

# **The Second International Symposium on Interdisciplinary Materials Science (ISIMS-2009)**

March 9 -10, 2009

Tsukuba

## **Program & List of Poster Presentations**

Strategic Initiative for  
Interdisciplinary Materials Science  
University of Tsukuba

## Program

### March 9 (Monday)

9:20 - Opening  
Akira Ukawa (*Executive Advisor to the President, University of Tsukuba*)

#### **Session 1    *Functionality in Molecular Assembly***

*chairmen: Yutaka Moritomo, Toshiaki Hattori*

9:30 - 10:10      **Nanoparticles of Switchable Iron (II) Spin-crossover Materials: Molecular Engineering in Confined Media**  
**IL-1**                      Jean-François Létard (*Groupe des Sciences Moléculaires, Université Bordeaux*)..... 1

10:10 - 10:35      **Functionality of Prussian Blue Lattice Mediated by Guest-host Interaction**  
**IL-2**                      Yutaka Moritomo (*Department of Physics, University of Tsukuba*)..... 2

10:35 - 10:45      Break

10:45 - 11:10      **Molecular Donor-Acceptor Compounds as Functional Components of Organic Field-Effect Transistors**  
**IL-3**                      Tatsuo Hasegawa (*Photonic Research Institute (PRI), National Institute of Advanced Industrial Science and Technology (AIST)*)..... 3

11:10 - 11:35      **Ferromagnetic Properties of Alkali-Metal Clusters Arrayed in Zeolite Crystals**  
**IL-4**                      Yasuo Nozue (*Department of Physics, Graduate of Science, Osaka University*)..... 4

11:35 - 12:00      **Physical Properties in Nano-Assembled Materials: Endohedral Atoms and Molecules in Confined Nanospaces**  
**IL-5**                      Katsumi Tanigaki (*TU-WPI, Department of Physics, Graduate of Science, Tohoku University*)..... 5

12:00 - 13:30      Lunch

13:30 - 15:20      **Poster Session**

#### **Session 2    *Specific Field and Functional Molecules***

*Chairmen: Toshiharu Teranishi, Tatsuya Nabeshima*

15:30 - 16:20      **Supramolecular Fluorescent Probes for Bioimaging**

|               |   |   |
|---------------|---|---|
| <b>IL-6</b>   | Bradley D. Smith ( <i>Department of Chemistry and Biochemistry, University of Notre Dame</i> ).....   | 6 |
| 16:20 - 16:55 | <b>Molecular Response System Based on Hexaphenylethanes : Toward the Realization of Unimolecular Memory and Multi-functional Properties</b> |   |
| <b>IL-7</b>   | Takanori Suzuki ( <i>Department of Chemistry, Faculty of Science, Hokkaido University</i> ).....  | 7 |
| 16:55 - 17:05 | Break   |   |
| 17:05 - 17:40 | <b>Photochemistry on Nano-engineered Au Structures</b>  |   |
| <b>IL-8</b>   | Hiroaki Misawa ( <i>Research Institute for Electronic Science, Hokkaido University</i> )..  | 8 |
| 17:40 - 18:00 | <b>Reactivity of Disilyne with a Silicon-Silicon Triple Bond</b>  |   |
| <b>IL-9</b>   | Masaaki Ichinohe ( <i>Department of Chemistry, University of Tsukuba</i> ).....   | 9 |
| 18:30 -       | Reception   |   |

## March 10 (Tuesday)

### Session 3 *Surface and Interface Science*

*chairmen: Kikuo Yamabe, Takaki Kanbara*

|               |  |    |
|---------------|--|----|
| 9:00 - 9:40   | <b>Spin Detection with a Scanning Tunneling Microscope</b>   |    |
| <b>IL-10</b>  | Qi-Kun Xue ( <i>Department of Physics, Tsinghua University</i> ).....  | 10 |
| 9:40 - 10:00  | <b>Atomically Controlled Diamond Surfaces</b>  |    |
| <b>IL-11</b>  | Norio Tokuda ( <i>Nanotechnology Research Institute, National Institute of Advanced Industrial Science and Technology</i> )..... | 11 |
| 10:00 - 10:20 | <b>Microscopic Analysis on Surface Roughness of SiO<sub>2</sub> Films Grown on Atomically Flat Si (111)</b>                      |    |
| <b>IL-12</b>  | Ryu Hasunuma ( <i>Graduate School of Pure and Applied Science, University of Tsukuba</i> ).....                                  | 12 |
| 10:20 - 10:30 | Break  |    |
| 10:30 - 11:10 | <b>STM/AFM Studies of Self-Assembled Monolayers and Molecular Recognition</b>  |    |
| <b>IL-13</b>  | Masahiko Hara ( <i>Tokyo Institute of Technology and RIKEN Advanced Science</i>  |    |

