The 6th Aceanian Conference on Dye-sensitized and Organic Solar Cells

Poster Presentations

October 17, 2011
17:00-20:00

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Polymer-sensitized solar cells using polythiophene derivatives with a hydrophilic unit directly linked to the thiophene ring

Takaya Kubo, Kenta Akitsu, Satoshi Uchida, Hiroshi Segawa, Naoki Otani, Misayo Tomura, Takayuki Tamura, Mitsunobu Matsumura

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Photovoltaic Generation Based on Electropolymerized Indoline Dye-Coupled Polyviologen Layer in Aqueous Solution

Naoki SANO, Miu SUZUKI, Wataru TOMITA, Kenichi OYAIZU and Hiroyuki NISHIDE

Department of Applied Chemistry, Waseda University

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Nanostructure Control of ZnO Thin Films by Electrodeposition and Its Influence to Dye-sensitized Solar Cell Performances

Toshimasa SUZUKI, Shigeo HORI, Shingo KAWAKATA and Tsukasa YOSHIDA

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Novel Double Anchor Indoline Dyes with Improved Efficiency for ZnO Solar Cells

Yuzuri YASUDA, Hiroto BABA, Shinji HIGASHIJIMA, Hidetoshi MIURA, Masaki MATSUI and Tsukasa YOSHIDA

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Non-Pt Counter Electrode Catalysts Applied in Dye-sensitized Solar Cells

Mingxing Wu, X. Lin, and Tingli Ma

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Development of Organic Solar Cells using Surface Complexes between TiO₂ and Dicyanomethylene Compounds

Jun-ichi FUJISAWA, Morio NAGATA, Norikazu HONDA, Jotaro NAKAZAKI, Satoshi UCHIDA, Takaya KUBO and Hiroshi SEGAWA

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Synthesis of functionalized silicon quantum dots for enhanced photocurrent of dye-sensitized solar cells
Kyu-Hak Park, Hyung-Kyun Lee and Kang-Jin Kim
Department of Chemistry, Korea University

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New Organic Sensitizer Containing Furan and Triphenylamine Moiety for Dye-sensitized Solar Cells
Jongchul Kwon, Nara Cho, Woochul Lee, Myoung Ki Kim, Sung Jin Jeong, Yongjun Jeon, Jaejung Ko, and Jong-In Hong
1Department of Chemistry, College of Natural Science, Seoul National University
2Department of New Materials Chemistry, Korea University

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Change in Ionic Conductivity and Interfacial Properties Attributed by Different Metal Oxide in Polymer Electrolytes for Solid State Dye-sensitized Solar Cells
Taewook Son, Hwaseok Chae, Yong Bum Pyun and Yong Soo Kang
Center for Next Generation Dye-sensitized Solar Cells and WCU Department of Energy Engineering, Hanyang University

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Roles of Cationic Species of Iodide/Triiodide in Solid-State Dye-Sensitized Solar Cells Employing Polymer Electrolyte
Taewook Son, Yong Bum Pyun, Su Jin Kim, Yong-Gun Lee, Jun-Ho Yum, Donghoon Song, Hwaseok Chae and Yong Soo Kang
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2School of Chemical and Biological Engineering, Seoul National University
3Swiss Federal Institute of Technology at Lausanne, Switzerland

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New Donor Materials based on Thiophene, Indole and Triphenylamine for Bulk Heterojunction Solar Cells
Yongjun Jeon, Jongchul Kwon, Woochul Lee, Myong Ki Kim, Seongjin Jeong, and Jong-In Hong
1Department of Chemistry, College of Natural Science, Seoul National University, Seoul, South Korea

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Novel Trifluoromethylthiazole-5-carboxylic Acid as Acceptor in Photo-sensitized Dyes
Satoru IWATA*, Misa AOYAMA and Kiyoshi TANAKA
Faculty of Science and Technology, Seikei University
The 6th Aceanian Conference on Dye-sensitized and Organic Solar Cells

