Program

Oral Presentation / Poster Session

March 18 | 19 | 20

Monday, March 18

Opening / Chair : H. ARAKAWA

10:00 **Opening Address**
Jiro HIRAISHI, AIST
COE Project "Photoreaction Control and Photofunctional Materials (PCPM)"
M. TACHIYA , AIST

Session 1 / Chair : M. TACHIYA

10:20 O-1 : Photoswitchable Molecular Receptors
Michael ALFIMOV, Photochemistry Center of Russian Academy of Sciences, Russia

11:00 O-2 : Single Molecules in Nanoscience
M. ORRIT, University of Leiden, The Netherlands

11:40 Lunch

13:00 **Poster Session 1 (Odd numbers)**

Session 2 / Chair : I. KOJIMA

14:40 O-3 : Size Tunable Emission from Organic Capped Silicon Quantum Dots and Nanoparticle/Bilayer Composites
Doug ENGLISH, University of Maryland-College Park, USA

15:00 O-4 : Development of Femtosecond Transient Reflecting Grating Spectroscopy and Its Application to Observation of Solid/Liquid Interface
Masanori FUJINAMI, University of Tokyo

15:40 O-5 : Attempts of Controlling Photoreactions by Lasers in AIST
Taisuke NAKANAGA, AIST

16:10 Break

Session 3 / Chair: T. NAKANAGA

16:30 O-6 : Direct Observation of Ultrafast Dynamics of Molecules and Clusters in Intense Laser Fields
Kaoru YAMANOUCHI, University of Tokyo

17:10 O-7 : Adaptive Femtosecond Quantum Control
Gustav GERBER, University of Wuerzburg, Germany

17:50

Tuesday, March 19

Session 4 / Chair : A. YABE

09:00 O-8 : Surface Micro-fabrication of Silica Glass by LIBWE Method
H. NIINO, AIST

09:30 O-9 : Materials Processing Using Interaction of Laser Beam and Another Medium
K. SUGIOKA, RIKEN

10:10 Break

Session 5 / Chair : H. NIINO

10:30 O-10 : Three-dimensional Microfabrication Using Two-photon Activated Chemistry
Joseph W. PERRY, University of Arizona, USA

11:10 O-11 : Laser-assisted Scanning Tunneling Spectroscopy : a New Tool to Probe Local Photocarriers in Organic Semiconductors
Denis FICHOU, CEA-Saclay, France

11:50 Lunch

13:00 **Poster Session 2 (Even numbers)**

Session 6 / Chair : M. MATSUMOTO

14:40 O-12 : Green Photonics - Photoresponsive Electroluminescent Devices
Kiyoshi YASE, AIST

15:10 O-13 : Organic Solid-State Laser
Musubu ICHIKAWA, Shinshu University

15:50 Break

Session 7 / Chair : K. YASE

16:10 O-14 : Photoreactions in Organic Ultrathin Films
Mutsuyoshi MATSUMOTO, AIST

16:40 O-15 : Light-induced Orientation and Diffusion of Azobenzene Containing Polymers
Joachim STUMPE, Fraunhofer-Institute for Applied Polymer Research, Germany

17:20 O-16 : Molecular Amplification of Photochemical Events
Kunihiro ICHIMURA, Tokyo University of Science

18:00

18:30 Banquet

Wednesday, March 20

Session 8 / Chair: S. MURATA

09:00 O-17 : Ultrafast Electron Injection Dynamics in Dye- and Polymer Sensitized Nanocrystalline Semiconductor Thin Films
Tianquan Tim LIAN, Emory University, USA

09:40 O-18 : Theory of Charge Recombination in Dye-Sensitized Nanocrystalline Semiconductors
M. TACHIYA, AIST

10:20 Break

Session 9 / Chair : H. SUGIHARA

10:40 O-19 : Molecular Control of Photo-induced Electron and Energy Transfer at Nanocrystalline Semiconductor Interfaces
Gerald J. MEYER, Johns Hopkins University, USA

11:20 O-20 : Dye-sensitized Photoelectrochemical and Solid-State Solar Cells: Charge Separation, Transport and Recombination Mechanisms
K. TENNAKONE, Institute of Fundamental Studies, Sri Lanka

12:00 Lunch

Session 10 / Chair : K. SAYAMA

13:10 O-21 : Molecular Design of Efficient Ruthenium(II) Polypyridyl Photosensitizers for Nanocrystalline TiO_2 Based Solar Cells
Ashraful ISLAM, AIST

13:50 O-22 : Photocatalysts for Water Decomposition of RuO_2-combined p-Block Metal Oxides with d^{10} Configuration
Y. INOUE, Nagaoka University of Technology

