Osaka Univ., ³SANKEN, Osaka Univ., ⁴IFReC., Osaka Univ., ⁵OTRL, Osaka Univ., ⁶PhotoBIO-OIL., AIST)
- 2Pos230 シングルセル 3D オプトジェネティクス技術の開発と応用
 Development and application of single-cell 3D optogenetics technology
Tomoyoshi Inoue¹, Ryuki Imamura¹, Naoya Kataoka², Shin Usuki³, Takuma Sugi¹ (¹Program of Biomedical Science, Graduate School of Integrated Sciences for Life, Hiroshima University, ²Department of Integrative Physiology, Graduate school of Medicine, Nagoya University, ³Research Institute of Electronics, Shizuoka University)
- 2Pos231 ナノメートル精度を有する極低温光電子相関顕微鏡システムの開発
 Development of cryogenic correlative light and electron microscope system with nanometer-scale
Takuma Yorita¹, Yoshimasa Takizawa², Hitoshi Kurumizaka², Satoru Fujiyoshi² (¹Grad. sch. Sci., Tokyo Tech., ²IQB., Univ. Tokyo)
- 2Pos232 高分解能ライトフィールド顕微鏡によるリアルタイム三次元多粒子トラッキングの開発
 Development of real-time 3D multi-particle tracking by high-resolution light-field microscopy
Ryuki Imamura¹, Shin Usuki², Takuma Sugi¹ (¹Program of Biomedical Science, Graduate School of Integrated Sciences for Life, Hiroshima University, ²Research Institute of Electronics, Shizuoka University)
- 2Pos233 超低侵襲高速原子間力顕微鏡の開発
 Ultra-low-invasive high-speed atomic force microscopy for visualization of fragile molecular complexes
Shingo Fukuda, Toshio Ando (*WPI Nano Life Science Institute (WPI-NanoLSI), Kanazawa University*)

32. バイオエンジニアリング / 32. Bioengineering

- 2Pos234 Lectin-conjugated nanoparticles selectively binding to cancer cell surface glycans for the capture of pancreatic cancer cell exosomes
Jonghoon Choi (*School of Integrative Engineering, Chung-Ang University*)
- 2Pos235 集光レーザービームの物理作用による生体分子濃縮の時空間制御
 Spatiotemporal control of condensation of biomolecules via photophysical effects of a focused laser beam
Shuma Matsumoto¹, Ren Shirata^{1,2}, Genki Fukasawa³, Takahisa Matsuzaki¹, Teruki Sugiyama^{4,5}, Ryuzo Kawamura⁶, Tomoaki Matsuura⁷, Hiroshi Yoshikawa¹ (¹Grad. Sch. Eng., Osaka Univ., ²Grad. Sch. Chem., Saitama Univ., ³Grad. Sch. Life Sci. Tech., Tokyo Tech., ⁴Dep. Appl. Chem., NYCU, ⁵Div. Mater. Sci., NAIST, ⁶Grad. Sch. Sci and Eng., Saitama Univ., ⁷ELSI, Tokyo Tech.)
- 2Pos236 微小曲面電極を用いた電気化学発光の細胞表面分子検出への応用
 Application of electrochemiluminescence with cup-shaped microelectrodes for detection of cell surface molecules
Taro Sasaki^{1,2}, Koki Uchiyama^{1,2}, Tomoyuki Kamata³, Dai Kato³, Naoshi Kojima³, Shohei Yamamura³, Hyonchol Kim^{1,2} (¹Grad. Sch. Eng., Tokyo Univ. Agric. Technol., ²Cell. Mol. Biotechnol. Res. Inst., AIST, ³Health Med. Res. Inst., AIST)
- 2Pos237 非熱平衡大気圧プラズマを用いた細胞成長促進用マイクロ灌流デバイスシステム
 A micro perfusion system for promoted cell growth using non-thermal atmospheric pressure plasma
Hayata Okino, Shinya Kumagai (*Meijo University*)

- 2Pos238 バルスレーザが骨の溶解性に与える影響の評価 ～骨構造の時空間制御に向けて～
Influence of pulsed laser irradiation on dissolution behavior of bone to understand the structural and chemical origins of old bone region
Anna Konishi¹, Erika Yamashita^{2,3}, Mihoko Maruyama¹, Takahisa Matsuzaki¹, Heqi Xi¹, Menglu Li¹, Katsumasa Fujita¹, Junichi Kikuta^{2,4}, Yusuke Mori¹, Masaru Ishii^{2,3,4,5}, Hiroshi Yoshikawa¹ (¹*Grad. Sch. Eng., Univ. Osaka*, ²*Grad. Sch. Med., Univ. Osaka*, ³*StemRIM Institute of Regeneration-Inducing Medicine, Univ. Osaka*, ⁴*Grad. Sch. FBS, Univ. Osaka*, ⁵*iFReC, Univ. Osaka*)
- 2Pos239 スリットナノポア近傍のDNAのダイナミクスに対するイオン種の影響
Effect of ionic species on Dynamics of DNA near slit nanopore
Takuma Yoshinaga, Seiwa Yamagishi, Yunosuke Fuji, Shin Takano, Yuuta Moriyama, Toshiyuki Mitsui (*Aoaku. Univ, Dept, of Phys.*)
- 2Pos240 相分離マイクロリアクタを用いたオンチップ濃縮系の開発
Development of on-chip enrichment system using microreactor for phase separation
Yoshihiro Minagawa, Shoki Nakata, Hiroyuki Noji (*Dep. App. Chem, Univ. Tokyo.*)
- 2Pos241 マグネタイトナノ粒子を内包したフェリチン結晶のFIB加工とその結晶を利用したスピン波デバイスの開発
FIB machining of crystals of magnetite nanoparticles encapsulated in ferritin and development of spin-wave device using the arrays
Mitsuhiro Okuda^{1,2}, Gabriela Pretre² (¹*Meiji Univ.*, ²*Komie corp.*)
- 2Pos242 マイクロビーズに提示したライブラリーによる蛍光アプタマーの in vitro セレクション
Selection of fluorogenic RNA aptamers by *in vitro* compartmentalization using microbead-display libraries
Tomotaka Tayama¹, Keisuke Ito², Sotaro Uemura², Ryo Iizuka² (¹*Dept. Biol. Sci., Fac. Sci., The Univ. Tokyo*, ²*Dept. Biol. Sci., Grad. Sch. Sci., The Univ. Tokyo*)
- 2Pos243 硬さの空間パターンによる細胞の集団運動の制御
Control of self-organization of cells by mechanically patterned hydrogel
Takahisa Matsuzaki (*Grad. Sch. Eng. Osaka Univ.*)

34. その他 / 34. Miscellaneous topics

- 2Pos244 高分子鎖における First Passage 問題の理論的解析
Theoretical analytics of First Passage Problems for polymer model
Yuta Sakamoto, Takahiro Sakaue (*Grad. Sci and Eng., Univ. Aoyama Gakuin*)
- 2Pos245 Phase separation of soft polymer mixtures
Naoki Iso, Yuki Norizoe, Takahiro Sakaue (*Aoyama Gakuin University*)
- 2Pos246 Antifungal effect of nanostructured copper oxide: Synthesis and Application
Yuki Nishida (*Faculty of Agriculture, Kagoshima University*)
- 2Pos247 インクジェット技術を用いたバクテリアのパターン化植菌方法
Development of patterned inoculation of microbial cell using inkjet technology
Mikiko Tsudome, Shigeru Deguchi (*JAMSTEC*)
- 2Pos248 種依存的な細胞レベルの温度適応機構の探索
Identifying species-dependent mechanisms of temperature adaptation at the cellular level
Haruya Suzuki¹, Akira Murakami^{1,2}, Takashi Funatsu¹, Koki Okabe^{1,3} (¹*Grad. Sch. Pharm. Sci., The Univ. of Tokyo*, ²*Sch. Pharm. Sci., Univ. Shizuoka*, ³*PRESTO, JST*)
- 2Pos249 213nm 深紫外線バルスレーザを用いる微生物殺菌効果の定量性に関する検討
Quantitative Study of Microbial Sterilization by using Deep UV Pulse Laser at 213nm
Koichi Murayama¹, Riri Miura¹, Kazuhiro Dainaka², Nobuhiro Umemura² (*Hokkaido Univ. of Education*, ²*Chitose Insti. Sci. Tech.*)

- 2Pos250 Medusavirus の新規カプシド構造と粒子形成過程に伴う構造変化
Novel capsid structure and structural changes during particle formation of Medusavirus
Ryoto Watanabe^{1,2,3}, Chihong Song^{1,2,3}, Masaharu Takemura⁴, Kazuyoshi Murata^{1,2,3} (¹The Graduate University for Advanced Studies (SOKENDAI), ²NIPS, ³ExCELLS, ⁴Tokyo University of Science)

3 日目 (11 月 16 日 (木)) / Day 3 (Nov. 16 Thu.) 13:10 ~ 15:10

01A. タンパク質：構造 / 01A. Protein: Structure

- 3Pos001 Structure and dynamics of β -hairpin peptide SVG28 by solid-state nuclear magnetic resonance spectroscopy
Izuru Kawamura¹, Shuhei Yoshida², Fumihiro Kayamori², Yuto Suzuki¹, Daisuke Sato¹, Shoko Fujita³, Kenji Usui², Ryuji Kawano³ (¹Grad. Sch. Eng. Sci., Yokohama Natl. Univ., ²Konan Univ., ³Tokyo Univ. Agric. Technol. (TUAT))
- 3Pos002 クライオ電子顕微鏡によるナトリウム共役型中性アミノ酸トランスポーター SNAT2 の立体構造解析
Cryo-EM Structure Analysis of SNAT2, the Sodium-Coupled Neutral Amino Acid Transporter
Haruna Inuzuka, Yongchan Lee, Tomohiro Nishizawa (*Grad. Sch. of Med. Life Sci., Yokohama City Univ.*)
- 3Pos003 ゼアキサントリン結合型のキサントロドプシン kin4B8 のクライオ電子顕微鏡構造解析
Cryo-EM structure of the zeaxanthin-bound xanthorhodopsin kin4B8
Wataru Shihoya¹, Syunya Murakoshi¹, Ariel Chazan², Hideki Kandori³, Keiichi Inoue⁴, Susumu Yoshizawa⁵, Oded Beja², Osamu Nureki¹ (¹Grad. Sch. Sci., The Univ of TOKYO, ²Faculty of Biology, Technion-Israel Institute of Technology, ³OptoBioTechnology Research Center, Nagoya Institute of Technology, ⁴The Institute for Solid State Physics, The University of Tokyo, ⁵Atmosphere and Ocean Research Institute, The University of Tokyo)
- 3Pos004 Molecular basis of host recognition and antigenic drift of human coronavirus 229E
Yu-Xi Tsai (*IBC, Academia Sinica*)
- 3Pos005 cyclic offset を導入した AlphaFold Multimer による環状ペプチド複合体構造予測
Structure prediction of cyclic peptide complexes by AlphaFold Multimer with cyclic offset
Keinoshin Togashi, Takatsugu Kosugi, Masahito Ohue (*Department of Computer Science, School of Computing, Tokyo Institute of Technology*)
- 3Pos006 Molecular basis of the hyper-activity of anti-cancer bispecific antibody due to domain rearrangement revealed by cryo-EM
Kyohei Sato¹, Ryutarō Asano², Koki Makabe³, Izumi Kumagai², Takashi Matsui⁴, Shiro Uehara¹, Atsushi Tsugita¹, Takeshi Yokoyama¹, Yoshikazu Tanaka¹ (¹Grad. Sch. Life Sci., Univ. Tohoku, ²Grad. Sch. Eng., Univ. Tokyo of Agriculture and Technology, ³Grad. Sch. Sci and Eng., Univ. Yamagata, ⁴Grad. Sch. Sci., Univ. Kitasato)
- 3Pos007 Structural study on the bacteriocin pectocin M1 from *Pectobacterium catorovorum*
Nawee Jantarit^{1,2}, Hideaki Tanaka², Genji Kurisu^{1,2} (¹Grad.Sch.Sci., Osaka Univ., ²IPR, Osaka Univ.)

- 3Pos008 **新規細胞内ポケットを介した class B1 GPCR の活性化機構の解明**
A novel activation mechanism of class B1 GPCRs via a conserved intracellular pocket
Kazuhiro Kobayashi¹, Kouki Kawakami¹, Tsukasa Kusakizako², Atsuhiko Tomita²,
Michihiro Nishimura², Kazuhiro Sawada², Hiroyuki Okamoto², Suzune Hiratsuka³, Gaku Nakamura³,
Riku Kuwabara³, Hiroshi Noda⁴, Hiroyasu Muramatsu⁴, Masaru Shimizu⁴, Tomohiko Taguchi⁵,
Asuka Inoue³, Takeshi Murata⁶, Osamu Nureki² (¹*Komaba Institute for Science, the University of Tokyo*,
²*Department of Biological Sciences, Graduate School of Science, The University of Tokyo*, ³*Graduate
School of Pharmaceutical Sciences, Tohoku University*, ⁴*Research Division, Chugai Pharmaceutical*,
⁵*Laboratory of Organelle Pathophysiology, Department of Integrative Life Sciences, Graduate School of
Life Sciences, Tohoku University*, ⁶*Department of Chemistry, Graduate School of Science, Chiba
University*)
- 3Pos009 **CENP-E モータードメインの加水分解前後の結晶構造の比較**
Comparison of crystal structures of the CENP-E motor domain before and after hydrolysis
Asuka Shibuya^{1,2}, Akira Suzuki², Naohisa Ogo³, Jun-ichi Sawada³, Akira Asai³, Hideshi Yokoyama²
(¹*Fac. Pharm. Sci., Josai Itn. Univ.*, ²*Fac. Pharm. Sci., Tokyo Univ. Sci.*, ³*Ctr. Drug Discov., Grad. Sch.
Pharm. Sci., Univ. Shizuoka*)
- 3Pos010 **新規化学修飾グラフェングリッドを利用した細胞分裂タンパク質 FtsZ フィラメントのクライオ
電顕構造解析**
Cryo-EM structure analysis of cell division protein FtsZ filaments using a novel chemically
modified graphene grid
Junso Fujita^{1,2,3}, Hiroshi Amesaka⁴, Takuya Yoshizawa⁵, Kota Hibino⁵, Fumiaki Makino^{1,2,6},
Haruyasu Asahara³, Maiko Moriguchi³, Tsuyoshi Inoue³, Keiichi Namba^{1,2,7}, Shun-ichi Tanaka⁴,
Hiroyoshi Matsumura⁵ (¹*Grad. Sch. Frontier Biosci., Osaka Univ.*, ²*JEOL YOKOGUSHI Res. Alliance
Lab., Osaka Univ.*, ³*Grad. Sch. Pharm. Sci., Osaka Univ.*, ⁴*Grad. Sch. Life & Env. Sci., Kyoto Pref. Univ.*,
⁵*Coll. of Life Sci., Ritsumeikan Univ.*, ⁶*JEOL Ltd.*, ⁷*RIKEN BDR/SPring-8 Center*)
- 3Pos011 **高感度チャネルロドプシン GtCCR4 の構造基盤**
Structural basis for the highly sensitive channelrhodopsin GtCCR4
Tatsuki Tanaka¹, Shoko Hososhima², Yo Yamashita², Teppei Sugimoto², Wataru Iida¹, Fumiya K. Sano¹,
Kota Katayama^{2,3}, Satoshi P. Tsunoda^{2,3}, Wataru Shihoya¹, Hideki Kandori^{2,3}, Osamu Nureki¹ (¹*Grad.
Sch. of Sci., Univ. of Tokyo*, ²*Grad. Sch. of Eng., Nagoya Inst. of Tech.*, ³*OptoBio Tech. Res. Cent.*)

