

**Date: Saturday, 2nd December 2017**

**POSTER PRESENTATION [Entrance area, 3rd-Floor, Library Building]  
(15:15-17:00)**

- PP-1-001 **Advances in New Generation Photoactive Materials**  
A.V. Emeline  
Saint-Petersburg State University, Russia
- PP-1-002 **Synthesis of (Ga<sub>1-x</sub>Zn<sub>x</sub>)(N<sub>1-x</sub>O<sub>x</sub>) photocatalysts via Li<sub>3</sub>N-assisted nitridation of 2D-ZnGa<sub>2</sub>O<sub>4</sub> Crystals**  
Amelia Amir, Kazuhiro Manseki, and Takashi Sugiura  
Graduate School of Engineering, Environmental and Renewable Energy Systems (ERES) Division, Gifu University, Japan
- PP-1-003 **Temperature Dependence of Z-schematic CO<sub>2</sub> Reduction Utilizing Water as an Electron Donor Using CuGa<sub>2</sub>S<sub>2</sub> and RGO-Metal Oxides Composites**  
Aruto Kashima<sup>a</sup>, Shunya Yoshino<sup>a</sup>, Akihide Iwase<sup>a,b</sup>, and Akihiko Kudo<sup>a,b</sup>  
<sup>a</sup>Department of Applied Chemistry, Faculty of Science, Tokyo University of Science, Japan  
<sup>b</sup>Photocatalysis International Research Center, Research Institute for Science and Technology, Tokyo University of Science, Japan
- PP-1-004 **Highly efficient visible-light-induced photoactivity of g-C<sub>3</sub>N<sub>4</sub>/Fe<sub>3</sub>O<sub>4</sub>/semiconductor photocatalysts for degradation of organic pollutants**  
A. Habibi-Yangjeh and M. Mousavi  
Department of Chemistry, University of Mohaghegh Ardabili, Iran
- PP-1-005 **Facile fabrication of novel ZnO-based heterojunction photocatalysts with enhanced visible light-driven activity towards organic pollutants**  
A. Habibi-Yangjeh and M. Pirhashemi  
Department of Chemistry, University of Mohaghegh Ardabili, Iran
- PP-1-006 **Redistribution of Oxygen Vacancies by Solution Plasma Treatment: A Case of TiO<sub>2</sub>(B)/Anatase Nanoparticles Photocatalyst**  
Changhua Wang<sup>a</sup>, Fei Yu<sup>a</sup>, Shoki Suzuki<sup>b</sup>, Xintong Zhang<sup>a</sup>, Norihiro Suzuki<sup>b</sup>, Chiaki Terashima<sup>b</sup>, and Akira Fujishima<sup>b</sup>  
<sup>a</sup>Key Laboratory of UV Light-Emitting Materials and Technology of Ministry of Education, Northeast Normal University, China  
<sup>b</sup>Photocatalysis International Research Center, Tokyo University of Science, Japan
- PP-1-007 **Microstructure Controlled ZnO Films and their Photocatalytic Properties**  
Hajime Wagata<sup>a</sup>, Chihiro Izawa<sup>a</sup>, Tomoaki Watanabe<sup>a</sup>, and Ken-ichi Katsumata<sup>b</sup>  
<sup>a</sup>Department of Applied Chemistry, School of Science and Technology, Meiji University, Japan  
<sup>b</sup>Photocatalysis International Research Center, Tokyo University of Science, Japan
- PP-1-008 **Fabrication of Ag@TiO<sub>2</sub>@SiO<sub>2</sub> hollow nanocatalyst based on Water-Soluble Precursor and its Application on Size-Selective Photocatalytic**  
Dongfeng Sun, Liangzhuan Wu, Yuan Yu, and Jinfang Zhi  
Key Laboratory of Photochemical Conversion and Optoelectronic Materials, Technical Institute of Physics and Chemistry, Chinese Academy of Sciences, China
- PP-1-009 **Photocatalytic CO<sub>2</sub> Generation from TiO<sub>2</sub> Films for New Applications**  
Eden Mariquit<sup>a</sup>, Hideaki Komaki<sup>b</sup>, Shigekazu Kato<sup>c</sup>, Katsunori Kitajima<sup>d</sup>, Takashi Nakatsuyama<sup>d</sup>, Takeshi Nakajima<sup>d</sup>, Hirofumi Hinode<sup>a</sup>, and Masahiro Miyauchi<sup>a</sup>  
<sup>a</sup>Tokyo Institute of Technology, Japan  
<sup>b</sup>Photocatalysis Industry Association of Japan, Japan  
<sup>c</sup>Photocatalytic Materials Inc., Japan  
<sup>d</sup>Ace Engineering Co. Ltd., Japan

- PP-1-010 **Selected HCOOH generation by CO<sub>2</sub> photoreduction under visible light irradiation**  
Ge Yin<sup>a</sup>, Hiroshi Sako<sup>a</sup>, Akira Yamaguchi<sup>a</sup>, Hideki Abe<sup>b</sup>, and Masahiro Miyauchi<sup>a</sup>  
<sup>a</sup> Tokyo Institute of Technology, Japan  
<sup>b</sup> National Institute for Materials Science (NIMS), Japan
- PP-1-011 **Production of Rare Sugars from Photocatalytic Oxidation of Sugar Alcohol with Metal-Supported Photocatalyst**  
Hajime Suzuki<sup>a,b</sup>, Kodai Iwasaki<sup>a,b</sup>, Yuichi Yamaguchi<sup>a,c</sup>, Kenji Yamatoya<sup>c</sup>, Norihiro Suzuki<sup>a</sup>, Ken-ichi Katsumata<sup>a</sup>, Chiaki Terashima<sup>a</sup>, Akira Fujishima<sup>a</sup>, Hideki Sakai<sup>b</sup>, and Kazuya Nakata<sup>a,c</sup>  
<sup>a</sup> Photocatalysis International Research Center, Tokyo University of Science, Japan  
<sup>b</sup> Department of Pure and Applied Chemistry, Tokyo University of Science, Japan  
<sup>c</sup> Department of Applied Biological Science, Tokyo University of Science, Japan
- PP-1-012 **Fabrication of CdS/β-SiC/TiO<sub>2</sub> Tri-Composite Photocatalyst for Hydrogen Production under Visible Light Irradiation**  
Haruki Nagakawa<sup>a,b</sup>, Morio Nagata<sup>a</sup>, and Tsuyoshi Ochiai<sup>b,c,d</sup>  
<sup>a</sup> Tokyo University of Science, Japan  
<sup>b</sup> Photocatalyst Group, Research and Development Department, Local Independent Administrative Agency, Kanagawa Institute of Industrial Science and Technology (KISTEC), Japan  
<sup>c</sup> Materials Analysis Group, Kawasaki Technical Support Department, KISTEC, Japan,  
<sup>d</sup> Photocatalysis International Research Center, Tokyo University of Science, Japan
- PP-1-013 **Production of L-Rare Sugars from Monosaccharide by Photocatalytic Oxidation**  
Hayao Hiroshima<sup>a,b</sup>, Tamami Takeuchi<sup>a,b</sup>, Tomoe Tsutsumi<sup>a,b</sup>, Yoshihiro Kanai<sup>c</sup>, Norihiro Suzuki<sup>a</sup>, Ken-ichi Katsumata<sup>a</sup>, Chiaki Terashima<sup>a</sup>, Masahiko Abe<sup>c</sup>, Akira Fujishima<sup>a</sup>, Kenji Yamatoya<sup>b</sup>, and Kazuya Nakata<sup>a,b</sup>  
<sup>a</sup> Photocatalysis International Research Center, Tokyo University of Science, Japan  
<sup>b</sup> Department of Applied Biological Science, Tokyo University of Science, Japan  
<sup>c</sup> Research Institute for Science and Technology, Tokyo University of Science, Japan
- PP-1-014 **Inhibition of ammonia production by photocatalytic materials**  
Hitoshi Ishiguro<sup>a,b</sup>, Yasuyoshi Hatayama<sup>a</sup>, Takeshi Nagai<sup>a</sup>, Kayano Sunada<sup>a</sup>, and Yoshinobu Kubota<sup>a,b</sup>  
<sup>a</sup> Kanagawa Institute of Industrial Science and Technology (KISTEC), Japan  
<sup>b</sup> Graduate School of Medicine, Yokohama City University, Japan
- PP-1-015 **Decomposition of an Aqueous Ammonia Solution over Ir-Doped Tantalate Photocatalysts under Visible Light Irradiation**  
Honghuai Wang<sup>a</sup>, Kazutaka Ii<sup>a</sup>, Akihide Iwase<sup>a,b</sup>, and Akihiko Kudo<sup>a,b</sup>  
<sup>a</sup> Department of Applied Chemistry, Faculty of Science, Tokyo University of Science, Japan  
<sup>b</sup> Photocatalysis International Research Center, Research Institute for Science and Technology, Tokyo University of Science, Japan
- PP-1-016 **Synergistic effect of electron-transfer mediator and interfacial catalytic active-site for the enhanced H<sub>2</sub>-evolution performance: A case study of CdS-Au photocatalyst**  
