Program

Day 2: November 11th

9:30-9:45	**Oral Presentations** Chair: **Kohji Seio** Tokyo Institute of Technology	**1O-01**	**One-Step Synthesis of Cyclopentene Derivatives from 5′-Deoxy-5′-Heteroarylsulfonylnucleosides, Nucleoside-Derived Julia-Kocienski Reagents** Natsuhisa Oka,[1,2,3,*] Mayuka Kanda,[1] Minami Furuzawa,[1] Wakaba Arai,[1] Kaori Ando[1,*] [1]Department of Chemistry and Biomolecular Science, Faculty of Engineering, Gifu University, [2]Center for Highly Advanced Integration of Nano and Life Sciences, Gifu University (G-CHAIN) [3]Institute for Glyco-core Research (iGCORE), Gifu University
9:45-10:00		**1O-02**	**Functional Oligonucleotide Encoding Metabolite Information** Tatsuya Nishihara[1], Yuto Motohashi,[1] Shuhei Moritani,[1] Momoka Yajima,[1] Kazuhito Tanabe[1,*] [1]College of Science and Engineering, Aoyama Gakuin University
10:00-10:15		**1O-03**	**Unnatural base pairs with spatially isolated hydrogen-bonding units in the DNA major groove** Hidenori Okamura,[1,2,*] Zhuoxin Dong,[1,2] Giang H. Trinh,[1,2] Fumi Nagatsugi[1,2,*] [1]Institute of Multidisciplinary Research for Advanced Materials, Tohoku University, [2]Graduate School of Science, Tohoku University
10:15-10:30	**Oral Presentations** Chair: **Noriaki Minakawa** Tokushima Univ.	**1O-04**	**Unnatural-base DNA sequencing method, Sanger gap sequencing, for genetic alphabet expansion technology** Michiko Kimoto,[1,*] Si Hui Gabriella Soh,[1,2] Hirao Ichiro[1,*] [1]Institute of Bioengineering and Bioimaging, A*STAR, [2]Lee Kong Chian School of Medicine, Nanyang Technological University
10:30-10:45		**1O-05**	**Engineering Semisynthetic Organisms using Unnatural Base Pairs** Koji Hashimoto,[1,2,3] Emil C. Fischer,[1] Floyd E. Romesberg[1,*] [1]Department of Chemistry, The Scripps Research Institute, [2]Department of Chemistry, Graduate School of Science, Nagoya University (Current affiliation), [3]JSPS Postdoctoral Fellow
10:45-11:00	**Oral Presentations** Chair: **Hiroshi Abe** Nagoya Univ.	**1O-06**	**Phase Transitions in the Assembly of Trifluoromethylated G-quadruplex RNA by shorter CGG Trinucleotide Repeats** Shiyu Wang, Yan Xu* Division of Chemistry, Department of Medical Sciences, Faculty of Medicine, University of Miyazaki
11:00-11:15		**1O-07**	**Small molecule targeting UGGAA pentanucleotide repeat alleviates disease phenotype in spinocerebellar ataxia type 31** Tomonori Shibata[1], Konami Nagano[2], Morio Ueyama[3], Kensuke Ninomiya[4], Tetsuro Hirose[4], Yoshitaka Nagai[3], Kinya Ishikawa[5], Gota Kawai[2], Kazuhiko Nakatani[1*] [1]Department of Regulatory Bioorganic Chemistry, SANKEN (The Institute of Scientific and Industrial Research), Osaka University, [2]Department of Life and Environmental Sciences, Faculty of Engineering, Chiba Institute of Technology, [3]Department of Neurology, Kindai University Faculty of Medicine, [4]Graduate School of Frontier Biosciences, Osaka University, [5]Center for Personalized Medicine for Healthy Aging, Tokyo Medical and Dental University
11:15-11:25	**Break**		

11:25-12:10	**Invited Lecture 1** Chair: **Kazuhiko Nakatani** Osaka Univ.	**IL-01**	**A Structure-based Approach to RNA-targeted Small Molecules** Jennifer C Petter* Arrakis Therapeutics
12:10-13:30	**Lunch Break**		
13:30-15:00	**Poster Presentation** 1P01-1P58 13:30-14:15 Odd Number 14:15-15:00 Even Number		
15:00-15:15	**Break**		