|   |   |    |
|---|---|----|
|   | <i>Institute)</i> .....   | 13 |
| 11:10 - 11:30   | <b>Forming Highly Ordered Arrays of DNA Nanofibers by Solvent Evaporation</b>   |    |
| <b>IL-14</b>  | Hidenobu Nakao ( <i>Organic Nanomaterials Center, National Institute for Materials Science</i> ).....                           | 14 |
| 11:30 - 13:00   | Lunch   |    |
| <b>Session 4 Environmental and Biomaterial Science and Technology</b> |   |    |
| <i>chairmen: Yukio Nagasaki, Keiichi Tomishige</i>                    |   |    |
| 13:00 - 13:30   | <b>Biomass - A Solution for Energy and Environment</b>  |    |
| <b>IL-15</b>  | Mohammad Asadullah ( <i>Department of Applied Chemistry and Chemical Technology, University of Rajshahi</i> ).....              | 15 |
| 13:30 - 13:50   | <b>Development of Catalysts for Conversion of Biomass to Fuels and Value-added Chemicals</b>                                    |    |
| <b>IL-16</b>  | Keiichi Tomishige ( <i>Graduate School of Pure and Applied Sciences, University of Tsukuba; JST, CREST; MANA, NIMS</i> ).....   | 16 |
| 13:50 - 14:20   | <b>Green Chemistry: Transformation of Carbon Dioxide to Carbonates</b>  |    |
| <b>IL-17</b>  | Hiroyuki Yasuda ( <i>National Institute of Advanced Industrial Science and Technology (AIST)</i> ).....                         | 17 |
| 14:20 - 14:30   | Break   |    |
| 14:30 - 15:00   | <b>Nano Photocatalysis: An Ultimate Green Technology for a Sustainable Society</b>  |    |
| <b>IL-18</b>  | Jinhua Ye ( <i>International Center for Materials Nanoarchitectonics (MANA); Photocatalytic Materials Science (NIMS)</i> )..... | 18 |
| 15:00 - 15:30   | <b>Synthesis of Renewable Chemicals by Catalytic Conversion of Non-food Biomass</b>   |    |
| <b>IL-19</b>  | Atsushi Fukuoka ( <i>Catalysis Research Center, Hokkaido University</i> ).....  | 19 |
| 15:30   | Closing   |    |
|   | Youiti Ootuka ( <i>TIMS, University of Tsukuba</i> )  |    |

# List of Poster Presentation

- P- 001    Optical Investigation on Sulfur Doping Effects in Titanium Dioxide Nanoparticles**  
X.W. Wu<sup>1</sup>, D.J. Wu, and X.J. Liu<sup>2</sup>  
*1 Department of Physics, University of Tsukuba*  
*2 Department of Electronic Science and Engineering, Key Lab of Modern Acoustics of MOE, Nanjing University*
- P-002    Properties of Intrinsic Josephson Junction of Iodine Intercalated Bi<sub>2</sub>Sr<sub>2</sub>CaCu<sub>2</sub>O<sub>8+δ</sub> ( I-Bi2212 ) Single Crystal**  
Shun Sato and Kazuo Kadowaki  
*Institute of Materials Science, University of Tsukuba*
- P-003    Fabrication and Physical Properties of Rare-earth<sub>123</sub> Based Whiskers**  
Shinya Hashimoto and Kazuo Kadowaki  
*Institute of Materials Science, University of Tsukuba*
- P-004    Strong Emission from Rectangular Mesa of Intrinsic Josephson Junctions (IJJ's)**  
Kazuhiro Yamaki, Manabu Tsujimoto, Hayato Yamaguchi, Takashi Yamamoto, Hidetoshi Minami, and Kazuo Kadowaki  
*Graduate School of Pure and Applied Sciences, University of Tsukuba,*
- P-005    Present Understanding of Bi2212 THz resonator**  
Hayato Yamaguchi<sup>1,2</sup>, Itsuhiro Kakeya<sup>2,3</sup>, Hidetoshi Minami<sup>1,2</sup>, Manabu Tsujimoto<sup>1,2</sup>, Kazuhiro Yamaki<sup>1,2</sup>, Takashi Yamamoto<sup>1,2</sup> and Kazuo Kadowaki<sup>1,2</sup>  
*1 Institute of Materials Science, University of Tsukuba*  
*2 JST-CREST, Japan*  
*3 Department of Electronic Science and Engineering, Kyoto University,*
- P-006    Mechanism of Terahertz Electromagnetic Wave Emission from Intrinsic Josephson Junctions**  
Shouta Fukuya  
*Institute for Solid State Physics, University of Tokyo*
- P-007    Electronic and Magnetic Properties of Valence-Controlled Ni-Fe Cyanide**  
Takayuki Shibata, Fumiya Nakada, Hayato Kamioka, and Yutaka Moritomo  
*Graduate School of Pure and Applied Sciences, University of Tsukuba*