Ping Wang and Huogen Yu  
School of Chemistry, Chemical Engineering and Life Sciences, Wuhan University of Technology, China
- PP-1-017 **Phenylamine-Functionalized rGO/TiO<sub>2</sub> Photocatalysts: Spatially Separated Adsorption Sites and Tunable Photocatalytic Selectivity**  
Ping Wang, Xuefei Wang, and Huogen Yu  
School of Chemistry, Chemical Engineering and Life Sciences, Wuhan University of Technology, China

- PP-1-018 **Au, Cu-loaded highly crystalline Anatase TiO<sub>2</sub> and the photocatalytic property**  
Jiangyan Wang and Baoshun Liu  
 State Key Laboratory of Silicate Materials for Architectures, Wuhan University of Technology, China
- PP-1-019 **Bismuth Vanadate as an Oxygen-Evolution Photocatalyst**  
Junya Osaki<sup>a</sup>, Toshihiro Takashima<sup>a,b</sup>, and Hiroshi Irie<sup>a,b</sup>  
<sup>a</sup> Integrated Graduate School of Medicine, Engineering and Agricultural Sciences, University of Yamanashi, Japan  
<sup>b</sup> Clean Energy Research Center, University of Yamanashi, Japan
- PP-1-020 **Quenching with liquid nitrogen for improving photocatalytic activity of TiO<sub>2</sub>**  
Kai Cheng and Baoshun Liu  
 State Key Laboratory of Silicate Materials for Architectures, Wuhan University of Technology, China
- PP-1-021 **Preparation and photocatalytic activity of MnO<sub>4</sub>-doped Ti-HAp**  
Kana Ishisone, Toshihiro Isobe, Sachiko Matsushita, and Akira Nakajima  
 Department of Materials Science and Engineering, Tokyo Institute of Technology, Japan
- PP-1-022 **Visible / NIR photocatalysis by trilayered SiO<sub>2</sub>/Au/TiO<sub>2</sub> nanocomposites with amorphous TiO<sub>2</sub> shell**  
 Kazuya Tobishima, Kanjiro Torigoe, Toshinari Ichihashi, Takeshi Endo, and Hideki Sakai  
 Tokyo University of Science, Japan
- PP-1-023 **Antiviral activity on a variety of metal compounds under visible light irradiation**  
Kavano Sunada<sup>a</sup>, Yasuyoshi Hatayama<sup>a</sup>, Takeshi Nagai<sup>a</sup>, Hitoshi Ishiguro<sup>a,b</sup>, and Yoshinobu Kubota<sup>a,b</sup>  
<sup>a</sup> Kanagawa Institute of Industrial Science and Technology (KISTEC), Japan  
<sup>b</sup> Graduate School of Medicine, Yokohama City University, Japan
- PP-1-024 **Distinction between reactive and non-reactive trap states in photocatalytic reactions revealed by transient grating technique**  
Kenji Katayama<sup>a,b</sup> and Shota Kuwahara<sup>c</sup>  
<sup>a</sup> Department of Applied Chemistry, Chuo University, Japan  
<sup>b</sup> JST, PRESTO, Japan  
<sup>c</sup> Department of Chemistry, Toho University, Japan
- PP-1-025 **Photocatalytic Production of Rare Sugars with Metal-Ion-Doped TiO<sub>2</sub>**  
Kodai Iwasaki<sup>a,b</sup>, Yuichi Yamaguchi<sup>a,c</sup>, Kenji Yamatoya<sup>c</sup>, Norihiro Suzuki<sup>a</sup>, Ken-ichi Katsumata<sup>a</sup>, Chiaki Terashima<sup>a</sup>, Akira Fujishima<sup>a</sup>, Hideki Sakai<sup>b</sup>, and Kazuya Nakata<sup>a,c</sup>  
<sup>a</sup> Photocatalysis International Research Center, Tokyo University of Science, Japan  
<sup>b</sup> Department of Pure and Applied Chemistry, Tokyo University of Science, Japan  
<sup>c</sup> Department of Applied Biological Science, Tokyo University of Science, Japan
- PP-1-026 **Synthesis of metal oxide by heating in microwave magnetic field and its application to photocatalysis**  
Kunihiko Kato<sup>a</sup>, Hong Jeongsoo<sup>a</sup>, Yunzi Xin<sup>a</sup>, Sebastien Vaucher<sup>b</sup>, and Takashi Shirai<sup>a</sup>  
<sup>a</sup> Nagoya Institute of Technology, Japan  
<sup>b</sup> Empa, Switzerland
- PP-1-027 **Photocatalytic and antimicrobial properties of titania particles prepared from Evonik P25**  
Kunlei Wang<sup>a</sup>, Maya Endo<sup>a</sup>, Zhishun Wei<sup>a</sup>, Paulina Rokicka<sup>b</sup>, Agata Markowska-Szczupak<sup>b</sup>, Bunsho Ohtani<sup>a</sup>, and Ewa Kowalska<sup>a</sup>  
<sup>a</sup> Hokkaido University, Japan  
<sup>b</sup> West Pomeranian University of Technology, Poland

- PP-1-028 **Fabrication of water-based functional photocatalytic coating and its industrialization**  
Liangzhuang Wu, Yuan Yu, Dongfeng Sun, and Jinfang Zhi  
 Key Laboratory of Photochemical Conversion and Optoelectronic Materials,  
 Technical Institute of Physics and Chemistry, Chinese Academy of Sciences, China
- PP-1-029 **Sodium-doped carbon nitride nanotubes for efficient visible-light driven hydrogen production**  
Longshuai Zhang<sup>a</sup>, Ning Ding<sup>a</sup>, Muneaki Hashimoto<sup>b</sup>, Koudai Iwasaki<sup>b</sup>, Noriyasu Chikamori<sup>b</sup>, Kazuya Nakata<sup>b</sup>, Dongmei Li<sup>a</sup>, Akira Fujishima<sup>b</sup>, Qingbo Meng<sup>a</sup>  
<sup>a</sup> Institute of Physics, Chinese Academy of Sciences, China  
<sup>b</sup> Tokyo University of Science, Japan
- PP-1-030 **Influence of Noble metal loading on TiO<sub>2</sub> for photocatalytic water splitting**  
Madhushree Bute Kant<sup>a</sup>, Sudhir Arbu<sup>j</sup>, Sunit Rane<sup>b</sup>, Chiaki Terashima<sup>c</sup>, Suresh Gosavi<sup>d</sup>, and Aditya Abhyankar<sup>a</sup>  
<sup>a</sup> Department of Technology, Savitribai Phule Pune University, India  
<sup>b</sup> Centre for Materials for Electronics Technology, India  
<sup>c</sup> Photocatalysis International Research Center, Research Institute for Science & Technology, Tokyo University of Science, Japan  
<sup>d</sup> Department of Physics, Savitribai Phule Pune University, India
- PP-1-031 **Photosensitization of Fe<sub>3</sub>O<sub>4</sub>/ZnO by some narrow band gap semiconductors to fabricate magnetically separable visible-light-driven photocatalysts**  
 M. Shekofteh-Gohari<sup>a</sup>, A. Habibi-Yangjeh<sup>a</sup>, and M. Hojamberdiev<sup>b</sup>  
<sup>a</sup> Department of Chemistry, University of Mohaghegh Ardabili, Iran  
<sup>b</sup> Department of Natural and Mathematic Sciences, Turin Polytechnic University in Tashkent, Uzbekistan
- PP-1-032 **Improvement of seed germination using photocatalyst**  
Masanari Nagao<sup>a,b</sup>, Sho Usuki<sup>a,b</sup>, Norihiro Suzuki<sup>b</sup>, Ken-ichi Katsumata<sup>b</sup>, Chiaki Terashima<sup>b</sup>, Akira Fujishima<sup>b</sup>, Hiroshi Wada<sup>b,c</sup>, Kenji Yamatoya<sup>a</sup>, and Kazuya Nakata<sup>a,b</sup>  
<sup>a</sup> Department of Applied Biological Science, Tokyo University of Science, Japan  
<sup>b</sup> Photocatalysis International Research Center, Tokyo University of Science, Japan  
<sup>c</sup> Department of Pharmacoscience, Tokyo University of Science, Japan
- PP-1-033 **Rewritable Super-Hemophobic and Super-Hemophilic Pattern Based on TiO<sub>2</sub>**  
Minh Quang Tran<sup>a,b</sup>, Horikoshi Satoshi<sup>a</sup>, and Kazuya Nakata<sup>b</sup>  
<sup>a</sup> Department of Materials and Life Sciences, Faculty of Science and Technology, Sophia University, Japan  
<sup>b</sup> Photocatalysis International Research Center, Tokyo University of Science, Japan
- PP-1-034 **Photocatalytic and Photoelectrode Properties of Four TiO<sub>2</sub> Polymorphs; Anatase, Rutile, Brookite, Bronze**  
Mizuki Kuniyoshi<sup>a</sup>, Koji Tomita<sup>a</sup>, and Ken-ichi Katsumata<sup>b</sup>  
