Program of the 1st international symposium on SOMS

Tuesday February 21, 2012

13:00-13:10 Opening Remarks
Jun-ichi Hanna (Tokyo Institute of Technology)
Yasuhiro Horiike (Research Supervisor at Japan Science and Technology, JST, Agency)

13:10-13:30 Dietrich Haarer (University of Bayreuth, Germany)
I-1
Electronic mobilities: The key issue of molecular electronics

13:30-14:10 Jun-ichi Hanna (Tokyo Institute of Technology, Japan)
O-1
Present status and future prospects of calamitic self-organizing molecular semiconductors -from materials to device applications-

14:10-14:40 Akira Ohno (Tokyo Institute of Technology, Japan)
O-2
Diagonal disorder and carrier transport in smectic liquid crystals

14:40-15:10 Hiroaki Iino (Tokyo Institute of Technology, Japan)
O-3
Availability of liquid crystallinity in solution processing for polycrystalline thin films and application to organic transistor

Coffee break

15:30-15:50 Yukiko Takayashiki (Tokyo Institute of Technology, Japan)
O-4
Effects of molecular structures on carrier transport properties in calamitic liquid crystalline materials

15:50-16:20 Hiroki Maeda (Dai Nippon Printing Co., Ltd., Japan)
O-5
Device applications of LC organic semiconductors

16:20-16:40 Shinya Fujimoto (Dai Nippon Printing Co., Ltd., Japan)
O-6
New fabrication method for LC organic semiconductors

Coffee break

17:00-17:40 Martin Heeney (Imperial College London, UK)
I-2
Design of high mobility semi-conducting polymers for field effect transistors

17:40-18:10 Shizuo Tokito (Yamagata University, Japan)
I-3
Structural Control of Highly-Ordered Liquid Crystalline Semiconducting Polymers and their Application to Thin-Film Transistors
**Wednesday February 22, 2012**

