

**The 10th Japan-China Joint Symposium on
Conduction and Photoconduction in Organic Solids
and Related Phenomena**



**October 17–20, 2010
Co-op Inn Kyoto
Kyoto, Japan**

Sunday, October 17

17:30–19:30 Mixer

Monday, October 18

08:30–09:40 Opening ceremony

09:40–10:00 Break

Session 1

Chairperson: Kyuya Yakushi (Institute for Molecular Science)

10:00 M01 Bio-inspired Energy Conversion Systems

Lei Jiang (Institute of Chemistry, CAS)

10:20 M02 Using Oligomers to Study the Self-Assembly and Opto-Electronic Properties of Conjugated Systems

Qifan Yan, Dahui Zhao (Peking University)

10:40 M03 π -Conjugated Molecular Crystals-Supramolecular Structure and Optical Properties

Yuguang Ma (Jilin University)

11:00 M04 Mechanism of Photochemical Modification on Structures and Electrical Properties of Ag(DCNQI)₂

Toshio Naito (Hokkaido University), Hideyuki Sugawara, Tamotsu Inabe, Yoshinori Kitajima, Takeshi Miyamoto, Hironobu Niimi, Kiyotaka Asakura

11:20 M05 Quantum Phonon Effects on Photoinduced Insulator-To-Metal Transition Dynamics in Organic BEDT-TTF Salts

Kenji Yonemitsu (Institute for Molecular Science), Yasuhiro Tanaka, Nobuya Maeshima

11:40 M06 A Spin-boson Theory of Magnetoresistance in Organic Semi-conducting Materials

Yao Yao, Wei Si, Xiaoyuan Hou, Chang-Qin Wu (Fudan University)

12:00–13:30 Lunch

Session 2

Chairperson: Daoben Zhu (Institute of Chemistry)

13:30 M07 Chemical Studies on Molecular Nanomagnets and Magnetic Semiconductors

Jing-Lin Zuo (Nanjing University), Xiao-Zeng You

13:50 M08 Studies of Organic Soft Magnets Containing Bithiazole Rings: Design and Magnetic Properties

Weilin Sun, Zhiquan Shen (Zhejiang University)

14:10 M09 Interplay between Localized Spins and Conduction Electrons in Molecular Crystals of Spin-polarized Donors Solids

Tadashi Sugawara (The University of Tokyo), Michio M. Matsushita, Hideji

- Komatsu, Kentaro Suzuki*
- 14:30 M10 Charge-Ordering Phase Transition in α' -(BEDT-TTF)₂IBr₂
Yue Yue, Kaoru Yamamoto, Mikio Uruichi, Kyuya Yakushi (Institute for Molecular Science), Atsushi Kawamoto
- 14:50 M11 Structures and Properties of Charge-Transfer Complexes Based on a Flexible Donor Molecule MeSEDO-TTF
Xiangfeng Shao (Lanzhou University), Yoshiaki Nakano, Hideki Yamochi, Koichiro Tanaka
- 15:10 M12 Successive Hysteretic Phases in HMTSF-TCNQ Induced by High Magnetic Field under Pressure
Keizo Murata (Osaka City University), Keiichi Yokogawa, Kensuke Kobayashi, Kosuke Masuda, Takahiko Sasaki, Natarajan Rani Tamilselvan, Harukazu Yoshino, James S. Brooks, Denis Jérôme, Mikio Uruichi, Kyuya Yakushi, Yoshio Nogami, Reizo Kato

15:30–15:50 Break

Session 3

Chairperson: Kenji Yonemitsu (Institute for Molecular Science)