<sup>a</sup> Tokai University, Japan  
<sup>b</sup> Tokyo University of Science, Japan
- PP-1-035 **An effect of domain interface for the photoelectrochemistry of organic semiconductor heterojunction**  
Mohd Fairus bin Ahmad<sup>a</sup>, Toshiyuki Abe<sup>b</sup>, and Keiji Nagai<sup>a</sup>  
<sup>a</sup> Tokyo Institute of Technology, Japan  
<sup>b</sup> Hirosaki University, Japan
- PP-1-036 **Enhanced Photocatalytic Activity of Mesoporous Carbon/C<sub>3</sub>N<sub>4</sub> photocatalysts**  
Ning Ding<sup>a</sup>, Longshuai Zhang<sup>a</sup>, Muneaki Hashimoto<sup>b</sup>, Koudai Iwasaki<sup>b</sup>, Noriyasu Chikamori<sup>b</sup>, Kazuya Nakata<sup>b</sup>, Dongmei Li<sup>a</sup>, Akira Fujishima<sup>b</sup>, and Qingbo Meng<sup>a</sup>  
<sup>a</sup> Institute of Physics, Chinese Academy of Sciences, China  
<sup>b</sup> Tokyo University of Science, Japan

- PP-1-037 **Photocatalytic CO<sub>2</sub> Reduction over Tungsten Bronze Materials Using H<sub>2</sub>O as an Electron Donor**  
Rekha Goswami Shrestha<sup>a</sup>, Akihide Iwase<sup>a,b</sup>, and Akihiko Kudo<sup>a,b</sup>  
<sup>a</sup> Department of Applied Chemistry, Faculty of Science, Tokyo University of Science, Japan  
<sup>b</sup> Photocatalysis International Research Center, Research Institute for Science and Technology, Tokyo University of Science, Japan
- PP-1-038 **Effect of co-catalyst on the Apparent Activation of TiO<sub>2</sub> Photocatalysis**  
Rui Zhang<sup>a</sup> and Baoshun Liu<sup>b</sup>  
 State Key Laboratory of Silicate Materials for Architectures, Wuhan University of Technology, China
- PP-1-039 **Fabrication and Enhanced Electrocatalytic Activity of Platinum-Copper Bimetallic Nanocrystal Clusters**  
Shanhu Liu<sup>a,b</sup>, Rui Li<sup>a</sup>, Liqun Mao<sup>a</sup>, Kazuya Nakata<sup>b</sup>, Tsuyoshi Ochiai<sup>b</sup>, Ruimin Xing<sup>a</sup>, and Akira Fujishima<sup>b</sup>  
<sup>a</sup> International Joint Research Laboratory for environmental pollution control materials of Henan, Henan University, China  
<sup>b</sup> Photocatalysis International Research Center, Research Institute for Science and Technology, Tokyo University of Science, Japan
- PP-1-040 **Photocatalytic activity & study the electronic structure of Bi<sub>11</sub>VO<sub>19</sub> synthesized by thermal plasma**  
Shankar S. Kekade<sup>a</sup>, S.A. Raut<sup>a</sup>, V.L. Mathe<sup>a</sup>, R.J. Choudhary<sup>b</sup>, D.M. Phase<sup>b</sup>, and S.I. Patil<sup>b</sup>  
<sup>a</sup> Department of Physics, S. P. Pune University, India  
<sup>b</sup> UGC-DAE, Consortium for Scientific Research, India
- PP-1-041 **Selective cross-coupling of heteroaromatic compounds over titanium oxide photocatalyst**  
Shimpei Naniwa<sup>a</sup>, Akira Yamamoto<sup>a,b</sup>, and Hisao Yoshida<sup>a,b</sup>  
<sup>a</sup> Graduate School of Human and Environmental Studies, Kyoto University, Japan  
<sup>b</sup> Elements Strategy Initiative for Catalysts and Batteries, Kyoto University, Japan
- PP-1-042 **High Photocatalytic Activation and Structural Analysis of TiO<sub>2</sub> by Solution Plasma Treatment**  
S. Suzuki<sup>a,b</sup>, K. Honda<sup>a,b</sup>, C. Terashima<sup>b</sup>, K. Nakata<sup>a,b</sup>, N. Suzuki<sup>b</sup>, K. Katsumata<sup>b</sup>, T. Kondo<sup>a,b</sup>, M. Yuasa<sup>a</sup>, and A. Fujishima<sup>a,b</sup>  
<sup>a</sup> Graduate School of Science and Technology, Tokyo University of Science, Japan  
<sup>b</sup> Photocatalysis International Research Center, Tokyo University of Science, Japan
- PP-1-043 **Zinc Rhodium Oxide Photocatalyst for Reduction of Carbon Dioxide**  
Shota Higuchi<sup>a</sup>, Toshihiro Takashima<sup>a,b</sup>, and Hiroshi Irie<sup>a,b</sup>  
<sup>a</sup> Integrated Graduate School of Medicine, Engineering, and Agricultural Sciences, University of Yamanashi, Japan  
<sup>b</sup> Clean Energy Research Center, University of Yamanashi, Japan
- PP-1-044 **Artificial Photosynthetic Water Splitting Using Cu<sub>3</sub>MS<sub>4</sub> (M=V, Nb, and Ta) with a Sulvanite Structure as a Hydrogen Evolving Photocatalyst**  
Shuhei Natsume<sup>a</sup>, Shunya Yoshino<sup>a</sup>, Akihide Iwase<sup>a,b</sup>, and Akihiko Kudo<sup>a,b</sup>  
<sup>a</sup> Department of Applied Chemistry, Faculty of Science, Tokyo University of Science, Japan  
<sup>b</sup> Photocatalysis International Research Center, Research Institute for Science and Technology, Tokyo University of Science, Japan
- PP-1-045 **Sporicidal Mechanism by WO<sub>3</sub> Photocatalysis in the Presence of Ethanol**  
Shun Ishioka<sup>a,b</sup>, Sho Usuki<sup>a,b</sup>, Yuichi Yamaguchi<sup>a,b</sup>, Takahiro Sakuma<sup>b</sup>, Norihiro Suzuki<sup>a</sup>, Ken-ichi Katsumata<sup>a</sup>, Chiaki Terashima<sup>a</sup>, Akira Fujishima<sup>a</sup>, Tomonori Suzuki<sup>a,b</sup>, Kenji Yamatoya<sup>b</sup>, and Kazuya Nakata<sup>a,b</sup>  
<sup>a</sup> Photocatalysis International Research Center, Research Institute for Science and Technology, Tokyo University of Science, Japan  
<sup>b</sup> Department of Applied Biological Science, Tokyo University of Science, Japan

- PP-1-046 **Utilizing Metal Sulfide H<sub>2</sub>-evolving Photocatalysts with Visible-Light Response up to 600 nm for a Z-schematic Water Splitting System**  
Shunya Yoshino<sup>a</sup>, Akihide Iwase<sup>a,b</sup>, and Akihiko Kudo<sup>a,b</sup>  
<sup>a</sup> Department of Applied Chemistry, Faculty of Science, Tokyo University of Science, Japan  
<sup>b</sup> Photocatalysis International Research Center, Research Institute for Science and Technology, Tokyo University of Science, Japan
- PP-1-047 **Effect of alkali metal ions on the formation of titania thin film coated on glass substrate**  
Takehiro Suzuki<sup>a</sup>, Kenichiro Iwasaki<sup>a</sup>, and Atsuo Yasumori<sup>a,b</sup>  
<sup>a</sup> Tokyo University of Science, Japan  
<sup>b</sup> Photocatalysis International Research Center-RIST, Japan
- PP-1-048 **The new antiviral test method for the photocatalytic textiles, “glass adhesion method”**  
Takeshi Nagai<sup>a</sup>, Kayano Sunada<sup>a</sup>, Hitoshi Ishiguro<sup>a,b</sup>, and Yoshinobu Kubota<sup>a,b</sup>  
<sup>a</sup> Kanagawa Institute of Industrial Science and Technology (KISTEC), Japan  
<sup>b</sup> Yokohama City University, Japan
- PP-1-049 **Decomposition of Disaccharide by Photocatalysis Toward Production of Disaccharide Rare Sugars**  
Tamami Takeuchi<sup>a,b</sup>, Yoshihiro Kanai<sup>c</sup>, Norihiro Suzuki<sup>a</sup>, Ken-ichi Katsumata<sup>a</sup>, Chiaki Terashima<sup>a</sup>, Masahiko Abe<sup>c</sup>, Akira Fujishima<sup>a</sup>, Kenji Yamatoya<sup>b</sup>, and Kazuya Nakata<sup>a,b</sup>  
<sup>a</sup> Photocatalysis International Research Center, Tokyo University of Science, Japan  
<sup>b</sup> Department of Applied Biological Science, Tokyo University of Science, Japan  
<sup>c</sup> Research Institute for Science and Technology, Tokyo University of Science, Japan
- PP-1-050 **Low-cost non-noble metal bipyridyldiamine-complexes as co-catalysts for hydrogen evolution system**  
Tarun Chand Vagvala<sup>a</sup>, Takashi Ooyabe<sup>b</sup>, Vit Kalousek<sup>a</sup>, Keita Ikeue<sup>a,b</sup>  
