

**Poster Presentation:** Posters in each group are designated to be presented according to the following schedule:

**[Group A]** — Poster Sessions I and II

**[Group B]** — Poster Sessions II and III

**[Group C]** — Poster Sessions I and III

## Poster Groups

- [P1]** A Belousov-Zhabotinsky Oscillation Driven by a Novel Metal Catalyst.....Group A  
*Masaru Mukai, Natsuko Uchida, Takashi Arimura, Naoki Mitsuyama, Shogo Ikeda and Nobuyoshi Miyamoto*
- [P2]** Design of Self-oscillating Gel without Rare Earth Metal Catalyst ..... Group B  
*Masaru Mukai and Takashi Arimura*
- [P3]** Photochemical regulation of DNA strand exchange using DNA photocrosslinking ..... Group C  
*Shigetaka Nakamura, Hirokazu Hashimoto and Kenzo Fujimoto*
- [P4]** Binary pattern tile set synthesis is NP-hard ..... Group A  
*Lila Kari, Steffen Kopecki, Pierre-Etienne Meunier, Matthew Patitz and Shinnosuke Seki*
- [P5]** Direct analysis of Holliday junction resolving enzyme in a DNA origami nanostructure ..... Group B  
*Yuki Suzuki, Masayuki Endo, Cristina Cañas, Silvia Ayora, Juan Alonso, Hiroshi Sugiyama and Kunio Takeyasu*
- [P6]** Multiple-input logic beacon controlled by cooperatively binding-induced DNA strand displacement ..... Group C  
*Jing Yang and Cheng Zhang*
- [P7]** A Molecular “AND” Logic Gate based on DNA Catenane.....Group A  
*Cheng Zhang and Jing Yang*
- [P8]** AFM Analysis on THz Communications between DNA Devices ..... Group B  
*Miki Hirabayashi, Junichi Hamazaki, Yoshihisa Irimajiri, Norihiko Sekine, Iwao Hosako, Masami Hagiya, Shukichi Tanaka and Hiroaki Kojima*
- [P9]** DNA Foldback Intercoil Structure 3D Modeling and Dynamic Property Analysis based on Elastic Network Model ..... Group C  
*Soojin Jo, Junyoung Son, Sungha Park and Moon Ki Kim*
- [P10]** On the implementation of molecular computing using programmable DNA Tetrominoes .... Group B  
*Hui San Ong, Mohd Syafiq Rahim, Mohd Firdaus Raih and Effirul Ikhwan Ramlan*
- [P11]** Photo-regulation of RNA-protein-based nanostructures ..... Group C  
*Tomonori Shibata, Kenzo Fujimoto, Yuki Suzuki, Hiroshi Sugiyama, Masayuki Endo, Masahiro Takinoue and Hirohide Saito*
- [P12]** An implementation of stochastic computing using DNA hybridization and fluorescence resonance energy transfer ..... Group A  
*Takahiro Nishimura, Yusuke Ogura and Jun Tanida*