01B. タンパク質：構造機能相関／01B. Protein: Structure & Function

- 3Pos012 **Prediction of the quantitative function of artificially-designed protein from structural information**
Ryosaku Ota¹, Naoki Honda^{1,2,3,4} (¹*Graduate School of Integrated Sciences for Life, Hiroshima
University*, ²*Exploratory Research Center on Life and Living Systems*, ³*Graduate School of Biostudies,
Kyoto University*, ⁴*Center for Brain, Mind and Kansei sciences research, Hiroshima University*)
- 3Pos013 **Effects of cancer-associated mutations on the allosteric network within the carboxyl-terminal
hydrolase domain of BAP1**
Chih-Hsuan Lai¹, Hao-Ting Chang², 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 10617, Taiwan*, ³*International Institute for Sustainability with Knotted Chiral Meta Matter,
Hiroshima University, Higashihiroshima 739-8527, Japan*)
- 3Pos014 **クライオ電子顕微鏡によるチャネルロドプシンの構造解析**
Cryo-EM structure of a channelrhodopsin
Yuzhu Wang¹, Tatsuki Tanaka¹, Fumiya K. Sano¹, Hiroaki Akasaka¹, Satoshi P. Tsunoda²,
Wataru Shihoya¹, Hideki Kandori², Osamu Nureki¹ (¹*Graduate School of Science, The University of
Tokyo*, ²*Graduate School of Engineering, Nagoya Institute of Technology*)

- 3Pos015 Efficient recombinant production, structural and functional study of mouse-derived α -defensin family, cryptidins
Shaonan Yan, Yuchi Song, Yi Wang, Shinya Yoshino, Tomoyasu Aizawa (*Graduate School of Life Science, Hokkaido University*)
- 3Pos016 X線1分子追跡法を用いたTRPチャネルの分子内動態計測
 Measurement of intramolecular dynamics of TRP channels using Diffracted X-ray Tracking
Kazuhiro Mio^{1,2}, Tatsunari Ohkubo², Tatsuya Arai^{1,3}, Yuji C. Sasaki^{1,3} (¹*AIST Operando-OIL*, ²*Med. Life Sci., Yokohama City Univ.*, ³*Grad. Sch. Front. Sci., Univ. Tokyo*)
- 3Pos017 海洋性珪藻 *Phaeodactylum tricornutum* の細胞質局在性 θ 型炭酸脱水酵素の構造と機能解析
 Structural and functional analysis of the cytosolic θ carbonic anhydrase from marine diatom *Phaeodactylum tricornutum*
Hiroyuki Negoro^{1,2}, Hideaki Tanaka^{1,2}, Ginga Shimakawa³, Hiroyasu Koteishi^{1,2}, Akihiro Kawamoto^{1,2}, Yusuke Matsuda³, 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, Kansai Gakuin University*)
- 3Pos018 小型 AsCas12f 酵素のクライオ電子顕微鏡を用いた構造解析およびその改変
 An AsCas12f-based compact genome editing tool derived by deep mutational scanning and structural analysis
Satoshi Omura¹, Tomohiro Hino², Ryoya Nakagawa¹, Tomoki Togashi³, Tsukasa Ohmori³, Atsushi Hoshino², Osamu Nureki¹ (¹*Department of Biological Sciences, Graduate School of Science, The University of Tokyo*, ²*Department of Cardiovascular Medicine, Graduate School of Medical Science, Kyoto Prefectural University of Medicine*, ³*Department of Biochemistry, Jichi Medical University School of Medicine*.)
- 3Pos019 Ultrahigh-affinity transport proteins from ubiquitous marine bacteria: structure, function, and environmental significance
Benjamin Clifton¹, Uria Alcolombri², Colin Jackson³, Paola Laurino¹ (¹*Protein Eng. Evol. Unit, Okinawa Inst. Sci. Tech. (OIST)*, ²*Inst. Environ. Eng., ETH Zurich*, ³*Research School of Chem., Aust. Nat. Univ. (ANU)*)

01C. タンパク質：物性 / 01C. Protein: Physical Property

- 3Pos020 抗体の変性によるコンパクト化と理想的球状化
 Antibodies get smaller and ideally globular by denaturation
Hiroshi Imamura¹, Ayako Ooishi², Shinya Honda² (¹*Dept. Bio-sci., Nagahama Inst. Bio-Sci. Tech.*, ²*Biomed. Res. Inst., AIST*)
- 3Pos021 あらゆるタンパク質のフォールディング機構を予測できる統計力学モデルの開発
 Development of statistical mechanical models that can predict folding mechanisms of any protein
Koji Ooka¹, Munechito Arai^{1,2,3} (¹*Col. Arts & Sci., Univ. Tokyo*, ²*Dept. Life Sci., Univ. Tokyo*, ³*Dept. Phys., Univ. Tokyo*)
- 3Pos022 AlphaFold2を用いた大型タンパク質の新生鎖フォールディング予測
 Prediction of nascent chain folding of large multidomain proteins by AlphaFold2
Shunji Suetaka¹, Masataka Yoshimura¹, Koji Ooka², Munechito Arai^{1,2,3} (¹*Dept. Life Sci., Univ. Tokyo*, ²*Col. Arts & Sci., Univ. Tokyo*, ³*Dept. Phys., Univ. Tokyo*)
- 3Pos023 小麦由来グリアジンペプチドの凝集形成に関する研究
 Characterization of Aggregation Process of Wheat Gliadin 33-mer Peptides
Yuri Emoto¹, Mio Nakashima¹, Natsuko Goda¹, Emi Hibino¹, Takeshi Tenno^{1,2}, Hidekazu Hiroaki^{1,2,3} (¹*Grad. Sch. Pharm. Sci., Nagoya Univ.*, ²*BeCellBar, LLC*, ³*COMIT*)

- 3Pos024 一倍体状態に起因する中心体足場タンパク質の不足はヒト体細胞のゲノム不安定性を引き起こす
Haploidy-linked insufficiency of pericentriolar material (PCM) protein causes a genome instability in human somatic cells
Koya Yoshizawa¹, Ryota Uehara² (¹Graduate School of Life Science, Hokkaido University, ²Faculty of Advanced Life Science, Hokkaido University)
- 3Pos025 血清アミロイド A の線維形成における主要な構造変化
A key conformational change for the fibril formation by serum amyloid A
Taishi Okunishi, Katsumi Matsuzaki, Masaru Hoshino (*Grad. Sch. of Pharm. Sci., Univ. Kyoto*)
- 3Pos026 蛋白質凝集の免疫原性は凝集体の生物物理学的特徴によって決まる
The biophysical properties of protein aggregates determine *in vivo* immunogenicity
Yutaka Kuroda (*Tokyo University of Agriculture and Technology (TUAT)*)
- 3Pos027 VHH 抗体 FR2 残基による特徴的な親和性-安定性トレードオフ機構の解明
Elucidation of unique affinity-stability trade-off mechanisms by FR2 residues in VHH antibodies
Koichi Yamamoto¹, Makoto Nakakido¹, Daisuke Kuroda^{1,2}, Satoru Nagatoishi¹, Kouhei Tsumoto^{1,3}
(¹Grad. Sch. of Eng., Univ. of Tokyo, ²Nat. Inst. of Infect. Dis., ³Inst. of Med. Sci., Univ. of Tokyo)
- 3Pos028 フロリゲン活性化複合体による LLPS 形成と花成制御機構
The LLPS formation by flowering activation complex and flowering regulating mechanism
Mayu Enomoto¹, Suai Anzawa¹, Yuka Koizumi¹, Kyoko Furuita², Kenichiro Taoka^{3,4}, Keiji Nishida⁴, Akihiko Kondo⁴, Takashi Kodama², Toshimichi Fujiwara², Hiroyuki Tsuji^{3,5}, Chojiro Kojima^{1,2} (¹Grad. Sci., YNU, ²IPR, Univ. Osaka, ³KIBR, YCU, ⁴EGBRC, Univ. Kobe, ⁵BBC, Univ. Nagoya)

01E. タンパク質：計測・解析 / 01E. Protein: Measurement & Analysis

- 3Pos029 構造コンプライアンス特性のロボット機構学的解析に基づくタンパク質の運動生成
Generation of Protein Motions based on Robot Kinematic Analysis of Structural Compliance Properties
Keisuke Arikawa (*Fcl. Eng., Kanagawa Inst. of Tech.*)
- 3Pos030 細胞内環境に酷似した細胞残骸密集環境下でのヒトアミロイドベータタンパク質の凝集体形成
Aggregate formation of Human Amyloid-beta Protein in cell debris crowding environment closely resembling the intracellular environment
Mitsuhiko Hirai¹, Hiroki Iwase², Shigeki Arai³ (¹Gunma University, ²Comprehensive Research Organization for Science and Society, ³National Institute for Quantum and Radiological Science and Technology)
- 3Pos031 Optimization of MD-derived conformational ensemble in information content space and its application to experimental SAXS data
Tomotaka Oroguchi (*Facult. Sci. Tech., Keio Univ.*)
- 3Pos032 あいち SR の名古屋大学 X 線回折ビームライン BL2S1 の即応性と多様性の利用支援
Rapid Access and Multi-Use Diffraction Beamline BL2S1 from Nagoya University in Aichi-SR
Yasufumi Umena¹, Hiroki Onoda¹, Leonard Chavas^{1,2} (¹NUSR, Nagoya Univ., ²Grad. Sch. Eng., Nagoya Univ.)
- 3Pos033 量子カスケードレーザーを用いた時間分解赤外分光法による古細菌と細菌由来の 2 つのヘリオロドプシンの構造変化計測
Time-resolved infrared dual-comb spectroscopy using quantum cascade laser reveals differences in structural changes of two heliorhodopsins
Toshiki Nakamura¹, Soichiro Kato¹, Ryo Yamamoto², Manish Singh^{1,3}, Hideki Kandori^{1,3}, Yuji Furutani^{1,3} (¹Nagoya Institute of Technology, ²Nagoya Institute of Technology, ³OptoBio Technology Research Center)

- 3Pos034 電気生理学的手法によるディフィシル菌二成分毒素の膜透過アッセイ系構築
Construction of a membrane translocation assay system for *C. difficile* binary toxin by electrophysiological technique
Yuki Mitani¹, Sotaro Takiguchi², Ryuji Kawano², Hideaki Tsuge¹ (¹Graduate School of Life Science, Kyoto Sangyo University, ²Department of Biotechnology and Life Science, Tokyo University of Agriculture and Technology)
- 3Pos035 パルス電子顕微鏡のための液中試料観察法の開発
Development of the Liquid Sample Observation Method for Pulse Electron Microscopy
Ryoya Katayama, Takeru Yamasaki, Tomoharu Matsumoto, Akihiro Narita (Grad. Sch. Sch., Nagoya Univ.)

02. ヘムタンパク質 / 02. Heme proteins

- 3Pos036 Electrochemically boosted P450 reactions to produce pharmaceutical hydroxyvitamin D₃
Yasuhiro Mie¹, Chitose Mikami¹, Yoshiaki Yasutake^{1,2} (¹Bioproduction Res. Inst., AIST, ²CBBD-OIL, AIST-Waseda Univ.)
- 3Pos037 ウシ心筋シトクロム酸化酵素のカルシウム結合構造
Calcium-bound structure of bovine heart cytochrome c oxidase
Kazumasa Muramoto, Kyoko Shinzawa-Itoh (Grad. Sch. Sci., Univ. Hyogo)
- 3Pos038 Fe-Tyr 配位結合をもつ 4 種類の天然変異ヘモグロビン M の結晶構造
Crystallographic structures of four kinds of Hemoglobin M which has Fe-Tyr coordination bond
Shigenori Nagatomo¹, Ayana Sato-Tomita², Yumi Semba¹, Akihisa Miyagawa¹, Kiyoharu Nakatani¹, Mio Ohki³, Kenji Mizutani², Sam-Yong Park³, Naoya Shibayama² (¹Dept. Chem., Univ. Tsukuba, ²Div. of Biophysics, Jichi Medical Univ., ³Protein Design Lab., Yokohama City Univ.)
- 3Pos039 CHCHD2 によるチトクロム酸化酵素活性化作用機序解明を目指した可視共鳴ラマン分光学的研究
Visible resonance Raman Study to elucidate the action mechanism of CHCHD2 for activating cytochrome oxidase
Takuto Kamei¹, Sachiko Yanagisawa¹, Atsuhiko Simada², Gladys Stephanie³, Aras Siddhesh², Huettemann Maik³, Glossman Lawrence³, Minoru Kubo¹ (¹Grad. Sch. Sci., Univ. Hyogo, Japan., ²Fac. Appl. Biol. Sci., Gifu Univ., ³Wayne State Univ. Sch. Med.)
- 3Pos040 アロステリック蛋白質の構造会合と特性に対する両親媒性溶質の影響
Effects of an amphipathic solute on the structural assembly and properties of an allosteric protein
Antonio Tsuneshige (Frontier Bioscience HOSEI UNIVERSITY)

03. 膜タンパク質 / 03. Membrane proteins

- 3Pos041 両親媒性ポリマーで再構成された BhuUV-T の分光学的解析
Spectroscopic analysis of BhuUV-T reconstituted with amphiphilic polymers
Yuki Sumida¹, Ayaka Naka¹, Yasuhiro Kobori^{1,2}, Yoshitsugu Shiro³, Hiroshi Sugimoto⁴, Tetsunari Kimura^{1,2} (¹Dept. of Chem., Grad. Sch. Sci., Univ. Kobe, ²Mol. Photo. Res. Cent., Univ. Kobe, ³Dept. of Life Sci., Grad. Sch. of Sci., Univ. Hyogo, ⁴Spring-8, RIKEN)
- 3Pos042 クライオ電子顕微鏡と分子動力学計算によって明らかとなった植物 YS1 トランスポーターによる鉄・フィトシテロホア複合体の輸送機構
Iron-phytosiderophore uptake mechanism of plant YS1 transporter revealed by cryo-EM structure and MD simulations
Atsushi Yamagata (RIKEN Center for Biosystems Dynamics Research)

- 3Pos043 K オピオイド受容体とモルフィナン骨格を保有するリガンドとの相互作用解析
Vibrational spectroscopy study of chemical interaction between k-opioid receptor (KOR) and ligands having morphinan structure
Ryo Nishikawa¹, Kota Katayama^{1,2}, Seiya Iwata¹, Ryoji Suno³, Chiyo Suno³, Takuya Kobayashi³, Hideki Kandori^{1,2} (¹Graduate School of Engineering, Nagoya Institute of Technology, ²OptoBio Technology Research Center, Nagoya Institute of Technology, ³Graduate School of Medicine, Kansai Medical University)
- 3Pos044 フィタニル基および膜貫通架橋をもつエーテル型リン脂質膜が再構成したバクテリオロドプシンの四次構造と光機能中間体を与える影響
Effect of the phytanyl groups and membrane-spanning cross-linkage on structure and photocycle of bR in ether-linked phospholipid membrane
Ami Harasawa¹, Ai Nakagawara¹, Takafumi Shimoaka¹, Toshiyuki Takagi², Takashi Kikukawa³, Hiroshi Takahashi¹, Masashi Sonoyama^{1,4,5} (¹Grad. Sch. Sci. Tech., Gunma Univ., ²AIST, ³Fac. Adv. life Sci., Hokaido Univ., ⁴GIAR, Gunma Univ., ⁵GUCFW, Gunma Univ.)
- 3Pos045 脂質膜パッチに再構成されたコレステロールトランスポーター ABCA1 の高速 AFM 観察
High-speed AFM imaging of the cholesterol transporter ABCA1 reconstituted in lipid membrane patch
Kaho Nakamoto¹, Atsushi Kodan², Romain Amyot^{1,4}, Kazuki Sakata³, Yasuhisa Kimura³, Kenichi Umeda⁴, Kazumitsu Ueda², Noriyuki Kodera⁴ (¹Grad. Sch. Math. & Phys., Kanazawa Univ., ²WPI-iCeMS, Kyoto Univ., ³Div. Appl. Life Sci., Grad Sch. Agric., Kyoto Univ., ⁴WPI-NanoLSI, Kanazawa Univ.)
- 3Pos046 光捕集タンパク質 LH1-RC の光受容における分子動態解析
Intramolecular dynamics analysis of light-harvesting protein LH1-RC in photoreception using the DXT technique
Tatsunari Ohkubo^{1,2}, Tatsuya Arai^{2,3}, Kazuhiro Mio^{1,2}, Yuji C. Sasaki^{2,3} (¹Grad. Sch. Med. Sci., Yokohama CU, ²Operand OIL, AIST, ³Grad. Sch. of Front. Sci., The Univ of Tokyo)
- 3Pos047 CGMD シミュレーションを用いた ErbB2, FGFR, EGFR の膜貫通部位のそれぞれの二量体化とそれらの構造の比較
Dimerizations of TM domains in ErbB2, FGFR, and EGFR Using CGMD Simulations and the Comparisons of These Structures
Naoto Tonogaito¹, Chika Minami¹, Naoyuki Miyasita^{1,2} (¹Grad. Sch. BOST, KINDAI Univ., ²BOST, KINDAI Univ.)

