



## Recent Advances of Molecular Machines and Molecular Robots

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### Message from the Guest Editors

“Recent Advances of Molecular Machines and Molecular Robots” is a highly interdisciplinary research field including material science, chemistry, biotechnology, biophysics, soft matter physics, micro-electromechanical systems (MEMS), and computer science. The interaction between ‘molecular machine engineering’ based on motor protein science/supramolecular chemistry, and ‘molecular robotics’ based on DNA nanotechnology/computing promote the development of nanometer- or micrometer-sized dynamical and programmable robotic systems equipped with molecular sensors and molecular intelligence. In this Special Issue, we would like you to contribute research papers, short communications, and review articles related to molecular machine engineering and molecular robotics from a wide range of research fields. By overviewing the recent advances in this field, we would like to ferment seeds of future applications such as medical microrobots, intelligent drug delivery systems, artificial cells/organelles, environmental nano/microsensor robots, agricultural nano/microrobots, and unconventional brain-like computers.

### Keywords

- Molecular Robotics
- Molecular Machine Engineering
- DNA Nanotechnology, DNA Computing, and Molecular Programming
- Artificial Cell/Organelle Engineering
- Bio Micro Electro Mechanical Systems (BioMEMS), Biomicrofluidics, and Micro-Total Analysis Systems (MicroTAS)
- Biophysics, Soft Matter Physics, and Active Matter Physics
- Polymer Chemistry and Supramolecular Chemistry
- Protein Engineering and Peptide Engineering
- Liposomes and Lipid Bilayer Systems
- Medical applications, Agricultural applications, and Environmental applications