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Enhanced Performance of ZnO Based Dye-sensitized Solar Cells Using a ZnO Compact Layer

Jie GUAN1,2,3, Jiyuan ZHANG1,2,3, Guogang XUE1,2,3, Xirui YU1,2,3, Zekun TANG1,2,3, Tao YU1,2,3 *, and Zhigang ZOU1,2,3
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Woochul Lee,1 Youna Yang,1 Nara Cho,2 Myung Ki Kim,1 Jaejung Ko2 and Jong-In Hong*1
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2Departments of New Material Chemistry, Korea University, Jochiwon, Chungnam 339-700 Korea

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Dye Sensitized Solar Cell Using Organic Molecules as a Redox Mediator

Akitomo KIKUCHI1, Takumi OKUYAMA1, Fumiaki KATO1, Kenichi OYAIZU3 and Hiroyuki NISHIDE1
1Department of Applied Chemistry, Waseda University

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Ken MURAOKA1, Takakazu SAITO1, Fumiaki KATO1, Kenichi OYAIZU3, and Hiroyuki NISHIDE1
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Deprotonation of N3 dye Adsorbed onto TiO2 Nanoparticles for High Performance Dye-sensitized Solar Cells

Narayan Chandra Deb NATH1, Subrata SARKER1, A. J. Saleh AHAMMAD1, Md. Mahbubur RAHMAN1, Sung Su LIM2, Ho Joon LEE2, Jae-Joon LEE1,2 *,
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2Department of Applied Chemistry, Konkuk University

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Plastic-Substrate Dye-sensitized Solar Cells Employing a Solvent-free Ionic Gel Electrolyte

Jhih-Lin Wu, Hsin-Fang Lee, Po-Ya Hsu, Fan-Yi Ouyang and Ji-Jung Kai *
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Miwa MATSUNE, Sadakazu HIROSE and Toshiyuki OKAMOTO
Gunze Ltd.
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Application of Mesoporous Spherical TiO$_2$ in Flexible Dye-Sensitized Solar Cell

Leqing FAN*, Yuan CHEN, Jihuai WU*, and Yunfang HUANG
Institute of Materials Physical Chemistry and the Key Laboratory for Functional Materials of Fujian Higher Education, Huaqiao University

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Photovoltaic Properties of CdSe QuantumDot-Sensitized ZnO Solar Cells with Flower-Like Structure

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3 PRESTO, Japan Science and Technology Agency (JST)

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Photoexcited Hole Dynamics in CdSe QDs-Sensitized Solar Cell Measured by Heterodyne Transient Grating Method

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Photovoltaic Properties and Electrochemical Impedance Spectra of ZnS Passivated PbS Quantum Dot Sensitized Solar Cells

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Fabrication of Photoelectrodes with Ag$_2$S Nanodot Sensitizers for Quantum Dot-sensitized Solar Cells

Tomohiro NAGATA$, Norihiro Kitada, and Hirohiko MURAKAMI
Tsukuba Institute for Super Materials, ULVAC, Inc.
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**Organic bilayer and planar mixed heterojunction solar cells based on novel coplanar π–bridged D–π–A molecule**

Yi-Hong Chen, Shi-Wen Chiu, Hao-Wu Lin, Li-Yen Lin, Ken-Tsung Wong

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2 Department of Chemistry, National Taiwan University

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**Photovoltaic Characteristics and Ultrafast Carrier Dynamics of CdS/CdSe Quantum Dot-Sensitized TiO_{2} Solar Cells with Inverse Opal Structure**

Yohei ONISHI, Qing SHEN, Kenji KATAYAMA, and Taro TOYODA

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2 PRESTO, Japan Science and Technology Agency (JST)
3 Department of Applied Chemistry, Faculty of Science and Engineering, Chuo University

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**Fabrication and Photoelectrochemical Properties of TiO_{2} films on ITO/PEN Substrate for Flexible Quasi-solid-state Dye-sensitized Solar Cells**