- P-008 Prussian Blue Junction and Electric Pressure-Induced Ferromagnetism**  
Takayuki Shibata and Yutaka Moritomo  
*Graduate School of Pure and Applied Sciences, University of Tsukuba*
- P-009 Valence-differential Spectroscopy of Fe-Fe Cyanide**  
Yutaro Kurihara<sup>1</sup>, Fumiya Nakada<sup>2</sup>, and Yutaka Moritomo<sup>2</sup>  
*1 College of Natural Sciences, University of Tsukuba*  
*2 Graduate School of Pure and Applied Sciences, University of Tsukuba*
- P-010 Control of the Spin State Transition by Guest Water in Prussian-blue Type Co-Fe Cyanide**  
Fumiya Nakada<sup>1</sup>, Jungenu Kim<sup>2</sup>, Masaki Takata<sup>3</sup>, and Yutaka Moritomo<sup>1</sup>  
*1 Department of Physics, University of Tsukuba*  
*2 Japan Synchrotron Radiation Research Institute/Spring-8,*  
*3 Spring-8/RIKEN*
- P-011 Valence-differential Spectroscopy of Co-Fe Prussian Blue Analogues**  
Fumiya Nakada and Yutaka Moritomo,  
*Department of Physics, University of Tsukuba,*
- P-012 Negative Thermal Expansion in Metal Hexacyanoferrates**  
Tomoyuki Matsuda<sup>1</sup>, Jungeun Kim<sup>2</sup>, Kenji Ohoyama<sup>3</sup>, and Yutaka Moritomo<sup>1</sup>  
*1 Department of Physics, University of Tsukuba*  
*2 JASRI/Spring-8*  
*3 Institute for Materials Research, Tohoku University,*
- P-013 Observation of Octahedral Rotation under Pressure in RbMn[Fe(CN)<sub>6</sub>]**  
Tomoyuki Matsuda<sup>1</sup>, XiaoJun Liu<sup>2</sup>, Hiroko Tokoro<sup>3</sup>, Shin-ichi Ohkoshi<sup>3</sup>, and Yutaka Moritomo<sup>1</sup>  
*1 Department of Physics, University of Tsukuba*  
*2 Department of Electronic Science and Engineering, Nanjing University*  
*3 Department of Chemistry, University of Tokyo,*
- P-014 Time-resolved Spectroscopy of Fe-Co cyanide Films**  
Hayato Kamioka<sup>1,2</sup>, Fumiya Nakada<sup>1</sup>, Kazuhiro Igarashi<sup>1</sup>, and Yutaka Moritomo<sup>1,2</sup>  
*1 Graduate School of Pure and Applied Sciences, University of Tsukuba*  
*2 CREST, Japan Science and Technology Corporation*
- P-015 Magnetization Measurement of Small Specimen Using a Micro-SQUID at Very Low**

## **Temperature**

Toru Yamagishi<sup>1</sup>, Yuna Nakashima<sup>2</sup>, and Youiti Ootuka<sup>1,2,3</sup>

*1 Graduate School of Pure and applied Sciences, University of Tsukuba*

*2 College of Natural sciences, University of Tsukuba*

*3 Tsukuba Research Institute for Interdisciplinary Materials Science, University of Tsukuba*

### **P-016 Edge States of S=1/2 Spin Ladder with Four-Spin Ring Exchange**

Shou Tanaya<sup>1</sup>, Mitsuhiro Arikawa<sup>1</sup>, Isao Maruyama<sup>2</sup>, and Yasuhiro Hatsugai<sup>1</sup>

*1 Institute of Physics, University of Tsukuba*

*2 Graduate School of Engineering Science, Osaka University*

### **P-017 Electron Correlations and Thermoelectric Effects for the Metal – band Insulator Crossover of the Perovskite Titanium Oxides**

Masashige Onoda and Ikuo Goto

*Institute of Physics, University of Tsukuba*

### **P-018 NMR Study for the Triangular Lattice Metal CoO<sub>2</sub> with a Three-layer Structure**

Asami Sugawara and Masashige Onoda

*Institute of Physics, University of Tsukuba,*

### **P-019 Thermoelectric Effects of the Multifunctional Composite Crystal Cu<sub>x</sub>V<sub>4</sub>O<sub>11</sub> System**

Hisashi Ishikawa and Masashige Onoda

*Institute of Physics, University of Tsukuba*

### **P-020 Synthesize and Superconducting Properties of Superconducting Graphite Intercalation Compounds**

Mizuho Namai and Kazuo Kadowaki

*Institute of Materials Science, University of Tsukuba*

### **P-021 Variation in the Electronic Structure of Hole-doped Co-Fe Cyanides**

K.Igarashi, F.Nakada, H.Kamioka, and Y.Moritomo

*Graduate school of pure and applied sciences, University of Tsukuba*

### **P-022 Optical Response of the Transport Properties of S-Sm-S Junctions**

K. Tsumura<sup>1,2</sup>, S. Nomura<sup>1,3</sup>, T. Akazaki<sup>3,4</sup>, and H. Takayanagi<sup>5,6</sup>

*1 Institute of Physics, University of Tsukuba*

*2 JSPS Research Fellowship for Young Scientists DC*

*3 NTT Basic Research Laboratories, NTT Corporation*

4 CREST-Japan Science and Technology Agency

5 Research Institute for Science and Technology, Tokyo University of Science

6 MANA, National Institute for Material Science

**P-023    Temperature Dependence of Electron Tunneling from Two Dimensional Electron Gas to Quantum Dots**

Yoko Sakurai<sup>1</sup>, Shintaro Nomura<sup>1</sup>, Yukihiro Takada<sup>1</sup>, Kenji Shiraishi<sup>1</sup>,  
Masakazu Muraguchi<sup>2</sup>, Tetsuo Endoh<sup>2</sup>, Mitsuhsa Ikeda<sup>3</sup>, Katsunori Makihara<sup>3</sup>, and Seiichi Miyazaki<sup>3</sup>

1 Graduate School of Pure and Applied Science, University of Tsukuba

2 Center of Interdisciplinary Research, Tohoku University

3 Graduate School of Advanced Sciences of Matter, Hiroshima University

**P-024    NMR Study of the Geometrically Frustrated Triangular Lattice Systems  $MxVO_2$  with  $M = Li$  and  $Na$**

Kenjiro Takao and Masashige Onoda

*Institute of Physics, University of Tsukuba*

**P-025    Construction of Functional  $\pi$ -Space Based on Saddle-Distorted Porphyrins**

Takahiko Kojima

*Department of Chemistry, University of Tsukuba*

**P-026    Structure of Low-coordinate Copper Complexes by Steric Effects of Bulky Substituents**

Naomi Aoki, Kiyoshi Fujisawa, and Takahiko Kojima

*Department of Chemistry, Graduate School of Pure and Applied Sciences, University of Tsukuba,*