- 15:50 M13 Shear Stress Effects on Spiropyrans
Makoto Inokuchi (Tokyo University of Science, Yamaguchi), Shuhei Ohshima, Ryosuke Sakai, Yukiko Shimizu, Yui Hanada, Kazuhiro Yabuuchi, Kyuya Yakushi, Ichimin Shirotani
- 16:10 M14 A Mutation Model in Terms of Conjugated Polymer
Li Ge, Sheng Li, Xin Sun (Fudan University)
- 16:30 M15 First-Principles Measurements of Electrical Conductivity in Organic Semiconductors by UPS: Direct Measurements of Charge Delocalization, Electron-Phonon Coupling and Band-Gap States
N. Ueno (Chiba University), S. Kera
- 16:50 M16 New Silicon-Bridged Molecule towards Bipolar Host: All-Phosphor White Organic Light-Emitting Device Exhibiting High Efficiency and Low Efficiency-Roll-Off
Shaolong Gong, Yonghua Chen, Chuluo Yang (Wuhan University), Cheng Zhong, Jingui Qin, Dongge Ma**
- 17:10 M17 Phosphorescent Dendrimers for Solution Processable PLED
Lixiang Wang (Changchun Institute of Applied Chemistry, CAS)
- 17:30 M18 Development of Water/Alcohol Soluble Conjugated Polyelectrolyte and Their Neutral Precursor as Highly Efficient Electron Injection Layer: Towards All Printable Polymer Light-Emitting Devices and Displays
Yong Cao (South China University of Technology), Fei Huang, Hongbin Wu

17:50–19:30 Dinner

19:30–21:00 Poster Session

Tuesday, October 19

Session 4

Chairperson: Wenping Hu (Institute of Chemistry)

- 08:30 T01 Photo CELIV measurement of Organic Photovoltaic Cells at Low Temperatures
Tomohiko Suzuki, Motoharu Yasui, Hiroyuki Tajima (The University of Tokyo)
- 08:50 T02 Infrared Spectroscopy of Charge Carriers in Regioregular Poly(3-Dodecylthiophene) and C₆₀
Yukio Furukawa (Waseda University), Ken-ichi Kudo
- 09:10 T03 New Fullerene Derivative Acceptors for High Performance Polymer Solar Cells
Youjun He, Guangjin Zhao, Yongfang Li (Institute of Chemistry, CAS)
- 09:30 T04 Interfacial Photocarrier Dissociation and Photovoltaic Effects in Molecular Donor-Acceptor Compounds
Tatsuo Hasegawa (National Institute of Advanced Industrial Science and Technology (AIST), Japan), Jun'ya Tsutsumi
- 09:50 T05 Effect of Buffer Layer between Active Layer and Cathode on the Performance of Polymer Bulk Heterojunction Solar Cells
Lijian Zuo, Xiaoxia Jiang, Ligong Yang, Hongzheng Chen (Zhejiang University)
- 10:10–10:30 Break

Session 5

Chairperson: Yukio Furukawa (Waseda University)

- 10:30 T06 Optoelectric Conversion by Organic Radical Photocells
Kunio Awaga (Nagoya University)
- 10:50 T07 Achieving High Performance Polymer Solar Cells via Incorporating Alcohol/Water-Soluble Conjugated Polyelectrolytes as Cathode Interlayer: The Role of the Polymer-Cathode Interface on the Exciton Generation, Dissociation and Charge Collection
Zhicai He, Chengmei Zhong, Chao He, Hongbin Wu (South China University of Technology), Yong Cao
- 11:10 T08 Organic Solar Cells Using Squarylium Dyes
Hiroyuki Nakazumi (Osaka Prefecture University), Takeshi Maeda, Shigeyuki Yagi
- 11:30 T09 n-Type Field-Effect Transistors Based on Thieno[3,2-*b*]thiophene-2,5-dione with Trifluoromethylphenyl Groups
Shiyan Chen (Tokyo Institute of Technology), Altan Bolag, Jun-ichi Nishida, Yoshiro Yamashita
- 11:50 T10 Design and Syntheses of Organic Semiconductors for High Performance Field-Effect Transistors
Hongxiang Li (Shanghai Institute of Organic Chemistry, CAS), Rongjin Li, Qing Meng, Chengliang Wang, Wenping Hu, Daoben Zhu
- 12:10–12:30 Photo
- 12:30–13:40 Lunch

Session 6

Chairperson: Shu Wang (Institute of Chemistry)