Session 11 / Chair : K. KASUGA

14:30 O-23 : TiO_2-Photocatalyzed Oxidation of Organic Compounds by H_2O_2 Under Visible Light Irradiation
Teruhisa OHNO, Osaka University

15:00 O-24 : Direct Water Splitting into H_2 and O_2 under Visible Light Irradiation with a New Series of Mixed Oxide Semiconductor Photocatalysts
Hironori ARAKAWA, AIST

15:30 Closing Remarks
Hironori ARAKAWA, AIST

15:40

Program

Oral Presentation / Poster Session

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***Odd numbers---March 18 / Even numbers--March 19**

P-1 **Infrared spectroscopy of aniline-toluene, aniline-toluene-water and investigation of the infrared predissociation reaction in the ternary cluster cation**

Naveed K Piracha and T Nakanaga

National Institute of Advanced Industrial Science & Technology

P-2 **IR-CRD spectroscopy of large methyliodide clusters -structure and its photochemical relevance-**

Fumiyuki Ito and Taisuke Nakanaga

photoreaction control research center, AIST

P-3 **Infrared depletion spectroscopy of aniline-acetonitrile and aniline-acetonitrile-water cluster cations**

Hidekazu Nagai, Naveed Piracha and Taisuke Nakanaga

National Institute of Advanced Industrial Science and Technology

P-4 **The observation of interference effect in the simultaneous one- and two-photon dissociation of allyl iodide**

Hideki Ohmura, Taisuke Nakanaga, Fumiyuki Itoh, Hidekazu Nagai, Hironori Arakawa and Masanori Tachiya

National Institute of Advanced Industrial Science and Technology

P-5 **Intramolecular naphthalene dimer cations studied by near-IR transient absorption spectroscopy**

Hideo OHKITA,*1 Yusuke FUJITA,*1 Toshiki FUSHIMI,*1 Shinzaburo ITO*1 and Masahide YAMAMOTO*2

**1 Department of Polymer Chemistry, Graduate School of Engineering, Kyoto University, *2 Faculty of Science and Engineering, Ritsumeikan University*

P-6 **CUFF (Consistent Charge Equilibration with Universal Force Field)**

Osamu KITAO*1,*2, Tetsuji OGAWA*2,*3, Noriyuki KURITA*4, Hideo SEKINO*4 and Shigenori TANAKA*5

**1 PCRC-AIST, *2 The University of Tokyo, *3 The Society of Chemical Engineers, Japan, *4 Toyohashi Univerisity of Technology, *5 Toshiba Corporation*

P-7 **The Role of Duschinsky Effect on Intramolecular Electron Transfer**

K. K. Liang*1, P.Lelong*1, A. M. Mebel*1, S. H. Lin*1, M. Hayashi*2, H. L. Selzle*3, E. W. Schlag*3 and M. Tachiya*4

**1 Institute of Atomic and Molecular Sciences, *2 Center for Condensed Matter Science, *3 Technisch Universit_t, *4 AIST*

P-8 **Electric Field Effect on Fluorescence Quenching Due to Electron Transfer in a Donor-Spacer-Acceptor Systems**

Maria Hilczer*1*2, M. Tachiya*1

**1 AIST *2Technical University*

P-9 **Competitive Electron Transfers in Model Ionic Triad System. MD Simulations**

Maria Hilczer*1*2, M. Tachiya*1

**1 AIST *2Technical University*

P-10 **Diffusion-assisted long-range reaction between the ends of a polymer: Effective sink approximation**

A.V. Barzykin, K. Seki and M. Tachiya

National Institute of Advanced Industrial Science and Technology (AIST)

P-11 **Relaxation and recombination of excess electrons in water. Two-state electron model.**

S.G.Fedorenko and M.Tachiya

National Institute of Advanced Industrial Science and Technology (AIST)

P-12 **Electric Field Effect on Electron Transfer Rate**

K. Seki, S. D. Traytak and M. Tachiya

AIST

P-13 **Femtosecond transient absorption study on the electron injection process from excited Ru-complexes to nano-crystalline ZnO semiconductor films: Effect of the dye concentration**

Akihiro Furube, Ryuzi Katoh, Kohjiro Hara, Shigeo Murata, Hironori Arakawa, Masanori Tachiya

National Institute of Advanced Industrial Science and Technology (AIST)

P-14 **Effect of molecular aggregation on electron injection efficiency from Ru-complex to nanocrystalline ZnO films**

Hiroaki Horiuchi, Ryuzi Katoh, Kohjiro Hara, Masatoshi Yanagida, Shigeo Murata, Hideki Sugihara, Hironori Arakawa, M. Tachiya