**P-027    Reactions of Disilyne with Organic Nitriles, Isonitriles, and Silylcyanides**

Katsuhiko Takeuchi, Masaaki Ichinohe, and Akira Sekiguchi

*Department of Chemistry, University of Tsukuba*

**P-028    Recognition of Cationic Guest by Macrocyclic Tris-dipyrrin  $BF_2$  Complex**

Naoya Sakamoto,<sup>1</sup> Chusaku Ikeda<sup>1</sup> and Tatsuya Nabeshima<sup>1,2</sup>

1 Graduate School of Pure and Applied Sciences, University of Tsukuba,

2 Tsukuba Research Center for Interdisciplinary Materials Science (TIMS), University of Tsukuba,

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Ryota Sato, Masayuki Kanehara, and Toshiharu Teranishi



**P-030    Synthesis of Pd@ $\gamma$ -Fe<sub>2</sub>O<sub>3</sub> Core-Shell Nanoparticles for Formation of Exchange- Coupled Nanocomposite Magnets**

Yoshihito Suzuki, Masayuki Kanehara, and Toshiharu Teranishi

*Department of Chemistry, Graduate School of Pure and Applied Sciences, University of Tsukuba*

**P-031    Chemical Understanding of La@C<sub>74</sub>(C<sub>6</sub>H<sub>3</sub>Cl<sub>2</sub>)**

Tsukasa Takahashi, Hidefumi Nikawa, Tsuyoshi Ito, Hidenori Kuga, Takeshi Akasaka, Naomi Mizorogi and Shigeru Nagase

*Center for Tsukuba Advanced Research Alliance, University of Tsukuba,  
Institute for Molecular Science*

**P-032    Synthesis of CdPd Sulfide Heterostructured Nanoparticles with Seed-dependent Morphologies**

Masaki Saruyama, Masayuki Kanehara, and Toshiharu Teranishi

*Department of Chemistry, Graduate School of Pure and Applied Sciences, University of Tsukuba,*

**P-033    Effective and Convenient Separation Method for D<sub>2</sub>d-C<sub>84</sub>(84:23)**

Makoto Hachiya<sup>1</sup>, Hidefumi Nikawa<sup>1</sup>, Satoru Sato<sup>1</sup>, Naomi Mizorogi<sup>1</sup>, Takahiro Tsuchiya<sup>1</sup>, Takeshi Akasaka<sup>1</sup>, and Shigeru Nagase<sup>2</sup>

*1 Center for Tsukuba Advanced Research Alliance (TARA Center), University of Tsukuba,*

*2 Department of Theoretical and Computational, Molecular Science, Institute for Molecular Science*

**P-034    Silylcarbene-Silene Rearrangement Route for Stable Silenes: Synthesis, Structure and Reactivity of 1,2-Dihydrosilene**

Hiroaki Tanaka, Masaaki Ichinohe, and Akira Sekiguchi

*Department of Chemistry, Graduate School of Pure and Applied Sciences, University of Tsukuba*

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Shiho Kijima<sup>1</sup>, Masaki Yamamura<sup>1</sup> and Tatsuya Nabeshima<sup>1,2</sup>

*1 Graduate School of Pure and Applied Sciences, University of Tsukuba*

*2 Tsukuba Research Center for Interdisciplinary Materials Science, University of Tsukuba*

**P-036    One-Pot Synthesis of Triangular Heterotetranuclear Complexes Bearing Many Long Alkoxy Chains**

Masao Sasaki,<sup>1</sup> Masaki Yamamura,<sup>1,2</sup> and Tatsuya Nabeshima<sup>1,2</sup>

*1 Graduate School of Pure and Applied Sciences, University of Tsukuba*

*2 Tsukuba Research Center for Interdisciplinary Materials Science, University of Tsukuba*

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Masakazu Nishida, Yoshinobu Nishimura, Atsuya Momotake, and Tatsuo Arai

*Graduate School of Pure and Applied Sciences, University of Tsukuba*

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Naoko Obi, Atsuya Momotake, and Tatsuo Arai

*Graduate School of Pure and Applied Sciences, University of Tsukuba*

**P-039 Syntheses and Physical Properties of Multi-nuclear Manganese Clusters with Ferrocenyl Groups**

Masayuki Nihei, Takahito Sakuraba, and Hiroki Oshio

*Graduate School of Pure and Applied Sciences, University of Tsukuba*

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Yasuyo Shimoda, Tomofumi Ogawa, and Kenji Morihashi

*Graduate School of Pure and Applied Sciences, University of Tsukuba*

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Takayuki Ohyoshi, Yamato Miyazawa, Yuki Asuma, Kenta Aoki, Satomi Ohmura,

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*Department of Chemistry, Graduate School of Pure and Applied Sciences, and Center for Tsukuba Advanced Research Alliance, University of Tsukuba*