15:15-16:00	**Invited Lecture 2** Chair: **Shigenori Iwai** Osaka Univ.	**IL-02**	**Structural Studies of DNA Function in Nucleosomes** Hitoshi Kurumizaka[1]* [1]Laboratory of Chromatin Structure and Function, Institute for Quantitative Biosciences, The University of Tokyo
16:00-16:15	**Oral Presentations** Chair: **Takehiko Wada** Tohoku Univ.	**1O-08**	**Efficient and site-specific chain elongation on a porous glass sheet in a photolithographic flow system** Yu Ito,[1,2] Koichiro Miyauchi,[1,2] Yu Miyazaki,[1] Saaya Akazawa,[1] Akihiro Ohkubo[1,2] [1]Department of Life Science and Technology, Tokyo Institute of Technology, [2]CREST, Japan Science and Technology Agency (JST)
16:15-16:30		**1O-09**	**Chemically modified PCR primer aiming accurate and efficient DNA assembly** Fumitaka Hashiya,[1] Kaoru Onda,[2] Kohei Nomura,[2] Gao Yiuno,[2] Hirotaka Murase,[2] Kosuke Nakamoto,[2] Masahito Inagaki,[2] Haruka Hiraoka,[2] Naoko Abe,[2] Yasuaki Kimura,[2] Natsuhisa Oka,[3,4] Goro Terai,[5] Kiyoshi Asai,[5] Hiroshi Abe[1,2,6,7]* [1]Research Center for Material Science, Nagoya University, [2]Graduate School of Science, Nagoya University, [3]Department of Chemistry and Biomolecular Science, Gifu University, [4]Institute for Glyco-core Research (iGCORE), Gifu University, [5]Department of Computational Biology and Medical Sciences, University of Tokyo, [6]CREST, Japan Science and Technology Agency, [7]Institute for Glyco-core Research (iGCORE), Nagoya University
16:30-16:45		**1O-10**	**Acceleration of DNA hybridization chain reaction by cationic copolymer under physiologically relevant conditions** Jun Wang,[1] Naohiko Shimada,[1] Atsushi Maruyama[1,]* [1]Department of Life Science and Technology, Tokyo Institute of Technology
16:45-17:00	**Oral Presentations** Chair: **Masayuki Fujii** Kindai Univ.	**1O-11**	**Exploring the Dynamics of Nucleic Acids at the Single-Molecule Level Using Triplet-Triplet Energy Transfer Kinetics** Jie Xu,[1] Atsushi Maruyama,[2] Mamoru Fujitsuka,[1] Kiyohiko Kawai[1,]* [1]SANKEN (The Institute of Scientific and Industrial Research), Osaka University, [2]Department of Life Science and Technology, Tokyo Institute of Technology
17:00-17:15		**1O-12**	**Development of small photosensitizer-oligonucleotide conjugates for site-specific oxidation of guanosine** Takashi Kanamori*, Shota Kaneko, Koji Hamamoto, Wang Chao, Ruoyu Li, Hideya Yuasa* Department of Life Science and Technology, School of Life Science and Technology, Tokyo Institute of technology
17:15-17:30	**Break**		