06. DNA/RNA ナノテクノロジー / 06. DNA/RNA nanotechnology

- 3Pos048 プライマー伸長にともなう鎖置換反応で駆動される DNA 状態機械の生物学応用に向けた検証
Characterization of a DNA state machine driven by primer extension accompanying strand displacement reaction toward biological application
Ken Komiya, Koji Sakamoto (*X-star, JAMSTEC*)
- 3Pos049 サブマイクロスケールのトラス DNA 構造体の設計手法
Design method of sub-micrometer scale truss DNA structures
Ibuki Kawamata^{1,2}, Yudai Yamashita¹, Satoshi Murata¹ (¹Graduate School of Engineering, Tohoku University, ²Faculty of Core Research, Ochanomizu University)
- 3Pos050 Multi-stimuli-responsive DNA origami nanolattice
Yuri Kobayashi, Kanta Tsumoto, Yuki Suzuki (*Grad. Sch. Eng., Mie. Univ.*)
- 3Pos051 DNA 反応拡散系における波型ハイドロゲルパターン
Waving hydrogel pattern in DNA-based reaction-diffusion system
Jaehyeok Eom¹, Keita Abe¹, Ibuki Kawamata^{1,2}, Shin-ichiro Nomura¹, Satoshi Murata¹ (¹Grad. Sch. Eng. Tohoku Univ., ²Grad. Sch. Faculty of Core Research Ochanomizu Univ.)

- 3Pos052 利用光鉗技術探討 RNA 偽結核構造核醣體框架位移之影響
Exploring how RNA pseudoknots affect ribosomal frameshifting using optical tweezers
YuTong Huang (*National Taiwan University / Taiwan (R.O.C)*)
- 3Pos053 外界とのコミュニケーションが可能なりボソーム型分子ロボットの構築に向けて
Toward the construction of giant unilamellar vesicle type molecular robots that can communicate with outside environment
Shoji Iwabuchi, Ryuji Kawano (*Tokyo University of Agriculture and Technology*)
- 3Pos054 統合情報理論に基づく意識をもった DNA システムのボトムアップ構築
Bottom-up Construction of DNA System with Consciousness based on Integrated Information Theory
Fumika Kambara¹, Sotaro Takiguchi¹, Hiroki Watanabe², Masahiro Takinoue², Ryuji Kawano¹
(¹*Department of Biotechnology and Life Science, Tokyo University of Agriculture and Technology.*,
²*Department of Computer Science, Tokyo Institute of Technology.*)
- 3Pos055 DNA コンピューティングを用いたカスケード酵素の可逆的空間制御系を応用した miRNA 検出
Reversible spatial control of cascade enzymes for miRNA detection system based on DNA computing
Aoi Mameuda¹, Masahiro Takinoue², Koki Kamiya¹ (¹*Grad. Sch. Sci. Tech., Gunma Univ.*, ²*Dept. Comp. Sci., Tokyo Tech.*)
- 3Pos056 単分散 GUV を用いた複数の相分離コンパートメントを持つ人工細胞モデルの生成
Generation of an Artificial Cell Model with Multiple Phase-separated Compartments within Monodisperse GUVs
Ryotaro Yoneyama¹, Ryota Ushiyama¹, Tomoya Maruyama², Masahiro Takinoue^{2,3}, Hiroaki Suzuki¹
(¹*Graduate School of Science and Engineering, Chuo University.*, ²*Life Science and Technology, Tokyo Institute of Technology.*, ³*Department of Computer Science, Tokyo Institute of Technology*)
- 3Pos057 疎水環境のナノスケール配置制御技術の開発
Development of nanoscale positional control technique for hydrophobic environment
Issei Kusunoki, Lwin Aye Seaim, Yusuke Sato (*Grad. Sch. Comp. Sci. Syst. Eng., Kyutech*)

07. 核酸：その他 / 07. Nucleic acid: Others

- 3Pos058 Direct visualization of nucleosome sliding in nucleosomes containing a histone variant and tailless histones by HS-AFM
Shin Morioka¹, Shoko Sato², Takumi Oishi², Suguru Hatazawa², Naoki Horikoshi², Tomoya Kujirai², Yoshimasa Takizawa², Hitoshi Kurumizaka², Mikihiro Shibata^{3,4} (¹*Grad. Sch. Math. & Phys., Kanazawa Univ.*, ²*Institute for Quantitative Biosciences, The Univ. of Tokyo.*, ³*WPI-NanoLSI, Kanazawa Univ.*, ⁴*InFiniti, Kanazawa Univ.*)
- 3Pos059 Synthetic siderophores as the Trojan horse carriers for peptide nucleic acids through the *E. coli* membrane
Uladzislava Tsylents¹, Michał Burmistrz¹, Piotr Maj¹, Adam Mieczkowski², Monika Wojciechowska¹, Joanna Trylska¹ (¹*Centre of New Technologies, University of Warsaw, Banacha 2c, 02-097 Warsaw, Poland.*, ²*Institute of Biochemistry and Biophysics, Polish Academy of Sciences, Pawinskiego 5a, 02-106 Warsaw, Poland*)
- 3Pos060 光ピンセットを用いたソレ効果による相分離ドロップレットの生成と DNA 濃縮 III
Generation of Phase-Separated Droplets Induced by the Soret Effect and DNA Enrichment by Optical Tweezers III
Mika Kobayashi^{1,2}, Hiroyuki Noji² (¹*Tokyo Univ. of Agriculture and Tech.*, ²*Univ. Tokyo*)

- 3Pos061 局所的配列の力学的特性が DNA の変形に及ぼす影響
Effects of mechanical properties of local sequence on DNA conformational changes
Anzu Kawamura¹, Shiho Ishii¹, Naoaki Sakamoto², Akinori Awazu², Yoshihiro Murayama¹ (¹*Tokyo Univ. of Agri. and Tech.*, ²*Hiroshima Univ.*)
- 3Pos062 線形および環状 DNA の交流電場応答の直接観測
Dynamics of circular and linear DNA under AC fields in viscous solutions
Yunosuke Fuji, Seiwa Yamagishi, Shin Takano, Yuuta Moriyama, Toshiyuki Mitsui (*Aogaku Univ. Dept. of Phys.*)
- 3Pos063 鎖状及び環状 DNA の絡み合い構造における変形の伝播距離の測定
Measurements of propagation distance of deformation in entangled structure of linear and circular DNA
Saki Matsuyama, Akinori Miyamoto, Yoshihiro Murayama (*Tokyo Univ. of Agri. and Tech.*)
- 3Pos064 シミュレートド分岐マシンを使用した RNA 二次構造の予測の改善
Improved Prediction of RNA Secondary Structure Using Simulated Bifurcation Machine
Yuki Matsubara¹, Kengo Tsuda¹, Masaru Suzuki², Hiroaki Hata¹ (¹*Mitsui Knowledge Industry*, ²*TOSHIBA DIGITAL SOLUTIONS*)
- 3Pos065 Structural Dynamics Role of AGG Interruptions in Preventing CGG Repeat Expansion Associated with Fragile X Syndrome
I-Ren Lee, Yang-I Shen, Kai-Chun Cheng (*National Taiwan Normal University*)

12. 発生・分化 / 12. Development & Differentiation

- 3Pos066 子宮平滑筋の収縮による子宮内圧力が器官形成期の胚の発生に与える影響
The effects of intrauterine pressure by uterine smooth muscle contractions for embryos in early organogenesis stage
Misuzu Okuno^{1,2}, Yoko Ueda¹, Kyoko Mochida¹, Yasumasa Bessho², Chiharu Kimura-Yoshida¹, Isao Matsuo¹ (¹*Department of Molecular Embryology, Research Institute, Osaka Women's and Children's Hospital, Osaka Prefectural Hospital Organization*, ²*Laboratory of Gene Regulation Research, Division of Biological Science, Graduate School of Science and Technology, Nara Institute of Science and Technology*)
- 3Pos067 Atomic force microscopy reveals that rheological properties of developing embryos in the gastrula stage depend on the cell fates
Yuki Miyata, Takahiro Kotani, Yosuke Tsuboyama, Tomohiro Matsuo, Yuki Fujii, Takaharu Okajima (*Grad. Sch. Inform. Technol., Hokkaido. Univ.*)
- 3Pos068 細胞外環境の硬さから読み解く脊椎動物心臓の発生と進化
The role of stiffness for evolution and development of vertebrates heart
Sho Matsuki, Ryuta Watanabe, Toshiyuki Mitsui, Yuuta Moriyama (*Grad. Sch. Sci., Univ. Aogaku*)
- 3Pos069 次世代 SPIM によるマウス E5.5 胚発生のトランススケール解析
Trans-scale analysis of a whole E5.5 mouse embryo during development with Next-generation SPIM
Go Shioi¹, Tomonobu M Watanabe¹, Junichi Kaneshiro¹, Yusuke Azuma², Shuichi Onami² (¹*Laboratory for Comprehensive Bioimaging, RIKEN Center for Biosystems Dynamics Research*, ²*Laboratory for Developmental Dynamics, RIKEN Center for Biosystems Dynamics Research*)
- 3Pos070 線虫の背側 / 腹側軸確立における極性確立反応ネットワークの同定
Identifying the reaction network for polarity establishment in *C. elegans* dorsal/ventral axis establishment
Ryunosuke Saito¹, Masatoshi Nishikawa^{1,2}, Sungrim Seirin Lee³ (¹*Grad. Sch. Sci & Eng., Hosei Univ.*, ²*Dep. Frontier Biosci., Hosei Univ.*, ³*ASHBi., Kyoto Univ.*)

- 3Pos071 Combination of force measurement and inference decipher non-linear involvement of E-cad shaping early *C. elegans* embryos
Kazunori Yamamoto^{1,2,3}, Charras Guillaume¹ (¹*LCN, UCL*, ²*Applied Bioscience, Kanagawa Institute of Technology*, ³*Institute for Genetic Medicine, Hokkaido University*)

13. 筋肉 / 13. Muscle

- 3Pos072 骨格筋の粘弾性における微小管の役割
 The role of microtubules on viscoelastic properties in skeletal muscle
Takuya Kobayashi¹, Motoshi Kaya², Nagomi Kurebayashi¹, Takashi Murayama¹, Takashi Sakurai¹
 (¹*Dept. of Cellular and Molecular Pharmacology, Juntendo University*, ²*Faculty of Physics, The University of Tokyo*)
- 3Pos073 スピロプラズマの遊泳装置を構成する細菌アクチン MreB1 の精製と機能解析
 Purification and characterization of bacterial actin MreB1: a component of swimming machinery in *Spiroplasma*
Daichi Takahashi¹, Makoto Miyata^{1,2}, Ikuko Fujiwara³ (¹*Grad. Sch. Sci., Osaka Metropolitan Univ.*, ²*OCARINA, Osaka Metropolitan Univ.*, ³*Dept. Mater. Sci. Bioeng., Nagaoka Univ. Tech.*)
- 3Pos074 アクチンフィラメントの末端を数ナノメートルの精度で観察
 Observation of an end of actin filament with several nanometer accuracies
Hikaru Empuku¹, Takahiro Mitani¹, Itsuki Kunita², Hajime Honda¹ (¹*Dept. Matl. Sci. Bioeng., Nagaoka Univ.*, ²*Faculty of Engineering, University of the Ryukyus.*)
- 3Pos075 X線回折法と張力測定法によるウサギ外眼筋の構造・機能特性
 Structural and functional property of the rabbit extraocular muscle studied by X-ray diffraction experiment and tension measurement
Maki Yamaguchi¹, Toru Kurihara², Naoya Nakahara¹, Hideki Yamauchi¹, Kazuhiro Hirano¹, Mai Yamaguchi¹, Toshiko Yamazawa¹, Tetsuo Ohno³, Shigeru Takemori¹, Naoto Yagi⁴ (¹*The Jikei Univ. Sch. Med.*, ²*Sougou Tokyo Hosp.*, ³*Teikyo Heisei Univ.*, ⁴*Spring8/JASRI*)
- 3Pos076 心筋細胞における生理的レベルの圧負荷のカルシウムハンドリングへの影響
 Effect of physiological hydrostatic pressure on Ca²⁺ handling in mouse cardiomyocytes
Yohei Yamaguchi¹, Toshiyuki Kaneko², Susumu Ohya¹, Masayoshi Nishiyama³ (¹*Dept. Pharm., Grad. Sch. Med., Nagoya City Univ.*, ²*Dept. Physio., Asahikawa Med. Univ.*, ³*Dept. Physics, Kindai Univ.*)
- 3Pos077 アクトミオシン相互作用の計算モデルにおける筋収縮の巨視的性質に対するバイアスブラウン運動の効果
 The effect of biased Brownian motion on the macroscopic properties of muscle contraction in the simulation model of actomyosin interaction
Shunta Oda, Tomoki P. Terada (*Dept. Appl. Phys., Grad. Sch. Eng., Nagoya Univ.*)
- 3Pos078 DNA オリガミ-ミオシン II 融合ナノシステムの単分子解像度計測によるパワーストローク協調の可視化
 Visualization of the cooperative power stroke revealed by single molecule measurement of DNA origami-based myosin II nano system
Hiroki Fukunaga^{1,10}, Masashi Ohmachi⁹, Takumi Washio^{2,7}, Hiroaki Takagi³, Keisuke Fujita^{4,10}, Keigo Ikezaki⁸, Toshio Yanagida⁶, Mitsuhiro Iwaki^{1,5,10} (¹*Adv ICT Res Inst, NICT*, ²*UT-Heart Inc*, ³*Dept. phys., Nara Med. Univ.*, ⁴*FBS, Univ. Osaka*, ⁵*IFReC, Univ. Osaka*, ⁶*IST, Univ. Osaka*, ⁷*FS, Univ. Tokyo*, ⁸*Grad. Sch. sci., Univ. Tokyo*, ⁹*SIGMA KOKI*, ¹⁰*BDR, Riken*)
- 3Pos079 アクチン分子の局所構造について
 Semi-local conformations of actin molecules
Toshiro Oda (*Faculty of Health and Welfare, Tokai-gakuin Univ.*)