**P-042 Synthesis and Unique Optical Properties of Gold Nanoparticles Protected by Phthalocyanine Derivatives**

Norifumi Itako, Masayuki Kanehara, and Toshiharu Teranishi

*Department of Chemistry, Graduate School of Pure and Applied Sciences University of Tsukuba*

**P-043 Novel Synthesis and Optical Properties of Monodisperse Metal Sulfide Semiconductor Nanoparticles**

Tetsuya Honda, Masayuki Kanehara, and Toshiharu Teranishi

*Department of Chemistry, Graduate School of Pure and Applied Sciences, University of Tsukuba*

**P-044 Ion Recognition Ability and Emission Properties of Novel Iridium Complexes with Azacrown**

## Ethers

Masaki Sairenji,<sup>1</sup> Chusaku Ikeda,<sup>1</sup> and Tatsuya Nabeshima<sup>1,2</sup>

*1 Graduate School of Pure Applied Sciences, University of Tsukuba,*

*2 Tsukuba Research Center for Interdisciplinary Materials Science (TIMS), University of Tsukuba*

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Yoko Sugiyama, Yoshihiro Shinohara, and Tatsuo Arai

*Graduate School of Pure and Applied Sciences, University of Tsukuba,*

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Hiroyasu Tamura, Yoshihiro Shinohara and Tatsuo Arai

*Graduate School of Pure and Applied Sciences, University of Tsukuba*

### **P-047 pH-dependent Size Tuning of PVP-protected Rh Nanoparticles for Overall Water Splitting**

Takahiro Ikeda, Masayuki Kanehara, and Toshiharu Teranishi

*Department of Chemistry, Graduate School of Pure and Applied Sciences, University of Tsukuba*

### **P-048 Thermodynamic Characterization of Crystal E Phase of 4-Alkyl-4'-isothiocyanatobiphenyl (*n*TCB)**

Katsuya Horiuchi,<sup>1</sup> Yasuhisa Yamamura,<sup>1</sup> Robert Pelka,<sup>1,2</sup> Masato Sumita,<sup>1</sup> Syuma Yasuzuka,<sup>1</sup> Maria Massalska-Arodz,<sup>2</sup> and Kazuya Saito<sup>1</sup>

*1 Department of Chemistry, Graduate School of Pure and Applied Sciences, University of Tsukuba,*

*2 The Henryk Niewodniczanski Institute of Nuclear Physics, Polish Academy of Sciences*

### **P-049 Dicyclohexylmethanol: Molecular Liquid Consisting of H-bonded Tetramer**

Yu-ta Suzuki, Yasuhisa Yamamura, Masato Sumita, Syuma Yasuzuka, and Kazuya Saito

*Department of Chemistry, Graduate School of Pure and Applied Sciences, University of Tsukuba*

### **P-050 Structure-activity Relationships of Glaziovianin A**

Akiyuki Ikeda<sup>1</sup>, Ichiro Hayakawa<sup>1</sup>, Sayaka Kazami<sup>2,3</sup>, Takeo Usui<sup>4</sup>, and Hideo Kigoshi<sup>1</sup>

*1 Department of Chemistry, University of Tsukuba,*

*2 RIKEN advanced science institute,*

*3 Saitama University*

*4 Department of Life Science and Bioengineering, University of Tsukuba*

### **P-051 Synthetic Studies on a Hybrid Compound of Aplyronine A and Mycalolide B**

Kenichi Kobayashi, Yusuke Fujii, Ichiro Hayakawa, and Hideo Kigoshi

*Department of Chemistry, Graduate School of Pure and Applied Sciences, and Center for Tsukuba Advanced Research Alliance, University of Tsukuba*

**P-052 Third Isomer of La@C82**

Hidehiko Kuga,<sup>1</sup> Hidefumi Nikawa,<sup>1</sup> Naomi Mizorogi,<sup>1</sup> Takahiro Tsuchiya,<sup>1</sup>  
Midori O. Ishitsuka,<sup>1</sup> Zdenek Slanina,<sup>1</sup> Takeshi Akasaka,<sup>1</sup> Kenji Yoza<sup>2</sup> Shigeru Nagase.<sup>3</sup>

*1 Center for Tsukuba Advanced Research Alliance, University of Tsukuba, T*

*2 Bruker AXS K.K.,*

*3 Department of Theoretical and Computational Molecular Science, Institute for Molecular Science*

**P-053 Photoluminescence Color Change of Naphthalene-based Liquid Crystals**

Takeshi Mori, and Masashi Kijima

*Institute of Materials Science, Graduate School of Pure and Applied Sciences, University of Tsukuba*

**P-054 Perturbation of the Patterns Observed in the Belousov-Zhabotinsky Reaction by Amphiphiles**

Rumana A. Jahan<sup>1,2</sup>, Yasuhiko Yamamoto<sup>2</sup>, and Tomohiko Yamaguchi<sup>1</sup>

*1 National Institute of Advanced Industrial Science and Technology,*

*2 Department of Chemistry, University of Tsukuba*

**P-055 Reversible Addition Reaction of Endohedral Metallofullerene La@C82**

Satoru Sato,<sup>1</sup> Yutaka Maeda,<sup>2</sup> Koji Inada,<sup>2</sup> Hidefumi Nikawa,<sup>1</sup> Michio Yamada,<sup>1</sup>  
Naomi Mizorogi,<sup>1</sup> Tadashi Hasegawa,<sup>2</sup> Takahiro Tsuchiya,<sup>1</sup> Takeshi Akasaka,<sup>1</sup>  
Tatsuhisa Kato,<sup>3</sup> Zdenek Slanina,<sup>1</sup> and Shigeru Nagase<sup>4</sup>.

