PREFACE

The 2nd International Symposium on Organic Molecular Electronics (ISOME 2002) will be held on May 16 and 17, 2002, RIKEN, Saitama, Japan. The ISOME 2002 is sponsored by Electronics Society of IEICE (the Institute of Electronics, Information and Communication Engineers) and RIKEN.

Much progress in the field of Organic Molecular Electronics will be expected in early 21st century. Recently, new organic devices such as organic EL devices, organic TFT, organic sensors and non-linear optical devices have attracted much attention. In such a situation, the purpose of ISOME 2002 is to provide an opportunity for people, who are interested in Organic Molecular Electronics, to come together in an informal and friendly atmosphere and exchange their technical information and experience. I am sure that this International Symposium is very useful and fruitful for all participants to summarize the recent progress in Organic Molecular Electronics and prepare a new step to the next generation.

Many papers have been submitted from various countries and more than 30 papers have been accepted for presentation. All the papers accepted will be presented and published in English. Main topics of interest are as follows:

1. Electroluminescent Devices
2. Electronic Devices
3. Conductive Polymers and Their Applications
4. Sensors
5. Fabrication and Characterization of Thin Films
6. Optics

The program of this symposium consists of a Plenary Session, six invited talks and six Oral Sessions. Beside, excellent papers will be selected from the papers presented in ISOME 2002 and they will be published in the Special Issue on Organic Molecular Electronics of IEICE transaction.

This symposium has been planned and organized by the Organizing Committee (Chair : Prof. T. Morizumi, TIT), the Program Committee (Chair : Prof. K. Tanaka, Chiba University) and the IEICE Committee on Organic Material Electronics (Chair : Prof. K. Matsushige, Kyoto University). I am greatly in debt to their chairs and members, without whose enthusiastic effort on this symposium would not have been possible. I would like to express my sincere gratitude to staff and students of RIKEN for their kind help.

Finally, I am grateful to The Electronics Society of The Institute of Electronics, Information and Communication Engineers and the IEICE Committee on Organic Material Electronics for the financial support.

Welcome to RIKEN. I hope that you will have a fruitful and enjoyable time here in Saitama.

Toyosaka Morizumi
ISOME 2002, Chair , TIT, Japan
The Symposium is held under auspices of The Electronics Society of IEICE (the Institute of Electronics, Information and Communication Engineers) and RIKEN.

Financial support from
1. The Electronics Society of The Institute of Electronics, Information and Communication Engineers
2. Committee on Organic Material Electronics of The Institute of Electronics, Information and Communication Engineers

Organizing Committee

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Tatsuo Wada (RIKEN)

Accountant:
Tohru Maruno (NTT)

Inspector:
Mitsumasa Iwamoto (Tokyo Institute of Technology)
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<td>Session II EL Devices (6 papers) Chair (Prof.Usui and Prof.Onoda)</td>
<td>Session VII Fabrication and Characterization of Thin Films (7papers) Chair (Prof.Iwamoto and Prof.Ohmori)</td>
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May 16 (Thursday)

Opening Remark  
9:30-9:40
Toyosaka MORIIZUMI (Tokyo Institute Technology)  
Shun-ichi KOBAYASHI (President, RIKEN)

Plenary Talk  
9:40-10:10
Spatio-Temporal Functions and Nano-sized Organization of Artificial Materials  
Toyoki KUNITAKE  
Group Director, Spatio-Temporal Function Materials Research, FRS, RIKEN

Session I: Invited Talk (3 papers)  
10:10-11:40

IT1
CMOS and Polymer Based Chemical Microsensors  
H. Baltes, C. Hagleitner and A. Hierlemann  
Physical Electronics Laboratory, ETH Zurich

IT2
Enhanced Performance in Pentacene TFT Prepared by Surface Treatment of Gate Dielectrics  
Chung Kun SONG  
Division of Electrical & Electronics & Computer Eng, Dong-A University

IT3
Electroluminescence and Amplified Spontaneous Emission from Self-Organized Crystals of Organic Semiconducting Oligomers  
Hisao YANAGI¹, Shu HOTTA² and Yoshio TANIGUCHI³  
¹Faculty of Engineering, Kobe University, and PRESTO, Japan Science and Technology Corporation (JST)  
²Joint Research Center for Harmonized Molecular Materials (JRCHMM)-Japan Chemical Innovation Institute (JCII)  
³Faculty of Textile Science and Technology, Shinshu University