<sup>a</sup> Advanced Material Research Institute, Tokyo University of Science-Yamaguchi, Japan  
<sup>b</sup> Department of Applied Chemistry, Tokyo University of Science-Yamaguchi, Japan
- PP-1-051 **Li<sub>3</sub>N-assisted synthesis and photoelectrochemical properties of nanoscale LaTiO<sub>2</sub>N crystals**  
Tetsuya Enomoto<sup>a</sup>, Kazuhiro Manseki<sup>a</sup>, and Takashi Sugiura<sup>a</sup>  
<sup>a</sup> Graduate School of Engineering, Environmental and Renewable Energy Systems (ERES) Division, Gifu University, Japan
- PP-1-052 **Photocatalytic Decomposition of Monosaccharide Ketose Toward Production of Rare Sugars**  
Tomoe Tsutsumia<sup>b</sup>, Yoshihiro Kanai<sup>c</sup>, Chiaki Terashima<sup>b</sup>, Ken-ichi Katsumata<sup>b</sup>, Norihiro Suzuki<sup>b</sup>, Masahiko Abe<sup>c</sup>, Akira Fujishima<sup>b</sup>, Kenji Yamatoya<sup>a</sup>, and Kazuya Nakata<sup>a,b</sup>  
<sup>a</sup> Department of Applied Biological Science, Faculty of Science and Technology, Tokyo University of Science, Japan  
<sup>b</sup> Photocatalysis International Research Center, Research Institute for Science and Technology, Tokyo University of Science, Japan  
<sup>c</sup> Research Institute for Science and Technology, Tokyo University of Science, Japan
- PP-1-053 **Synthesis of ZnS-based photocatalyst prepared in zeolite pores for hydrogen production from S<sup>2-</sup>/SO<sub>3</sub><sup>2-</sup> aqueous solution**  
Toru Kondo and Morio Nagata  
Graduate School of Engineering, Tokyo University of Science, Japan

- PP-1-054 **Enhancement of the hydrogen evolution activity of graphitic carbon nitride photocatalysts by coloaded low-cost polymeric nickel-mercaptoethanol complex co-catalyst**  
Vit Kalousek<sup>a</sup>, Tarun Chand Vagvala<sup>a</sup>, and Keita Ikeue<sup>a,b</sup>  
<sup>a</sup> Advanced Materials Research Institute, Tokyo University of Science-Yamaguchi, Japan  
<sup>b</sup> Department of Applied Chemistry, Tokyo University of Science-Yamaguchi, Japan
- PP-1-055 **Enhancing H<sub>2</sub>O<sub>2</sub> photocatalytic generation on the novel reduced g-C<sub>3</sub>N<sub>4</sub> under visible light irradiation**  
 Zedong Zhu, Honghui Pan, Aimal Khan, Jianyu Gong, and Yanrong Zhang  
 Environmental Science Research Institute, Huazhong University of Science and Technology, China
- PP-1-056 **Spontaneous Generation of Local Reducing Ambient for Introduction of Oxygen Vacancies into Hematite for Solar Water Oxidation**  
Yi Zhou, Mingkun Yan, and Ying Ma  
 School of Material Sciences and Engineering, Huazhong University of Science and Technology, China
- PP-1-057 **Enhancing Photocatalytic H<sub>2</sub> Evolution from Water on CuO-Co<sub>3</sub>O<sub>4</sub>/TiO<sub>2</sub> by Controlling Loading Amount**  
 Haiyan Shen, Dawei Ni, and Ying Ma  
 School of Materials Science and Engineering, Huazhong University of Science and Technology, China
- PP-1-058 **Co grafted TiO<sub>2</sub> photothermocatalyst effectively increase CH<sub>4</sub> selectivity in CO<sub>2</sub> reduction**  
Yingying Li, Changhua Wang, and Xintong Zhang  
 Key Laboratory of UV-Emitting Materials and Technology, Ministry of Education, Northeast Normal University, China
- PP-1-059 **Formation of OH radicals by the plasmonic excitation of Au-TiO<sub>2</sub> photocatalyst under the existence of H<sub>2</sub>O<sub>2</sub>**  
 Tomoya Hayashi, Kyoko Nakamura, and Yoshinori Murakami  
 Department of Materials Engineering, National Institute of Technology, Nagaoka College, Japan
- PP-1-060 **Visible-Light-Driven Z-Scheme Photocatalyst Systems for Highly Efficient Water Splitting under Neutral Condition**  
Yuhei Udagawa<sup>a</sup>, Shunya Yoshino<sup>a</sup>, Akihide Iwase<sup>a,b</sup>, and Akihiko Kudo<sup>a,b</sup>  
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- PP-1-061 **The Effects of Photocatalytic Reaction to Bacteria and Fungi**  
Yutaro Kajiwara<sup>a</sup>, Masaki Mitsugi<sup>a</sup>, Hikaru Mukai<sup>a</sup>, Yuji Ohshima<sup>a</sup>, Akira Fujishima<sup>b</sup>, and Tomonori Suzuki<sup>a,b</sup>  
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- PP-1-062 **Generation of Rare Sugars by Photocatalytic Oxidation of Sugar Alcohols**  
Yuuki Nakamura<sup>a,b</sup>, Tomoe Tsutsumi<sup>a,b</sup>, Tamami Takeuchi<sup>a,b</sup>, Yoshihiro Kanai<sup>c</sup>, Norihiro Suzuki<sup>a</sup>, Ken-ichi Katsumata<sup>a</sup>, Chiaki Terashima<sup>a</sup>, Masahiko Abe<sup>c</sup>, Akira Fujishima<sup>a</sup>, Kenji Yamatoya<sup>b</sup>, and Kazuya Nakata<sup>a,b</sup>  
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- PP-1-063 **Charge carrier separation in TiO<sub>2</sub>-graphene hybrid composites**  
Antoni W. Morawski<sup>a</sup>, Ewelina Kusiak-Nejman<sup>a</sup>, Agnieszka Wanag<sup>a</sup>, Joanna Kapica-Kozar<sup>a</sup>, and Christophe Colbeau-Justin<sup>b</sup>  
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- PP-1-064 **Flexible Dry Hydrogel Engineered by Dehydration in Poor Solvent**  
Feilong Zhang<sup>a,c</sup>, Shutao Wang<sup>b,c</sup>, and Lei Jiang<sup>b,c</sup>  
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- PP-1-065 **Detection of single bacteria collision events and their metabolic activity**  
Guan Yue Gao<sup>a,b</sup>, Michael V. Mirkin<sup>b</sup>, and Jinfang Zhi<sup>a</sup>  
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- PP-1-066 **Near and short-wave infrared PbS colloidal quantum dot / ZnO nanowire solar cells**  
Haibin Wang<sup>a</sup>, Takaya Kubo<sup>a</sup>, and Hiroshi Segawa<sup>a,b</sup>  
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<sup>b</sup> Graduate School of Arts and Sciences, The University of Tokyo, Japan
- PP-1-067 **Partial oxidation of methane to syngas on photodeposited ruthenium catalyst**  
Haoyang Jiang<sup>a</sup>, Singgih Wibowo<sup>a</sup>, Akira Yamaguchi<sup>a</sup>, Hideki Abe<sup>b</sup>, and Masahiro Miyauchi<sup>a</sup>  
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<sup>b</sup> National Institute for Materials Science (NIMS), Japan
- PP-1-068 **Preparation and photocatalytic activity under visible light irradiation of mesostructured titania particles modified with phthalocyanine in the pores**  
Hirobumi Shibata<sup>a,b</sup>, Shin-ichi Ohshika<sup>b</sup>, Keishi Nishio<sup>b</sup>, Hideki Sakai<sup>b</sup>, Masahiko Abe<sup>b</sup>, Kazuaki Hashimoto<sup>a</sup>, and Mutsuyoshi Matsumoto<sup>b</sup>  
<sup>a</sup> Chiba Institute of Technology, Japan  
<sup>b</sup> Tokyo University of Science, Japan
- PP-1-069 **Direct laser writing of low density materials**  
Hongcheng Gu, Hongmei Wei, Xiaojiang Liu, and Zhongze Gu  
 State Key Laboratory of Bioelectronics, School of Biological Science and Medical Engineering, Southeast University, China
- PP-1-070 **Bio-inspired Controllable Liquid Transfer by Topological Asymmetric Fibers**  
Huan Liu and Lei Jiang  
 Key Laboratory of Bio-Inspired Smart Interfacial Science and Technology of Ministry of Education, School of Chemistry, Beihang University, China
