Name：Masami Hagiya

Expertise：computer science

Affiliation：Department of Computer Science,
Graduate School of Information Science and Technology,
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Reserch Theme in This Project：

slime-type molecular robot, gellular automata

Main Research Results, Publications：

As the learder of the project I have been managing the activities of the whole project, and as the leader of the slime team I have been guiding the research on slime-type molecular robots. In particular, I proposed the idea of implementing cellular automata by gels (gellular automata), and performed preliminary experiments and theoretical analyses on the mathematical model in which gel walls separating cells are decomposed and restructed. I also did research on controllers of molecular robots, and proposed a framework for implementing hybrid systems by chemical reactions. I am currently investigationg what is intelligence of molecular robots.

Masami Hagiya, Shaoyu Wang, Ibuki Kawamata, Satoshi Murata, Teijiro Isokawa, Ferdinand Peper, Katsunobu Imai: On DNA-Based Gellular Automata, Unconventional Computation and Natural Computation, 13th International Conference, UCNC 2014, Lecture Notes in Computer Science Vol.8553, 2014, pp.177-189. DOI: 10.1007/978-3-319-08123-6_15

Masami Hagiya, Akihiko Konagaya, Satoshi Kobayashi, Hirohide Saito, and Satoshi Murata: Molecular Robots with Sensors and Intelligence, Accounts of Chemical Research, ACS, Vol.47, No.6, 2014, pp.1681-1690. DOI: 10.1021/ar400318d

Nathanael Aubert, Clement Mosca, Teruo Fujii, Masami Hagiya, and Yannick Rondelez: Computer Assisted Design for Scaling Up Systems based on DNA Reaction Networks, Journal of the Royal Society Interface, Vol.11, 20131167, 2014. DOI: 10.1098/rsif.2013.1167

S. Murata, A. Konagaya, S. Kobayashi, H. Saito, and M. Hagiya: Molecular Robotics: A New Paradigm for Artifacts, New Generation Computing, Vol.31, 2013, pp.27-45.

Recent Activities (hobbies, etc.): playing nagauta-shamisen