Po-Ya Hsu, Hsin-Fang Lee, Jhih-Lin Wu, Fan-Yi Ouyang and Ji-Jung Kai

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**Preparation of Ag@TiO_{2} Core-Shell Composite Nanoparticles for Dye-sensitized Solar Cell**

Kyungho Song, Inseok Jang, and Seong-Geun Oh

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**Highly Ordered Donor-Acceptor Heterojunction at the Microphase Segregation Interface**

Sadayuki Asaoka, Masashi Aotani, Syunske Yamada, Gensuke Akimoto, Motonori Komura, Hirohisa Yoshida

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2 Chemical Resources Laboratory, Tokyo Institute of Technology.
3 Department of Urban Environmental Science, Tokyo Metropolitan University

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**Dependence of Electron Diffusion Length on Size of Electrolyte Cation in Dye-sensitized Solar Cells**

Yusuke YAMANASHI, Tomohiro GONDA, and Naoki KOBAYASHI

Faculty of Informatics and Engineering, The University of Electro Communications
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Combination of Organic Dye and Cobalt Complex Redox Couples for Dye-sensitized Solar Cells (2)

Takurou N. MURAKAMI*, Takayuki UCHIYAMA², Yu UEMURA¹, Shingo SUZUKI¹, Naruhiko MASAKI², Nagatoshi KOUMURA¹, Kazumichi OBUCHI², Mutsumi KIMURA², and Shogo MORI*²

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²Faculty of Textile Science and Technology, Shinshu University

**P033**

Improvement of Photovoltaic Performance of Dye-sensitized Solar Cells by (Hf/N) Codoping

Issei OHTANI¹, Hiroyuki NAKAMURA², Kenji YAMADA¹, Hirokazu YAMANE¹

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Improvement of Photovoltaic Characteristics of Dye-sensitized Solar Cells using Polymer-grafted TiO₂ Nanoparticles

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**P035**

Effect of Annealing Temperature on Photo-electrochemical Performance of Thin-Film Organic Photovoltaic Cells

Yoshinori KIMOTO¹, Hiroyuki NAKAMURA², Kenji YAMADA¹, Hirokazu YAMANE¹

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Effect of dye adsorption conditions on the photoelectrochemical kinetics in D149-sensitized zinc oxide films

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Dye-Sensitized Solar Cells with a Ruthenium Sensitizer Bearing an Ortho-Dicarboxyphenyl Terpyridine Ligand

Shohei OURA, Yu OKUYAMA, Kazutaka MITA, Hironobu OZAWA, and Hironori ARAKAWA

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Optimization of Light Confining Effect of TiO2 Photoelectrode for Efficiency Improvement of Black-Dye-Sensitized Solar Cells
Tomoya KANEYASU, Yu OKUYAMA, Hironobu OZAWA, and Hironori ARAKAWA

Department of Industrial Chemistry, Faculty of Engineering, Tokyo University of Science

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Kazutaka MITA, Hironobu OZAWA, and Hironori ARAKAWA

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Light-Confining Effects of Nanoporous TiO2 Spheres on the Solar Cell Performance of Black-Dye-Based Dye-sensitized Solar Cells
Hiroki FUMIKURA, Hironobu OZAWA, Wan In Lee and Hironori ARAKAWA

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Dye-sensitized Solar Cells with Metal Substrates and Carbon Cathodes
Yuki NOGUCHI, and Masaie FUJINO

Gunma National College of Technology

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Pulse electrodeposition as a tool to enhance the penetration of cuprous iodide in dye-sensitized solid-state solar cells
E.V.A. Premalal, N.Dematage and Akinori Konno

Graduate School of Science and Technology, Shizuoka University

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Development of quality of FTO films for high efficient dye-sensitized solar cell and other optoelectronic devices
E.V.A. Premalal, N. Dematage, S. Kaneko, A. Konno