Lunch
EL1

Organic Light Emitting Diode Using 8-Hydroxyquinoline Aluminum Doped with Rubrene for Application on a Flexible Electro-Optical Conversion Device
Hirotake KAJII1, Takayuki TANEDA1, Takahisa TSUKAGAWA1, Masamitsu KANEKO1, Katsumi YOSHINO2, Masanori OZAKI2, Akihiko FUJII2, Makoto HIKITA3, Satoru TOMARU3, Saburo IMAMURA3, Hisataka TAKENAKA3, Junya KOBAYASHI3, Fumio YAMAMOTO3 and Yutaka OHMORI1

1Collaborative Research Center for Advanced Science and Technology, Osaka University
2Department of Electronic Engineering, Graduate School of Engineering, Osaka University
3NTT Advanced Technology Corp.

EL2

Electrical and Emitting Properties of Organic Electroluminescent Diodes with Nanostructured Cathode Buffer-Layers of Al/Alq3 Ultrathin Films
Kazunari SHINBO1, Eigo SAKAI1, Futao KANEKO1, Keizo KATO1, Takahiro KAWAKAMI1, Toyoyasu TADOKORO2, Shinichi OHTA3 and Rigoberto C. ADVINCULA3

1Department of Electrical and Electronic Engineering, Niigata University
2R&D Center, Nippon Seiki Co. Ltd.
3Department of Chemistry, University of Alabama at Birmingham

EL3

Organic Electroluminescent Diodes with a Nanostructured Fullerene Layer at the Interface between Electron- and Hole-Transport Layers
Keizo KATO1, Keisuke SUZUKI1, Kazunari SHINBO1, Futao KANEKO1, Nozomu TSUBOI2, Satoshi KOBAYASHI2, Toyoyasu TADOKORO3 and Shinichi OHTA3

1Department of Electrical and Electronic Engineering, Niigata University
2Department of Material Science and Technology, Niigata University
3R&D Center, Nippon Seiki Co. Ltd.

EL4

Electrical Characterization of Hole Transport Materials Using In-Situ Field Effect Measurement
Masaaki iiZUKA, Masakazu NAKAMURA, Kazuhiro KUDO and Kaniaki TANAKA
Department of Electronics and Mechanical Engineering, Chiba University

EL5

Study on the Conduction Mechanism of Organic Light-Emitting Diode Using One-Dimensional Discontinuous Model
Takuya OGAWA, Don-Chan CHO, Kazue KANEKO, Tatsuo MORI and Teruyoshi MIZUTANI
Department of Electrical Engineering, Nagoya University

EL6

Photoirradiation Effects on Light-Emitting Devices Based on Poly(p-phenylene vinylene) Derivative
Kazuya TADA and Mitsuyoshi ONODA
Department of Electrical Engineering, Himeji Institute of Technology

Coffee Break
Session III: Electronic Devices (6 papers) 15:20-17:20

ED1
Nanostructure of Metal/Organic Interface Causing Photocurrent Multiplication Phenomenon
Masahiro HIRAMOTO
Graduate School of Engineering, Osaka University

ED2
Fabrication of Organic Photoreceptor Device with Multilayered Structure
Sei UEMURA, Manabu YOSHIDA, Takehito KODZASA, Hirobumi USHIJIMA, Kiyoshi Yase and Toshihide KAMATA
National Institute of Advanced Industrial Science and Technology (AIST)

ED3
Effect of Interfacial Space Charges and Coupling Electrodes on Organic Single Electron Tunneling Device
Yutaka NOGUCHI¹, Mitsumasa IWAMOTO¹, Tohru KUBOTA² and Shinro MASHIKO²
¹Department of Physical Electronics, Tokyo Institute of Technology
²Communication Research Laboratory,

ED4
High-Performance Organic FET with Functional Layers
Manabu YOSHIDA¹, Sei UEMURA¹, Takehito KODZASA¹, Hirobumi USHIJIMA¹, Toshihide KAMATA¹, Makoto MATSUZAWA² and Takeshi KAWAI²
¹National Institute of Advanced Industrial Science and Technology (AIST)
²Science University of Tokyo

ED5
Fabrication of Organic FET Device with Dielectric Gate Insulator Prepared by Sol-Gel Technique
Takehito KODZASA, Manabu YOSHIDA, Iwao YAMAGUCHI, Sei UEMURA, Hirobumi USHIJIMA, Toshia KUMAGAYA and Toshihide KAMATA
National Institute of Advanced Industrial Science and Technology (AIST)