AIST

P-15 **Measurement of fluorescence quantum yield of organic solids**

Jin Tatsuzaki,Sayaka Fujii and Masahiro Kotani

Faculty of Science, Gakushuin University

P-16 **Absorption spectrum of electron injected from excited molecule adsorbed on nanocrystalline TiO_2 and ZnO films**

Ryuzi Katoh, Akihiro Furube, Kohjiro Hara, Shigeo Murata, Hironori Arakawa, Masanori Tachiya

Photoreaction Control Research Center National Institute of Advanced Industrial Science and Technology (AIST)

P-17 **Applications of magnetic field effect and pulsed RYDMR on the photo-induced electron transfer reaction of flavin derivatives.**

Kiminori Maeda[*1], Makoto Horiuchi[*1], Masaaki Murakami[*1], Toshiaki Suzuki[*1], Tatsuo Arai[*1] and Hisao Murai[*2]

*[*1] Department of Chemistry, University of Tsukuba, [*2] Department of Chemistry, Graduate School of Science, Tohoku University*

P-18 **Electron transfer in nonpolar solvent. Long-range electron transfer**

Shigeo Murata[*1], M. El-Kemary[*1] and M. Tachiya[*2]

*[*1] Photoreaction Control Research Center, AIST [*2] AIST*

P-19 **Molecular design and photophysical properties of a calix[4]arene-based metalloporphyrin dimer which exhibits high selectivity for C_{70}**

Takashi Arimura, Seiji Ide, Yasuhiro Suga, Takuya Nishioka, Hideki Sugihara, Shigeo Murata and M. Tachiya

National Institute of Advanced Industrial Science and Technology

P-20 **OBSERATION OF CYANINE J-AGGREGATES WITH PHOTON SCANNING TUNNELING MICROSCOPE**

Takehisa OKUYAMA and Kotaro KAJIKAWA

Department of Information Processing, Interdisciplinary Graduate School of Science and Engineering, Tokyo Institute of Technology

P-21 **Photoinduced Electron Transfer Systems Connected with Intermolecular Quadruple Hydrogen Bonding**

Masashi Ikegami, Ikuma Ohshiro, Tatsuo Arai

Department of Chemistry, University of Tsukuba

P22 **Photoinduced electron transfer in a polysaccharide solid**

Kazuhisa Suzuki, Hidenobu Shiroishi and Masao Kaneko

Faculty of Science, Ibaraki University

P-23 **Fluorescence Quenching Reaction of Chlorophyll a in DPPC Vesicles**

Makoto Takezaki, Toshihiro Tominaga, Keiichi Yamane* and Michiko Kodama*

*Department of Applied Chemistry, Faculty of Engineering, Okayama University of Science, *Department of Biochemistry, Faculty of Science, Okayama University of Science*

P-24 **Excited State Dynamics of Closely Connected C_{60}-Aromatic Amine Dyad in Non-polar and Polar Solvents**

Yasuyuki ARAKI[*1], Ryota HATSUDA[*2], Bahlul Zayed Sh. AWEN[*2], Akihiko OUCHI[*2], Osamu ITO [*1,*3]

*1 Core Research for Evolutional Science and Technology (CREST), *2 Institute of Multidisciplinary Research for Advanced Materials (IMRAM), Tohoku University, *3 Research Initiative of Green Chemical Process, National Institute of Advanced Industrial Science and Technology

P-25 **SPECTROSCOPIC ANALYSIS OF AN UV IRRADIATED POLYIMIDE FILM**

Tomoaki TANAKA, Nobuyuki MATSUBAYASHI, Motoyasu IMAMURA, Hiromichi SHIMADA

National Institute of Advanced Science and Technology

P-26 **Theoretical Studies on Photoexcitation Processes under Visible Light Irradiation in 3d Transition Metal-Doped Titanium Dioxide**

Tsutomu UMEBAYASHI*1, Tetsuya YAMAKI*2, Hisayoshi ITOH*2 and Keisuke ASAI*1

*1 Department of Quantum Engineering and Systems Science, Graduate School of Engineering, The University of Tokyo *2 Department of Materials Development, Takasaki Radiation Chemistry Research Establishment, Japan Atomic Energy Research Institute*

P-27 **Ketone acts as a external electron spin multiplicity modulator of excited singlet methyl methoxybenzoate : New discovery in a dioxetane photolysis at low temperature**

Takeshi Wakasugi*1,Ken Fujimori*1,Masakatsu Matsumoto*2, Shigeo Murata*3, Ryuzi Katoh*3

*1 University of Tsukuba, Department of Chemistry *2 Kanagawa University, Department of Chemistry *3 AIST*

