



## Guest editorial

This special issue contains 16 papers, the subjects of which were presented during the 12th International Conference on Unconventional Photoactive Systems (UPS-12) held in Sendai from 2 to 6 October 2005. Since the first conference in 1983, the conference has been held every 2 years in cities in the USA, Europe and Japan, for presentation and discussion on photochemistry in various kinds of materials. Materials photochemistry rests at the foundation of a variety of technologies including optical-recording, photo-emissive displays, photo-energy conversion and laser-material processing. As such, photo-science is recognized as an important research field that both supports and feeds into the modern society of this century. In this field, numerous new phenomena have been found with the introduction of femtosecond lasers, which are expected to lead to the conception of new photo-functional systems. Furthermore, the development of super-resolution techniques like scanning probe microscopy has enabled us to observe not only the structures but also the reactions of single molecules. The advancement of these new techniques is bringing us ever closer to several breakthroughs in the research field of unconventional photoactive systems. Thus, the scope of UPS-12 covered a wide range of fundamental and applied photochemistry.

Many interesting contributions containing keywords such as organic/inorganic nano-particles, single molecules, surface plasmon, organic opto/electronic devices, photo-switchable systems, nonlinear responses, surface spectroscopy, terahertz spectroscopy, and so were all brought together in this meeting. As a result, we had one keynote lecture, 13 invited talks, 26 oral presentations, and 53 poster presentations. The number of the overall participants reached to 133 involving 35 overseas scientists. The conference was supported by the Chemical Society of Japan, the Japan Society of Applied Physics, the Society of Polymer Science, Japan, and the Japanese Photochemistry Association. Eight commercial companies and the Sendai Convention Bureau financially supported the Conference. Sendai is a local city located 350 km north of Tokyo, but has an academic history dating from the beginning of 20th century. Tohoku Impe-

rial University was founded here in 1907 as the Third Imperial University in Japan. The University was the first one in Japan to accept women students, enrolling three in 1911, an act that was against the government intention in that time. In 1922 Albert Einstein and in 1937 Niels Bohr visited the University to discuss trends in physics. It is also a part of the proud history of the University that Lu Xun, the father of modern Chinese literature, studied here as a medical student in his early career. Thus, the University has kept the open-door policy for women and overseas students for a long time. The chairs of UPS-12, Professors Hachiro Nakanishi and Hiroshi Fukumura believe that this open atmosphere in the city has affected all of the participants leading to free and pleasant discussion throughout the conference.

The papers in this special issue can be categorized into photo-sciences of organic crystals, polymers, nano-particles, quantum dots and wells, from the viewpoint of objective materials. Each paper has a different aspect like microscopic ultra-fast spectroscopy, singlet and triplet excitons, photochromism, lanthanide fluorescence, quantum dot-polymer interaction, laser implantation, laser ablation yielding colloids, anomalous diffusion, photo and thermal responsive membranes, plasmon resonance, nonlinear optical response, and THz generation. All of the papers have diverse flavors of rising modern science bridging from the end of 20th century to this new century, which I am sure will be of great interest to readers of this journal. As guest editor, I am very pleased to have this opportunity to edit such valuable papers, and would like to thank all contributors of this special issue. Finally I would like to acknowledge Dr. Jonathan Hobley for his constant support to prepare this special issue.

Hiroshi Fukumura\*

*Tohoku University, Sendai 980-8578, Japan*

\* Tel.: +81 22 795 6567; fax: +81 22 795 6570.

*E-mail address: [fukumura@orgphys.chem.tohoku.ac.jp](mailto:fukumura@orgphys.chem.tohoku.ac.jp)*

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