ED6
Surface Spectroscopy and Electronic Properties of Organic Thin Film Electronic Device Structures
Toshihiro SHIMADA¹,² and Atsushi KOMA²
¹PREST, Japan Science and Technology Corporation
²Department of Chemistry, School of Science, The University of Tokyo

Coffee Break

Session IV: Conductive Polymers & Their Applications (2 papers) 17:30-18:10

CP1
Synthesis and Electrochemical Characterization of a Polyradical Cathode Material for Rechargeable Batteries
Jiro IRIYAMA, Kentaro NAKAHARA, Shigeyuki IWASA, Yukiko MORIOKA, Masahiro
CP2
Wavelet Analysis of Pattern of Neuron-Type Conducting Polymer
Masaharu FUJII, Ryotaro OZAKI, Haruo IHORI and Kiyomitsu ARII
Faculty of Engineering, Ehime University

Welcome Party (Welfare and Conference Building)  18:10-19:40

May 17 (Friday)

Session V: Invited Talk (3 papers)  9:00-10:30

IT4
Transport and Photocarrier Generation at Nanometric Interface of Conducting Polymers and Metals
Keiichi KANETO1, Koichi RIKITAKE2 and Wataru TAKASHIMA1
1Graduate School of Life Science and Systems Engineering, Kyushu Institute of Technology
2Department of Computer Science and Systems Engineering, Kyushu Institute of Technology

IT5
Self-Assembled Monolayers and Gold Nanoparticles as the Basis Sets For the Molecular Scale Electronics
Changjin LEE,1 Yongku KANG,1 Sung Rim KIM,1 Do-Jae WON,1 Kyehyung LEE,1 Jae Sung NOH1, Hoon Kyu SHIN,2 Chung Keun SONG,2 Do Hyun KIM,2 Young Soo KWON,2 Hye-Mi SO,3 and Jinhee KIM3
1Korea Research Institute of Chemical Technology
2Dong-A University
3Korea Research Institute of Standards and Science

IT6
Optical Properties of Organic Nonlinear Optical Materials and their Device Applications
Toshikuni KAINO
Institute of Multidisciplinary Research for Advanced Materials, Tohoku University

Coffee Break

Session VI: Sensors (3 papers)  10:50-11:50

SE1
Study of Quartz Crystal Microbalance Odor Sensing System for Apple and Banana Flavors
Severino MUNOZ, Takamichi NAKAMOTO and Toyosaka MORIIZUMI
Graduate School of Science and Engineering, Tokyo Institute of Technology
An Application Possibility of Self-Ordered Mesoporous Silicate for Surface Photo Voltage (SPV) Type NO Gas Sensor (I): The Characterization of Nonionic Triblock Copolymer Templated Self-Ordered Mesoporous Silicates and Preparation Their Film for Device Application
Takeo YAMADA¹,², Hao-Shen ZHOU¹, Hidekazu UCHIDA³, Masato TOMITA³, Yuko UENO³, Keisuke ASAI², Itaru HONMA¹ and Teruaki KATSUBE⁴
¹National Institute of Advanced Industrial Science and Technology (AIST)
²Department of Quantum Engineering and Systems Science, The University of Tokyo
³NTT lifestyle and Environmental Technology Laboratories
⁴Department of Information and Computer Science, Saitama University

An Application Possibility of Self-Ordered Mesoporous Silicate for Surface Photo Voltage (SPV) Type NO Gas Sensor (II): Self-Ordered Mesoporous Silicate Incorporated SPV Device and Its Sensing Property Dependence on Mesostructure
Takeo YAMADA¹,², Hao-Shen ZHOU¹, Hidekazu UCHIDA³, Masato TOMITA³, Yuko UENO³, Keisuke ASAI², Itaru HONMA¹ and Teruaki KATSUBE⁴
¹National Institute of Advanced Industrial Science and Technology (AIST)
²Department of Quantum Engineering and Systems Science, The University of Tokyo
³NTT lifestyle and Environmental Technology Laboratories
⁴Department of Information and Computer Science, Saitama University

Lunch

Session VII: Fabrication & Characterization of Thin Films (7 papers) 13:00-15:20

TF1
C-Au Film Formed by Co-Operation Process of Methane Plasma CVD and Sputtering of Gold
Md. Abul KASHEM, Masaki MATUSHITA and Shinzo MORITA
Department of Electronics, Graduate School of Engineering, Nagoya University