- 13:40 T11 Low-Voltage Organic Field-Effect Transistors
Hu Yan (University of Yamanashi), Hidenori Okuzaki
- 14:00 T12 Naphthodithiophene-Based Polymers for High Performance Organic Field-Effect Transistors
I. Osaka (Hiroshima University), T. Abe, S. Shinamura, E. Miyazaki, K. Takimiya
- 14:20 T13 Organic Transistors Using Organic Charge-Transfer Complexes and Carbon Electrodes with the Use of Laser Processing
Hiroshi Wada, Jun-ichi Inoue, Takehiko Mori (Tokyo Institute of Technology)
- 14:40 T14 Solution-Crystalized High-Mobility Organic Transistors
J. Takeya (Osaka University)
- 15:00 T15 Expansion of Rylenes: New Chemistry and New Properties
Zhaohui Wang (Institute of Chemistry, CAS)
- 15:20 T16 Self-Assembly, Aggregation Structures and Properties of Functional Molecules
Yuliang Li (Institute of Chemistry, CAS), Huibiao Liu, Yongjun Li, Daoben Zhu
- 15:40–16:00 Break

Session 7

Chairperson: Takayoshi Nakamura (Hokkaido University)

- 16:00 T17 Edge State and Unconventional Magnetism of Nanographene
Toshiaki Enoki (Tokyo Institute of Technology)
- 16:20 T18 Preparation of Graphene and its Electronic Properties
Yunqi Liu (Institute of Materials Chemistry, CAS), Dacheng Wei, Chongan Di, Jian Zheng, Hongtao Liu, Jianyi Chen, Bin Wu, Yunlong Guo, Gui Yu, Daoben Zhu
- 16:40 T19 Molecular Electronic Devices with Point Contacts Formed from sp^2 Carbon Nanomaterials
Xuefeng Guo (Peking University)
- 17:00 T20 Graphite-Diamond Phase Transition Induced by Inter-Layer Charge Transfer Exciton in the Visible Region
Keiichiro Nasu (High Energy Accelerator Research Organization (KEK))
- 17:20 T21 **A Two-Dimensional Organic Metal Based on Fullerene**
Gunzi Saito (Meijo University), Akihiro Otsuka, Mitsuhiro Maesato, Dmitri V. Konarev, Salavat S. Khasanov, Rimma N. Lyubovskaya
- 17:40 T22 Electronic Structure of Endohedral Fullerenes
Shojun Hino (Ehime University)
- 19:00–21:00 Banquet

Wednesday, October 20

Session 8

Chairperson: Deqing Zhang (Institute of Chemistry)

- 08:30 W01 New Efficient Photovoltaic Dyes for DSSC
He Tian (East China University of Science and Technology)
- 08:50 W02 Design of Supramolecular Rotators in Solid State Toward Novel Functional Systems
Heng-Yun Ye (Hokkaido University), Shin-ichiro Noro, Tomoyuki Akutagawa, Takayoshi Nakamura
- 09:10 W03 Structural Flexibility and Dielectric Responses of Supramolecules in [Ni(dmit)₂] Salts
Tomoyuki Akutagawa (Tohoku University), Qiong Ye, Takayoshi Nakamura
- 09:30 W04 Design and Functions of Two-Dimensional Macromolecules
Donglin Jiang (Institute for Molecular Science)
- 09:50 W05 Functional Materials Based on Ordered Porous Structure
Guangtao Li (Tsinghua University)

10:10–10:30 Break

Session 9

Chairperson: Yukio Ouchi (Nagoya University)

- 10:30 W06 Refillable Water of Crystallization in (BEDO-TTF)₂Br(H₂O)₃
Tsuyoshi Haneda, Adam Tracz, Gunsu Saito, Hideki Yamochi (Kyoto University)
- 10:50 W07 Helical Organic Functional Nanostructures and Superstructures
Yong Yan, Zai Yu, Jin Fang, Zhixiang Wei (National Center for Nanoscience and Technology, China)*
- 11:10 W08 Increasing Crystallinity and Alignment of Poly(3-hexylthiophene) Film
Kui Zhao, Longjian Xue, Xiang Gao, Yanchun Han (Changchun Institute of Applied Chemistry, CAS)
- 11:30 W09 Conductance Measurements on Copper Phthalocyanine Thin Films Made *In Situ* during Film Growth
Richard Murdey (Kyoto University), Naoki Sato
- 11:50 W10 Synthesis of Ordered Organic Nanowire Films and Their Photoconductivity Properties
Chengyi Zhang, Xiujuan Zhang, Xiaohong Zhang (Technical Institute of Physics and Chemistry, CAS)

12:10–13:20 Lunch

Session 10

Chairperson: Toyonari Sugimoto (Osaka Prefecture University)