Graduate School of Science and Technology, Shizuoka University

P044

Highly Electroactive Alkylpyridinium Iodide for Efficient Dye-Sensitized Solar Cells
Feng HAO, Hong LIN, Wendi Li and Jianbao Li

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School of Materials Science and Engineering, University of Science & Technology Beijing
**P045**

**Bifunctional Single-Crystalline Rutile Nanorods Decorated Heterostructural Photoanodes for Efficient Dye-Sensitized Solar Cells**

Feng HAO, Hong LIN*, and Jianbao LI

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**P046**

**Dye-Sensitized Boron-doped TiO₂ Solar Cells**

Huajun TIAN, Linhua HU, Jiang SHENG and Songyuan DAI*

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**P047**

**Enhanced Performance of P3HT/TiO₂ Bilayer Heterojunction Photovoltaic Device Having Gold Nanoparticles in the Donor Layer**

Yu-Wei Su¹, Je-Yuan YehAI, Hsin-Chih Tsai¹ and Raymond Chien-Chao Tsiang¹,²*

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²Institute of Opto-Mechatronics, National Chung Cheng University

**P048**

**The effect of compression on electron transport and recombination in plastic TiO₂ photoanodes**

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²Pen-Tung Sah Micro-Nano Technology Research Center, Xiamen University

**P049**

**Highly efficient ZnS-inserted quantum dot-dye co-sensitized solar cell**

Heping SHEN¹, Hong LIN¹*, and Jianbao LI¹

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**P050**

**The effect of compression on electron transport and recombination in plastic TiO₂ photoanodes**

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²Pen-Tung Sah Micro-Nano Technology Research Center, Xiamen University
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Improvement of the Performance of Dye-sensitized Solar Cells by using Organosilicon Compounds as Sensitizing Dyes

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Materials design indexes of Dye-Sensitized Solar Cells

Toshikazu HASEGAWA, Makoto HOSODA, and Satoru MAESHIMA

EKO INSTRUMENTS CO.,LTD. Meteorology, Environment and New Energy Division Sales Dept.

P053

Ionic conductivity and diffusion of solid polymer electrolyte for dye sensitized solar cell

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Enhanced Performance of P3HT/TiO2 Bilayer Heterojunction Photovoltaic Device Having Gold Nanoparticles in the Donor Layer

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Department of Engineering and System Science, National Tsing Hua University
Experimental Evidence of Band Edge Movement by tert-Butylpyridine in Dye-Sensitized Solar Cell
Chang-Ryul Lee, Hui-Seon Kim, In-Hyeok Jang, Jeong-Hyeok Im, Nam-Gyu Park*
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Synthesis and Photovoltaic Property of A New Quantum Dot Material Based on Organic-Inorganic Hybridization
Jeong-Hyeok Im¹, Seung-Joo Kim², Nam-Gyu Park¹,*
¹School of Chemical Engineering and Department of Energy Science, Sungkyunkwan University
²Department of Chemistry, College of Natural Sciences, Ajou University

Manufacturing Process Study for Monolithic Dye-sensitized Solar Cells Modules
Toshiyuki SANO¹*, Yasunori NOJI¹, Shoichi DÔ¹, Junji NAKAJIMA¹, Katuyoshi MIZUMOTO¹, Tatsuo TOYODA¹, Naohiko KÂTO² and Kazuo HIGUCHI²
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Triarylamine Base D-π-A Sensitizers Bridged With Ring-Fused Thiophene for Dye Sensitized Solar Cells
Quan LIU¹, Yongchao YANG, Zhikuan ZHOU, Quanyou FENG³, Hiroko YAMADA², Zhongsheng WÂNG³, Noboru ÓNO* and Zhen SHEN¹
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Organic Sensitizers with Diphenylquinoxaline Moiety in the π-Conjugated Spacer for Dye-Sensitized Solar Cells
Hui-Tung Kuo, Sie-Rong Li, and Shih-Sheng Sun*
Institute of Chemistry, Academia Sinica