17:30-18:15	**Invited Lecture 3** Chair: **Hiroyuki Asanuma** Nagoya Univ.	**IL-03**	**Interlocked DNA nanostructures for molecular engineering** Michael Famulok,[1,2]* Mathias Centola,[1,2] Yinzhou Ma[1], Marko Škugor[1], Ze Yu[1], Michael W. Haydell[1], Julián Valero[3] [1]Chemical Biology and Medicinal Chemistry Unit, Life and Medical Sciences (LIMES) Institute, University of Bonn, [2]Max-Planck-Fellowship Group Chemical Biology, Center of Advanced European Studies and Research, [3]Interdisciplinary Nanoscience Center - INANO-MBG, iNANO-huset
18:15-18:30	**Oral Presentations** Chair: **Atsushi Maruyama** Tokyo Institute of Technology	**1O-13**	**Enzyme Cascade Reactions on a DNA Scaffold with Shape Transformation** Peng Lin,[1] Huyen Dinh,[1] Eiji Nakata,[1] Takashi Morii[1,*] [1]Institute of Advanced Energy, Kyoto University
18:30-18:45		**1O-14**	**Aptameric enzyme subunit enhances the peroxidase activity of myoglobin against luminol** Kaori Tsukakoshi,[1] Yasuko Yamagishi[1], Mana Kanazashi[2], Kenta Nakama[1], Daiki Oshikawa[1], Nasa Savory[1], Akimasa Matsugami[3], Fumiaki Hayashi[3], Jinhee Lee[4], Taiki Saito[1], Koji Sode[4], Kanjana Khunathai[2], Hitoshi Kuno[2], Kazunori Ikebukuro[1,*] [1]Department of Biotechnology and Life Science, Tokyo University of Agriculture and Technology, [2]DENSO CORPORATION, [3]NMR Science and Development Division, RIKEN SPring-8 Center, [4]Joint Department of Biomedical Engineering, University of North Carolina at Chapel Hill and North Carolina State University
18:45-19:00	**Oral Presentations** Chair: **Yan Xu** Univ. of Miyazaki	**1O-15**	**Structures and dynamics of oligonucleotides in living human cells evaluated by in-cell NMR** Yudai Yamaoki,[1,2] Tomoki Sakamoto,[2] Keiko Kondo,[1] Shohei Takami,[2] Takashi Nagata,[1,2] Masato Katahira[1,2,*] [1]Institute of Advanced Energy, and [2]Graduate School of Energy Science, Kyoto University
19:00-19:15		**1O-16**	**Membrane Permeable Oligonucleotides' application on mdx myotubes and its nucleus internalization** Zhaoma Shu,[1] Haruka Hiraoka,[1] Bao Tri Le,[2] Keiko Masuda,[3] Kousuke Nakamoto,[1] Naoko Abe,[4] Yasuaki Kimura,[4] Yoshihiro Shimizu,[3] Rakesh N Veedu,[2] Hiroshi Abe[4,5]* [1]Chemistry Department, Nagoya University, [2]Centre for Molecular Medicine and Innovative Therapeutics, Murdoch University, [3]RIKEN Center for Biosystems Dynamics Research, [4]Research Center for Materials Science, Nagoya University, [5]CREST, Japan Science and Technology Agency
	Break		
19:30	**Online Exchange Meeting**		

Day 3: November 12th

9:30-10:15	**Special Lecture 1** Chair: **Yoshihito Ueno** Gifu Univ.	**SL-01**	**Study on the development of nucleoside and oligonucleotide drugs based on genomic information** Yukio Kitade[1]* [1]Department of Applied Chemistry, Faculty of Engineering, Aichi Institute of Technology
10:15-10:30	**Oral Presentation** Chair: **Toshihiro Ihara** Kumamoto Univ.	**2O-17**	**Ligand stabilization of G-quadruplex increases sensitivity to S1 nuclease** Masayuki Tera,[1,*] Ryo Ishikawa,[1] Mizuho Yasuda,[1] Shogo Sasaki,[1] Yue Ma,[1] Kazuo Nagasawa[1] [1]Department of Biotechnology and Life Sciences, Tokyo University of Agriculture and Technology
10:30-10:45		**2O-18**	**Chemical modulation of DNA replication by topology-dependent ligand binding on guanine quadruplexes** Shuntaro Takahashi,[1] Anita Kotar,[2] Hisae Tateishi-Karimata,[1] Sudipta Bhowmik,[3] Zi-Fu Wang,[4] Ta-Chau Chang,[4] Shinobu Sato,[5] Shigeori Takenaka,[5] Janez Plavec,[2] Naoki Sugimoto[1,6,*] [1]Frontier Institute for Biomolecular Engineering Research (FIBER), Konan University, [2]Slovenian NMR center, National Institute of Chemistry, SI-1000 Ljubljana, Slovenia Department of Applied Chemistry, [3]University of Calcutta, [4]Institute of Atomic and Molecular Sciences, Academia Sinica, [5]Kyushu Institute of Technology, [6]Graduate School of Frontiers of Innovative Research in Science and Technology (FIRST), Konan University
10:45-11:00	**Oral Presentation** Chair: **Daisuke Miyoshi** Konan Univ.	**2O-19**	**G-quadruplex binding of cyclic naphthalene diimide and their inhibition ability in cancer cell growth** Shinobu Sato,[1] Hikaru Fukida,[2] Hiroshi Takeuchi,[2] Shigeori Takenaka[1,*] [1]Department of Applied Chemistry, Kyushu Institute of Technology, [2]Department of Health Promotion, Kyushu Dental University
11:00-11:15		**2O-20**	**Thermodynamic Properties of the Binding between Antiparallel Triplex Nucleic Acids and Budding Yeast Triplex Nucleic Acid Binding Protein** Maiko Shinmura,[1] Momono Kamegai,[1] Kei Hirabayashi,[1] Hidetaka Torigoe[1,*] [1]Department of Applied Chemistry, Faculty of Science, Tokyo University of Science
11:15-11:25	**Break**		
11:25-12:10	**Invited Lecture 4** Chair: **Satoshi Obika** Osaka Univ.	**IL-04**	**Antisense oligonucleotide-mediated splice modulation of epidermal growth factor receptor (EGFR) in cancer cells** Rakesh N. Veedu[1,2,*] Akilandeswari Balachandran[1] [1]Centre for Molecular Medicine and Innovative Therapeutics, Murdoch University, [2]Perron Institute for Neurological and Translational Science
12:10-13:30	**Lunch Break**		
13:30-15:00	**Poster Presentation** 2P59-2P117 13:30-14:15 Odd Number 14:15-15:00 Even Number		
15:00-15:15	**Break**		