- 13:20 W11 Some New Strategies to New Organic/Polymeric Chemosensors
Xiaoding Lou, Qi Zeng, Xiaohong Cheng, Jingui Qin, Zhen Li (Wuhan University)
- 13:40 W12 Structural and Physical Properties of Molecular Conductors Derived from *Meso*-,

(±)-, and (S,S)-DMDH-TTP

Jun-ichi Yamada (University of Hyogo), Kouki Miura, Shun Ichikawa, Satoshi Shimono, Hiroki Akutsu, Shin'ichi Nakatsuji, Lee Martin

14:00 W13 Chain Growth Polymerization for Conjugated and Nonconjugated Polymers
Yanhou Geng (Changchun Institute of Applied Chemistry, CAS), Shupeng Wu, Li Huang, Fosong Wang

14:20 W14 Conjugated Molecules and Polymers Based on Fused-Ring Building Blocks
Xiaowei Zhan (Institute of Chemistry, CAS)

14:40–15:00 Break

Session 11

Chairperson: Lixiang Wang (Changchun Institute of Applied Chemistry)

15:00 W15 High Performance Rechargeable Battery Using Organic Active Cathode Materials with Multi-Electron Migration
Toyonari Sugimoto (Osaka Prefecture University), Takayuki Kubota, Takayuki Matsunaga, Masaharu Satoh

15:20 W16 Building an Excellent Li Storage Material Based on Mixed Conducting (Li⁺ and E⁻) Concept
G. L. Cui (Qingdao Institute of Bioenergy and Bioprocess Technology, CAS), L. Gu, J. Maier

15:40 Closing Remark

List of poster presentations

- P01 Structural and Physical Properties of Molecular Conductors Based on the Bis(methylthio)-Substituted p-Electron Donors
*Kohei Fujikawa (University of Hyogo), Kazuhiro Takeuchi, Shun Ichikawa, Hiroki Akutsu, Shin'ichi Nakatsuji, Jun-chi Yamada**
- P02 Synthesis of New Dimethyl-Substituted π -Electron Donors and Electrical Conductivity of Their Charge-Transfer Materials
*Atsushi Wada (University of Hyogo), Hiroki Akutsu, Shin'ichi Nakatsuji, Jun-chi Yamada**
- P03 Syntheses and Physical Properties of Radical Cation Salts of 2-(Thiopyran-4-ylidene)-4,5-ethylenedithio-1,3-dithiole (TP-EDTT) with Octahedral and Tetrahedral Anions
Toshiaki Nishi (Kyoto University), Yoshiaki Nakano, Mikio Uruichi, Kyuya Yakushi, Masanobu Shirai, Koichiro Tanaka, Hideki Yamochi
- P04 Synthesis, Crystal Structures, Optical Properties and Photocurrent of Interactive Radical Dimers
Rie Suizu (Nagoya University), Akito Iwasaki, Laigui Hu, Yukiko Noda, Hirofumi Yoshikawa, Kunio Awaga, Hiroshi Ito, Mikio Uruichi, Kyuya Yakushi
- P05 A Novel [3+3] Schiff-base Macrocyclic Merging Tetrathiafulvalene Units: Synthesis, Characterization and Physical Properties
Chunyang Jia (University of Electronic Science and Technology of China), Jiaqiang Zhang*
- P06 Novel Bis-Fused π -Electron Donor Composed of Tetrathiafulvalene and Tetraselenafulvalene
Minoru Ashizawa, Ken-ichi Ishidzu, Masaki Watanabe, Tetsuhiko Tanahashi, Takashi Shirahata, Tadashi Kawamoto, Takehiko Mori, Yohji Misaki (Ehime University)
- P07 Cyclic π -Conjugated Systems as High Performance Organic Semiconductors
Wei Xu (Institute of Chemistry), Yabin Song, Tianyue Zhao, Yali Qiao, Yun Zhao, Daoben Zhu
- P08 Using Oligomers to Study the Self-Assembly and Opto-Electronic Properties of Conjugated Systems
Qifan Yan, Dahui Zhao (Peking University) ➔ M02 (Oral session 1)
- P09 Synthesis and Properties of Mn₁₂ Cluster Modified with Conjugated Oligomers and Polymers
Xiaobing Yan, Sanping Cheng, Xingguo Chen (Wuhan University), Jingui Qin
- P10 Homoleptic Copper(I) Arylthiolate Polymers as a New Class of Organic Semiconductors
Cheng-Hui Li (Nanjing University), Stephen Sin-Yin Chui, V. A. L. Roy, Kam-Hung Low, Chi-Ming Che
- P11 Preparation and Function of Liquid Crystal Displays Doped with Pd Nanoparticles Stabilized by Cyanobiphenyl Side-chain Polymers
Koji Oki (Tokyo University of Science, Yamaguchi), Tsubasa Futatugi, Kazuhiro Yabuuchi, Makoto Inokuchi
- P12 Solution-Processable Organic Molecular Glasses for Optoelectronic Device Applications
Xu-Hui Zhu (South China University of Technology)
- P13 Design of ambipolar transporting materials for highly efficient OLEDs
Lian Duan (Tsinghua University), Yong Qiu