- [P13] Self-Assembly of Smart Tiles: The Power of Signals, Detachment and Local Computing . . . Group B  
*Lila Kari, Steffen Kopecki and Amirhossein Simjour*
- [P14] Meta-synthetic metabolism: in silico design of novel amino acids from all-organism data . . . Group C  
*Robert Cox, Masahiko Nakatsui, Hiroki Makiguchi, Teppei Ogawa, Akihiko Kondo and Michihiro Araki*
- [P15] Size Dependent Regulation of Apoptosis with a Series of Equilateral-Triangular Shaped RNA-protein Complexes . . . . . Group A  
*Yoshihiko Fujita, Fumihiko Sagawa, Hirohisa Ohno and Tan Inoue*
- [P16] Square-shaped nanostructures made with RNA-protein interacting module . . . . . Group B  
*Hirohisa Ohno and Tan Inoue*
- [P17] O-Bricks: Cylindrical NanoPegboards Assembled from DNA . . . . . Group C  
*Shelley Wickham, Jianghong Min and William Shih*
- [P18] Two-dimensional assembly of Au nanoparticles through DNA hybridization on supported lipid bilayer . . . . . Group A  
*Takumi Isogai, Eri Akada, Sakiko Nakada, Ryugo Tero, Shunta Harada, Toru Ujihara and Miho Tagawa*
- [P19] Making the intractable tractable: large stochastic simulations through HAS . . . . . Group B  
*Trevor Tanner*
- [P20] Using the DACCAD framework to quickly develop tools for DNA computing system design Group C  
*Nathanael Aubert, Adele Drame-Maigne, Yannick Rondelez and Masami Hagiya*
- [P21] Condition robust nucleic acid detection with toehold probes . . . . . Group A  
*Luvena Ong, Xi Chen, David Zhang and Peng Yin*
- [P22] Complex reconfiguration of DNA nanostructures . . . . . Group B  
*Bryan Wei, Luvena Ong, Jeffrey Chen, Alexander Jaffe and Peng Yin*
- [P23] Tuning the Translational Freedom of DNA for High-Speed AFM . . . . . Group C  
*Andrew Lee, Michal Szymonik, Jamie Hobbs and Christoph Wälti*
- [P24] Nanoscale patterning of complex DNA structures with the bacterial protein Recombinase A. Group A  
*Sybilla Corbett, Rajan Sharma, A. Giles Davies and Christoph Walti*
- [P25] Double Functionalization of Gold Nanorods with Natural and Engineered Lipidic Dispersants for Therapeutics . . . . . Group B  
*Tatsuya Murakami, Hirotaka Nakatsuji, Nobuhiro Morone, John Heuser and Hiroshi Imahori*
- [P26] Force Balances Made from DNA . . . . . Group C  
*Philipp Nickels, Phil Holzmeister, Hans Høiberg, Philip Tinnefeld and Tim Liedl*
- [P27] Robustness of Localized DNA Strand Displacement Cascades . . . . . Group A  
*Mario Teichmann, Enzo Kopperger and Friedrich C. Simmel*
- [P28] Engineering Self-Contained DNA Circuit for Proximity Recognition and Localized Signal Amplification of Target Biomolecules . . . . . Group B  
*Yan Shan Ang and Lin-Yue Lanry Yung*