- PP-1-071 **Multiscale Biointerfaces based on Inorganic Oxide toward the Detection of Cancer Cells**  
Jingxin Meng and Shutao Wang  
 CAS Key Laboratory of Bio-inspired Materials and Interfacial Science, Technical Institute of Physics and Chemistry, Chinese Academy of Sciences, China
- PP-1-072 **Highly Enhanced Photocurrent via Al<sub>2</sub>O<sub>3</sub> Passivation to Eliminate Reverse Schottky Barrier at PbS/Au Contact**  
Jinhuan Li, Yinglin Wang, and Xintong Zhang  
 Northeast Normal University, China



- PP-1-073 **A General Emulsion Interfacial Polymerization Strategy for the Synthesis of Chemically and Topologically Anisotropic Janus Particles**  
Jun-Bing Fan, Yongyang Song, and Shutao Wang  
CAS Key Laboratory of Bio-inspired Materials and Interfacial Science, Technical Institute of Physics and Chemistry, Chinese Academy of Sciences, China
- PP-1-074 **Bio-inspired reversible pestle-loop fastener**  
Junrong Jiao<sup>a,b</sup> and Shutao Wang<sup>a,b</sup>  
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<sup>b</sup> University of Chinese Academy of Sciences, China
- PP-1-075 **Photocatalytic property of Ti<sub>0.8</sub>Zn<sub>0.2</sub>O<sub>2</sub> nanosheet**  
Kenjiro Fujimoto<sup>a,b</sup>, Zigang Nie<sup>a</sup>, Yoshiharu Hada<sup>a</sup>, Akihisa Aimi<sup>a</sup>, and Yuki Yamaguchi<sup>a,b</sup>  
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- PP-1-076 **Construction of Biomimetic Asymmetric Nanochannel Membranes**  
Liping Wen  
Technical Institute of Physics and Chemistry, Chinese Academy of Sciences, China
- PP-1-077 **Role of iridium oxide in improving electrocatalytic activity of supported platinum particles**  
Loredana Preda<sup>a</sup>, Takeshi Kondo<sup>b</sup>, Tanta Spataru<sup>a</sup>, Mariana Marin<sup>a</sup>, Mihai Radu<sup>a</sup>, Petre Osiceanu<sup>a</sup>, Akira Fujishima<sup>b</sup>, and Nicolae Spataru<sup>a</sup>  
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<sup>b</sup> Tokyo University of Science, Japan
- PP-1-078 **Smart Thin Hydrogel Coatings Harnessing Hydrophobicity and Topography to Capture and Release Cancer Cells**  
Luying Wang<sup>a</sup>, Hongliang Liu<sup>b</sup>, Feilong Zhang<sup>a</sup>, Guannan Li<sup>a</sup>, and Shutao Wang<sup>b</sup>  
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- PP-1-079 **Synthesis of large Bi<sub>2</sub>Se<sub>3</sub> bridges by a two-step vapor transport deposition**  
Manshu Han, Jiangang Ma, Haiyang Xu, and Yichun Liu  
Key Laboratory of UV Light-Emitting Materials and Technology of Ministry of Education, Northeast Normal University, China
- PP-1-080 **Patterning of TiO<sub>2</sub> particles as a platform for highly efficient photocatalytic reaction**  
Marika Hayashi<sup>a</sup>, Hiroaki Suzuki<sup>a</sup>, Woon Yong Sohn<sup>a</sup>, and Kenji Katayama<sup>a,b</sup>  
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- PP-1-081 **Nanotip-defined high local electric fields accelerate CO<sub>2</sub> reduction heterogeneous catalysts**  
Min Liu  
School of Physics and Electronics, Central South University, China
- PP-1-082 **A General and Ultra-fast Method to Alkene-Functionalized Papers with Click Reactivity**  
Min Wang, Xin Du, and Zhongze Gu  
State Key Laboratory of Bioelectronics, School of Biological Science and Medical Engineering, Southeast University, China
- PP-1-083 **Improvement of water-splitting photocatalytic activity of BaLa<sub>4</sub>Ti<sub>4</sub>O<sub>15</sub> photocatalyst by precise loading of bimetallic cluster**  
Rui Hayashi, Wataru Kurashige, Shun Yoshino, Kosuke Wakamatsu, Tomoaki Takayama, Akihiko Iwase, Akihiko Kudo, and Yuichi Negishi  
Tokyo University of Science, Japan

- PP-1-084 **Porous Ag<sub>2</sub>S/ZnS Nanospheres with Enhanced Visible-light Photocatalytic Activities**  
Ruimin Xing<sup>a</sup>, Yinxia Xu<sup>a</sup>, Xiaodan Zhang<sup>a</sup>, Shanhu Liu<sup>a</sup>, Kazuya Nakata<sup>b</sup>, and Akira Fujishima<sup>b</sup>  
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- PP-1-085 **Non-destructive depth analysis of chemically strengthened glass by X-ray diffraction and micro-Raman spectroscopy**  
R. Sasaki<sup>a</sup>, N. Terakado<sup>a</sup>, Y. Okamoto<sup>b</sup>, Y. Takahashi<sup>a</sup>, and T. Fujiwara<sup>a</sup>  
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<sup>b</sup> Department of Materials Science and Engineering, National Defense Academy, Japan
- PP-1-086 **Evaluation of Flexible Boron-Doped Diamond (BDD) Electrodes for Plant Monitoring**  
Shoko Tago<sup>a</sup>, Tsuyoshi Ochiai<sup>a,b</sup>, Seitaro Suzuki<sup>a,c</sup>, Mio Hayashi<sup>a</sup>, Takeshi Kondo<sup>b</sup>, and Akira Fujishima<sup>a,b</sup>  
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- PP-1-087 **Adsorption Energy Optimization of Co<sub>3</sub>O<sub>4</sub> through Rapid Surface Sulfurization for Efficient Counter Electrode in Dye-Sensitized Solar Cells**  
Shuang Lu, Yinglin Wang, Xintong Zhang, and Yichun Liu  
 Northeast Normal University, China
- PP-1-088 **Superhydrophilic Coatings Induced Temporary Conductivity for Low-Cost Coating and Patterning of Insulating Surfaces**  
Shuang Zheng<sup>a</sup>, Ye Tian<sup>a</sup>, and Lei Jiang<sup>b</sup>  
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<sup>b</sup> Technical Institute of Physics and Chemistry, Chinese Academy of Sciences, China
- PP-1-089 **Engineering Biointerface with Controlled Cell Adhesion towards Cancer Diagnostics**  
Shutao Wang  
 CAS Key Laboratory of Bio-inspired Materials and Interfacial Science, Technical Institute of Physics and Chemistry, Chinese Academy of Sciences, China
- PP-1-090 **The study for the interactions of protein molecules on the ordered porous nanostructure substrates**  
Weiping Qian, Qianqian Su, and Jian Dong  
 State Key Laboratory of Bioelectronics, School of Biological Science and Medical Engineering, Southeast University, China
- PP-1-091 **Efficient Capture of Cancer Cells by Their Replicated Surfaces Reveals Multiscale Topographic Interactions Coupled with Molecular Recognition**  
Wenshuo Wang<sup>a,b</sup> and Shutao Wang<sup>a,b</sup>  
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- PP-1-092 **Regulating ion transport through triblock copolymer based composited membrane: model system establishment and rectification mapping**  
Xiang-Yu Kong<sup>a</sup>, Zhen Zhang<sup>b</sup>, Liping Wen<sup>a,b</sup>, and Lei Jiang<sup>a,b</sup>  
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- PP-1-093 **Liquid Superrepellent Structures Prepared via Two-Photon Polymerization based 3D Printing Technology**  
Xiaojiang Liu, Hongcheng Gu, and Zhongze Gu  
 State Key Laboratory of Bioelectronics, School of Biological Science and Medical Engineering, Southeast University, China

- PP-1-094 **Dynamic Photofunctionalization and Photopatterning on Disulfide Surface**  
Xin Du, Hongmei Wei, Min Wang, and Zhongze Gu  
 State Key Laboratory of Bioelectronics, School of Biological Science and Medical Engineering, Southeast University, China
- PP-1-095 **Ion-Transport-Regulating Nanoporous Membrane Opens New Sight in Lithium-Sulphur Battery**  