- 3Pos080 プロトン駆動力下でのクライオ電子顕微鏡単粒子解析によって明らかにする ATP 合成酵素の回転機構
Single particle Cryo-EM under proton motive force reveals the rotational mechanism of ATP synthase
Atsuki Nakano¹, Jun-ichi Kishikawa², Kaoru Mitsuoka³, Ken Yokoyama¹ (*¹Fac. of Life Sci., Kyoto Sangyo Univ., ²Applied Biology, Kyoto Institute of Technology, ³Research Center for Ultra-High Voltage Electron Microscopy, Osaka University*)
- 3Pos081 CHD ファミリーの α アクチニン ABD とフィラミン ABD はアクトミオシン II 運動を阻害しない
Unlike CHD of Rng2, two members of the CHD family, α -actinin ABD and filamin ABD, do not inhibit actomyosin II motility in vitro
Kameyama Shuhei (*Dept. Pure & Appl. Physics, Grad. Sch. Adv. Sci. & Eng., Waseda Univ.*)
- 3Pos082 Creation of ATP synthase with multiple torque generating units
Hiroshi Ueno¹, Riku Marui¹, Naruhiko Adachi², Norie Hamaguchi³, Toshio Moriya², Masato Kawasaki², Akihito Ikeda², Satomi Inaba², Satoshi Yasuda³, Toshiya Senda², Takeshi Murata³, Hiroyuki Noji¹ (*¹Grad. Sch. Eng., Univ. Tokyo, ²Tsukuba, KEK, ³Grad. Sch. Sci., Univ. Chiba*)
- 3Pos083 全原子計算によるアクトミオシンの結合モードの探索と biased binding の再現
Investigation of binding modes and reproduction of biased binding of actomyosin by all-atom calculations
Kyoko Shimanuki, Daichi Kubo, Kyohei Shoji, Mitsunori Takano (*Dept. of Pure & Appl. Phys., Grad. Sch. Adv. Sci. & Eng., Waseda Univ.*)
- 3Pos084 マイナスキネシン kinesin-14 の微小管上マイナス端方向運動には N 末側で固定されることが重要
Anchoring geometry is a significant factor in determining the direction of kinesin-14 motility on microtubules
Masahiko Yamagishi, Rieko Sumiyoshi, Junichiro Yajima (*Grad. Arts & Sci., Univ. Tokyo*)
- 3Pos085 KIF1A-微小管結合における K-loop の結合安定性および結合速度への寄与
Contribution of K-loop to the KIF1A-microtubule binding stability and the binding rate
Koki Adachi, Mitsunori Takano (*Dept. of Pure & Appl. Phys., Grad. Sch. Adv. Sci. & Eng., Waseda Univ.*)
- 3Pos086 情報理論を用いた骨格筋ミオシンの協同性の評価
Evaluation of skeletal myosin cooperativity based on information theory
Arun Kasimchetty (*Department of Physics, School of Science, The University of Tokyo.*)
- 3Pos087 周毛性細菌におけるべん毛間の回転速度差
Rotation-speed difference between flagella in peritrichous bacteria
Tsubasa Ishihara, Shuichi Nakamura (*Dept. Appl. Phys., Grad. Sch. Eng., Tohoku Univ.*)
- 3Pos088 F_1 -ATPase の回転を駆動する構造変化メカニズム
Conformational change mechanisms driving the rotation of F_1 -ATPase
Masahiro Motohashi^{1,2}, Mao Oide^{2,3}, Chigusa Kobayashi⁴, Jung Jaewoon^{2,4}, Eiro Muneyuki¹, Yuji Sugita^{2,4} (*¹Grad. Sch. Sci. Eng., Univ. Chuo, ²Wako Inst., Riken, ³PRESTO, JST, ⁴Kobe Inst., Riken*)
- 3Pos089 繊毛の屈曲波運動を実現する繊毛キネシンの力学特性
The mechanical properties of ciliary kinesin: an essential motor for the bending wave motion of cilia
Hiroto Ishii, Masahiko Yamagishi, Junichiro Yajima (*Grad. Sch. of Arts and Sci., Univ. Tokyo*)
- 3Pos090 新規評価方法を用いたバクテリアべん毛モーターの回転揺らぎの周期性の解析
Investigation of periodicity of rotational fluctuations in the bacterial flagellar motor using a novel evaluation method
Kenta Takemori, V. Yusuke Morimoto (*Fac, Comp. Sci. and Sys. Eng., Kyushu Inst. Tech*)

- 3Pos091 ヘテロダイマーモーターの運動を数学的にモデル化することで明らかにする KIF1A ダイマーのヘッド間の協調性
Modeling the motion of heterodimeric motors uncovers head-head coordination in a KIF1A dimer
Tomoki Kita¹, Kazuo Sasaki², Shinsuke Niwa^{1,3} (¹Grad. Life. Sci., Tohoku Univ., ²Grad. Eng., Tohoku Univ., ³FRIS., Tohoku Univ.)
- 3Pos092 A Novel Photochromic inhibitor SP-AB-SP exhibits multiple stages of inhibitory activity on mitotic kinesin Eg5
MD Alrazi Islam¹, Shinsaku Maruta², Tostani Fofou Yonta² (¹Dept. Sci & Eng. for Sustainable Innovation, Soka University, ²Grad. Sch. of Bio Science, Soka University)
- 3Pos093 ミトコンドリア型 ATP 合成酵素の阻害因子 IF₁ が示す回転方向依存的な制御機構: 1 分子操作実験と分子動力学シミュレーション
Direction-dependent regulation of IF₁ in the mitochondrial ATP synthase by single-molecule manipulation and molecular dynamics simulation
Ryohei Kobayashi, Kei-ichi Okazaki (*Inst. for Mol. Sci.*)

15B. 細胞生物学的課題：運動／15B. Cell biology: Motility

- 3Pos094 リアルタイムフィードバックを用いた機械的刺激による心筋細胞集合体の拍動リズムの制御
Control of cardiac aggregate beat rhythm by mechanical stretch with real-time feedback
Kyotaro Kanazashi, Ayu Sasaki, Yuuta Moriyama, Toshiyuki Mitsui (*Aogoku Univ. Dept. of Phys*)
- 3Pos095 機械学習を用いた共培養下における線維芽細胞の動態予測
Prediction of fibroblast dynamics in co-culture using machine learning
Hiromu Kuwabara, Arata Nagai, Kaito Kojima, Ayu Sasaki, Kyotaro Kanazashi, Yuuta Moriyama, Toshiyuki Mitsui (*Aogaku Univ. Dept. of Phys.*)
- 3Pos096 細胞個体レベルでの大腸菌走化性応答の定量解析
Quantitative analysis of E. coli chemotactic response at individual cell level
Hirotto Tanaka, Yasuaki Kazuta, Erica Kobayashi, Hiroaki Kojima (*Frontier Research Lab, Adv ICT Res Inst, NICT*)
- 3Pos097 繊毛運動の温度による制御
Control of ciliary motility by temperature
Shunta Fueki, Megumi Yoshida, **Kenjiro Yoshimura** (*Col. Sys. Engineer. Sci., Shibaura Inst. Technol.*)
- 3Pos098 深層学習を用いて血管新生に関わる動的な自由度を抜き出す
Extracting dynamic degrees of freedom involved in angiogenesis using deep learning
Hiroshi Fujisaki¹, Kenta Odagiri², Hiromichi Suetani³, Hiroya Takada¹, Rei Ogawa¹ (¹Nippon Medical School, ²Senshu Univ., ³Oita Univ.)
- 3Pos099 細菌の遊泳に対する菌体サイズの影響
Effect of the cell size on bacterial swimming
Riu Osanai (*Grad. Eng., Univ. Tohoku*)
- 3Pos100 海洋細菌 Vibrio alginolyticus の集団運動における 1 細胞運動解析
Single cell dynamics in collective migration of Vibrio alginolyticus
Hiyori Tokumori, Ikuro Kawagishi, Masatoshi Nishikawa (*Dep. Frontier Bioscience, Hosei Univ.*)
- 3Pos101 Phosphatidylserine is an essential regulator of Ras excitability and cell motility
Satomi Matsuoka^{1,2,3}, Da Young Shin^{2,3}, Hyeyun Jung², Hiroaki Takagi^{3,4}, Michio Hiroshima^{1,3}, Masahiro Ueda^{1,2,3} (¹Graduate School of Frontier Biosciences, Osaka University, ²Graduate School of Science, Osaka University, ³Center for Biosystems Dynamics Research, RIKEN, ⁴School of Medicine, Nara Medical University)
- 3Pos102 クラムドモナス後退遊泳固定株に前進遊泳を復帰させる変異
Chlamydomonas Move-Backwards-Only mutants restored forward swimming by a point mutation in the outer-arm dynein β heavy chain
Toshiki Yagi, Ai Sumiyoshi, Shogo Sawada (*Dept. of Life Sci., Prefectural Univ. Hiroshima*)

- 3Pos103 カルシウム感受性があるクラミドモナス鞭毛内部構造のラセン配置
The Calcium Sensitive Helical Arrangement of Axonemal Structures in Chlamydomonas Flagella
Hitoshi Sakakibara¹, Kenta Ishibashi¹, Hiroyuki Iwamoto², Hiroaki Kojima¹, Kazuhiro Oiwa^{1,3}
(¹BioICT, NICT, ²Spring8, JASRI, ³Life Sci., Univ. Hyogo)
- 3Pos104 電子顕微鏡法によるスピロプラズマ遊泳運動をもたらす MreB4 と MreB5 の可視化
Visualization of MreB4 and MreB5 Filaments Driving *Spiroplasma* Swimming by Electron Microscopy
Haruka Yuasa¹, Yuya Sasajima¹, Hana Kiyama¹, Daichi Takahashi¹, Takuma Toyonaga^{1,3}, Tomoko Miyata², Fumiaki Makino², Keiichi Namba², Makoto Miyata^{1,3} (¹Grad. Sch. Sci., Osaka Metropolitan Univ., ²Osaka Univ., ³OCARINA, Osaka Metropolitan Univ.)
- 3Pos105 *Spiroplasma* swimming mechanism suggested by fluorescently labeled MreBs expressed in JCVI-syn3B
Yoshiki Tanaka¹, Hana Kiyama¹, Makoto Miyata^{1,2} (¹Grad. Sch. Sci., Osaka Metro Univ., ²OCARINA, Osaka Metro Univ)
- 3Pos106 JCVI-syn3B における 2 つの MreB タンパク質による *Haloplasma* 運動能の再構築
Haloplasma Motility Reconstituted in JCVI-syn3B by Combination of Two MreB Proteins
Mone Mimura¹, Hana Kiyama¹, Shingo Kato², Yuya Sasajima¹, Atsuko Uenoyama¹, Shigeyuki Kakizawa³, André Antunes⁴, Tomoko Miyata⁵, Fumiaki Makino⁵, Keiichi Namba⁵, Makoto Miyata^{1,6} (¹Grad. Sch. Sci., Osaka Metropolitan Univ., Japan, ²RIKEN BRC., JCM., Japan, ³Bioproduction Res. Inst., AIST, Japan, ⁴Macau Univ. of Sci. and Tech., China, ⁵Osaka Univ., Japan, ⁶OCARINA, Osaka Metropolitan Univ., Japan)
- 3Pos107 光ピンセットによる外力印加に対する細胞境界の変形応答
Force-induced remodeling of cell contacts by two-point optical manipulation
Kenji Nishizawa¹, Shao-Zhen Lin², Claire Chardès³, Jean-François Rupprecht², Pierre-François Lenne³
(¹Graduate School of Science, The University of Tokyo., ²CNRS, Centre de Physique Théorique., ³CNRS, The Institute of Developmental Biology of Marseille.)
- 3Pos108 水／水の相分離により生じる細胞サイズ液滴内での微小管－キネシン複合体の自発的な対流生成
Microtubule-kinesin complexes spontaneously generate vortex flow in the cell-sized droplets created by water/water phase separation
Hiroki Sakuta^{1,2}, Naoki Nakatani³, Takayuki Torisawa⁴, Yutaka Sumino⁵, Kanta Tsumoto⁶, Kazuhiro Oiwa^{7,8}, Kenichi Yoshikawa^{3,9} (¹UBI, Univ. Tokyo, ²Grad. Sch. Arts Sci., Univ. Tokyo, ³Facul. Life Med. Sci., Doshisha Univ., ⁴Cell Arch. Lab., Natl. Inst. Genet., ⁵Facul. Adv. Eng., Tokyo Univ. Sci., ⁶Grad. Sch. Eng., Mie Univ., ⁷Adv. ICT Res. Inst., NICT, ⁸Grad. Sch. Sci., Univ. Hyogo, ⁹Inst. Adv. Study, Kyoto Univ.)

15D. 細胞生物学的課題：情報伝達・細胞膜／15D. Cell biology: Signal transduction & Cell membrane

- 3Pos109 環状心筋細胞ネットワークにおける 64 電極同時細胞外電位計測
Simultaneous 64-electrode extracellular potential measurement of circular cardiomyocyte networks
Akito Yoshikawa, Momo Akada, Masahito Hayashi, **Tomoyuki Kaneko** (*LaRC, Dept. Frontier Biosci., Hosei Univ.*)
- 3Pos110 デコンボリューション法を用いた大腸菌走化性受容体の三次元観察
Three-dimensional observation of *Escherichia coli* chemotaxis receptors using the deconvolution method
Yumiko Uchida, Yong-Suk Che, Akihiko Ishijima, Hajime Fukuoka (*Grad. Sch. Frontier Biosci. Osaka Univ.*)

- 3Pos111 Effects of mitochondrial administration on reduction of oxidative damage of cells
Sadab Sipar Ibban^{1,2}, Sayaka Doi¹, Yoshihiro Ohta¹ (¹*Department of Biotechnology and Life Science, Graduate School of Engineering, Tokyo University of Agriculture and Technology*, ²*Department of Pharmacy, International Islamic University Chittagong, Bangladesh*)
- 3Pos112 A method for measuring the maximal membrane extension of macrophages using the cylindrical inner surface of opsonized capillary tubes
Sota Suzuki¹, Dan Horonushi¹, Kenji Yasuda^{1,2} (¹*Dept. Pure & Appl. Phys., Grad. Sch. Adv. Sci. & Eng., Waseda Univ.*, ²*Dept. Phys., Sch. Adv. Sci. & Eng., Waseda Univ.*)
- 3Pos113 Hydrostatic pressure stimuli increase intracellular calcium concentration
Masatoshi Morimatsu¹, Zidan Gao², Keiji Naruse¹ (¹*Graduate School of Medicine, Dentistry and Pharmaceutical Sciences*, ²*Graduate School of Medicine, Dentistry and Pharmaceutical Sciences*)
- 3Pos114 大腸菌センサーキナーゼ BaeS によるインドール感知機構
 Indole-sensing mechanism of the sensor kinase BaeS of *Escherichia coli*
Hirotaaka Tajima^{1,2}, Tomoka Iseri², Kennichiro Kashihara³, Ikuro Kawagishi^{1,2,3} (¹*Res. Cen. for Micro-Nano Tech., Hosei Univ.*, ²*Dept. Biosci., Hosei Univ.*, ³*Grad. Sch. Sci. Eng., Hosei Univ.*)
- 3Pos115 高カルシウム濃度環境において増殖可能な細胞株の解析
 Analysis of cell strains capable of proliferating in high Ca²⁺ concentration environment
Fumiya Shimizu¹, Yusuke V. Morimoto² (¹*Grad. Sch. Comp. Sci. and Sys. Eng., Kyushu Inst. Tech.*, ²*Dept. Phys. and Info. Eng., Fac. Comp. Sci. and Sys. Eng., Kyushu Inst. Tech.*)
- 3Pos116 大腸菌走化性受容体による誘引応答シグナリングの光架橋解析
 Photo-crosslinking analyses of attractant signaling via the chemoreceptor of *Escherichia coli*
Momoka Nakano¹, Hirotaaka Tajima^{2,3}, Ikuro Kawagishi^{1,2,3} (¹*Grad. Sch. Sci., Univ. Hosei*, ²*Dept. Biosci., Univ. Hosei*, ³*Res. Cen. Micro-Nano Tech., Univ. Hosei*)
- 3Pos117 導電性を利用した微生物のエネルギー戦略
 Electron conduction conserves energy in bacterial assemblages
Yoshihide Tokunou^{1,2}, Hiromasa Tongu³, Masanori Toyofuku^{1,4}, Nobuhiko Nomura^{1,4} (¹*Faculty of Life and Environmental Sciences, University of Tsukuba.*, ²*International Center for Materials Nanoarchitectonics, National Institute for Materials Science.*, ³*Degree Programs in Life and Earth Sciences, University of Tsukuba.*, ⁴*Microbiology Research Center for Sustainability, University of Tsukuba.*)