15:15-15:30	**Oral Presentation** Chair: **Kazunori Ikebukuro** Tokyo Univ. of Agriculture and Technology	**2O-21**	**Small molecule–PNA oligomer conjugates for rRNA A-site at neutral pH for FID assays** En Ting Tabitha, Lee,[1] Yusuke Sato,[1,*] Seiichi Nishizawa[1,*] [1]Department of Chemistry, Tohoku University
15:30-15:45		**2O-22**	**Detection of MicroRNAs with Similar Sequences Using Reverse-Transcription Hairpin-Probe Polymerase Chain Reaction** Fumie Takei,[1,*] Misaki Akiyama,[1] Minoru Dateki[1] [1]Faculty of Medicine, National Defense Medical College (NDMC)
15:45-16:00	**Oral Presentation** Chair: **Fumi Nagatsugi** Tohoku Univ.	**2O-23**	**Novel Design Strategy of DNA-Artificial Nucleic Acid Chimera Toward Enhancement of Target RNA Cleavage Activities: Application for COVID-19 Therapeutics** Masahito Inagaki,[1,3] Nozomu Ishiwata,[1] Ryota Azuma,[1] Masaki Nishijima,[1] Hironori Hayashi,[2] Yasuyuki Araki,[1] Eiichi Kodama,[2] Takehiko Wada[1,*] [1]Institute of Multidisciplinary Research for Advanced Materials (MRAM), Tohoku University, [2]International Research Institute of Disaster Science (IRDeS), Tohoku University, [3]Grad. School Science, Nagoya University
16:00-16:15		**2O-24**	**Nonenzymatic polymerase-like elongation of acyclic L-threoninol nucleic acid via chemical ligation** Keiji Murayama,* Hikari Okita, Hiroyuki Asanuma* Graduate School of Engineering, Nagoya University
16:15-16:30		**2O-25**	**Transmission of the genetic information from 4'-thioDNA to 4'-thioRNA to protein** Noriko Saito-Tarashima, Ayako Matsuo, Noriaki Minakawa* Graduate School of Pharmaceutical Science, Tokushima University
16:30-16:40	**Break**		
16:40-17:25	**Invited Lecture 5** Chair: **Kazuhiko Nakatani** Osaka Univ.	**IL-05**	**Pyrrole–Imidazole Polyamides as Artificial Genetic Switches** Hiroshi Sugiyama[1,2*] [1]Department of Chemistry, Graduate School of Science, Kyoto University, [2]Institute for Integrated Cell-Material Science (WPI-iCeMS), Kyoto University
17:25-17:35	**Break**		
17:35-	**Closing Remarks** **JSNAC General Meeting**		