Yahong Zhou<sup>a</sup>, Yuede Pan<sup>a</sup>, and Lei Jiang<sup>a,b</sup>  
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- PP-1-096 **A Simple Preparation of Highly Selective Electrochemical Sensor for Ag<sup>+</sup> based on 3,3',5,5'-Tetramethylbenzidine/Graphene Electrode**  
Yang Fu, Yuan Yu, and Jinfang Zhi  
 Key Laboratory of Photochemical Conversion and Optoelectronic Materials, Technical Institute of Physics and Chemistry, Chinese Academy of Sciences, China
- PP-1-097 **Investigation of average, local, and electronic structures of high functional oxides for energy system with quantum beams**  
Yasushi Idemoto<sup>a,b</sup>, Naoto Kitamura<sup>a,b</sup>, Naoya Ishida<sup>a,b</sup>, and Kazuya Nakata<sup>b,c</sup>  
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- PP-1-098 **Ions and Molecules Transport in Nanochannels**  
Ye Tian<sup>a</sup> and Lei Jiang<sup>b</sup>  
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- PP-1-099 **Single-Step Fabrication of High-Throughput Surface-Enhanced Raman Scattering Substrates**  
Yi Zeng and Zhongze Gu  
 State Key Laboratory of Bioelectronics, School of Biological Science and Medical Engineering, Southeast University, China
- PP-1-100 **Three-dimensional Heterojunctional Colloidal Quantum Dot Solar Cell with ZnO Nanowire Array**  
Yinglin Wang, Shuaipu Zang, Wei Su, Jinhuan Li, Meiyong Li, and Xintong Zhang  
 Northeast Normal University, China
- PP-1-101 **Tunable Microlasers based on Proton Controlled Intramolecular Charge Transfer in Organic Resonators**  
Yongli Yan<sup>a,b</sup>, Zhenhua Gao<sup>a,b</sup>, and Yong Sheng Zhao<sup>a,b</sup>  
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- PP-1-102 **ZrO<sub>2</sub>-nanodendrites in Borosilicate Glass: Impact of Al<sub>2</sub>O<sub>3</sub>-addition on Phase Formation and Photoluminescence**  
 Yasuhiro Nobuta<sup>a</sup>, Yoshihiro Takahashi<sup>a</sup>, Takamichi Miyazaki<sup>b</sup>, Nobuaki Terakado<sup>a</sup>, Noriko Onoue<sup>c</sup>, Tsuyoshi Shinozaki<sup>c</sup>, and Takumi Fujiwara<sup>a</sup>  
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- PP-1-103 **Problems and solutions of the present mediated electrochemical biosensors for evaluating biological toxicity of water**  
Yuan Yu, Deyu Fang, and Jinfang Zhi  
 Key Laboratory of Photochemical Conversion and Optoelectronic Materials, Technical Institute of Physics and Chemistry, Chinese Academy of Sciences, China

- PP-1-104 **Super -Wettability Based Fabrication of organic functional materials**  
Yuchen Wu, Jiangang Feng, and Lei Jiang  
 Technical Institute of Physics and Chemistry, Chinese Academy of Science, China
- PP-1-105 **Bulk scale transport of hydrogel on asymmetric microvilli structure at low Reynolds**  
Yuefeng Wang<sup>a,c</sup>, Xiaodong Chen<sup>b,c</sup>, and Shutao Wang<sup>a,c</sup>  
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- PP-1-106 **Preparation and control of spin ordering in spin thermal conductivity La–Ca–Cu–O films for active thermal management**  
Yuki Machida, Nobuaki Terakado, Ryosuke Takahashi, Yoshihiro Takahashi, and Takumi Fujiwara  
 Department of Applied Physics, Tohoku University, Japan
- PP-1-107 **Regular aligned 1D single-crystalline supramolecular arrays for photodetectors**  
Yun Liu<sup>a</sup>, Jiangang Feng<sup>b</sup>, Bo Zhang<sup>c</sup>, Yuchen Wu<sup>b</sup>, Yong Chen<sup>b</sup>, and Lei Jiang<sup>b,c</sup>  
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- PP-1-108 **Ease synthesis the large-scale diamond film using in-liquid microwave plasma CVD process**  
Y. Sakurai<sup>a,b</sup>, Y. Harada<sup>a,b,c</sup>, K. Miyasaka<sup>a,b</sup>, C. Terashima<sup>b</sup>, H. Uetsuka<sup>b,c</sup>, N. Suzuki<sup>b</sup>, K. Nakata<sup>a,b</sup>, K. Katsumata<sup>b</sup>, T. Kondo<sup>a,b</sup>, M. Yuasa<sup>a</sup>, and A. Fujishima<sup>b</sup>  
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- PP-1-109 **Synthesis of Ba<sub>6</sub>Co<sub>6</sub>ClO<sub>15.5</sub> Single Crystal and Measurement of ZT by Modified Herman Method**  
Yuta Tokiwa<sup>a</sup>, Hirofumi Kakemoto<sup>b</sup>, and Hiroshi Irie<sup>a,b</sup>  
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- PP-1-110 **Photo and Thermo Dual-Responsive Copolymer Surfaces for Efficient Cell Capture and Release**  
Yuwei Hao<sup>a,c</sup>, Lei Jiang<sup>b,c</sup>, and Shutao Wang<sup>b,c</sup>  
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<sup>c</sup> University of Chinese Academy of Sciences, China
- PP-1-111 **Ultrathin and Ion-Selective Janus Membranes for High-Performance Osmotic Energy Conversion**  
Zhen Zhang<sup>a</sup>, Liping Wen<sup>b</sup>, and Lei Jiang<sup>b</sup>  
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- PP-1-112 **Bio-sourced microfluidic analytical devices**  
Zhenzhu He, Bingbing Gao, and Zhongze Gu  
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- PP-1-113 **Superwettability Controlled Overflow**  
Zhichao Dong, Jie Ma, and Lei Jiang  
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- PP-1-114 **Fabrication of Functional Liver on a Chip as Drug Evaluation System**  
Zhongze Gu  
 State Key Laboratory of Bioelectronics, School of Biological Science and Medical Engineering, Southeast University, China
- PP-1-115 **Study of structure and activity of calcium titanate for photocatalytic reduction of CO<sub>2</sub>**  
Akihiko Anzai<sup>a</sup>, Akira Yamamoto<sup>a,b</sup>, and Hisao Yoshida<sup>a,b</sup>  
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- PP-1-116 **N719 and its binary electron transporting layer for highly efficient organic photovoltaics**  
Chuanlang Zhan  
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- PP-1-117 **Electrochromic performance of TiO<sub>2</sub>(B) based ultrathin transparent films**  
He Ma, Changhua Wang and Xintong Zhang  
 Key Laboratory of UV-Emitting Materials and Technology, Ministry of Education, Northeast Normal University, China
- PP-1-118 **DMF as an additive in two-step spin coating method for 20% conversion efficiency perovskite solar cells**  
Jionghua Wu<sup>a,b</sup>, Xin Xu<sup>a,b</sup>, Yanhong Luo<sup>a,b</sup>, Dongmei Li<sup>a,b</sup>, Huijue Wu<sup>a</sup>, and Qingbo Meng<sup>a,b</sup>  
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- PP-1-119 **Development of Novel Visible-Light-Driven Photocatalysts by Ag(I)- and Cu(I)-Substitution of Layered Perovskite Oxides**  
Kenta Watanabe<sup>a</sup>, Akihide Iwase<sup>a,b</sup>, and Akihiko Kudo<sup>a,b</sup>  
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- PP-1-120 **Photo-switchable two-dimensional nanofluidic ionic diodes**  
Lili Wang<sup>a,b</sup>, Wei Guo<sup>b</sup>, and Lei Jiang<sup>b</sup>  
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<sup>b</sup> CAS Key Laboratory of Bio-inspired Materials and Interfacial Science, Technical Institute of Physics and Chemistry, Chinese Academy of Sciences, China
- PP-1-121 **Elucidating the Impact of A-Site Cation Change on Photocatalytic H<sub>2</sub> and O<sub>2</sub> Evolution Activities of Perovskite-Type LnTaON<sub>2</sub> (Ln = La and Pr)**  