Polymer Solar Cells with Hole Transport Layer of PEDOT:PSS/Single-Wall Carbon Nanotubes
Naoki Kishi¹*, Shinya Kato¹, Takeshi Saito², Junki Hayashi¹, Daiki Ito¹, Yasuhiro Hayashi¹, Tetsuo Soga¹, Takashi Jimbo¹
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³Research Center for Nano-Device and System, Nagoya Institute of Technology
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Effect of p-type Semiconductor on Photovoltaic Characteristics in Dye-sensitized Solar Cell
Takeru OKADA, Yoshihisa HAYAKAWA, Kazuya YAMAMOTO, Tatsuhiko SONODA, Hirokazu YAMANE, and Kenji YAMADA*
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Preparation of n/p Tandem Type Dye-sensitized Solar Cell utilizing Plasma Sputtering Methods
Ryo FUKUDA, Tatsuhiko SONODA, Kazuya YAMAMOTO, and Kenji YAMADA*
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Development of Low-Leakage and High-Conductivity Solid Polymeric Electrolytes for DSSC
Engineering and System Science, National Tsing Hua University

P066
Development of the Gel Electrolyte Based on PVB for Dye-sensitized Solar Cells
K.F. Chen*, C. H. Liu, H. K. Huang, P. A. Pan, K.C. Hsu, F. R. Chen
Engineering and System Science, National Tsing Hua University

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New type of Quasi-Solid-State Dye Sensitized Solar Cells Based on UV-Solidification Process
K.F. Chen*, C. L. Lin, S. Y. Liu, G. T. Lu, Z. H. Tsai, H. K. Huang, F. R. Chen
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P068
Preparation of Dye-sensitized Solar Cells Hybridized with Inorganic Nanofiber
Kotomi IKEDA¹ Kazuya YAMAMOTO¹*, Ryo FUKUDA¹, Hideyuki OTSUKA², Atsushi TAKAHARA², and Kenji YAMADA¹
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P069
Syntheses of New Ruthenium Complexes with a Functional Side Chains
Kazumichi OBUCHI, Junya MASUO, Naruhiro MASAKI, and Shogo MORI*, and Mutsumi KIMURA*
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Vaccume-free Fabrication and Photovoltaic Characteristics of Organic Solar Cells using Ag Nanoparticles Network Counter Electrode

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Membrane-based electrolyte sheets for flexible dye-sensitized solar cells

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Fabrication of semi-transparent organic solar cells with Ag nanoparticles film as a cathode using wet processing

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2Toda Kogyo Corporation

Improved performance of flexible dye-sensitized solar cells

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Green Energy & Environment Research Laboratories, Industrial Technology Research Institute

The effect of pre-treatment to the performance of dye-sensitized solar cells

Yao-Shan Wu*, Jen-An Chen, Yung-Liang Tung
Green Energy & Environment Research Laboratories, Industrial Technology Research Institute


Eun Yi KIM1, Chin Myung WHANG2, and Wan In LEE1
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Al2O3 Coated Nanoporous TiO2 Electrode for Quantum-dot Sensitized Solar Cells

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Department of Chemistry, Inha University
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Influences of Electrolyte and Dye structure on the Reduction Rate of Dye Cation in Dye-Sensitized Solar Cells

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A structural effect in novel electron acceptors of C₆₀ derivatives with poly(3-hexylthiophene) for organic photovoltaic applications

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P079

Dye encapsulated silica Nanoparticles for Solar Cell Materials

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P080

Towards Optimal Combination of Photovoltaic Devices for Façade and Architectural Applications

Katsuyoshi SATO, Tsutomu MIYASAKA, and Masashi IKEGAMI

Graduate School of Engineering, Toin University Yokohama

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A Comparative Study of Efficient Quasi-solid State Electrolytes for Dye-sensitized Solar Cells