P-28 **PRESERVATION CHARACTERISTICS OF RIGHT AND LEFT CIRCULARLY POLARIZED PHOTOLUMINESCENCE OBSERVED IN Si BASED LUMINESCENCE MATERIAL**

Naokatsu YAMAMOTO

Basic and Advanced Research Division, Communications Research Laboratory

P-29 **Possibility of Nonequilibrium Isomerization of Azobenzene Triggered by Vibrational Excitations**

Shigenori Tanaka*1, Satoshi Itoh*1 and Noriyuki Kurita*2

*1 Advanced Materials & Devices Laboratory, Toshiba Research & Development Center *2 Department of Knowledge-Based Information Engineering, Toyohashi University of Technology*

P-30 **A Highly Efficient Dye-Sensitized Solar Cells with Ionic Conducting Polymer**

Liyuan Han, Ryoichi Komiya, Ryohsuke Yamanaka, Takehito Mitate

Ecological Technology Development Center, SHARP CORPORATION

P-31 **Dye-sensitized nanocrystalline TiO_2 solar cells using novel coumarin dyes**

Kohjiro Hara*1, Yasuhiro Tachibana*1, Ryuzi Katoh*1, Akihiro Furube*1, Kazuhiro Sayama*1, Hironori Arakawa*1, Yasuyo Ohga*2, Akira Shinpo*2 and Sadaharu Suga*2

*1 National Institute of Advanced Industrial Science and Technology (AIST), Photoreaction Control Research Center (PCRC) *2 Hayashibara Biochemical Laboratories, Inc.*

P-32 **Oxidation of diamond and silicon carbide using TiO_2(IV) photocatalyst**

Yoshie Ishikawa*1, Yoko Nishida and Yasumichi Matsumoto

Department of Applied Chemistry, Faculty of Engineering

P-33 **INFLUENCE OF THE ELECTROLYTES ON ELECTRON TRANSPORT PROPERTIES IN MESOPOROUS TiO_2-ELECTROLYTE SYSTEMS**

Shingo KAMBE, Shogo NAKADE, Takayuki KITAMURA, Yuji WADA and Shozo YANAGIDA

Material and Life Science, Graduate School of Engineering, Osaka University

P-34 **ELECTRON DIFFUSION LENGTH IN DYE-SENSITIZED SOLAR CELLS**

Takayuki KITAMURA, Mizuho MATSUDA, Shogo NAKADE, Shingo KAMBE, Yasuteru SAITO, Yuji WADA and Shozo YANAGIDA

Material and Life Science, Graduate School of Engineering, Osaka University

P-35 **Quasi-solid-state dye-sensitized solar cells using room temperature molten salts and a low molecular weight gelator**

Wataru KUBO, Takayuki KITAMURA, Kenji HANABUSA, Yuji WADA and Shozo YANAGIDA

Material and Life Science, Graduate School of Engineering, Osaka University Graduate School of Science and Technology, Shinshu University

P-36 **Fabrication of dye-sensitized solar cells from amorphous TiO_2-sol by spray pyrolysis deposition**

Masayuki Okuya, Daisuke Osa, G.R.A. Kumara and Shoji Kaneko

Department of Materials Science and Technology, Shizuoka University

P-37 **Poly(ethylenedioxythiophene) as a hole conductor in solid state dye sensitized solar cells**

Yasuteru Saito, Takayuki Kitamura, Yuji Wada and Shozo Yanagida

Material and Life Science, Graduate School of Engineering, Osaka University

P-38 **Development of virtual device simulator of bipolar photogalvanic cell**

Hidenobu Shiroishi[*1], Yuuki Kaburagi[*1], Michiko Seo[*1], Takayuki Hoshi[*1], Tomoyo Nomura[*1], Sumio Tokita[*2] and Masao Kaneko[*1]

*[*1] Faculty of Science, Ibaraki University [*2] Faculty of Engineering, Saitama University*

P-39 **Application of Carbon Nano-fibers to Counter Electrode in Dye- Sensitized Solar Cells**

Kazuharu Suzuki, Makoto Yamaguchi and Mikio Kumagai

Chemical Research Department, Institute of Research and Innovation

P-40 **Quantitative analysis of electron transfer yield in dye sensitised TiO_2 solar cells: influence of light scattering magnitudes and excitation energy**

Yasuhiro Tachibana, Kohjiro Hara, Kazuhiro Sayama and Hironori Arakawa

Photoreaction Control Research Center (PCRC), National Institute of Advanced Industrial Science and Technology (AIST)

P-41 **Dye-Sensitized Solar Cells using Semiconductor Thin Film Composed of Titania Nanotubes**

Susumu Yoshikawa[*1], Issei Okada[*2], Yusuke Murata[*3] and Motonari Adachi[*4]