TF2
Investigation of Surface Potential Occurring at Metal/Phthalocyanine Interfaces by Electro-Absorption Technique
Takaaki MANAKA, Xiaoman CHENG, Chen Quan LI and Mitsumasa IWAMOTO
Department of Physical Electronics, Tokyo Institute of Technology

TF3
Light Emission from Prism/Ag/Molecular Films due to Multiple Surface Plasmon Excitations by Reverse Irradiation in the Kretschmann Configuration
Mitsuru TERAKADO¹, Toshiharu SATO¹, Takayuki NAKANO¹, Futao KANEKO¹, Kazunari SHINBO¹, Keizo KATO¹ and Takashi WAKAMATSU²
¹Department of Electrical and Electronic Engineering, Niigata University
²Department of Electrical Engineering, Ibaraki National College of Technology

TF4
Fabrication and Surface Plasmon Excitation Properties of Polystyrene Micro-Sphere Thin
Films
Futao KANEKO1, Syunsuke MIYABAYASHI1, Hajime KOBAYASHI1, Kazunari SHINBO1,3, Keizo KATO1, Masato TANAKA2 and Rigoberto C. ADVINCULA1
1Department of Electrical and Electronic Engineering, Niigata University
2Department of Chemistry and Chemical Engineering, Niigata University
3Department of Chemistry, University of Alabama at Birmingham

TF5
Effect of Surface Hydrophilicity and Solution Chemistry on the Adsorption Behavior of Cytochrome c in Quartz Studied Using Slab Optical Waveguide (SOWG) Spectroscopy
Jose H. SANTOS, Naoki MATSUDA, Zhi-mei QI, Akiko TAKATSU and Kenji KATO
Nanoarchitectonics Research Center, AIST

TF6
Computation of Interaction Energy Between the Calcium Ion Channel Gating Subunits on the Excitable Biological Membrane
Hirohumi HIRAYAMA
Department of Public Health, Asahikawa Medical College

TF7
Local Area Characterization of Evaporated TTF-TCNQ Complex Films with Scanning Tunneling Spectroscopy
Masakazu NAKAMURA, Masaaki IIZUKA, Kazuhiro KUDO and Kuniaki TANAKA
Department of Electronics and Mechanical Engineering, Chiba University

Coffee Break

Session VIII: Optics (7 papers) 15:40-18:00

OP1
Application of Fluorinated Polyimide Waveguide to Integrated Optical Sensors
Renshi SAWADA, Eiji HIGURASHI and Takahiro ITO
NTT Telecommunications Energy Laboratories

OP2
Optical Detectors for Polymeric Optical Integrated Devices
Yutaka OHMORI, Takahisa TSUKAGAWA, Masamitsu KANEKO, Takayuki TANEDA and Hirotae KAJII
Osaka University, Collaborative Research Center for Advanced Science and Technology (CRest)

OP3
Ionization-Assisted Deposition of Azo-Containing Polyurea for NLO Applications
Hiroaki USUI, Fumiko KIKUCHI, Kuniaki TANAKA, Toshiyuki WATANABE and Seizo MIYATA
Faculty of Technology, Tokyo University of Agriculture and Technology

OP4
Waveguide Fabrication of 4-(4-dimethylaminostyryl)-1-methylpyridinium tosylate (DAST) Crystal
Kyoji KOMATSU, Kazuya TAKAYAMA, Bin CAI, Toshikuni KAINO
Institute of Multidisciplinary Research for Advanced Materials, Tohoku University

OP5
Thermo-Optic Devices Using Polymer Waveguides
Seiji TOYODA, Naoki OOBA, Tsutomu KITOH, Takashi KURIHARA and Tohru MARUNO
NTT Photonics Laboratories, NTT Corporation

OP6
Multiplexed Holography with Monolithic Photorefractive Trimer
Tetsuya AOYAMA¹, Emi TAKABAYASHI¹, Yadong ZHANG¹, Hiroyuki SASABE², Tatsuo WADA¹
¹Supramolecular Science Lab., RIKEN ²Chitose Institute of Science & Technology

OP7
Near Field Optical Recording on Azopolymer Using a Sub-Microsecond Pulse
Taiji IKAWA, Chang-Dae KEUM, Hideki TAKAGI, Masaaki TSUCHIMORI, Osamu WATANABE, Wataru MORI, Masaya HARADA, Masahiro TAWATA and Hiroshi SHIMOYAMA
Toyota Central R&D Labs., Inc.

Closing Remark 18:00-18:10