Mirabbos Hojamberdiev<sup>a,b</sup>, Maged F. Bekheet<sup>c</sup>, Judy N. Hart<sup>d</sup>, Junie Jhon M. Vequizo<sup>e</sup>, Akira Yamakata<sup>e</sup>, Kunio Yubuta<sup>f</sup>, Aleksander Gurlo<sup>c</sup>, Masashi Hasegawa<sup>a</sup>, Kazunari Domen<sup>g</sup>, and Katsuya Teshima<sup>b,h</sup>  
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- PP-1-122 **Photo-conversion of Carbon Dioxide by the Oxidation and Reduction Cocatalysts Co-loaded Photocatalysis System**  
Shusaku Shoji, Akira Yamaguchi, Etsuo Sakai and Masahiro Miyauchi  
Tokyo Institute of Technology, Japan
- PP-1-123 **SnS<sub>2</sub> Nanoplates: A Promising 2D Visible-Light Photocatalyst for Hydrogen Generation**  
Shubhangi Damkale, Sudhir Arbuji, Sunit Rane and Bharat Kale  
Materials for Renewable Energy & Sensor Division, Centre for Materials for Electronics Technology, India
- PP-1-124 **Enhanced the photochemical water splitting of ZnO@GZO films via charge-transfer effect**  
Sujun Guan, Leo Yamawaki, and Xinwei Zhao  
Department of Physics, Tokyo University of Science, Japan
- PP-1-125 **Enhancement of Oxygen Evolution Activity of Hematite Electrodes by Inducing the Concerted Proton-Coupled Electron Transfer**  
Toshihiro Takashima<sup>a</sup>, Koki Ishikawa<sup>b</sup>, and Hiroshi Irie<sup>a</sup>  
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- PP-1-126 **Creation of High Activity Water-Splitting Photocatalyst using Au<sub>25</sub> Cluster Cocatalyst**  
Wataru Kurashige, Rina Kumazawa, Rui Hayashi, Tomoaki Takayama, Akihide Iwase, Akihiko Kudo, and Yuichi Negishi  
Tokyo University of Science, Japan
- PP-1-127 **Controllable Sequential Deposition of Mixed Cation Perovskite Films with High Performance and Stability**  
Yanhong Luo, Yanhong Zhao, Dongmei Li, and Qingbo Meng  
Key Laboratory for Renewable Energy, Chinese Academy of Sciences; Beijing Key Laboratory for New Energy Materials and Devices; Institute of Physics, Chinese Academy of Sciences, China
- PP-1-128 **Intramolecular singlet fission in antiaromatic polycyclic hydrocarbon**  
Yishi Wu, Yuancheng Wang, Deqing Zhang, Hongbing Fu  
Institute of Chemistry, Chinese Academy of Sciences, China
- PP-1-129 **Diffuse Function Dependence of S<sub>2</sub><sup>2-</sup> in the Ground State**  
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- PP-1-130 **Accessing to the High-Pressure Phases in the NiOTaON Binary System for Photocatalytic Application**  
Yuito Mori, Mirabbos Hojamberdiev, Ken Niwa, and Masashi Hasegawa  
Department of Materials Physics, Nagoya University, Japan
- PP-1-131 **Positive shift in the Potential for the Photo-Electrochemical CO<sub>2</sub> Reduction into CO on Ag loaded BDD Electrode by the Electrochemical Pre-treatment on the Surface of BDD**  
Yukihiro Nakabayashi<sup>a</sup>, Yui Hirano<sup>a</sup>, Yusei Sakurai<sup>a</sup>, Akihiro Okazaki<sup>b</sup>, Haruo Kuriyama<sup>b</sup>, Nitish Roy<sup>a</sup>, Norihiro Suzuki<sup>a</sup>, Kazuya Nakata<sup>a</sup>, Ken-ichi Katsumata<sup>a</sup>, Akira Fujishima<sup>a</sup>, and Chiaki Terashima<sup>a</sup>,  
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- PP-1-132 **Significance for Hydroxyl Radical in O<sub>2</sub> Evolution by Photo-electrochemical Water Oxidation on Monoclinic Bismuth Vanadate**  
Yukihiro Nakabayashi<sup>a</sup>, Masami Nishikawa<sup>b</sup>, Nobuo Saito<sup>b</sup>, Chiaki Terashima<sup>a</sup>, and Akira Fujishima<sup>a</sup>  
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- PP-1-133 **Water-purification reactors using photocatalyst and refractive-index-matching techniques**  
Arata Myoga<sup>a</sup>, Ryutaro Iwashita<sup>a</sup>, Noriyuki Unno<sup>b</sup>, Jun Taniguchi<sup>a</sup>, Kazuhisa Yuki<sup>b</sup>, Yohji Seki<sup>d</sup>, and Shin-ichi Satake<sup>a,c</sup>  
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- PP-1-134 **Construction of TiO<sub>2</sub>-TiNb<sub>2</sub>O<sub>7</sub> interface for enhancing visible light photocatalytic activity**  
Dong Hao<sup>a</sup>, Takamasa Ishigaki<sup>a,b</sup>, Hironori Ogata<sup>a,b</sup>, Yoshihiro Tsujimoto<sup>c</sup>, and Tetsuo Uchikoshi<sup>c</sup>  
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- PP-1-135 **Plasmonic photocatalysts with enhanced photocatalytic activities for decomposition of chemical and micro-biological pollutants**  
Ewa Kowalska<sup>a</sup>, Zhishun Wei<sup>a</sup>, Marcin Janczarek<sup>a,b</sup>, Maya Endo<sup>a</sup>, Shuazhi Zheng<sup>a,c</sup>, Anna Zielinska-Jurek<sup>b</sup>, Kenta Yoshiiri<sup>a</sup>, Agata Markowska-Szczupak<sup>d</sup>, and Bunsho Ohtani<sup>a</sup>  
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<sup>b</sup> Gdansk University of Technology, Poland  
<sup>c</sup> Xiangtan University, China  
<sup>d</sup> West Pomeranian University of Technology, Poland
- PP-1-136 **Photocatalytic Inactivation for *Synechocystis***  
Haruto Nakayama<sup>a,b</sup>, Masaki Tano<sup>a,b</sup>, Tatsuya Tomo<sup>c</sup>, Norihiro Suzuki<sup>b</sup>, Ken-ichi Katsumata<sup>b</sup>, Chiaki Terashima<sup>b</sup>, Akira Fujishima<sup>b</sup>, Kenji Yamatoya<sup>a</sup>, and Kazuya Nakata<sup>a,b</sup>  
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<sup>c</sup> Department of Liberal Arts, Faculty of Science, Tokyo University of Science, Japan
- PP-1-137 **NO<sub>x</sub> Removal Efficiency on TiO<sub>2</sub> in Cementitious Materials**  
Inkyu Rhee<sup>a</sup>, Jun-Seok Lee<sup>a</sup>, Jin Hee Kim<sup>a</sup>, Jong Beom Kim<sup>a</sup>, Geon-Joong Kim<sup>b</sup>, Hee Ju Park<sup>c</sup>, Ara Joc, Eun Cho<sup>c</sup>, Yun Jong Ki<sup>c</sup>, and Jong-Ho Kim<sup>a</sup>  
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<sup>b</sup> Inha University, Korea  
<sup>c</sup> Bentech Frontier Co. Ltd., Korea
- PP-1-138 **Synthesis of Hydroxyapatite and Its Application**  
Jeongsoo Hong, Yunzi Xin, Harumitsu Nishikawa and Takashi Shirai  
 Advanced Ceramics Research Center, Nagoya Institute of Technology, Japan
- PP-1-139 **Bioinspired Designing Superwetting Filtration Membranes for High-efficient Oil/water Separation**  
Jian Jin  
 Suzhou Institute of Nano-Tech and Nano-Bionics, Chinese Academy of Sciences, China

- PP-1-140 **NO Removal of Mortar Mixed with TiO<sub>2</sub> Produced from Ti-Salt Flocculated Sludge**  
Jong Beom Kim<sup>a</sup>, Inkyu Rhee<sup>a</sup>, Jin Hee Kim<sup>a</sup>, Ho Kyong Shon<sup>b</sup>, Geon-Joong Kim<sup>c</sup>, Hee Ju Park<sup>d</sup>, Ara Jo<sup>d</sup>, Eun Cho<sup>d</sup>, Yun Jong Ki<sup>d</sup>, and Jong-Ho Kim<sup>a</sup>  
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<sup>c</sup> Inha University, Korea  
<sup>d</sup> Bantech Frontier Co. Ltd., Korea
- PP-1-141 **Analyses of hybrid wastewater purification system using biological treatment, photocatalyst and boron-doped diamond electrode**  
Mari Ideguchi<sup>a,c</sup>, Toshiki Sato<sup>a</sup>, Tsuyoshi Ochiai<sup>b,c</sup>, Akira Fujishima<sup>b,c</sup>, and Tomonori Suzuki<sup>a,b</sup>  
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- PP-1-142 **Sterilization Mechanism of *Anabaena* by TiO<sub>2</sub> photocatalysis**  