*1 Center for Tsukuba Advanced Research Alliance, University of Tsukuba,*

*2 Department of Chemistry, Tokyo Gakugei University,*

*3 Department of Chemistry, Josai University,*

*4 Department of Theoretical and Computational Molecular Science, Institute for Molecular Science*

**P-056 New Synthetic Approach to Diketopyrrolopyrrole Derivatives and Their Luminescence Properties**

Takuya Yamagata, Junpei Kuwabara, and Takaki Kanbara

*Tsukuba Research Center for Interdisciplinary Materials Science, University of Tsukuba*

**P-057 Synthesis of an Optically Active Polyisocyanide from an Achiral Monomer in Cholesteric**

## **Liquid Crystal**

Satoshi Ohkawa, Reina Ohta, and Hiromasa Goto

*Institute of Materials Science, Graduate School of Pure and Applied Sciences, University of Tsukuba*

### **P-058 Synthesis and Properties of Endohedral Metallofullerene Ligand**

Yuya Yokosawa, Takahiro Tsuchiya, and Takeshi Akasaka

*Center for Tsukuba Advanced Research Alliance, University of Tsukuba*

### **P-059 Fluorescence Response upon Organic Solvents to Simple Phenols**

Ken Okamoto, Jonathan P. Hill, and Katsuhiko Ariga

*WPI Research Center for Materials Nanoarchitectonics (MANA),  
National Institute for Materials Science (NIMS)*

### **P-060 Radical Coupling Reaction of Paramagnetic Endohedral Metallofullerene La@C82**

Yuta Takano<sup>1</sup>, Akinori Yomogida<sup>1</sup>, Hidefumi Nikawa<sup>1</sup>, Takatsugu Wakahara<sup>1</sup>,  
Takahiro Tsuchiya<sup>1</sup>, Midori O. Ishitsuka<sup>1</sup>, Yutaka Maeda<sup>2</sup>, Takeshi Akasaka<sup>1</sup>,  
Tatsuhisa Kato<sup>3</sup>, Zdenek Slanina<sup>1</sup>, Naomi Mizorogi<sup>4</sup>, and Shigeru Nagase<sup>4</sup>

*1 Center for Tsukuba Advanced Research Alliance, University of Tsukuba,*

*2 Department of Chemistry, Tokyo Gakugei University,*

*3 Department of Chemistry, Josai University,*

*4 Department of Theoretical and Computational Molecular Science, Institute for Molecular Science*

### **P-061 Design and Synthesis of Artificial Receptors for Ion Recognition Cooperatively Enhanced by an External Effector**

Masaki Yamamura,<sup>1,2</sup> Futoshi Sato,<sup>2</sup> Yui Togawa,<sup>2</sup> Tatsuya Nabeshima<sup>1,2</sup>

*1 Tsukuba Research Institute for Interdisciplinary Materials Science, University of Tsukuba,*

*2 Graduate School of Pure and Applied Sciences, University of Tsukuba*

### **P-062 Bis-adduct of Non-IPR La@C72**

Tsuyoshi Ito<sup>1</sup>, Hidefumi Nikawa<sup>1</sup>, Hidenori Kuga<sup>1</sup>, Tsukasa Takahashi<sup>1</sup>, Takeshi Akasaka<sup>1</sup>,  
Takahiro Tsutiya<sup>1</sup>, Zdenek Slanina<sup>1</sup>, Naomi Mizorogi<sup>1</sup>, Shigeru Nagase<sup>2</sup>

*1 Center for Tsukuba Advanced Research Alliance, University of Tsukuba,*

*2 Department of Theoretical and Computational Molecular Science, Institute for Molecular Science*

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Mari Minowa,<sup>1</sup> Michio Yamada,<sup>1</sup> Masahiro Kako,<sup>2</sup> Takahiro Tsuchiya,<sup>1</sup> Midori O. Ishitsuka,<sup>1</sup>  
Takeshi Akasaka<sup>1</sup>

*1 Center for Tsukuba Advanced Research Alliance, University of Tsukuba*

*2 Department of Applied Physics and Chemistry, University of Electro-Communication*

**P-064 Selective Syntheses of a Chiral Single Chain Magnet and an Achiral Single Molecule Magnet**

Norihisa Hoshino, Takuya Shiga, Masayuki Nihei and Hiroki Oshio

*Graduate School of Pure and Applied Sciences, University of Tsukuba*

**P-065 CH $\cdots$ O Hydrogen-bond Assisted Benzenediols Recognition by Dimeric Pt(II)**

**Terpyridyl-based Host**

Robert Trokowski,<sup>1</sup> Shigehisa Akine<sup>1</sup> and Tatsuya Nabeshima<sup>1,2</sup>

*1 Graduate School of Pure and Applied Sciences, University of Tsukuba,*

*2 Tsukuba Research Center for Interdisciplinary Materials Science (TIMS), University of Tsukuba,*

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Masakazu Hoshino, Yasuyo Shimodo, and Kenji Morihashi

*Department of Chemistry, Graduate School of Pure and Applied Sciences*

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Tatsuya Onuki, Mao Noguchi, Takuya Shiga, and Hiroki Oshio