*[*1] Institute of Advanced Energy , Kyoto University [*2] Institute of Advanced Energy , Kyoto University [*3] Institute of Advanced Energy , Kyoto University [*4] Institute of Advanced Energy , Kyoto University*

P-42 **DEVELOPMENT OF DYE-SENSITIZED SOLID-STATE PHOTOVOLTAIC CELL: IMPROVED STABILITY BY FORMING A FINE CRYSTALLINE COPPER IODIDE FILM**

Akinori Konno[*1], G. R. Asoka Kumara [*1] and Kirthi Tennakone[*2]

*[*1] Faculty of Engineering, Shizuoka University, [*2] Institute of Fundamental Studies, Sri Lanka*

P-43 **Nanocrystalline Solar Cells Sensitized with Pyridyl-Quinoline Ruthenium(II) Complexes**

Masatoshi Yanagida[*1], Ashraful Islam[*1], Yasuhiro Tachibana[*1], Gaku Fujihashi[*2], Kohjiro Hara[*1], Ryuzi Katoh[*1], Hideki Sugihara[*1] and Hironori Arakawa[*1]

*[*1] National Institute of Advanced Industrial and Science Technology (AIST), Photoreaction Control Research Center(PCRC) [*2] Sumitomo Osaka Cement Co. Ltd*

P-44 **Photochemical CO_2 reduction mediated by ruthenium and cobalt polypyridine complexes in compressed CO_2**

Atsushi Fushimi, Yoshihito Maeno and Takuji Hirose

Department of applied chemistry, Saitama university

P-45 **Homogeneous Hydrogenation of Carbon Dioxide to Formate Catalyzed by Rhodium Complexes in Aqueous Solution Under Mild Conditions**

Yuichiro Himeda, Nobuko Onozawa, Hideki Sugihara, Hironori Arakawa and Kazuyuki Kasuga

Photoreaction Control Research Center, National Institute of Advanced Industrial Science and Technology (AIST)

P-46 **Structure and properties of diastereoisomers of a ruthenium(II) complex having a pyridylpyrazoline derivative as a ligand**

Pengfei Wang, Kazuyuki Kasuga, Nobuko Onozawa-Komatsuzaki, Ryuzi Katoh, Yuichiro Himeda, Hideki Sugihara and Hironori Arakawa

Photoreaction Control Research Center, National Institute of Advanced Industrial Science and Technology

P-47 **Synthesis and properties of ruthenium bipyridyl-copper and cobalt schiff base dinuclear complexes having dipyrido phenazine moiety**

Nobuko Onozawa-Komatsuzaki, Ryuzi Katoh, Yuichiro Himeda, Hideki Sugihara, Hironori Arakawa, Kazuyuki Kasuga

Photoreaction Control Research Center, National Institute of Advanced Industrial Science and Technology (AIST)

P-48 **Significant Effect of NaI Addition on Water Splitting into H_2 and O_2 over Pt-loaded Semiconductor Photocatalysts - Suppression of Backward Reaction over Pt Particles on Semiconductor -**

Ryu Abe, Zhigang Zou, Kazuhiro Sayama and Hironori Arakawa

Photoreaction Control Research Center (PCRC), National Institute of Advanced Industrial Science and Technology (AIST)

P-49 **Photocatalytic water splitting into H_2 and O_2 over various tantalates**

Hideki Kato and Akihiko Kudo

Faculty of Science, Science University of Tokyo

P-50 **Photocatalytic reduction of CO_2 by $Co(bpy)_3^{2+}$ sensitized by $Ru(bpy)_3^{2+}$ fixed to cation exchange polymer**

Yoshihito Maeno[*1], Takuji Hirose[*1] and Yuichiro Himeda[*2]

*[*1] Department of Applied Chemistry, Saitama University, [*2] Photoreaction Control Research Center, National Institute of Advanced Industrial Science and Technology*

P-51 **Multinuclear complexes of Ruthenium and Osmium connected by Oligomethylene-Linked Bisphenanthrolines**

Mitsuru Nakajima[*1], Atsushi Fushimi[*1], Yoshihito Maeno[*1], Tomohisa Miura[*1], Akihiro Tsukamoto[*1], Takuji Hirose[*1], Kazuyuki Kasuga[*2], Nobuko Onozawa[*2] Satomi Sakai[*3], Akio Yoshimura[*3] and Takeshi Ohno[*3]

*[*1] Department of Applied Chemistry, Faculty of Engineering, Saitama University [*2] National Institute of Materials and Chemical Research [*3] Department of Chemistry, Graduate School of Science, Osaka University*