- P14 The Role of LiF Buffer Layer in Au-Cathode OLEDs
*Z. Y. Sun (Fudan University), B. F. Ding, B. Wu, Y. T. You, W. B. Li, X. M. Ding, X. Y. Hou**
- P15 Novel Polymeric Host Materials Constructed by Silane-Cabazole Backbone and Electron-Affinitive Cyanoethyl Substituent for Blue Phosphorescence Dopant in Polymer Light Emitting Device
Dehua Hu, Ping Lu (Jilin University), Yuguang Ma, Gang Cheng
- P16 Fabrication and Electrical Characteristics of pn-Homojunction Diodes Based on Zinc Phthalocyanine
Hiroaki Yoshii (Waseda University), Yukio Furukawa
- P17 Fabrication and Electrical Measurements of Bulk Heterojunction Solar Cells Based on P3HT and PCBM
Jun Eguchi (Waseda University), Yukio Furukawa
- P18 Synthesis, Physical Properties and Device Application of Novel Organic Semiconductors Based on Diphenylpyran Derivatives
Altan Bolag (Tokyo Institute of Technology), Jun-ichi Nishida, Kohjiro Hara, Yoshiro Yamashita
- P19 Tunable Optoelectronic Property Based on Cooperative Supramolecular Interactions in Organic π -Conjugated Materials
Bing Yang (Jilin University), Leilei Tian, Yuanze Xu, Wenchao Li, Yuguang Ma, Jiacong Shen
- P20 Growth Dynamics of Photoinduced Domains in Two-Dimensional Charge-Ordered Organic Conductors
Yasuhiro Tanaka (Institute for Molecular Science), Kenji Yonemitsu
- P21 Metal Ions Promoted Electron Transfer within TTF-Based D-A Dyads
Deqing Zhang (Institute of Chemistry, CAS), Guanxin Zhang, Lina Jia, Jin Li, Fei Sun, Luxi Tan, Daoben Zhu
- P22 Spectroscopic Study on the Phase Transition of (DMEDO-EBDT)₂PF₆
Yoshiaki Nakano (Kyoto University), Hideki Yamochi, Toru Morikawa, Takashi Shirahata, Hisakazu Miyamoto, Yohji Misaki, Mikio Uruichi, Kyuya Yakushi
- P23 Metal-Insulator Transition in Organic Alloy, [(EDO-TTF)_{1-x} (MeEDO-TTF)_x]₂ PF₆ {*x*=0.06–0.12}
Takaaki Hiramatsu (Koto University), Tsuyoshi Murata, Xiangfeng Shao, Yoshiaki Nakano, Hideki Yamochi, Mikio Uruichi, Kyuya Yakushi, Koichiro Tanaka
- P24 Crystal Structures and Dielectric Response of (Pyridazine)([18]crown-6 derivatives)[Ni(dmit)₂] Salts
Zunqi Liu (Hokkaido University), Ling Li, Shin-ichiro Noro, Tomoyuki Akutagawa, Takayoshi Nakamura
- P25 Magnetic and Thermal Properties of Ferrocenium Ionic Liquids
Y. Funasako (Kobe University), T. Inagaki, T. Mochida, T. Sakurai, H. Ohta, K. Furukawa, T. Nakamura*
- P26 Electrochemical SFG Studies on the Interface of Room Temperature Ionic Liquid - Octathio[8]circulene (Sulflower) Thin-Film for Organic FET Device
Jesse Montague, Zhou Wei, Takashi Iwahashi, Takuya Fujimoto, Kunio Awaga, Kazuhiko Seki, Yukio Ouchi (Nagoya University)
- P27 Energy Level Alignment at the Organic Donor-Acceptor Heterojunction Interfaces
W. Chen, F. Bussolotti (Chiba University), S. Kera, N. Ueno, A. T. S. Wee