16A. 生体膜・人工膜：構造・物性 / 16A. Biological & Artificial membrane: Structure & Property

- 3Pos118 両親媒性ランダムコポリマーによる曲がった膜の認識
 Recognition of curved membrane by amphiphilic random copolymers
Kazuma Yasuhara, Ryo Yamanaka, Jun-ichi Kikuchi (*Div. Mat. Sci., Nara Inst. Sci. Tech.*)
- 3Pos119 人工膜を用いた脂質膜表面における分子認識の研究
 A biomimetic molecular recognition platform based on functionalized lipid bilayer membrane
Yuuri Miyata¹, Nanami Nagatsuka², Masato Koezuka¹, Fumio Hayashi³, Kenichi Morigaki^{1,4} (¹*Grad. Sch. Agri., Kobe Univ.*, ²*Fac. Agri., Kobe Univ.*, ³*Grad. Sch. Sci., Kobe Univ.*, ⁴*Biosignal Research Center, Kobe Univ.*)
- 3Pos120 脂質膜組成と高分子相分離の相関
 Correlation between lipid membrane composition and macromolecular phase separation
Chiho Watanabe (*Grad. Sch. Int. Sci. Life, Hiroshima Univ.*)
- 3Pos121 The mammalian cell protective synergy of antimicrobial peptides LL-37 and HNP1
Ariane Melissa Schwitter^{1,2}, Kaori Sugihara² (¹*Grad. Scho. Eng., The University of Tokyo, Tokyo*, ²*Institute of Industrial Science, The University of Tokyo, Tokyo*)

- 3Pos122 脂質膜の長期的な水透過に対する膜特性の影響
Effect of membrane properties on long-term water permeation through lipid membranes
Natsuki Fukuda, Nozomi Watanabe, Yukihiko Okamoto, Hiroshi Umakoshi (*Graduate School of Engineering Science, Osaka University*)
- 3Pos123 Global-TRES 法を用いたリポソーム膜特性の新規評価手法の開発
Multiplicity of Solvent Environments in Lipid Bilayer Systems Revealed by Comparative Global-TRES of Twin Probes: Laurdan and Prodan
Natsuumi Ito, Nozomi Watanabe, Yukihiko Okamoto, Hiroshi Umakoshi (*Bio-Inspired Chemical Engineering Laboratory / Division of Chemical Engineering / Graduate School of Engineering Science / Osaka University*)

16B. 生体膜・人工膜：ダイナミクス / 16B. Biological & Artificial membrane: Dynamics

- 3Pos124 クロモグリク酸ナトリウム封入リポソームにおける形状変化と膜の相分離
Shape change and membrane phase separation on disodium cromoglycate-encapsulated liposomes
Kaori Udagawa, Masahito Hayashi, Tomoyuki Kaneko (*LaRC, FB, Grad. Sch. Sci.&Eng., Hosei Univ.*)
- 3Pos125 体外式膜型人工肺の新規中空糸膜細孔構造モデルにおける水分子と酸素分子の透過シミュレーションの検討
Simulation study of Water and Oxygen Molecule's Permeations in the partial model of a Novel Hollow Fiber Membrane Pore Structure in ECMO
Takahiro Chujo¹, Yoshitaka Tadokoro¹, Makoto Fukuda^{1,2}, Naoyuki Miyashita^{1,2} (¹*Grad. Sch. BOST, KINDAI Univ.*, ²*BOST, KINDAI Univ.*)
- 3Pos126 相分離した三成分系ベシクルにおける膜粘度の温度依存性
Viscosity Landscape of Phase-Separated Ternary Vesicles in Composition-Temperature Space
Julia Tanaka, Kenya Haga, Masayuki Imai, Yuka Sakuma (*Grad. Sch. Sci., Tohoku Univ.*)
- 3Pos127 一定張力による脂質膜中のポア形成やブリポアの縁の線張力に対する単分子膜自発曲率の効果
Effect of monolayer spontaneous curvature on constant tension-induced pore formation and the line tension of a pre-pore in lipid bilayers
Kanta Tazawa¹, **Masahito Yamazaki**^{1,2,3} (¹*Grad. Sch. Sci., Shizuoka Univ.*, ²*Res. Inst. Ele., Shizuoka Univ.*, ³*Grad. Sch. Sci. Tech., Shizuoka Univ.*)
- 3Pos128 抗菌ペプチド・PGLa のポア形成に対する膜張力と単分子膜自発曲率の効果
Effect of membrane tension and monolayer spontaneous curvature on antimicrobial peptide PGLa-induced pore formation
Marzuk Ahmed¹, Md. Zahidul Islam², Masahito Yamazaki^{1,2,3} (¹*Grad. Sch. Sci. Tech., Shizuoka Univ.*, ²*Res. Inst. Ele., Shizuoka Univ.*, ³*Grad. Sch. Sci., Shizuoka Univ.*)
- 3Pos129 光ピンセットを用いた人工脂質膜ドメイン操作
Manipulation of lipid membrane domains in artificial membrane by optical tweezers
Yasushi Tanimoto, Shunya Moriyama, Kyoko Masui, Chie Hosokawa (*Grad. Sch. Sci., OMU*)
- 3Pos130 ポリマー脂質膜のチャンネルにおける脂質膜の自発展開
Self-spreading lipid bilayers in preformed polymeric lipid bilayer channels
Masako Fujii¹, Kenichi Morigaki^{1,2} (¹*Grad. Sch. Agri., Univ. Kobe*, ²*Biosignal Research Center, Univ. Kobe*)

- 3Pos131 細菌機械受容チャネル MscL のメカノゲーティング調節における細胞外ループの役割に関する解析
Analysis on the role of the periplasmic loop in the regulation of Mechano-Gating in the Bacterial Mechanosensitive Channel MscL
Yasuyuki Sawada¹, Masahiro Sokabe², Hisashi Kawasaki³ (¹*Institute of Materials Innovation, Institutes of Innovation for Future Society, Nagoya University*, ²*Human Information Systems Labs, Kanazawa Institute of Technology*, ³*Agro-Biotechnology Research Center, University of Tokyo*)
- 3Pos132 Importance of Spatial Arrangement Shape of Cardiomyocyte Network for Precise and Stable On-Chip Predictive Cardiotoxicity Measurement
Nanami Abe, Kazufumi Sakamoto, Hideki Matsumoto, Mitsuru Sentoku, Kenji Yasuda (*Dept. Pure & Appl. Phys., Grad. Sch. Adv. Sci. & Eng, Waseda Univ., Japan*)
- 3Pos133 原核生物由来ナトリウムチャネルを用いた分子動力学計算
Molecular dynamics simulation with prokaryotic sodium channels
Katsumasa Irie (*Pharm. Sci., Wakayama Med. Univ.*)
- 3Pos134 簡便な単一チャネル電流計測システムの開発
Development of a simple single-channel current measurement system
Tomomi Murata¹, **Toru Ide**^{1,2}, Minako Hirano¹, Mami Asakura² (¹*Grad. Sch. Health Sys., Okayama Univ.*, ²*Dept. Engn., Okayama Univ.*)
- 3Pos135 アガロースゲルビーズを用いたチャネル電流測定装置の開発
Development of channel current measurement device using agarose gel beads
Mami Asakura¹, Shuyan Wang², Minako Hirano², Toru Ide² (¹*Dept. of Comp. Tech. Soln., Okayama Univ.*, ²*Grad. Sch. Health Sys., Okayama Univ.*)
- 3Pos136 細胞排出イオンの測定によるがん浸潤関連塩化物イオンチャネル Clic1 の機能解析
Functional analysis of the cancer invasion-associated chloride ion channel Clic1 by measuring cell efflux ions
Ayana Yamagishi^{1,2}, Akane Nagata², Koki Uchiyama², Tsukuru Minamiki³, Toshihiro Takeshita⁴, Chikashi Nakamura^{1,2} (¹*Cell. Mol. Biotech. Res. Inst., AIST*, ²*Grad. Sch. Eng., Tokyo Univ. Agric. Technol.*, ³*Health Med. Res. Inst., AIST*, ⁴*Sens. Sys. Res. Cent., AIST*)
- 3Pos137 TRAAK チャネルの特徴的なフリッカーゲーティングは内葉張力によって制御されている
The inner leaflet tension regulates the characteristic flicker gating of the single TRAAK channel
Takahisa Maki¹, Yuka Matsuki², Toshiyuki Yoshida³, Shigetoshi Oiki⁴, **Masayuki Iwamoto**¹ (¹*Dept. Mol. Neurosci., Univ. Fukui. Facul. Med. Sci.*, ²*Dept. Anesth. Reanimatol., Univ. Fukui. Facul. Med. Sci.*, ³*Dept. Info. Sci., Univ. Fukui. Facul. Eng.*, ⁴*Biomed. Imaging Res. Cent., Univ. Fukui*)

19. 神経回路・脳の情報処理／19. Neuronal circuit & Information processing

- 3Pos138 集光フェムト秒レーザーの高頻度照射により誘発された神経活動の時空間パターン
Spatio-temporal patterns of neuronal activity induced by high-frequency irradiation with a focused femtosecond laser
Kan Otani¹, Yumi Segawa¹, Wataru Minoshima^{1,2}, Kyoko Masui¹, Chic Hosokawa¹
(¹*Grad.Sch.Sci.,osaka Metro.Univ./Osaka City Univ*, ²*NICT*)
- 3Pos139 赤外線レーザーによる神経回路の刺激
Stimulation of neural network by infrared laser
Rika Fuchikami, Masahito Hayashi, Tomoyuki Kaneko (*LaRC, FB, Grad. Sch. Sci. & Eng., Hosei Univ.*)
- 3Pos140 線虫の全脳活動データに対する機能的神経クラスタ推定
Estimation of functional neuron ensembles for whole-brain activity data in *C. elegans*
Harutaka Takeshita, Shun Kimura, Koujin Takeda, Yuishi Iwasaki (*Grad. Sch. Sci. Eng., Ibaraki Univ.*)

- 3Pos141 低酸素密閉空間における 1 細胞レベルでの神経細胞培養に最適な細胞濃度の検証
Optimal Cell Concentration for Culturing Neuronal Cells at Single Cell Level in Hypoxic Sealed Space
Ayuri Sakaguchi, Masahito Hayashi, Tomoyuki Kaneko (*LaRC, Dept. Frontier Biosci., Hosei Univ.*)
- 3Pos142 スパース制約を課した新たな ICA とタスク付き fMRI データ解析への応用
A novel ICA with sparse constraint and application to task-related fMRI data analysis
Yusuke Endo, Koujin Takeda (*Grad. Sch. Eng., Univ. Ibaraki*)
- 3Pos143 神経細胞-微小電極接合部の分子特異的形成に向けた小型人工シナプスオーガナイザーの分子設計
Molecular design of compact engineered synapse organizer toward molecule-specific formation of neuron-microelectrode junctions
Kosuke Sekine¹, Sam Young Kim¹, Sm Ahasanul Hamid¹, Mieko Imayasu¹, Tomoyuki Yoshida², Hidekazu Tsutsui¹ (¹*School of Material Science, Japan Advanced Institute of Science and Technology, Ishikawa*, ²*Department of Molecular Neuroscience, faculty of medicine, University of Toyama*)
- 3Pos144 哺乳類および鳥類の一次ニューロンにおけるペプチドタグを介した人工シナプスオーガナイザーのシナプス形成活性
Peptide-tag mediated synaptogenic activity of engineered synapse organizer in mammalian and avian primary neurons
Wataru Haga¹, Sm. Ahasanul Hamid¹, Sam Young Kim¹, Mieko Imayasu¹, Tomoyuki Yoshida² (¹*School of Materials Science, Japan Advanced Institute of Science and Technology, Ishikawa*, ²*Department of Molecular Neuroscience, Faculty of Medicine, University of Toyama*)
- 3Pos145 海馬が合成する男性・女性ホルモンやストレスホルモンは記憶シナプスを蛋白キナーゼ信号系で制御する
Kinase-dependent modulation of neuronal synapses by hippocampus-synthesized androgen, estrogen and stress hormone
Suguru Kawato^{1,2}, Mika Soma^{1,2}, Mari Ogiue-Ikeda^{1,2}, Saira Mabashi², Minoru Saito² (¹*Dep. Urology, Grad. Sch. Medicine, Juntendo Univ.*, ²*Dep. Bioscience, Nihon Univ.*)
- 3Pos146 ミミズ古典的条件づけの分子メカニズム
Molecular mechanisms of classical conditioning in earthworm, *Eisenia fetida*
Sukehiro Kabayama¹, Yoshiichiro Kitamura² (¹*Appl Matl Life Sci, Grad Sch Eng, Kanto Gakuin Univ.*, ²*Dept Math Sci Phys, Col Sci Eng, Kanto Gakuin Univ*)
- 3Pos147 長距離に情報伝達する神経ネットワークは脳表面の最短経路に配線される --- ヒト胎児脳の形の数理解析
Geodesic theory of long association fibers arrangement in the human fetal cortex
Kazuya Horibe^{2,3}, Gentaro Taga⁴, **Koichi Fujimoto**^{1,2} (¹*Math. Life Sci., Horoshima Univ.*, ²*Biol. Sci., Osaka Univ.*, ³*Grad. Sci. Eng., Osaka Univ.*, ⁴*Grad. Sci. Edu., Univ. Tokyo*)
- 3Pos148 Axonal differentiation of embryonic hippocampal neurons is governed by the length of neurite outgrowth rather than growth order
Ryohei Yamazaki¹, Nanami Abe¹, Soya Hagiwara², Naoya Takada², Kenji Yasuda^{1,2} (¹*Dept. Pure & Appl. Phys., Grad. Sch. Adv. Sci. & Eng., Waseda Univ.*, ²*Dept. Phys., Sch. Adv. Sci. & Eng., Waseda Univ.*)
- 3Pos149 味覚嫌悪学習後に見られる GABA 応答変化の濃度依存性
Dose-dependence of GABA response in the nervous system after conditioned taste aversion training
Yoshimasa Komatsuzaki¹, Samui Chiba², Ayaka Itoh³, Minoru Saito³ (¹*Dept. Phys., CST, Nihon Univ.*, ²*Grad. Sch. of Sci. and Tech., Nihon Univ.*, ³*Grad. Sch. of Integ. Bas. Sci., Nihon Univ.*)