P-52 **Photocatalytic Water Splitting into H_2 and O_2 under Visible Light Irradiation Mimicking a Z-Scheme Mechanism in Photosynthesis**

Kazuhiro SAYAMA[*1], Kazuaki, MUKASA[*2], Ryu ABE[*1], Yoshimoto ABE[*2] and Hironori ARAKAWA[*1]

*[*1] AIST [*2] Science Univ. of Tokyo*

P-53 **Role of *R* in Bi_2RNbO_7(*R* = Y, Rare earth):**
Effect on Band Structure and Photocatalytic Properties

Zhigang Zou, Jinhua Ye*, Ryu Abe, Kazuhiro Sayama and Hironori Arakawa

*Photoreaction Control Research Center (PCRC), National Institute of Advanced Industrial Science and Technology (AIST), *Materials Engineering Laboratory (MEL), National Institute for Materials Science (NIMS)*

P-54 **ESR studies on electron transfer reaction from xanthene dye on TiO_2 particle**

Yoshinari Konishi, Ryu Abe and Hironori Arakawa

National Institute of Advanced Industrial Science and Technology Photoreaction Control Research Center

P-55 **FABRICATION OF MICROPATTERNS ON FUSED SILICA BY LASER-INDUCED BACKSIDE WET ETCHING (LIBWE)**

Ximing Ding, Yoshizo Kawaguchi, Hiroyuki Niino and Akira Yabe

Photoreaction Control Research Centre, National Institute of Advanced Industrial Science and Technology (AIST)

P-56 **Time evolution of ZnO plume in He atmosphere**

Yoshizo KAWAGUCHI, Aiko NARAZAKI, Tadatake SATO, Hiroyuki NIINO and Akira YABE

Photoreaction Control Research Center, National Institute of Advanced Industrial Science and Technology (AIST)

P-57 **Preparation and Characterization of $Pb(Zr,Ti)O_3$ Thin Films Using Coating Photolysis Process**

Yuki Miyamoto[*1], Tetsuo Tsuchiya[*2], Iwao Yamaguchi[*2], Takaaki Manabe[*2], Hiroyuki Niino[*2], Akira Yabe[*2], Toshiya Kumagai[*2], Toshio Tsuchiya[*1] and Susumu Mizuta[*2]

*[*1] Department of Material Science and Technology, Faculty of Industrial Science and Technology, Tokyo University of Science [*2] National Institute of Advanced Industrial Science and Technology (AIST*)

P-58 **DYNAMICS OF CHEMICALLY-REACTED Si NANOPARTICLES FORMED BY LASER ABLATION**.

T. Mizuta, D. Takeuchi, T. Makimura and K. Murakami

Institute of Applied Physics, University of Tsukuba

P-59 **Application of polyperinaphthalenic organic semiconductive thin films prepared by laser ablation to opto and electronic devices**

Satoru Nishio[*1], Kazuyuki Tamura[*1], Jun Murata[*1], Junko Kitahara[*1], Teruhiko Kan[*1], Akiyoshi Matsuzaki[*1], Nobuo Ando[*2], Yukinori Hato[*2]

*[*1] Department of Chemistry for Materials, Faculty of Engineering, Mi'e University [*2] Kanebo LTD.*

P-60 **Formation of silicon-based polymer films using metal nano-particles produced by laser ablation**

Ren-guo Song*1, Munehiro Yamaguchi*1, Okio Nishimura*1,
Katsuyoshi Shimokawa*1, Nobuo Kushibiki*2, Masaaki Suzuki*1

*1 Research Institute of Biological Resources, AIST *2 Dow Corning Asia, Ltd.*

P-61 **Laser ablation of iron disilicide studied by laser ionization time-of-flight mass spectrometry**

Aiko Narazaki, Tadatake Sato, Yoshizo Kawaguchi, Hiroyuki Niino and Akira Yabe

Photoreaction Control Research Center, National Institute of Advanced Industrial Science and Technology

P-62 **TRIPLET EXCIMER OF VINYL POLYMERS HAVING AROMATIC SIDE GROUP**

Masahide YAMAMOTO*1, Kenji HISADA*2, Hideo OHKITA*2, Shinzaburo ITO*2, KeitaTANI*3 and Yasuo TOHDA*3

*1 Faculty of Science and Engineering, Ritsumeikan University, *2 Department of Polymer Chemistry, Graduate School of Engineering, Kyoto University, *3 Division of Natural Science, Osaka Kyoiku University*

P-63 **Generation of benzdiynes in low temperature matrices by laser-induced reaction**

Tadatake Sato, Sundaram Arulmozhiraja, Aiko Narazaki, Yoshizo Kawaguchi, Hiroyuki Niino, Akira Yabe

