

【Abstract of 2008 Grant – in – Aid for Scientific Research on Innovative Areas
(Research in a proposed research area)】

Title of project	Emergent chemistry of nano-scale molecular systems
Head Investigator Name	Tomoji Kawai
Abstract of Research Project	“Emergence in chemistry”, which is the central issue of this project, means the appearance of structural hierarchy and highly functionalized properties of molecular systems beyond individual molecule. The purpose of the project is investigations of method and principle for the formation of nano-scale materials and systems under the fusion of molecular design and utilization of nonequilibrium processes including fluctuation and dissipation. It is obvious that such approach is promising and fruitful route to realization of nano-scale molecular systems because life adopts self-organization based on the molecular information and nonequilibrium open system. Prospective achievements are spontaneous formation of huge supramolecules consisting of numerous molecular components, creation of stimulus-sensitive nanomolecular systems and nanomaterials responding to circumstances. Furthermore, device-oriented researches using lithography technique are planned.
Term of Project: 2008–2012	