- 3Pos150 SynGAP LLPS condensates recruit PSD95 and receptor oligomers, serving as a basic platform for generating neuronal excitatory synapses
Saahil Acharya¹, Taka-aki Tsunoyama¹, Christian Hoffmann², Gerard Aguilar², Irina Meshcheryakova¹, Yuri L. Nemoto¹, Aya Nakamura-Norimoto¹, Takahiro Fujiwara³, Dragomir Milovanovic², Akihiro Kusumi¹ (¹*Okinawa Institute of Science and Technology Graduate University (OIST), Okinawa, Japan*, ²*German Centre for Neurodegenerative Diseases (DZNE), Berlin, Germany*, ³*Institute for Integrated Cell-Material Sciences (WPI-iCeMS), Kyoto University, Kyoto, Japan*)

21A. 光生物：視覚・光受容／21A. Photobiology: Vision & Photoreception

- 3Pos151 光活性化型アデニル酸シクラーゼの ATP 依存的な液-液相分離
 ATP-dependent liquid-liquid phase separation of photoactivated adenylate cyclase
Yusuke Nakasone¹, Kazuhiro Sakamaki², Masahide Terazima¹ (¹*Grad. Sch. Sci., Univ. Kyoto*, ²*Grad. Sch. Biostudies., Univ. Kyoto*)
- 3Pos152 QM/MM RWFE-SCF 法を用いたアニオンポンプロドプシン NpHR のイオン輸送過程に関する理論的研究
 Theoretical study on ion transport process of anion pump rhodopsin NpHR using QM/MM RWFE-SCF method
Tomo Ejiri, Ryo Oyama, Shigehiko Hayashi (*Grad. Sch. Sci., Univ. Kyoto*)
- 3Pos153 光センサー RsPYP と下流分子 RsPBP の光可逆的な相互作用ダイナミクス
 Photo-reversible intermolecular interaction dynamics between light sensor protein RsPYP and its downstream protein RsPBP
Mizuki Hirata¹, Yusuke Nakasone¹, Suhyang Kim², Masahide Terazima¹ (¹*Grad. Sch. Sci., Univ. Kyoto*, ²*Grad. Sch. Arts and Sci., Univ. Tokyo*)
- 3Pos154 光合成集光タンパク質の高温高圧抽出におけるフィコビオロピンからフィコシアノビルリンへの変換
 Conversion of phycoviolobilin to phycocyanobilin during pressurized liquid extraction of cyanobacterial photosynthetic antenna protein
Takaaki Matsushita, Yuya Fujita, Takanari Kamo, Toshihiko Eki, Yuu Hirose (*Toyohashi Univ. of Tech. Dep. of Eng.*)
- 3Pos155 同位体標識色素を用いたシアノバクテリオクロム型光受容体 RcaE の光感知機構の解析
 Analysis of photosensing mechanism of the cyanobacteriochrome RcaE using isotope-labeled bilin chromophore
Yuya Fujita¹, Takanari Kamo¹, Takaaki Matsushita¹, Masako Hamada¹, Tatsuya Tsuchida², Takayuki Nagae³, Toshihiko Eki¹, Masaki Mishima³, Yutaka Ukaji², Yuu Hirose¹ (¹*Toyohashi Univ. of Tech. Dep. of Eng.*, ²*Kanazawa Univ. Coll. of Sci. and Eng.*, ³*Tokyo Univ. of Phar. and Life Sci.*)
- 3Pos156 光センサータンパク質 OCP とその制御タンパク質 FRP の光依存的な相互作用ダイナミクス
 Time-resolved study on intermolecular interaction dynamics between orange carotenoid protein and fluorescence recovery protein
Tadayuki Tokashiki¹, Takatoshi Ohata¹, Synrou Tokonami², Yusuke Nakasone¹, Masahide Terazima¹ (¹*Grad. Sch. Sci., Kyoto Univ.*, ²*Grad. Sch. Sci., Gakushuin Univ.*)
- 3Pos157 ヘリオロドプシンのプロトン移動に伴う水素結合ネットワーク上の構造変化
 Proton transfer and conformational changes along the hydrogen bond network in heliorhodopsin
Masaki Tsujimura¹, Yoshihiro Chiba¹, Keisuke Saito^{1,2}, Hiroshi Ishikita^{1,2} (¹*Grad. Sch. Eng., UTokyo*, ²*RCAST, UTokyo*)
- 3Pos158 長い光サイクルをもつアクチノバクテリア由来の新規外向き H⁺ポンプロドプシン
 Actinobacteria-derived novel outward proton-pumping rhodopsins having long photocycle
Shota Takahashi¹, Mako Ueno¹, Fumio Hayashi², Takashi Kikukawa³, Ichiro Kasano¹, Yusuke Inoue¹, Masashi Sonoyama^{1,4,5} (¹*Grad. Sch. Sci. Tech., Gunma Univ.*, ²*Ctr. Inst. Analysis, Gunma Univ.*, ³*Fac. Adv. Life. Sci., Hokkaido Univ.*, ⁴*GIAR, Gunma Univ.*, ⁵*GUCFW, Gunma Univ.*)

- 3Pos159 ロドプシン-ベストロフィン巨大イオンチャネル複合体の光誘起構造変化の研究
Light-induced structural changes of a rhodopsin-bestrophin giant ion channel complex studied by infrared spectroscopy
Natsuki Honda¹, Rei Yoshizumi¹, Hideki Kandori^{1,2}, Yuji Furutani^{1,2} (¹*Grad. Sch. Eng., Tech. Nagoya, ²OptoBiotechnology Research Center., Tech. Nagoya*)
- 3Pos160 レチナル発色団を結合するリジン 255 の共有結合は KR2 のナトリウムポンプ機能に必須である
Covalent binding at Lys-255 residue connecting the retinal chromophore is essential for a sodium pump function of Krokinobacter Rhodopsin2
Yuki Ichikawa¹, Shoha Ochiai¹, Sahoko Tomida¹, Yuji Furutani^{1,2} (¹*Department of Engineering, Nagoya Institute of Technology, Japan, ²OptoBioTechnology Research Center, Nagoya Institute of Technology, Japan*)
- 3Pos161 固体 NMR を用いたシゾロドプシンのレチナルと Cys75 の立体相互作用の解析
Steric interaction of Cys75 with retinal in schizorhodopsin using solid-state NMR
Akito Kitaguchi¹, Takashi Okitsu², Hideki Kandori³, Keiichi Inoue⁴, Izuru Kawamura¹ (¹*Graduate School of Engineering Science, Yokohama National University, Japan, ²Faculty of Pharmaceutical Sciences, University of Toyama, Japan, ³Department of Life Science and Applied Chemistry, Nagoya Institute of Technology, Japan, ⁴The Institute for Solid State Physics, The University of Tokyo, Japan*)
- 3Pos162 近赤外光吸収口ドプシンの特異な光化学反応
Unique photochemical reactions in near-infrared light absorbing rhodopsins
Masahiro Sugiyura¹, Ritsu Mizutori¹, Kazuki Ishikawa¹, Kota Katayama^{1,2}, Yuji Sumii¹, Rei Abe-Yoshizumi¹, Satoshi Tsunoda^{1,2}, Yuji Furutani^{1,2}, Norio Shibata¹, Leonid S. Brown³, Hideki Kandori^{1,2} (¹*Dept. Life Sci. & App. Chem, Nagoya Inst. Tech., ²OptoBioTechnology Research Center, ³Dept. of Phys. Univ. of Guelph*)

21C. 光生物：光遺伝学・光制御 / 21C. Photobiology: Optogenetics & Optical Control

- 3Pos163 可視光でオン・オフできる Gs 共役型光遺伝学ツールの開発
Development of a Gs-coupled optogenetic tool that can be turned on and off by visible light
Akinari Sakayori¹, Yusuke Sakai², Naoyuki Taira¹, Yusei Sakata¹, Mitsumasa Koyanagi², Akihiisa Terakita², Saori Tani-Matsuhana¹, Kunio Inoue¹, Hisao Tsukamoto¹ (¹*Grad. Sch. Sci., Kobe Univ., ²Grad. Sch. Sci., Osaka Metropolitan Uni.*)
- 3Pos164 無脊椎動物由来の Gi/o 共役型可視光受容タンパク質の分子特性
Molecular characteristics of an invertebrate Gi/o-coupled and visible light-sensitive opsin
Sachiko Fukuzawa, Hisao Tsukamoto (*Grad. Sch. Sci., Kobe Univ.*)
- 3Pos165 光ジッパー融合タンパク質の光依存的な Lac オペレーター配列への結合
A light-dependent binding of the lacI-Photozipper fusion protein to the lac operator sequence
Osamu Hisatomi, Nagomi Matsumoto (*Grad. Sch. Sci., Osaka Univ.*)
- 3Pos166 大腸菌に対する青色光の光毒性
Phototoxicity of blue light to *E. coli* cells
Nagomi Matsumoto, Osamu Hisatomi (*Grad. Sch. Sci., Osaka Univ.*)
- 3Pos167 ユレモ由来の光活性化アデニル酸シクラーゼの活性に影響を与える重要なアミノ酸の同定
Identification of Key Amino Acids affecting the Activity of Photoactivated Adenylyl Cyclase from *Oscillatoria acuminata*
Minako Hirano¹, Masumi Takebe², Syunshi Yano¹, Hinase Kondo¹, Ayu Yuasa¹, Toru Ide¹ (¹*Grad Schl Interdiscip Sci Engn Health Syst, Okayama Univ., ²Hamamatsu Photonics K.K.*)
- 3Pos168 近赤外線レーザーによる分散培養心筋細胞シートに対する光ペーシング
Optical pacing in cardiomyocytes by near-infrared laser
Takaaki Nishikawa¹, Yasumasa Furuie¹, Kentaro Kito², Masahito Hayashi², Tomoyuki Kaneko² (¹*LaRC, Dept. Frontier Biosci, Hosei Univ., ²LaRC, FB, Grad. Sch.Sci&Eng, Hosei Univ.*)

- 3Pos169 光駆動内向きプロトンポンプのツール開発
Tool development for the light-driven inward-proton pumps
Rei Abe-Yoshizumi¹, Shinji Matsuda², Wataru Kakegawa³, Takao Imai², Itaru Arai³, Satoshi Tsunoda¹, Michisuke Yuzaki³, Hideki Kandori^{1,4} (¹*Grad. Sch. Eng., Nagoya Inst. Tech.*, ²*Grad. Sch. Inform. and Eng., UEC*, ³*Dept. Physiol., Keio Univ. Sch. Med.*, ⁴*OptoBio., Nagoya Inst. Tech.*)
- 3Pos170 Photoregulation of Small GTPase Ras using Photoresponsive Protein
Nobuyuki Nishibe¹, Zhang Ziyun¹, Kazunori Kondo², Shinsaku Maruta^{1,2} (¹*Department of Bioinformatics, Soka University Graduate School of Engineering*, ²*Department of Science and Engineering for Sustainable Innovation, Faculty of Science and Engineering, Soka University*)
- 3Pos171 光センサータンパク質 eBLUF の選択的ダイマー化を利用した光操作ツールの開発
Opto-control of protein activity utilizing selective dimerization of light sensor eBLUF
Takafumi Kuno¹, Yusuke Nakasone¹, Kazuhiro Sakamaki², Masahide Terazima¹ (¹*Grad.Sci., Univ.Kyoto*, ²*Grad.Bio., Univ.Kyoto*)
- 3Pos172 バクテリオロドプシンの酸性青色状態の分光学的解析
Spectroscopic analysis of the acid blue form of bacteriorhodopsin
Tsutomu Kouyama, Kunio Ihara (*Nagoya Yniversity*)
- 3Pos173 アニオンチャネルロドプシン GtACR1 における細胞内ドメインによるイオンチャネル機能の制御
The cytoplasmic domain regulates the photocurrent lifetime of anion channelrhodopsin GtACR1
Hana Maruyama¹, Shoko Hososhima¹, Satoshi Tsunoda^{1,2}, Yuya Ohki³, Takashi Kikukawa^{3,4}, Takashi Tsukamoto^{3,4}, Hideki Kandori^{1,2} (¹*Grad. Sch. Eng., Nagoya Inst. Tech.*, ²*Opto Bio Technology Research Center*, ³*Grad. Sch. Life Sci., Univ. Hokkaido*, ⁴*Grad. Sch. Faculty of Advanced Life Sci., Univ. Hokkaido*)
- 3Pos174 光遺伝学を用いた p53 シグナル伝達経路の操作法開発
Optogenetic control of p53 signaling pathway
Tatsuki Tsuruoka^{1,2,3}, Yuhei Goto^{1,2,3}, Kazuhiro Aoki^{1,2,3} (¹*Quantitative Biology Research Group, Exploratory Research Center on Life and Living Systems (ExCELLS), National Institutes of Natural Sciences*, ²*Division of Quantitative Biology, National Institute for Basic Biology*, ³*Department of Basic Biology, School of Life Science, SOKENDAI (The Graduate University for Advanced Studies)*)

26A. 計算生物学: 生命情報学 / 26A. Computational biology: Bioinformatics

- 3Pos175 深層学習および SVM を用いた GPCR-G タンパク質結合選択性予測プログラムの開発
Development of Program for Predicting GPCR - G protein Coupling Selectivity, Using Deep Learning and SVM
Kento Fujishima¹, Kenji Etchuya¹, Hiroshi Arai², Ikuo Masuho^{3,4}, Makiko Suwa^{1,2} (¹*Chem. Biol. Sci., Sci. Eng., Aoyama Gakuin Univ.*, ²*Biol. Sci., Grad. Sci. Eng., Aoyama Gakuin Univ.*, ³*Pediatrics & Rare Dis. Group, Sanford Res.*, ⁴*Dept. of Pediatrics, Sanford Sch. of Med., Univ. of South Dakota*)
- 3Pos176 乳がん患者ごとの最適な治療法の予測のための乳がん細胞モデルのシミュレーション
Simulation of breast cancer cell models for predicting optimal treatment strategies for individual breast cancer patients
Shogo Sonoyama, Takanori Sasaki (*Grad.Sch.Adv.Math.Sci., Meiji Univ.*)
- 3Pos177 Metainference method applied on Hi-C data to study heterogeneous chromatin conformations and their dynamics
Chenyang Gu, Shoji Takada, Giovanni Brandani (*Grad. Sch. Sci., Univ. Kyoto*)
- 3Pos178 頻出する ψ ループモチーフと稀に確認される ψ ループモチーフを区別する構造ルールの解析
Analysis of structural rules that distinguish frequently and rarely occurring psi-loop motif
Tomoki C. Terada, Takumi Nishina, George Chikenji (*Dept of Appl. Phys., Grad. Sch. of Eng., Nagoya Univ.*)