- [P29] Empirical investigation of importance of cellularity in the RNA world evolution using droplet-based microfluidics ..... Group C  
*Shigeyoshi Matsumura, Faith Coldren, Ádám Kun, Philippe Nghe, Fabrice Jossinet, Eörs Szathmáry, Andrew Griffiths and Michaël Ryckelynck*
- [P30] Self-dimerizing group I ribozymes as a new class of modular units for cooperative editing between two RNA strands ..... Group A  
*Takahiro Tanaka, Hiroyuki Furuta and Yoshiya Ikawa*
- [P31] DNA-based reaction-diffusion waves within microfluidics ..... Group B  
*Adrian Zambrano, Anton Zadorin, Yannick Rondelez, André Estévez-Torres and Jean-Christophe Galas*
- [P32] Construction of helical DNA origami tubes with various sizes and arrangements ..... Group C  
*Masayuki Endo, Seigi Yamamoto, Tomoko Emura, Kumi Hidaka, Nobuhiro Morone, John Heuser and Hiroshi Sugiyama*
- [P33] Evolutionary construction of dynamic biochemical systems performing mathematical calculations ..... Group A  
*Quang Huy Dinh, Hitoshi Iba and Yannick Rondelez*
- [P34] Construction and direct imaging of functional RNA-protein nanostructures for mammalian cell applications ..... Group B  
*Eriko Osada, Yuki Suzuki, Kumi Hidaka, Hirohisa Ohno, Hiroshi Sugiyama, Masayuki Endo and Hirohide Saito*
- [P35] A Sequential DNA Generation Circuit for Directing DNA Nanomachines ..... Group C  
*Ken Komiya, Erimi Harada and Masayuki Yamamura*
- [P36] Diffusive submicron transport of molecules tethered to a supramolecular DNA platform .... Group A  
*Enzo Kopperger, Tobias Pirzer and Friedrich C. Simmel*
- [P37] DNA Nanotechnology Based on Small Circular DNA Molecules ..... Group B  
*Hongning Zheng, Minyu Xiao, Yinzhou Ma and Shou-Jun Xiao*
- [P38] Modelling DNA Origami Self-Assembly ..... Group C  
*Frits Dannenberg, Thomas Ouldrige, Katherine Dunn, Jonathan Bath, Marta Kwiatkowska and Andrew Turberfield*
- [P39] Isothermal Detection of Double-Stranded DNA, Small Molecules, and Oligonucleotides using Modular, Multiplexable, Catalytic DNAzyme Sensors ..... Group A  
*Carl W. Brown Iii, Matthew R. Lakin, Aurora Fabry-Wood, Eli Horwitz, Nicholas A. Baker, Darko Stefanovic and Steven Graves*
- [P40] A generalized model of signal-passing tile assembly ..... Group B  
*Natasha Jonoska and Shinnosuke Seki*
- [P41] Rigid Nanomechanical DNA Origami Devices for Efficient Detection of Biomolecules .... Group C  
*Akinori Kuzuya, Ryosuke Watanabe, Erina Kigoshi, Shinya Minamida, Masafumi Kaino and Yuichi Ohya*
- [P42] Light-triggered signal conversion of DNA to RNA ..... Group A  
*Yukiko Kamiya, Toshiki Takagi, Hiroshi Ito, Xingguo Liang and Hiroyuki Asanuma*

- [P43] Hydrophobicity control of DNA nanostructures ..... Group B  
*Keitel Cervantes-Salguero, Ibuki Kawamata and Satoshi Murata*
- [P44] Computational Research of Automated Microtubule Path Tracking and Microtubule Movement Mechanism on Gliding Assay ..... Group C  
*Bulibuli Mahemuti, Yuexing Han, Daisuke Inoue and Akihiko Konagaya*
- [P45] Photoregulated collapse of 3D microstructure by photo-driven DNA nanodevice ..... Group A  
*Yoshinobu Yamada, Takahiro Muro, Xingguo Liang, Kazunori Matsuura, Yukiko Kamiya and Hiroyuki Aasanuma*
- [P46] Visualization of Hydrogen-bonds of DNA Nano-structures ..... Group B  
*Akito Hara and Akihiko Konagaya*
- [P47] Hybrid Systems as Controllers of Molecular Robots — A Case Study ..... Group C  
*Shaoyu Wang, Nathanael Aubert-Kato and Masami Hagiya*
- [P48] Programmable Energy Landscapes for Kinetic Control ..... Group A  
*Robert Machinek, Thomas Ouldrige, Natalie Haley, Jonathan Bath and Andrew Turberfield*
- [P49] High Precision, High Yield Fabrication of Nanoparticle Arrays via DNA Origami Directed Self-Assembly for Nanophotonics Applications ..... Group B  
*Sadao Takabayashi, William Klein, Craig Onodera, Blake Rapp, Elias Lindau, Lejmarc Snowball, Juan Flores-Estrada, Joseph Sam, Jeunghoon Lee, William Knowlton, Elton Graugnard, Bernard Yurke, Wan Kuang and William Hughes*
- [P50] A study on Nyquist criterion for biochemical reaction systems ..... Group C  
*Ippei Asada and Takashi Nakakuki*
- [P51] The Future of DNA Circuitry: Enhanced Rates and Lower Background ..... Group A  
*John Milligan, Yu Jiang and Andrew Ellington*
- [P52] Supramolecular hydrogel formation through exchange reaction ..... Group B  
*Masato Ikeda, Takuro Kanada, Masamune Morita, Masahiro Takinoue and Yukio Kitade*
- [P53] Multisubjective: better nucleic acid design through fast removal of undesired secondary structure ..... Group C  
*John Sadowski*
- [P54] Chemical reactions of the Lotoka Vorlerra model with small number of molecules ..... Group A  
*Yasuhiro Suzuki*
- [P55] Experimental validation of the connectability of RTRACS modules ..... Group B  
*Toshihiro Kojima, Koh-Ichiroh Shohda and Akira Suyama*
- [P56] In vitro selection of Liposome binding peptide by cDNA display ..... Group C  
*Naoto Nemoto, Toshiki Miyajima, Yuki Yoshikawa and Shota Kobayashi*
- [P57] Trianguated construction motifs for sturdy DNA nanoarchitectures ..... Group A  
*Michael Matthies and Thorsten L Schmidt*
- [P58] Sol-Gel Transition by Formation of DNA Cross-link using Diffusion and Reaction of Programmed Hybridization ..... Group B  
*Ibuki Kawamata, Satoshi Murata and Masami Hagiya*