<table>
<thead>
<tr>
<th>Time</th>
<th>Speaker</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:00-9:40</td>
<td>Sandeep Kumar (Raman Research Institute, India)</td>
<td>Discotic liquid crystal nanocomposites: A new class of organic semiconductors</td>
</tr>
<tr>
<td>9:40-10:10</td>
<td>Takuzo Aida (University of Tokyo, Japan)</td>
<td>Molecularly engineered liquid crystals for organic electronics</td>
</tr>
<tr>
<td></td>
<td>Coffee break</td>
<td></td>
</tr>
<tr>
<td>10:00-10:30</td>
<td>Wojciech Pisula (Max Planck Institute, Germany)</td>
<td>Discotic polycyclic aromatic hydrocarbons as organic semiconductors</td>
</tr>
<tr>
<td>10:30-11:10</td>
<td>James Kirkpatrick (University of Oxford, UK)</td>
<td>Multi-scale simulations of charge hopping in organic semiconductors: applications to discotic liquid crystals and recent developments</td>
</tr>
<tr>
<td></td>
<td>Lunch time</td>
<td></td>
</tr>
<tr>
<td>13:30-14:00</td>
<td>Yo Shimizu (Advanced Industrial Science and Technology, Japan)</td>
<td>Miscibility and phase separation in mesophase towards the spontaneous formation of well-controlled orders of molecules</td>
</tr>
<tr>
<td>14:00-14:30</td>
<td>Masanori Ozaki (Osaka University, Japan)</td>
<td>Solution-processed bulk-heterojunction solar cell based on liquid crystalline phthalocyanine</td>
</tr>
<tr>
<td>14:30-15:10</td>
<td>Mary O’Neill (University of Hull, UK)</td>
<td>Materials, properties, and device applications of nematic liquid crystalline materials</td>
</tr>
<tr>
<td></td>
<td>Coffee break</td>
<td></td>
</tr>
<tr>
<td>15:30-16:10</td>
<td>Yves Geerts (Université libre de Bruxelles, Belgium)</td>
<td>A chemist approach to order in molecular semiconductors</td>
</tr>
<tr>
<td>16:10-16:40</td>
<td>Masahiro Funahashi (Kagawa University, Japan)</td>
<td>New electronic functions of liquid-crystalline semiconductors produced by nanosegregation</td>
</tr>
<tr>
<td>16:40-16:50</td>
<td>Closing Remarks (Jun-ichi Hanna)</td>
<td></td>
</tr>
<tr>
<td>17:00-19:00</td>
<td>Poster session (Light foods and soft drinks will be provided)</td>
<td>Poster session (Light foods and soft drinks will be provided)</td>
</tr>
<tr>
<td>Poster session</td>
<td></td>
<td></td>
</tr>
<tr>
<td>----------------</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| **P-1** | **Alignment Control of Mesophase Semiconductors with Infrared Laser Irradiation**  
Hirosato Monobe and Yo Shimizu (National Institute of Advanced Industrial Science and Technology) |
| **P-2** | **Phase transition and Charge transport Properties in np-Octahexylphthalocyanine/PCBM blends**  
Fabien Nekelson, Tetsuro Hori, Yasuo Miyake, Naoki Fukuoka, Kouji Miyamoto, Takeshi Hayashi, Hiroyuki Yoshida, Akihiko Fujii, Masanori Ozaki, and Yo Shimizu (National Institute of Advanced Industrial Science and Technology) |
| **P-3** | **Polymorph Selection in Pentacene Thin-Films on a Model Substrate: Molecular Dynamics Simulation Study**  
Makoto Yoneya, Masahiro Kawasaki, and Masahiko Ando (National Institute of Advanced Industrial Science and Technology) |
| **P-4** | **Characterization of Organic Transistors with a Self-Organizing Polycrystalline Semiconductor**  
Takeyoshi Tokuhara, Tomoyuki Yokota, Tsuyoshi Sekitani, and Takao Someya  
(University of Tokyo) |
| **P-5** | **Thermal press crystallization of organic semiconductor materials for flexible sheet electronics**  
M. Sakai, A. Inoue, T. Okamoto, Y. Joho, H. Yamauchi, S. Kuniyoshi, M. Nakamura, and K. Kudo (Chiba University) |
| **P-6** | **Highly Soluble Discotic Liquid-Crystalline Materials Based on Triphenylene and Hexabenzocoronene with Trialkylsilylethynyl Groups**  
Yutaro Miyazaki, Mikio Yasutake, and Takuji Hirose (Saitama University) |
| **P-7** | **Photoconductivity of Self-Assembled Hexabenzocoronene Nanotube: Insight into the Charge Carrier Mobilities on Local and Long-Range Scales**  
Y. Koizumi, A. Saeki, Y. Yamamoto, T. Fukushima, T. Aida, and S. Seki (Osaka University) |
| **P-8** | **Control of the orientation of CuPc nanorods in organic solar cell by inserting self-organizing molecular semiconductor**  
T. Ueno and K. Ishikawa (Tokyo Institute of Technology) |
| **P-9** | **Solution-processed polycrystalline thin film OFETs fabricated with liquid crystalline thin films as a precursor**  
Hiroaki lino and Jun-ichi Hanna (Tokyo Institute of Technology) |
| **P-10** | **Enhanced thermal stability in solution-processed OFETs featured by highly ordered liquid crystal phase**  
Hiroaki lino, Takayuki Usui, Takeo Kobori, and Jun-ichi Hanna (Tokyo Institute of Technology) |
| **P-11** | **Control of conductivity in liquid crystalline material using micro phase separated structure**  
Hiroaki lino, Syoichi Konishi and Jun-ichi Hanna (Tokyo Institute of Technology) |
P-12 **Bulk mobility in liquid crystalline phases of Benzothienobenzothiophene derivatives**  
Hiroaki Iino, Takayuki Usui, Takeo Kobori, Akira Ohno and Jun-ichi Hanna  
(Tokyo Institute of Technology)

P-13 **Intrinsic carrier transport Mechanism in Organic Liquids**  
Hiroaki Iino and Jun-ichi Hanna  
(Tokyo Institute of Technology)