- 3Pos179 生体膜上で相互作用する GPCR ペアの特徴
Characteristics of the interacting GPCR pairs on biological membrane
Wataru Nemoto^{1,2}, Yuki Ishioka¹, Kyokuhou Sya¹, Aoi Fukushima² (¹*Dept. Sci. & Eng., Tokyo Denki Univ.*, ²*Grad. Sch. Sci. & Eng., Tokyo Denki Univ.*)
- 3Pos180 GPCR ヘテロダイマー結合リガンドの特徴解析
Computational analysis of ligands to GPCR heterodimer
Ryota Takishima¹, Tatsuki Okamoto², Kurumi Tsuda², Wataru Nemoto^{1,2} (¹*Grad. Sch. Sci. & Eng., Tokyo Denki Univ.*, ²*Dept. Sci. & Eng., Tokyo Denki Univ.*)
- 3Pos181 膜タンパク質間相互作用ペア予測
Membrane protein interaction pair prediction
Takuma Gunji¹, Gota Saito¹, Aoi Fukushima^{1,2}, Wataru Nemoto^{1,2} (¹*Dept. Sci. & Eng., Tokyo Denki Univ.*, ²*Grad. Sch. Sci. & Eng., Tokyo Denki Univ.*)
- 3Pos182 GPCR 間相互作用予測器の開発と応用
Development and application of GPCR-GPCR interaction pairs predictor
Aoi Fukushima¹, Gouta Saito², Hiroaki Teruse³, Sakie Shimamura¹, Hiroyuki Toh³, Wataru Nemoto^{1,2} (¹*Dept. Sci. & Eng., Tokyo Denki Univ.*, ²*Grad. Sch. Sci. & Eng., Tokyo Denki Univ.*, ³*Dept. Sci. & Tech., Kwansai Gakuin Univ.*)
- 3Pos183 Machine learning-based quantification of nuclear behavior to understand chiral properties of multicellular epithelial colonies
Ryohei Nishizawa^{1,2}, Tomoki Ishibashi¹, Goshi Ogita¹, Tatsuo Shibata¹ (¹*BDR, RIKEN*, ²*Grad. FBS., Univ. Osaka*)
- 3Pos184 言語モデルを使った液-液相分離 client タンパク質の予測
Language Model-Based Prediction of LLPS Client Proteins
Kazuki Miyata¹, Wataru Iwasaki^{1,2,3,4,5} (¹*Graduate School of Science, the University of Tokyo*, ²*Graduate School of Frontier Sciences, the University of Tokyo*, ³*Atmosphere and Ocean Research Institute, the University of Tokyo*, ⁴*Institute for Quantitative Biosciences, the University of Tokyo*, ⁵*Collaborative Research Institute for Innovative Microbiology, the University of Tokyo*)

26B. 計算生物学: 分子シミュレーション / 26B. Computational biology: Molecular simulation

- 3Pos185 PI3K SH2 ドメインの基質結合と構造ダイナミクスの gREST シミュレーション
Substrate binding-coupled conformational dynamics of PI3K SH2 domain revealed by gREST simulation
Suyong Re¹, Kenji Mizuguchi^{1,2} (¹*NIBIOHN*, ²*IPR, Osaka Univ.*)
- 3Pos186 粗視化分子動力学シミュレーションを用いた多成分脂質二重膜における膜貫通タンパク質パーティショニング
Transmembrane protein partitioning in multicomponent lipid bilayers using coarse-grained molecular dynamics simulations
Diego Ugarte¹, Yuji Sugita^{1,2,3} (¹*Computational Biophysics Research Team, RIKEN Center for Computational Science*, ²*Theoretical Molecular Science Laboratory, RIKEN Cluster for Pioneering Research*, ³*Laboratory for Biomolecular Function Simulation, RIKEN Center for Biosystems Dynamics Research*)
- 3Pos187 α チューブリンおよび KRas4B の天然変性領域における遊離状態と結合状態に関する分子動力学シミュレーション解析
Molecular dynamics simulation for the isolated and complex states of the intrinsically disordered regions in α -tubulin and KRas4B
Masato Morikawa¹, Kazuki Kawada², Taimu Maeda², Koji Umezawa^{1,2,3} (¹*Grad. Sch. Of Sci. & Tech., Shinshu Univ.*, ²*Agri., Shinshu Univ.*, ³*IBS., Shinshu Univ.*)

- 3Pos188 Binding Pathway of Hydroxycarboxylic acid receptor 2 (HCAR2) — Niacin Explored by Tree-Search Molecular Dynamics (TS-MD)
Yukina Nakai¹, Toru Ekimoto¹, Tsutomu Yamane², Kei Terayama¹, Sam-Yong Park¹, Mitsunori Ikeguchi^{1,2} (¹*Dept. of Med. Life Sci., Yokohama City Univ.*, ²*R-CCS, Riken*)
- 3Pos189 主成分分析の逆変換を用いた構造生成によるタンパク質構造のサンプリング
 Enhanced conformational sampling based on structural generation by the inverse transformation using principal component analysis
Rikuri Morita, Yasuteru Shigeta, Ryuhei Harada (*CCS, Univ. Tsukuba*)
- 3Pos190 単一アミノ酸ポテンシャル力場 SAAP を用いたアミロイド形成ペプチドの分子シミュレーション
 Molecular simulation of amyloid-forming peptides using the Single Amino Acid Potential (SAAP)
Sayako Misawa^{1,2}, Taku Shimosato³, Michio Iwaoka^{1,2,3} (¹*Graduate School of Science and Technology, Tokai University*, ²*Institute of Advanced Biosciences, Tokai University*, ³*Department of Chemistry, School of Science, Tokai University*)
- 3Pos191 変異型タンパク質複合体の結合自由エネルギー計算
 Binding free energy calculation for mutated protein complex system
Kazutomo Kawaguchi, Hidemi Nagao (*Inst. Sci. Eng., Kanazawa Univ.*)
- 3Pos192 Development of GENESIS CGDYN for large-scale coarse-grained MD simulation of heterogeneous biomolecule systems
Jaewoon Jung^{1,2}, Cheng Tan¹, Yuji Sugita^{1,2,3} (¹*RIKEN R-CCS*, ²*RIKEN CPR*, ³*RIKEN BDR*)
- 3Pos193 光合成反応中心—光捕集アンテナ超分子複合体におけるユビキノノ/ユビキノール移動経路の解明
 Ubiquinone/ubiquinol exchange pathway in the photosynthetic RC—LH1 supercomplex
Yosuke Teshirogi¹, Yoshitaka Moriwaki¹, Kentaro Shimizu², Tohru Terada¹ (¹*Dept. of Biotechnol., Grad. Sch. of Agri and Life Science., The Univ. of Tokyo*, ²*Agricultural Bioinformatics Research Unit, Grad. Sch. of Agri and Life Science., The Univ. of Tokyo*)
- 3Pos194 Semi-automated derivation of SPICA force field parameters for glycosaminoglycans (GAGs)
Grzegorz Lazarski^{1,3}, Yusuke Miyazaki², Ryo Urano², Mariusz Kepczyński³, Wataru Shinoda² (¹*Grad. Sch. of Natural Science and Technology, Okayama University*, ²*Okayama University*, ³*Doc. Sch. of Exact and Natural Sciences, Jagiellonian University*)
- 3Pos195 植物のチラコイド膜の曲率に対する脂質の種類と比率の依存性に関する理論的研究
 Theoretical study of the dependence of different lipid types and ratios on the curvature of plant thylakoid membranes
Kaichi Kokubo, Ryuta Imayoshi, Tatsuhiko Kawashima, Kazutomo Kawaguchi, Hidemi Nagao (*Grad. Sch. Nat. Sci. Tech., Univ. Kanazawa*)
- 3Pos196 長時間分子動力学シミュレーションによる植物型フェレドキシンの構造や運動状態に関する計算化学的研究
 Computational analysis of the structure and motion of the plant-type ferredoxin using long-time molecular dynamics simulations
Tomoki Nakayoshi¹, Yusuke Ohnishi², Hideaki Tanaka², Genji Kurisu², Yu Takano¹ (¹*Grad. Sch. Inf. Sci., Hiroshima City Univ.*, ²*Inst. Protein Res., Osaka Univ.*)
- 3Pos197 抗肺炎球菌薬開発に向けた FtsXECL1 の D&C-MD シミュレーションと自由エネルギー解析
 D&C-MD Simulation and Free Energy Analysis of FtsXECL1 toward an Anti-pneumococcus Drug Development
Hiromitsu Shimoyama (*Noguchi Institute*)
- 3Pos198 The Spike protein Conformational Shift in the Omicron Variant of SARS-CoV-2
Hisham Dokainish^{1,2}, Yuji Sugita^{3,4,5}, Katsumi Maenaka^{1,2} (¹*Faculty of Pharmaceutical Sciences, Hokkaido University*, ²*Hokkaido University Institute for Vaccine Research & Development*, ³*Theoretical Molecular Science Laboratory, RIKEN Cluster for Pioneering Research, Wako, Japan*, ⁴*Laboratory for Biomolecular Function Simulation, RIKEN Center for Biosystems Dynamics Research, Kobe, Japan*, ⁵*Center for Drug Design Research, National Institutes of Biomedical Innovation*)

- 3Pos199 GPUを用いた粗視化分子動力学シミュレータの開発と大規模系への適用
Development of GPU-accelerated coarse-grained molecular dynamics simulator and application to large-scale systems
Yutaka Murata, Shoji Takada (*Dept. Biophysics, Div. Biology Grad. Sch. of Science, Kyoto University, Takada Lab*)
- 3Pos200 SPICA 力場を用いた粗視化分子動力学シミュレーションによる脂質ナノ粒子の研究
Coarse-grained molecular dynamics simulation of lipid nanoparticles using the SPICA force field
Yusuke Miyazaki, Wataru Shinoda (*RIMS, Okayama Univ.*)
- 3Pos201 弾性エネルギーを用いた混合正規分布分子の基準振動解析
Normal mode analysis of Gaussian mixture molecule using spring and strain energy
Takeshi Kawabata, Kengo Kinoshita (*Grad.Sch.Info.Sci., Tohoku Univ.*)
- 3Pos202 新生ペプチド鎖のリボソームトンネルにおける2次構造形成に関する計算科学的研究
The computational study on the secondary structure formation of nascent peptides inside the ribosome tunnel
Takunori Yasuda¹, Rikuri Morita², Yasuteru Shigeta², Ryuhei Harada² (*¹Doctoral Program in Biology, University of Tsukuba, ²Center for Computational Sciences, University of Tsukuba*)
- 3Pos203 光活性化アデニル酸シクラーゼ OaPAC のシグナル伝達機構の分子シミュレーションによる解析
Analysis of signal transmission mechanism of photoactivated adenylate cyclase OaPAC by molecular simulation
Akiya Fukuda¹, Masahiko Taguchi^{1,2,3}, Shun Sakuraba³, Justin Chan³, Eriko Nango^{1,2}, Hidetoshi Kono³ (*¹Graduate School of Science, Tohoku University, ²Institute of Multidisciplinary Research for Advanced Materials, Tohoku University, ³Institute for Quantum Life Science, National Institutes for Quantum Science and Technology*)
- 3Pos204 TDP-43 のマルチドメイン構造と RNA とともに形成する非膜性構造体の物性の関係
The Relationship between Multiple-domain Structures of TDP-43 and the Physical Properties of Membraneless Organelles Formed with RNA
Yui Matsushita¹, Eiji Yamamoto² (*¹Graduate School of Science and Technology, Keio University, ²Department of System Design Engineering, Keio University*)
- 3Pos205 インシリコとインビトロ解析による広範なコロナ変異株に結合可能な抗体の開発
Development of antibodies with broadly binding affinity to SARS-CoV-2 variants *in silico* and *in vitro* assays
Xu Pan¹, Takashi Tadokoro^{1,3}, Yuki Anraku¹, Cong Tian¹, Hideo Fukuhara^{1,2}, Takao Nomura¹, Shunsuke Kita¹, Taishi Onodera⁴, Yu Adachi⁴, Saya Moriyama⁴, Kohei Yumoto⁴, Tateki Suzuki⁵, Jiei Sasaki⁵, Takao Hashiguchi⁵, Yoshimasa Takahashi⁴, Hisham M. Dokainish¹, Katsumi Maenaka¹ (*¹Faculty of Pharmaceutical Sciences, Hokkaido University, ²International Institute for Zoonosis Control, Hokkaido University, ³Sanyo-Onoda City University, ⁴National Institute of Infectious Diseases, ⁵Laboratory of Medical Virology, Institute for Frontier Life and Medical Sciences, Kyoto University*)

27. 数理生物学・理論生物学 / 27. Mathematical & Theoretical biology

- 3Pos206 Biomolecular Set Theory-分子生物学のための測度論的確率論の展開-
Biomolecular Set Theory -Measure-theoretic probability theory for molecular biology-
Ryoichi Sato, Masami Yokota Hirai (*CSRS., RIKEN*)
- 3Pos207 魚類の網膜における錐体モザイク形成に関する力学モデルを用いた考察
Study of cone mosaic formation in fish retinas using a mathematical model
Keiichi Yamamoto¹, Yuji Sakai², Atsushi Mochizuki² (*¹Graduate school of Science, Kyoto University, ²Institute for life and medical sciences, Kyoto University*)

- 3Pos208 上皮シートにおける極性細胞と非極性細胞の相分離
Phase separation of polar and nonpolar cells in epithelial sheet
Ryunosuke Karimata¹, Satoru Okuda² (¹*School of Mathematics and Physics, Kanazawa University,*
²*Nano Life Science Institute, Kanazawa University*)
- 3Pos209 細胞膜上の分子密度に依存したクラスター形成とシグナル伝達の数理的研究
Mathematical study of molecular density-dependent cluster formation and signal transduction on the plasma membrane
Hiroaki Takagi (*Dep. Phys., Sch. Med., Nara Med. Univ.*)
- 3Pos210 周期構造上の紡錘形細胞集団におけるトポロジカル欠陥のダイナミクス
Dynamics of topological defects in spindle-shaped cell populations on periodic structures
Hiroki Miyazako¹, Naoki Matsuda¹, Takashi Sakajo², Takaaki Nara¹ (¹*Grad. Sch. IST, Univ. of Tokyo,*
²*Grad. Sch. Sci., Kyoto Univ.*)
- 3Pos211 相互作用する複数の要素から成るシステムの挙動に関する理論解析
Modeling the behavior of a system consisting of multiple interacting elements
Naoto Yonekura¹, Shinji Deguchi² (¹*School of Engineering Science, Osaka University,* ²*Graduate School of Engineering Science, Osaka University*)
- 3Pos212 Simultaneous Optimization of the Structure and Control of Machines: A Model Study
Yuki Hamada¹, Yuichi Togashi^{1,2} (¹*Grad. Sch. Life Sci., Ritsumeikan Univ.,* ²*RIKEN BDR*)
- 3Pos213 液滴誘導型細胞内走化性の理論
Theory of droplet-induced intracellular chemotaxis
Takeshi Sugawara (*CDS, Univ. Kochi*)