*University of Tsukuba*

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Shin-ichi Mikami, Kiyofumi Irie, Hulin Tai, Shigenori Nagatomo, and

Yasuhiko Yamamoto

*Department of Chemistry, University of Tsukuba*

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Kazuyuki Akasaka<sup>4</sup>

*1 Department of Chemistry, University of Tsukuba,*

*2 National Food Research Institute,*

*3 Department of Pharmacy, Ritsumeikan University,*

*4 Department of Biotechnological Science, School of Biology-Oriented Science and Technology,*

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Yuka Mayumi, Misaki Yokota, Kohei Fuchibe, and Junji Ichikawa

*Graduate School of Pure and Applied Sciences*

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Yousuke Chiba, Hiroyuki Tanabe, Takashi Mori, and Junji Ichikawa

*Graduate School of Pure and Applied Sciences University of Tsukuba*

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Cuncheng Li, Ryota Sato, Masayuki Kanehara, and Toshiharu Teranishi

*Department of Chemistry, Graduate School of Pure and Applied Sciences, University of Tsukuba*

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Ryosuke Akatsuka, Yoshihiro Shinohara, Yoshinobu Nishimura, and Tatsuo Arai

*Graduate School of Pure and Applied Science, University of Tsukuba*

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Junichi Hozumi, Tomohiro Hayashi, Masahiko Hara

*Department of Electronic Chemistry, Tokyo Institute of Technology,*

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Atsushi Taninaka, Osamu Takeuchi and Hidemi Shigekawa

*Institute of Applied Physics CREST-JST, University of Tsukuba*

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Tomoko Matsuda and Tokushi Kizuka

*Institute of Materials Science, University of Tsukuba*

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Hui Huang, Ken Kanazawa, Atsushi Taninaka, Osamu Takeuchi and Hidemi Shigekawa

*Institute of Applied Physics, University of Tsukuba, CREST-JST*

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Katsuya Kamata<sup>1</sup>, Ryota Ozaki, Ryu Hasunuma<sup>1,2</sup>, and Kikuo Yamabe<sup>1,2</sup>  
*1 Institute of Applied Physics, University of Tsukuba*  
*2 Tsukuba Research Institute for Interdisciplinary Materials Science, University of Tsukuba*

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Keisuke Saito, Junpei Kuwabara, and Takaki Kanbara  
*Tsukuba Research Center for Interdisciplinary Materials Science, University of Tsukuba*

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Ayako Taketoshi and Takaki Kanbara  
*Tsukuba Research Center for Interdisciplinary Materials Science, University of Tsukuba*

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Akira Akagawa<sup>1</sup>, Kun'ichi Miyazawa<sup>2</sup>, and Tokushi Kizuka<sup>1</sup>  
*1 Institute of Materials Science, University of Tsukuba, Tsukuba, Ibaraki 305-8573, Japan*  
*2 Fullerene Engineering Group, Advanced Nano Materials Laboratory, National Institute for Material Science*

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Hideki Masuda, Tomoko Matsuda, and Tokushi Kizuka  
*Institute of Materials Science, University of Tsukuba*

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Hideki Masuda and Tokushi Kizuka  
*Institute of Materials Science, University of Tsukuba*

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Takayuki Tokumine<sup>1</sup>, Kun'ichi Miyazawa<sup>2</sup>, and Tokushi Kizuka<sup>1</sup>  
*1 Institute of Materials Science, University of Tsukuba,*  
*2 Fullerene Engineering Group, Advanced Nano Materials Laboratory, National Institute for Material Science*

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*Institute of Materials Science, University of Tsukuba*



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*Institute of Applied Physics, CREST, University of Tsukuba*
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*1 Institute of Applied Physics, University of Tsukuba, CREST-JST,*  
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*Institute of Applied Physics, Univ. of Tsukuba, CREST-JST,*
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*2 National Institute for Materials Science*
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 and Kikuo Yamabe<sup>1,2</sup>  
*1 Graduate School of Pure and Applied Sciences, Univ. of Tsukuba,*  
*2 Tsukuba Research Center for Interdisciplinary Materials Science (TIMS),*  
*3 Semiconductor Leading Edge Technologies, Inc. (Selete),*
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*1 Institute of Applied Physics, University of Tsukuba,*

*2 Semiconductor Leading Edge Technologies, Inc. (Selete)*

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Mitsuru Sometani, Chihiro Tamura, Ryu Hasunuma and Kikuo Yamabe

*Tsukuba Research Institute for Interdisciplinary Materials Science, University of Tsukuba*

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Naoyuki Ueda, Akira Shimao, Yasunori Shinmi, Shuichi Koso, and Keiichi Tomishige

*Graduate School of Pure and Applied Sciences, University of Tsukuba*

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Tatsuya Ebashi, Yoichi Ishida, Shin-ichi Ito, Kimio Kunimori, and Keiichi Tomishige

*Graduate School of Pure and Applied Sciences, University of Tsukuba*

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Lei Wang, Takuya Sakurai, and Keiichi Tomishige

*Graduate school of Pure and Applied Science, University of Tsukuba,*

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Toru Yoshitomi<sup>1</sup>, Takashi Mamiya<sup>4</sup>, Hirofumi Matsui<sup>4</sup>, Aki Hirayama<sup>7</sup>, and

Yukio Nagasaki<sup>1,2,3,4,5,6</sup>

*1 Graduate School of Pure and Applied Sciences, University of Tsukuba*

*2 Tsukuba Research Center for Interdisciplinary Materials Science (TIMS), University of Tsukuba*