Hsin-Fang Lee*, Jhih-Lin Wu, Fan-Yi Ouyang, Wei-Lun Tai, and Ji-Jung Kai

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P082

Panchromatic Sensitizers with Heteroleptic Tridentate Chelates for Dye-Sensitized Solar Cells

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Investigation of the Performance of a Series of Sensitizer for Type-II Dye-Sensitized Solar Cell Based on Electrolytes
Md. Mahbubur Rahman, Sung-Su Lim, Ho-Joon Lee, Young Deok Jeon, Hyun-Seok Son, and Jae-Joon Lee*
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P084
A Highly Efficient Photoelectrochromic Device with Fast Switching Containing Two Tailored Electrolytes
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2 Institute of Chemistry, Academia Sinica
3 Institute of Polymer Science and Engineering, National Taiwan University

P085
Porphyrin-sensitized Solar Cells with Br-/Br₃- Redox Mediator
Fumiyasu AWAI, Yonbon ARAI, Satoshi UCHIDA, Takaya KUBO, and Hiroshi SEGAWA
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P086
Roles of Cationic Species of Iodide/Triiodide in Solid-State Dye-Sensitized Solar Cells Employing Polymer Electrolyte
Taewook Son, Yong Bum Pyun1, Su Jin Kim1, Yong-Gun Lee2, Jun-Ho Yum3, Donghoon Song1, Hwaseok Chae1 and Yong Soo Kang1*
1 Center for Next Generation Dye-sensitized Solar Cells and WCU Department of Energy Engineering, Hanyang University
2 School of Chemical and Biological Engineering, Seoul National University
3 Swiss Federal Institute of Technology at Lausanne, Switzerland

P087
Change in Ionic Conductivity and Interfacial Properties Attributed by Different Metal Oxide in Polymer Electrolytes for Solid State Dye-sensitized Solar Cells
Taewook Son, Hwaseok Chae, Yong Bum Pyun and Yong Soo Kang*
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P088
Development of quality of FTO films for high efficient dye-sensitized solar cell and other optoelectronic devices
E.V.A. Premalal, N. Dematage, S. Kaneko, A. Konno
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THE 6TH ASEANIAN CONFERENCE ON DYE-SENSITIZED AND ORGANIC SOLAR CELLS

P089

Fabrication of Automatic Electrolyte Filling Machine for DSC

P. V. V. Jayaweera* and S. Kaneko
SPD Laboratory, Inc.

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Spray Pyrolysis Deposition for Thin Film Formation and Its Application to Dye-sensitized Solar Cell Fabrication

Shoji Kaneko*, P. V. V. Jayaweera, Shunji Kawasaki and G. R. A. Kumara
SPD Laboratory, Inc.

P091

The development of the evaluation method for Organic Photovoltaics.

Hidenori Saito1, Tomoko Aoki, Daisuke Aoki, Katsuhiko Takagi1 and Akira Fujishima1,2
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P092

Efficiency Improvement of Dye-sensitized Solar Cell through High-Performance Purification of Dye

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Control of Molecular Arrangement in Inorganic-Organic Hybrid Photovoltaic Cells

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Effects of Nb2O5 Buffer layer on ITO-PEN for High Efficient Plastic Dye-sensitized Solar Cell

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Efficient Thin-film Dye-sensitized Photoelectrode Prepared by Low Temperature TiO2 Coating Paste

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Electrolyte compositions for Dye-sensitized solar cells showing constant energy conversion efficiencies in wide temperature range

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Metal oxide-coated Zinc oxide Photoelectrode for Dye-sensitized Solar Cell

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Plastic Dye-sensitized Solar Cells based on Screen printing method

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Fabrication of TiO₂/CuInₓS₉ structures by In, S doping of TiO₂/CuS

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Technology Opportunities Analysis for DSSCs using Text Mining and Semantic-TRIZ

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Synthesis of Thiocyanate-free Ru(II) Sensitizers with Functionalized Pyridyl Benzimidazololate Chelates for Dye-sensitized Solar Cells

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