29. 非平衡・生体リズム / 29. Nonequilibrium state & Biological rhythm

- 3Pos214 微小管集団によって運搬・蓄積されるコロイド粒子のクラスター形成
Cluster Formation of Colloidal Particles Transported and Accumulated by Microtubule Populations
Yuki Matsuo¹, Yutaka Sumino¹, Mousumi Akter², Mst. Rubaya Rashid³, Akira Kakugo³ (¹*Department of Applied Physics, Faculty of Science Division I, Tokyo University of Science,* ²*Institute of Molecular Biology, University of Oregon,* ³*Department of Physics, Graduate School of Science, University of Kyoto*)
- 3Pos215 Emergence of adaptive slower coupled oscillations of spontaneously beating cardiomyocyte networks using on chip cell network assay
Suguru Matsumoto¹, Kazufumi Sakamoto¹, Kenji Yasuda^{1,2}, Kosuke Fujimoto² (¹*Dept. Pure & Appl. Phys., Grad. Sch. Adv. Sci. & Eng., Waseda Univ.,* ²*Dept. Pure & Appl. Phys., Sch. Adv. Sci. & Eng., Waseda Univ.*)
- 3Pos216 運動ニューラルネットワークの局所不可逆性の定量化
Quantifying the local irreversibility of a motor neural network
Yoshiaki Horiike^{1,2}, Shin Fujishiro³, Rune W. Berg², Karel Josef A. Proesmans⁴ (¹*Dept. Appl. Phys., Nagoya Univ.,* ²*Dept. Neurosci., Univ. Copenhagen,* ³*Fukui Inst. Fundam. Chem., Kyoto Univ.,* ⁴*Niels Bohr Intl. Acad., Univ. Copenhagen*)
- 3Pos217 細胞の意思決定における理論的な精度限界
Theoretical limits on the precision of cellular decision making
Nobumasa Ishida, Yoshihiko Hasegawa (*Grad. Sch. Info. Sci. Tech., Univ. Tokyo*)
- 3Pos218 確率論に基づくシミュレーションを用いた1次元振動パターンにおけるピーク位置の理論的研究
Theoretical Study of Peak Position in One Dimensional Oscillation Patterns by using Stochastic Simulation
Ryuta Imayoshi, Kaichi Kokubo, Tatsuhiro Kawashima, Kazutomo Kawaguchi, Hidemi Nagao (*Grad. Sch. Nat. Sci, Kanazawa Univ.*)

- 3Pos219 精子形成の周期と波：マウス精巢の細胞集団秩序を支える生物リズム
The spermatogenic cycle and wave: biological rhythms for the collective cellular order in mouse testis
Toshiyuki Sato¹, Shosei Yoshida^{1,2} (¹*NIBB*, ²*Grad. Inst. for Adv. Stud., SOKENDAI*)
- 3Pos220 走化性を示さない細胞性粘菌変異株の集団が示すキラルなパターン形成
Large-scale chiral pattern formation in population of non-chemotactic *Dictyostelium* cells
Masayuki Hayakawa¹, Hidekazu Kuwayama², Tatsuo Shibata¹ (¹*Riken, BDR*, ²*Faculty of Life and Environmental Sciences, University of Tsukuba*)
- 3Pos221 高周波強制振動によるニューロンのモデル方程式の発火抑制
Suppression of repetitive spiking in neural model equation with high frequency forced oscillation
Keito Yamasaki (*IGSES, Univ. Kyushu*)
- 3Pos222 心筋細胞に備わった恒常性的安定性を併せ持つカオス特性、S4Cの発見
Discovery of S4C, a chaotic property of cardiomyocytes with homeostatic stability
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*)
- 3Pos223 細胞集団における位相欠陥の幾何的制御と流れの発生
Geometric control of topological defects and emergent flow in cell population
Ryo Ienaga¹, Yusuke Maeda¹, Kazusa Beppu² (¹*Grad. Sch. Sci. Phys., Univ. Kyushu*, ²*Applied Phys., Univ. Aalto*)
- 3Pos224 Inducing simple and short-termed phosphorylation oscillation by using a phosphorylation site variant of clock protein KaiC
Kosuke Maki, Yuji Nishimura, Rie Kumagai, Yuto Iura (*Grad. Sch. Sci., Nagoya Univ.*)

30. 計測 / 30. Measurements

- 3Pos225 NMR analysis of 2'-fucosyllactose in human breast milk
Zhiyan Hu¹, Jiayi Jiang¹, Li Gan¹, Zihao Song¹, Yuki Ohnishi¹, Seiji Osada², Hiroyuki Kumeta¹, Yasuhiro Kumaki¹, Kazuo Yamauchi³, Tomoyasu Aizawa¹ (¹*Grad. Sch. Life Sci., Hokkaido Univ.*, ²*Nakayama Co., Ltd.*, ³*IAS, OIST*)
- 3Pos226 卓上型 NMR 装置を用いたヒト母乳中の乳糖濃度の定量
Determination of lactose concentration in human breast milk utilizing a benchtop NMR spectrometer
Jiayi Jiang¹, Zhiyan Hu¹, Zihao Song¹, Li Gan¹, Yuki Ohnishi¹, Seiji Osada², Hiroyuki Kumeta¹, Yasuhiro Kumaki¹, Kazuo Yamauchi³, Tomoyasu Aizawa¹ (¹*Grad. Sch. Life Sci., Hokkaido Univ.*, ²*Nakayama Co., Ltd.*, ³*IAS, OIST*)
- 3Pos227 センサシステム研究のための水素化アモルファスシリコンで増強された脂肪酸とクマリンの複合分子薄膜
Composite molecular thin films of fatty acids and coumarins enhanced with hydrogenated amorphous silicon for sensor system research
Koyu Akiyama¹, Kazunori Takada¹, Kohei Saito¹, Hiroshi Masumoto², Yutaka Tsujiuchi^{1,2} (¹*Material Science and Engineering, Akita University*, ²*Frontier Research Institute for Interdisciplinary, Tohoku University*)
- 3Pos228 *Plunus Lanessiana* から抽出した蛍光色素の解析と水素化アモルファスシリコン薄膜上での特性
Analysis of fluorescent pigments extracted from *Plunus Lanessiana* and their properties on hydrogenated amorphous silicon thin films
Yutaka Tsujiuchi^{1,2}, Kazunori Takada¹, Koyu Akiyama¹, Akihito Nakajima¹, Hiroshi Masumoto² (¹*Material Science and Engineering, Akita University*, ²*Frontier Research Institute for Interdisciplinary, Tohoku University*)

- 3Pos229 タンパク質間相互作用検出のための4チャンネル偏光蛍光相関分光装置の構築と検証
Construction and verification of 4ch polarization-dependent fluorescence correlation spectroscopy for detection of protein interaction
Masataka Kinjo, Riku Ando, Akira Kitamura (*Ad. Lif. Sci.Hokkaido U.*)
- 3Pos230 補償光学系による位相変調と機械学習を用いて1分子輝点3次元座標を光軸方向に広範囲に高精度計測する方法のシミュレーション研究
A simulation study of precise 3D single-molecule localization over a large axial range using PSF engineering and deep learning
Yuma Ito, Ryota Sasaki, Kosuke Ohira, Xiang Zhou, **Makio Tokunaga** (*Sch. Life Sci. Tech., Tokyo Tech*)
- 3Pos231 Development of Electrochemical DNA Sensors for Nondestructive Inspection of Molecular Robots
Haruki Tanabe, Hiromu Akai, Kan Shoji (*Graduate School of Engineering, Nagaoka University of Technology*)
- 3Pos232 血中CEA腫瘍マーカーの1分子識別のためのアプタマーを用いたナノポア測定技術開発
Development of aptamer-based nanopore measurement technology for single molecule identification of CEA tumor markers in blood
Ryo Akita, Hikaru Nozawa, Tatsuhiko Tsunoda, Sotaro Uemura (*Grad. Sch. Sci., Univ. Tokyo*)
- 3Pos233 ウイルスゲノムの分節化による多重感染条件下での細胞感染率の違い
Differences in cell infection rates under multiple infection conditions due to viral genome segmentation
Yuu Kawahara, Hiroyuki Noji, Kazuhito Tabata (*Grad. Eng. App., Univ. Tokyo*)

31. バイオイメージング/31. Bioimaging

- 3Pos234 Establishment of a screening system for bioluminescent indicator development
Rikuto Tanaka¹, Kazunori Sugiura², Mitsuru Hattori², Takeharu Nagai^{1,2} (¹*Grad. Sch. FBS, Osaka, SANKEN, Osaka*)
- 3Pos235 Versatile design for genetically-encoded fluorescent indicator based on excited state proton transfer
Kazunori Sugiura, Takeharu Nagai (*SANKEN, Osaka university*)
- 3Pos236 高速AFMの更なる高速化に向けたZ-スキャナシステムの改良
Improvement of the Z-scanner system for faster high-speed AFM
Kazuma Tatsumi¹, Kenichi Umeda², Noriyuki Kodera² (¹*Grad. Sch. Math. & Phys., Kanazawa Univ., WPI-NanoLSI, Kanazawa Univ.*)
- 3Pos237 High-throughput system for real-time single-cell secretion imaging with optical waveguide chip
Zhuohao Yang¹, Mai Yamagishi², Nobutake Suzuki², Etsushi Kuroda³, Shinya Sakuma⁴, Takashi Funatsu¹, Yoshitaka Shirasaki¹ (¹*Grad. Sch. Pharm. Sci., The Univ. of Tokyo*, ²*Live Cell Diagnosis, Ltd.*, ³*Dep. Immun., Hyogo Coll. Med.*, ⁴*Fac. Eng., Kyushu Univ.*)
- 3Pos238 Aβ凝集体がTauの凝集に与える影響
Effects of preformed amyloid β aggregates on tau aggregation
Soichiro Ogura (*Graduate school of Engineering, Muroran Institute of Technology*)
- 3Pos239 SSBD:repository/SSBD:database: バイオイメージングデータのグローバルな共有
SSBD:repository/SSBD:database: A global sharing of bioimaging data
Koji Kyoda¹, Hiroya Itoga¹, Fangfang Wang^{1,2}, Miguel Miranda-Miranda¹, Haruna Yamamoto¹, Yuki Yamagata^{2,3}, Yukako Tohsato^{1,4}, Shuichi Onami^{1,2} (¹*RIKEN BDR*, ²*RIKEN R-IH*, ³*RIKEN BRC*, ⁴*Ritsumeikan University*)

- 3Pos240 脂質・ヌクレオチド依存的なペルオキシレドキシソ高分子量複合体形成メカニズムの解明
Study on the formation mechanism of peroxiredoxin high molecular weight complex with lipid and nucleotide
Ryusei Yamada¹, Hiroki Konno² (¹*Grad. Sch. Sci., Univ. Kanazawa*, ²*WPI Nano Life Science Inst., Univ. Kanazawa*)
- 3Pos241 がん免疫において細胞傷害性指標となる液性因子分泌のライブセルイメージング
Live Cell Imaging of Liquid Factor Secretion as an Indicator of Cytotoxicity in Cancer Immunity
Yuto Kurisu¹, Zhuohao Yang¹, Koji Nagaoka², Kazuhiro Kakimi^{2,3}, Takashi Funatsu¹, Yoshitaka Shirasaki¹ (¹*Grad. Sch. Pharm., UTokyo.*, ²*UTokyo Hospital*, ³*Faculty of Medicine, Kindai Univ.*)
- 3Pos242 Single Polypeptide Detection Using a Translocon SecYEG
Wenqing Xu¹, Ryoji Miyazaki², Ryo Iizuka¹, Tomoya Tsukazaki², Sotaro Uemura¹ (¹*Grad. Sch. Sci., Univ. Tokyo*, ²*Nara Inst. of Sci. and Tech.*)
- 3Pos243 凍結固定された生体試料内分子のラマンイメージング
Raman imaging of intracellular molecules in cryo fixed biological specimens
Mizushima Kenta^{1,2}, Yasuaki Kumamoto^{1,3}, Shoko Tamura⁴, Masahito Yamanaka¹, Kentaro Mochizuki⁴, Menglu Li^{1,2}, Shunsuke Egoshi^{5,6}, Kosuke Dodo^{5,6}, Yoshinori Harada⁴, Isac Smith Nicholas⁷, Mikiko Sodeoka^{5,6}, Hideo Tanaka⁴, Katsumasa Fujita^{1,2,3} (¹*Department of Applied Physics, Osaka University*, ²*Advanced Photonics and Bioengineering Open Innovation Laboratory AIST-Osaka University*, ³*Institute of Open and Transdisciplinary Research Initiatives, Osaka University*, ⁴*Department of Pathology and Cell Regulation, Kyoto Prefectural University of Medicine*, ⁵*Synthetic Organic Chemistry Laboratory, RIKEN Cluster for Pioneering Research*, ⁶*Catalysis and Integrated Research Group, RIKEN Center for Sustainable Resource Science*, ⁷*Biophotonics Laboratory, Immunology Frontier Research Center, Osaka University*)
- 3Pos244 光機能性ラマンプローブの開発とその応用
Development of photoactivatable and photoswitchable Raman probes
Minoru Kawatani^{1,2}, Ayumi Komazawa³, Jingwen Shou⁴, Hiroyoshi Fujioka^{1,2}, Yoshio Mita^{4,5}, Yasuteru Urano^{2,3}, Yasuyuki Ozeki^{4,6}, Mako Kamiya^{1,2,7} (¹*Sch. Life Sci. Tech., Tokyo Tech.*, ²*Grad. Sch. Med., Univ. Tokyo*, ³*Grad. Sch. Pharm. Sci., Univ. Tokyo*, ⁴*Dep. Electr. Eng. Info. Sys., Univ. Tokyo*, ⁵*LIMMS, Univ. Tokyo*, ⁶*RCAT, Univ. Tokyo*, ⁷*IRFI, Tokyo Tech.*)
- 3Pos245 小胞ライブイメージングが解き明かす新しい細胞間情報伝達様式
New Mode of InterCellular Communication Unveiled by Vesicle Live Imaging
Tomohiro Minakawa¹, Fumiyoshi Ishidate², Takahiro Fujiwara², Jun K. Yamashita¹ (¹*Graduate School of Medicine, the University of Tokyo Department of Cellular and Tissue Communication*, ²*Analysis Center, Institute for Integrated Cell-Material Sciences (WPI-iCeMS), KUIAS, Kyoto University*)
- 3Pos246 非標識光学顕微鏡を用いた細胞内熱伝導と加熱による温度変化の計測
Intracellular heat conduction and heat-induced temperature change measurements by label-free optical microscopy
Keiichiro Toda¹, Masaharu Takarada², Genki Ishigane¹, Hiroyuki Shimada¹, Venkata Ramaiah Badarla¹, Kohki Okabe², Takuro Ideguchi¹ (¹*Department of Science, The University of Tokyo*, ²*Department of Pharmaceutical Science, The University of Tokyo*)
- 3Pos247 クラスター型プロトカドヘリンの同種親和性相互作用を可視化する蛍光指示薬の開発
Development of fluorescent indicators for visualizing homophilic interaction of clustered protocadherin
Takashi Kanadome^{1,2}, Nanami Hoshino³, Takeharu Nagai², Takeshi Yagi³, Tomoki Matsuda² (¹*PRESTO, JST*, ²*SANKEN, Osaka Univ.*, ³*FBS, Osaka Univ.*)

- 3Pos248 プロリンを含有するテトラペプチドの結晶化
Crystallization of Proline-containing Tetrapeptides
Shogo Hayashi, Kazunori Motai, Yuhei Hayamizu (*Dept. of Mat. Sci. and Eng., Tokyo Tech.*)
- 3Pos249 ヒスチジンを含むテトラペプチドと銅イオンの結晶化におけるリアルタイムイメージングとラマン分光解析
Real-Time Imaging of Crystallization and Raman Spectral Analysis of Histidine-Containing Tetrapeptides and Metal Ions
Yumie Nishiyama, Kazunori Motai, Shogo Hayashi, Yuhei Hayamizu (*Dept. of Mat. Sci. and Eng., Tokyo Tech.*)
- 3Pos250 Integrating In Vivo Crystallography and De Novo Protein Design at Nagoya University
Etsuko Tokunaga¹, Hiroki Onoda¹, Yasufumi Umena¹, Swagatha Ghosh², George Chikenji², Tomoki Terada², Hidehiko Akiyama³, Leonard MGH Chavas^{1,2} (¹*NUSR, Nagoya University*, ²*Dept Applied Physics, Nagoya University*, ³*Faculty of Medical Sciences, Fujita Health University*)