*3 Center for Tsukuba Advanced Research Alliance (TARA), University of Tsukuba*

*4 Master's School of Medical Sciences, Graduate School of Comprehensive Human Sciences, University of Tsukuba*

*5 Satellite Laboratory, International Center for Materials Nanoarchitectonics (MANA), National Institute for Materials Science (NIMS),*

*6 Polyscale Technology Research Center,*

*7 Center for Integrative Medicine, Tsukuba University of Technology*

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Junpei Kuwabara, and Takaki Kanbara

*Tsukuba Research Center for Interdisciplinary Materials Science (TIMS), Graduate School of Pure*

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Akitsu Tsujimoto<sup>1</sup>, Ayako Taketoshi<sup>1</sup>, Shusaku Maeda<sup>2</sup>, Take-aki Koizumi<sup>2</sup>, and Takaki Kanbara<sup>1,2</sup>

*1 Tsukuba Research Center for Interdisciplinary Materials Science (TIMS), Graduate School of Pure and Applied Sciences, University of Tsukuba,*

*2 Chemical Resources Laboratory, Tokyo Institute of Technology*

**P-100 Self-assembling of Stable Radical-containing PEG block- and Graft- copolymer and Their Cytotoxicity**

Rie Suzuki<sup>1</sup>, Toru Yoshitomi<sup>1</sup>, and Yukio Nagasaki<sup>1,2,3,4,5</sup>

*1 Graduate School of Pure and Applied Sciences, University of Tsukuba,*

*2 Tsukuba Research Center for Interdisciplinary Materials Science (TIMS), University of Tsukuba,*

*3 Center for Tsukuba Advanced Research Alliance (TARA), University of Tsukuba,*

*4 Satellite Laboratory, International Center for Materials Nanoarchitectonics (MANA), National Institute for Materials Science (NIMS),*

*5 Polyscale Technology Research Center*

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Shogo Sumitani<sup>1</sup>, Motoi Oishi<sup>1,2,3</sup>, Tatiana K. Bronich<sup>6,7</sup>, Alexander V. Kabanov<sup>6,7</sup>, Michael D. Boska<sup>7,8,9</sup> and Yukio Nagasaki<sup>1,2,3,4,5</sup>

*1 Graduate School of Pure and Applied Sciences, University of Tsukuba,*

*2 Tsukuba Research Center for Interdisciplinary Materials Science (TIMS)*

*3 Center for Tsukuba Advanced Research Alliance (TARA)*

*4 Graduate School of Comprehensive Human Sciences,*

*5 Satellite Laboratory of International Center for Materials Nanoarchitectonics (MANA), NIMS,*

*6 Departments of Pharmaceutical Sciences, University of Nebraska Medical Center,*

*7 Centers for Drug Delivery and Nanomedicine,*

*8 Department of Radiology,*

*9 Center for Neurovirology and Neurodegenerative Disorders, University of Nebraska Medical Center.*

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Taiga Tatsumi<sup>1,2,3</sup>, Motoi Oishi<sup>1,2,3,5</sup>, Kazunori Kataoka<sup>6,7</sup>, and Yukio Nagasaki<sup>1,2,3,4,5</sup>

- 1 Graduate School of Pure and Applied Sciences, University of Tsukuba,*  
*2 Tsukuba Research Institute for Interdisciplinary Materials Science,*  
*3 Center for Tsukuba Advanced Research Alliance,*  
*4 Master's School of Medical Science, Graduate School of Comprehensive Human Science,*  
*University of Tsukuba,*  
*5 Satellite Laboratory, International Center for Materials Nanoarchitectonics, National Institute of*  
*Materials Science,*  
*6 Department of Materials Engineering, Graduate School of Engineering, The University of Tokyo,*  
*7 Division of Clinical Biotechnology, Center for Disease Biology and Integrative Medicine,*  
*Graduate School of Medicine, The University of Tokyo*

**P-103    Thermally-stable Mixed-PEG/streptavidin Co-immobilized Magnetic Beads for DNA Capture**

Masaki Kubota<sup>1</sup>, Keitaro Yoshimoto<sup>2,3,4</sup>, Xiaofei Yuan<sup>2,3,4</sup>, Yukio Nagasaki<sup>1,2,3,4,5,6</sup>

- 1 Collage of Engineering Sciences, University of Tsukuba*  
*2 Graduate School of Pure Applied Sciences, University of Tsukuba*  
*3 Tsukuba Research Center for Interdisciplinary Materials Science (TIMS)*  
*4 Tsukuba Advanced Research Alliance (TARA)*  
*5 Master School of Medical Sciences, Graduate School of Comprehensive Human Sciences,*  
*University of Tsukuba*  
*6 Satellite Laboratory of International Center for Materials Nanoarchitectonics (MANA) in*  
*National Institute for Materials Science (NIMS), University of Tsukuba,*

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N.Venkatachalam<sup>1</sup>, Y. Okumura<sup>2</sup>, K. Soga<sup>1,2</sup>, R. Fukuda<sup>3</sup> and T. Tsuji<sup>3</sup>

- 1 Polyscale Technology Research Center, Tokyo University of Science*  
*2 Department of Materials Science and Technology, Tokyo University of Science*  
*3 Department of Biological Science and Technology, Tokyo University of Science,*