P-14 **Charge Transport in Organic Liquids Doped with Chemical Impurities**  
Shota Matsudo, Hiroaki Iino, and Jun-ichi Hanna  
(Tokyo Institute of Technology)

P-15 **Improved Luminance in Electrochemiluminescent Cells in Balanced Effective Concentration of Cations and Anions**  
Shota Matsudo, Hiroaki Iino, and Jun-ichi Hanna  
(Tokyo Institute of Technology)

P-16 **Disorder model based on Marcus hopping rate for charge carrier transport in liquid crystals**  
Akira Ohno and Jun-ichi Hanna  
(Tokyo Institute of Technology)

P-17 **Effect of dipoles on carrier transport of self organizing molecular semiconductor**  
Akira Ohno and Jun-ichi Hanna  
(Tokyo Institute of Technology)

P-18 **Molecular Design led by quantum chemical calculation**  
Akira Ohno and Jun-ichi Hanna  
(Tokyo Institute of Technology)

P-19 **Extraction of Trap Distribution in Smectic Liquid Crystals by Time-of-Flight Spectroscopy**  
Akira Ohno and Jun-ichi Hanna  
(Tokyo Institute of Technology)

P-20 **Synthesis and characterization of ferroelectric liquid crystalline p-terphenyl derivatives and their carrier transport properties**  
Yukiko Takayashiki, Takahiro Kida, Hiroaki Iino, and Jun-ichi Hanna  
(Tokyo Institute of Technology)

P-21 **Efficient carrier injection at the interface of a ferroelectric liquid crystal/electrodes and its application to light-emitting diodes**  
Miho Higuchi, Shotaro Hoshi, Takahiro Kida, Yukiko Takayashiki, Hiroaki Iino, and Jun-ichi Hanna  
(Tokyo Institute of Technology)

P-22 **Organic Light-emitting Cells with Smectic Liquid Crystalline Material**  
Kyohei Nakano, Hiroaki Iino, Yukiko Takayashiki, Takayuki Usui, and Jun-ichi Hanna  
(Tokyo Institute of Technology)

P-23 **Improved Carrier Injection in Liquid Crystals with OH group at ω-position of Side Chain**  
Yuya Kimura, Kyohei Nakano, Takeo Kobori, Manami Tsuneda, Hiroaki Iino, and Jun-ichi Hanna  
(Tokyo Institute of Technology)

P-24 **Improved Efficiency and Molecular Orientation in Thermally Annealed Bulk Hetero-junction Solar Cells with Smectic Liquid Crystalline Material**  
Kyohei Nakano, Hiroaki Iino, Yukiko Takayashiki, Takayuki Usui, and Jun-ichi Hanna  
(Tokyo Institute of Technology)
P-25 Synthesis and phase transition behavior of liquid-crystalline polymers prepared by atom transfer radical polymerization
Kei Kato, Jun-ichi Mamiya, Motoi Kinoshita, and Atsushi Shishido (Tokyo Institute of Technology)

P-26 Motion analysis of soft matter by means of two-dimensional surface labeled gratings
Norihisa Akamatsu, Jun-ichi Mamiya, Motoi Kinoshita, and Atsushi Shishido (Tokyo Institute of Technology)

P-27 Development of photofunctional polymer materials showing molecular reorientation behavior by photophysical process
Yousuke Aihara, Jun-ichi Mamiya, Motoi Kinoshita, and Atsushi Shishido (Tokyo Institute of Technology)

P-28 Photoalignment behavior of laser dye-doped liquid crystals
Motoi Kinoshita (Tokyo Institute of Technology)

P-29 Fabrication of bilayer crosslinked liquid-crystalline polymer films with a periodic structure
Ryoichi Tatsumi, Jun-ichi Mamiya, Motoi Kinoshita, and Atsushi Shishido (Tokyo Institute of Technology)

P-30 Effect of molecular alignment on photoinduced bending in crosslinked azobenzene liquid-crystalline polymers
Keiji Ogawa, Jun-ichi Mamiya, Motoi Kinoshita, Atsushi Shishido, and Tomiki Ikeda (Tokyo Institute of Technology)