Photoreaction Control Reserch Center, National Institute of Advanced Industrial Science and Technology(AIST)

P-64 **Deposition dynamics for droplet-free Si nanoparticle films using laser ablation.**

D. Takeuchi*1, T. Mizuta*1, T. Makimura*1, S. Yoshida*1, M. Fujita*1, K. Hata*2, H. Shigekawa*1 and K. Murakami

*1 Institute of Applied Physics, University of Tsukuba *2 Department of Chemistry and Chemical Biology, Harvard University*

P-65 **EPITAXIAL GROWTH OF INZIUM OXIDE FILMS BY A COATING PHOTOLYSIS PROCESS**

Tetsuo Tsuchiya, Iwao Yamaguchi, Takaaki Manabe, Toshiya Kumagai, Hiroyuki Niino, Akira Yabe and Susumu Mizuta

National Institute of Advanced Industrial Science and Technology (AIST)

P-66 **Improved Photo-Catalytic Activity and Carrier Dynamics of Vacuum-Deposited SiO_2/TiO_2 Multilayer Film**

Kiyoshi Miyashita *1,*2, Shin-ichi Kuroda *2, Tsutomu Ubukata *3, Keiji Tokuda *1, So Tajima *4, Seiji Tobita *2, Hitoshi Kubota *2

*1 Department of Chemistry, Gunma Prefecture Industrial Technology Research Laboratory, *2 Department of Chemistry, Gunma University, *3 Ichikoh Industries Ltd., *4 Sattelite Venture Business Laboratory, Gunma University,*

P-67 **IN SITU OBSERVATION OF ELECTRON TRANSFER BETWEEN SURFACE IMMOBILIZED CYTOCHROME c AND ITO ELECTRODE BY SLAB OPTICAL WAVEGUIDE SPECTROSCOPY**

Naoki MATSUDA*1, Jose H. SANTOS*1, Zhi-mei QI*1, Akiko TAKATSU*2 and Kenji KATO*2

*1Nanoarchitectonics Research Center, AIST, *2 National Metrological Laboratory, AIST*

P-68 **3-D Microfabrication of Photosensitive Glass by Femtosecond Laser**

Masashi Masuda*2, Koji Sugioka*1, Ya Cheng*1, Naoko Aoki*2, Masako Kawachi*3, Kazuhiko Shihoyama*3, Koichi Toyoda*2 and Katsumi Midorikawa*1

*1 RIKEN (The Institute of Physical and Chemical Research). *2 Department of Applied Electronics, Faculty of Industrial Science and Technology, Science University of Tokyo. *3 HOYA CONTINUUM CORPORATION.*

P-69 **Bandgap effect to Thermal Quenching of Photoluminescence At 1.5ƒÊm from Er-Doped Si Nanocrystallites in SiO_2 Matrices**

C.Q.Li, K.Kondo, Y.Kawaguchi, T.Makimura and K.Murakami

Institute of Applied Physics, University of Tsukuba, Tsukuba

P-70 **Fabrication of Er-doped Si nanocrystallites in SiO_2 matrices without thermal quenching of 1.5ƒÊm photoluminescence**

Keiichi Kondo, Changqing Li, Testuya Makimura and Kouichi Murakami

Institute of Applied Physics, University of Tsukuba

P-71 **PHOTO-ORIENTATION OF MESOSTRUCTURED SILICA USING AN AZOBENZENE MONOLAYER**

Yasuhiro KAWASHIMA*1, Masaru NAKAGAWA*1, Takahiro SEKI*1 and Kunihiro ICHIMURA*2

*1Chemical Resources Laboratory, Tokyo Institute of Technology *2Research Institute for Science and Technology, Science University of Tokyo*

P-72 **The sythesis and photoreaction of montmorillonite -dihexadecylviologen-tetraphenylporphine intercalation compounds**

Norishige Kakegawa[*1] and Makoto Ogawa[*2,3]

*[1] Graduate School of Sicence and Engineering, Waseda University [*2] Department of Earth Sciences, Waseda University [*3] PRESTO, Japan Scienes and Technology Corporation (JST)*

P-73 **Pockels Effect in Hemicyanine Self-Assembled Monolayer**

Tomoko Iiyama[*1], Ryo Naraoka[*1], Haruki Okawa[*2], Yuuki Ikezawa[*2], Kazuhiko Hashimoto[*2] and Kotaro Kajikawa[*1]

*[1] Interdisciplinary Graduate School of Sciencec and Engineering, Tokyo Institute of Technology [*2] Department of Applied Chemistry, Faculty of Engineering, Kogakuin University*

P-74 **Preparation and Photo-Responsive Properties of Polymeric Membranes**

N. Minoura[*1], A. Rachkov[*1], K. Idei[*2], K. Matsuda[*2]

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P-75 **Photocontrol of Poly(di-*n*-hexylsilane) Main Chain Orientation by Irradiation with Linearly Polarized UV Light**

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P-76 **Photochemical studies of self-assembled via axial coordination zinc porphyrin-fulleropyrrolidine dyads and triads**.