- P28 New Method for Depth Profiling of Energy Levels: Electronic Structure of Buried Organic/Metal Interface
Hiroyuki Yoshida (Kyoto University), Eisuke Ito, Masahiko Hara, Naoki Sato
- P29 Raman Spectra of Alq₃ Films Doped with Alkali Metal or Alkali-Earth Metal
Hidehiro Minashima (Waseda University), Yukio Furukawa
- P30 Two-Dimensional Analysis of Solid Structures of Pentacene Films by Raman Imaging
Keisuke Seto (Waseda University), Yukio Furukawa
- P31 Some Electronic Properties and Morphological Feature of Hybrid Material DNA/SWCNT Thin Films
Yusei Maruyama (Hosei University), Satoru Motohashi, Masayuki Tanaka, Hironori Ogata, Biao Zhou, Akiko Kobayashi, Masayuki Shoda, Shunji Bandow, Sumio Iijima
- P32 Conducting Properties of the Two-Dimensional Triangular Lattice System Based on Fullerene
Mitsuhiro Maesato (Kyoto University), Akihiro Otsuka, Dmitry V. Konarev, Salavat S. Khasanov, Rimma N. Lyubovskaya, Mikio Uruichi, Kyuya Yakushi, Hideki Yamochi, Hiroshi Kitagawa, Gunzi Saito
- P33 Micro- & Nanometer Sized Organic Semiconductor Single Crystals: Growth, Characterization and Device Application
Wenping Hu (Institute of Chemistry)
- P34 STM/STS Measurement on Ultra Tiny Molecular Chains of (BETS)₂GaCl₄
A. Hassanien, H. Tanaka (National Institute of Advanced Industrial Science and Technology (AIST), Japan), K. Clark, S. Khan, K.-F. Braun, S.-W. Hla
- P35 Controlling Molecular Rotary Motion with a Self-Complexing Lock
Da-Hui Qu (East China University of Science & Technology), Ben. L. Feringa
- P36 Molecular Motion of Supramolecular Cations in Ferromagnetic Layer Structure of [MnCr(oxalate)₃]
Toru Endo (Hokkaido University), Tomoyuki Akutagawa, Shin-ichiro Noro, Sadamu Takeda, Takayoshi Nakamura
- P37 Direct 3D Imaging of the Buried Interfaces between Water and Superhydrophobic Surfaces
Chan Luo (South China University of Technology), Hua Zheng, Lei Wang, Haiping Fang, Jun Hu, Chunhai Fan, Yong Cao, Jian Wang
- P38 Nanoholes of Erythrocyte Membrane Ghosts Revealed by Dielectric Spectroscopy
Koji Asami (Kyoto University)
- P39 Conjugated Polyelectrolytes as New Optical Probes for Biosensing and Imaging
Shu Wang (Institute of Chemistry)
- P40 Novel Highly Photoluminescent Water-Soluble Polyfluorenes for Metal Ions Sensing
Chuanjiang Qin, Xiaopu Wu, Hui Tong (Changchun Institute of Applied Chemistry, CAS), Lixiang Wang**
- P41 Dual-Sensing Color-Tunable Copolymeric Optical Nanosensor
Qiang Yan, Jinying Yuan (Tsinghua University)
- P42 Pressure Dependence of Charge-Transfer in Benzoquinone-Phenylenediamine Complexes
Takafumi Miyazaki (Ehime University), Hidefumi Kiriki, Shojun Hino
- P43 Shear Stress Effects on Photochromic Compounds Spiropyran and Diarylethene
Shuhei Ohsima (Tokyo University of Science, Yamaguchi), Takeshi Inoue (Tokyo University of Science, Yamaguchi), Ryosuke Sakai, Makoto Inokuchi, Kazuhiro Yabuuchi, Kyuya Yakushi, Ichimin Shirotani*