- [P59] Molecular Computational Modeling of Human Anagram Solving ..... Group C  
*Hyo-Sun Chun, Ji-Hoon Lee, Je-Hwan Ryu, Christina Baek, Eun Seok Lee and Byoung-Tak Zhang*
- [P60] Molecular Rewrite Operation by Mung Bean Nuclease ..... Group A  
*Je-Hwan Ryu, Ji-Hoon Lee and Byoung-Tak Zhang*
- [P61] Use of Symmetric Internal Loops for Molecular Pattern Classification ..... Group B  
*Ji-Hoon Lee, Christina Baek, Hyo-Sun Chun, Je-Hwan Ryu, Russell Deaton and Byoung-Tak Zhang*
- [P62] DNA-based Swarm Intelligence Inspired Computation ..... Group C  
*Rizki Mardian and Kosuke Sekiyama*
- [P63] Stochastic Computation for DNA-based Finite State Machine ..... Group A  
*Rizki Mardian and Kosuke Sekiyama*
- [P64] Tuning Self-Assembly of DNA Nanostructures in Eutectic Solvents ..... Group B  
*Isaac Gallego, Martha A. Grover and Nicholas V. Hud*
- [P65] Reflections on Tiles (in Self-assembly) ..... Group C  
*Jacob Hendricks, Matthew Patitz and Trent Rogers*
- [P66] Reduction of Spurious Triggering in a Catalytic DNA Strand Displacement Cycle:  
Effective Placement of Fuel Strand Mismatches ..... Group A  
*Xiaoping Olson, Shohei Kotani, Jennifer Padilla, Sara Goltry, Natalya Hallstrom, Elton Graugnard, Bernard Yurke and William Hughes*
- [P67] Toward Low-Error Algorithmically Self-Assembling Finite Binary Counters with DNA  
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*Constantine Evans and Erik Winfree*
- [P68] Numerical simulation of dynamic AND gate module ..... Group C  
*Takashi Nukada, Koh-Ichiroh Shohda and Akira Suyama*
- [P69] Reversible Gel-Sol Transition of DNA Gel by using Photo-Responsive Artificial Base ..... Group A  
*Daisuke Kandatsu, Ibuki Kawamata, Shogo Hamada, Shin-Ichiro M. Nomura, Kenzo Fujimoto and Satoshi Murata*
- [P70] Control of input RNA synthesis for gene expression regulation in GUV by external signal  
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*Toru Nishikata, Koh-Ichiro Shohda, Yutetsu Kuruma and Akira Suyama*
- [P71] A maze-solving DNA robot for prototyping complex nanomechanical tasks performed  
using simple molecular components ..... Group C  
*Philip Petersen, Grigory Tikhomirov and Lulu Qian*
- [P72] Approximate Equivalence of Chemical Reaction Networks ..... Group A  
*Boyan Yordanov, Niall Murphy and Andrew Phillips*