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P-77 **Aggregation Behavior of Homo- and Hetero-coerdianthrone**

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P-78 **Morphology Controls of Fibrous Materials from Azopyridne Carboxylic Acids**

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P-79 **Preparation of Pt/TiO_2 Nanocomposite Thin Films by PLD/Sputtering Combined System and their Photoelectrochemical Behaviors**

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P-80 **Characterization of optical and thermal properties of porous silicon films on silicon substrates using photoacoustic technique**

Qing Shen and Taro Toyoda

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P-81 **SiO_2 SOL-GEL FILMS DOPED WITH NICKEL OXIDE NANOCLUSTERS FOR OPTICAL GAS SENSOR APPLICATIONS**

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P-82 **Preparation of nanocrystalline complex oxide films by pulsed laser deposition at room temperature**

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P-83 **FORMATION OF NICKEL OXIDE NANOPARTICLES BY LASER ABLATION.**

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P-84 **Enantioselective Photoreaction of 4-Isopropyltropolone Methyl Ether in Inclusion Crystals with Optically Active Host Compounds**

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P-85 **Photomagnetism of Photochromic Biindenylidene in the Solid State**

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P-86 **Fluorescence emission in microcrystals and thin films of diphenylhexatrienes**

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P-87 **Three-Component Photo Radical Initiating System -the effect of accelerator-**

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P-88 **Development of environmental depollution system using functional materials**

Kensaku Mizoguchi, Tomohiko Nakagawa, Tomonari Nakatani, Shinsuke Sugiura, Shigetoshi Matsui and Akinori Maezawa

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P-89 **Gas-phase synthesis of fine particles from tetravinylgermanium and carbon disulfide**

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P-90 **Second harmonic generation (SHG) at semiconductor surfaces as a tool for in-situ characterization during nanometer-scale materials processing**

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P-91 **Nonlienear Optical Properties of Hemicyanine Self-Assembled Monolayers**

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P-92 ***cis-trans* PHOTOISOMERIZATION OF *meta*-SUBSTITUTED [1.1]AZOBENZENOPHANES**

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P-93 **Mn ion concentration dependence of the photoacoustic and photoluminescence spectra for ZnS:Mn nanocrystals**

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P-94 **Exposure time dependence of the photoacoustic and photoluminescence intensities for porous silicon with different wavelengths of excitation light**

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P-95 **Effect of applied voltage treatments on photoacoustic and photoelectrochemical current spectra in final preparation processes of porous TiO_2 electrodes**

Taro Toyoda, Masashi Hayashi, Jun Sato and Qing Shen

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P-96 **Effect of sensitization by quantum-sized CdS on photoacoustic and photoelectrochemical current spectra of porous TiO_2 electrodes**

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P-97 **Control of the Properties of CO_2 Reduction Photocatalysis of Rhenium Complexes Using Direct Interaction between Ligands**

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P-98 **Investigation of organic photoreceptor device useing p/n alternating multilayer**

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P-99 **OPTO-ELECTRICAL PROPERTIES OF BORON DOPED CAMPHORIC CARBON THIN FILMS DEPOSITED BY PULSED LASER DEPOSITION**

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P-100 **OPTO-ELECTRICAL PROPERTIES OF TETRAHEDRAL CARBON THIN FILMS DEPOSITED BY PULSED LASER DEPOSITION**

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P-101 **SPECTRAL PHOTORESPONSE CHARACTERISTICS OF PHOSPHORUS DOPED n-CARBON/p-SILICON SOLAR CELL**

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P-102 **OPTO-ELECTRICAL PROPERTIES OF NITROGEN DOPED CAMPHORIC CARBON THIN FILMS DEPOSITED BY PULSED LASER DEPOSITION AND ITS APPLICATION TO n-CARBON/p-SILICON JUNCTION SOLAR CELL**

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P-103 **PATHWAY FOR THE EXCITATION ENERGY TRANSFER FROM THE CORE ANTENNA COMPLEX TO THE PHOTOSYNTHETIC REACTION CENTER OF PHOTOSYSTEM II**

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P-104 **Molecular Three-dementional Alignment in Thiophene Derivative Films**

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P-105 **Photoelectric Properties of Oriented Layers of Conjugated Polymers on Titanium dioxide**

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