International Workshop on

Mesomorphic Advanced Materials and Nanotechnology

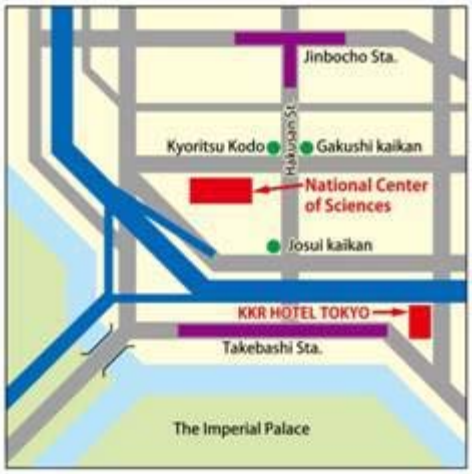
- MAMN 2009 -

Date: March 9-10, 2009
Venue: National Center of Sciences
2-1-2 Hitotsubashi, Chiyoda-ku, Tokyo 101-8430
Sponsor: Nanotechnology Research Institute,
National Institute of Advanced Industrial Science and Technology

Scope:
Mesomorphism is characterized by the presence of spontaneously broken symmetry in simple liquids in at least one of the degrees of freedom for molecular conformation, orientation, translation, and/or packing. The mesomorphic materials thus formed possess a flexible order that gives rise to unique static and dynamical properties. Liquid crystals and polymers have been the best known examples with deeply cultivated scientific ground and revolutionary industrial applications; The field of mesomorphic materials, however, has been rapidly expanding to embrace wide range of nano-composites, biological materials and even living organisms.

Soaring interest and demand in the so-called green nanotechnology is generating a global thrust toward the deeper understanding of mesomorphism, exploration and design of novel mesomorphic materials, and their practical applications to the sustainable technology.

The aim of this meeting is to bring together the leaders in the field of nanostructured liquid crystals, soft-matter, their electro-optic applications, and beyond to discuss the future possibilities of the field of mesomorphic materials and the need for strategic global networking of experts.



The attendance is limited to 40 participants by invitation only.

Program (Tentative)

March 9 (Monday), 2009

9:00 - 9:30 Hiroshi Yokoyama (AIST, Japan)
Opening Remarks: Challenge and Opportunity in Nanotechnology of Mesomorphic Materials

Discussion Leader: Isa Nishiyama (DIC, Japan)

9:30 - 10:15 Charles Rosenblatt (Case Western Reserve University, USA)
Optical Nanotomography of Anisotropic Fluids

10:15 - 10:45 Coffee Break

10:45 - 11:30 Jun Hanna (Tokyo Institute of Technology, Japan)
Liquid crystals as a quality organic semiconductor and their application to field effect transistors

11:30 - 12:15 Tomiki Ikeda (Tokyo Institute of Technology, Japan)
Photomobile Polymer Materials - Various Three-Dimensional Movements

12:15 – 14:00 Lunch

Discussion Leader:

14:00 - 4:45 Ping Sheng (Hong Kong University of Science and Technology, Hong Kong)
Onsager Principle and the Nanoscale Hydrodynamics of Immiscible Flows

14:45 - 15:30 Masao Doi (University of Tokyo, Japan)
Drying Process of a Droplet of Polymer Solution on a Substrate

15:30 – 16:15 Sin-Doo Lee (Seoul National University, Korea)
Elasticity-Based Reconstitution of Lipid Rafts and Micropatterning of Red Blood Cells

16:15 – 16:45 Coffee Break

Discussion Leader: Jun Yamamoto (Kyoto University, Japan)

16:45 – 17:30 Hideo Takezoe (Tokyo Institute of Technology, Japan)
Induced optical activity of achiral rod-like molecules nano-segregated in the B4 structure of achiral bent-core molecules

17:30 – 18:15 Matt Glaser (University of Colorado, USA)
B4 and dark conglomerate (Tentative)

18:30 - Banquet

March 10 (Tuesday), 2009

Discussion Leader: Yuka Tabe (Waseda University, Japan)

9:00 - 9:45 Peter Palffy-Muhoray (Kent State University, USA)
Orientationally Ordered Nanocolloids

9:45 - 10:30 Kozo Ito (University of Tokyo, Japan)

Supramolecular Slide-Ring Materials: Novel Concept of Polymer Crosslinks

10:30 - 11:00 Coffee Break

Discussion Leader: Masahito Oh-e (Hitachi, Japan)

11:00 - 11:45 Oleg D. Lavrentovich (Kent State University, USA)
Dynamics of Colloidal Particles in Liquid Crystals

11:45 - 12:30 Kenichi Yoshikawa (Kyoto University, Japan)
Emergence of spatio-temporal order under constant laser illumination

12:30 – 14:00 Lunch

Discussion Leader: Makoto Yoneya (AIST, Japan)

14:00 - 14:45 Claudio Zannoni (Bologna University, Italy)
The Role of Modelling and Simulations for Device and Non-device Applications of Liquid Crystals

14:45 - 15:30 Hirotsugu Kikuchi (Kyushu University, Japan)
Polymer-Stabilized Cholesteric Blue Phases for Electro-optic Applications.

15:30 – 16:00 Coffee Break

16:00 – 16:45 T.B.A.

16:45 – 17:00 Closing