Masaki Tano<sup>a,b</sup>, Tatsuya Tomo<sup>c</sup>, Norihiro Suzuki<sup>b</sup>, Ken-ichi Katsumata<sup>b</sup>, Chiaki Terashima<sup>b</sup>, Akira Fujishima<sup>b</sup>, Kenji Yamatoya<sup>a</sup>, and Kazuya Nakata<sup>a,b</sup>  
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<sup>c</sup> Department of Liberal Arts, Faculty of Science, Tokyo University of Science, Japan
- PP-1-143 **Evaluation of Water Purification Performance for TiO<sub>2</sub>-Impregnated Porous Silica Tubes**  
Mio Hayashi<sup>a</sup>, Tsuyoshi Ochiai<sup>a,b</sup>, Shoko Tago<sup>a</sup>, Hiromasa Tawarayama<sup>c</sup>, Toshifumi Hosoya<sup>c</sup>, Tsukahara Yahagi<sup>a</sup>, and Akira Fujishima<sup>a,b</sup>  
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- PP-1-144 **Various Application of Boron Doped Diamond Electrode**  
Sachio Yoshihara  
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- PP-1-145 **Simultaneous sorption and photodegradation of dyes over steel converter slag under UV illumination**  
Shahlo Daminova<sup>a</sup>, Mirabbos Hojamberdiev<sup>b</sup>, Zukhra C. Kadirova<sup>a</sup>, and Khurshidbek Makhmudov<sup>a</sup>  
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- PP-1-146 **Wettability of oleic acid on TiO<sub>2</sub> surface in water**  
Shunsuke Nishimoto<sup>a</sup>, Daisuke Yabumoto<sup>a</sup>, Yusuke Sawai<sup>a</sup>, Yoshikazu Kameshima<sup>a</sup>, Michihiro Miyake<sup>a</sup>, Eiji Fujii<sup>b</sup>, and Ken-ichi Katsumata<sup>c</sup>  
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<sup>c</sup> Tokyo University of Science, Japan
- PP-1-147 **Multi-structured Nanofibrous Membranes for Liquid Separation**  
Yong Zhao  
 Beihang University, China
- PP-1-148 **Photodegradation of methylene blue with iron oxide-styrene-divinylbenzene copolymer under UV illumination in oxalate solution**  
Zukhra C. Kadirova<sup>a</sup>, Mirabbos Hojamberdiev<sup>b</sup>, Ken-ichi Katsumata<sup>c</sup>, Toshihiro Isobe<sup>d</sup>, Nobuhiro Matsushita<sup>d</sup>, Akira Nakajima<sup>d</sup>, and Kiyoshi Okada<sup>d</sup>  
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- PP-1-149 **Boosting photoelectrochemical performance of hematite photoanode with TiO<sub>2</sub> underlayer by extremely rapid high temperature annealing**  
Dan Wang<sup>b</sup>, Ying Chen<sup>a</sup>, and Xintong Zhang<sup>a</sup>  
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<sup>b</sup> School of Media and Mathematics & Physics, Jilin Engineering Normal University, China
- PP-1-150 **Optimization toward quantum dot sensitized solar cells**  
Dongmei Li, Huiyun Wei, and Qingbo Meng  
Institute of Physics, Chinese Academy of Sciences, China
- PP-1-151 **Near-infrared (NIR) controlled reversible cell adhesion on a responsive nano-biointerface**  
Haijun Cui<sup>a,b</sup> and Shutao Wang<sup>a,b</sup>  
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<sup>b</sup> University of Chinese Academy of Sciences (UCAS), China
- PP-1-152 **Incident photon-to-electron conversion efficiency (IPCE) of solar cells measuring system**  
Huijue Wu and Qingbo Meng  
Institute of Physics, Chinese Academy of Sciences, China
- PP-1-153 **Polystyrene Stabilized Perovskite Component, Grain and Microstructure for Improved Efficiency and Stability of Planar Solar Cells**  
Huiyin Zhang, Jiangjian Shi, and Qingbo Meng  
Key Laboratory for Renewable Energy, Chinese Academy of Sciences; Beijing Key Laboratory for New Energy Materials and Devices; Institute of Physics, Chinese Academy of Sciences, China
- PP-1-154 **Dependence of Platinum Amount on Photo-Thermoelectric Effect over Multi-Layer Platinum-Tungsten Trioxide**  
Kohei Shimoyama<sup>a</sup>, Hirofumi Kakemoto<sup>b</sup>, and Hiroshi Irie<sup>a,b</sup>  
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- PP-1-155 **Development of a biological temperature sensor: Optically-stimulated luminescence in ZrO<sub>2</sub> powder**  
Masaharu Ohashi<sup>a</sup>, Nobuaki Terakado<sup>a</sup>, Yoshihiro Takahashi<sup>a</sup>, Noriko Onoue<sup>b</sup>, Tsuyoshi Shinozaki<sup>b</sup>, and Takumi Fujiwara<sup>a</sup>  
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- PP-1-156 **Light-Controlled Ion Transport through Biomimetic DNA-Based Channels**  
Pei Li<sup>a</sup>, Liping Wen<sup>b</sup>, and Lei Jiang<sup>a,b</sup>  
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- PP-1-157 **Development of Soft Coating Process for TiO<sub>2</sub> Film by Using of Atmospheric Pressure Plasma Jet and Plasma Polymerization**  
Rena Tabei<sup>a,b</sup>, Chiaki Terashima<sup>b</sup>, Norihiro Suzuki<sup>b</sup>, Kazuya Nakata<sup>a,b</sup>, Ken-ichi Katsumata<sup>b</sup>, Koji Arimitsu<sup>a,b</sup>, Takeshi Kondo<sup>a,b</sup>, Makoto Yuasa<sup>a,b</sup>, and Akira Fujishima<sup>b</sup>  
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- PP-1-158 **SUPERHYDROPHILIC MOTH-EYE SURFACE COATED WITH TiO<sub>2</sub> FOR SELF-CLEANING AND ANTI-FOGGING APPLICATIONS**  
Sanjay S. Latthe<sup>a</sup>, Rajaram S. Sutar<sup>a</sup>, Aishwarya N. Todkari<sup>a</sup>, Chiaki Terashima<sup>b</sup>, Kazuya Nakata<sup>b</sup>, and Akira Fujishima<sup>b</sup>  
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- PP-1-159 **Crystal Domain and Second-harmonic Generation of Perfectly Surface-crystallized Glass-ceramics in SrO–TiO<sub>2</sub>–SiO<sub>2</sub> system**  
Yuta Hayashibara, Kosuke Funajima, Nobuaki Terakado, Yoshihiro Takahashi, and Takumi Fujiwara  
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- PP-1-160 **3D Origami Photonic Crystals Paper-like  $\mu$ PADs**  
Bingbing Gao, Junjie Chi, Hong Liu, and Zhongze Gu  
State key Laboratory of Bioelectronics, School of Biological Science and Medical Engineering, Southeast University, China
- PP-1-161 **Long-range orders of conjugated polymers for organic electronics**  
Huanli Dong  
Key Laboratory of Organic Solids, Institute of Chemistry, Chinese Academy of Sciences, China
- PP-1-162 **Development of Paper Substrate Sensor Using TiO<sub>2</sub> Ink Capable of Screen Printing**  
K. Katagishi<sup>a</sup>, C. Terashima<sup>b</sup>, N. Suzuki<sup>b</sup>, I. Shitanda<sup>a,b</sup>, K. Nakata<sup>a,b</sup>, K. Katsumata<sup>b</sup>, Y. Hoshi<sup>a</sup>, M. Itagaki<sup>a</sup>, and A. Fujishima<sup>b</sup>  
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- PP-1-163 **Ballistic Jumping Drop on Superhydrophobic Surface via Electrostatic Charging**  
Ning Li<sup>a,b</sup>, Zhichao Dong<sup>a</sup>, and Lei Jiang<sup>a</sup>  
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- PP-1-164 **Superwettability-Induced Confined Reaction toward High-Performance Flexible Electrodes**  
Xiqi Zhang and Lei Jiang  
Technical Institute of Physics and Chemistry, Chinese Academy of Sciences, China
- PP-1-165 **Photonic Crystals for Promoting Laser Desorption Ionization**  
Zhuoying Xie, Shan Chen, Liuyang Guo, and Zhongze Gu  
State Key Laboratory of Bioelectronics, Southeast University, China
- PP-1-166 **Evaluation of Electrode for Electric Double Layer Capacitor Produced with Used Activated Carbon for Deodorization**  
Hisafumi Sakaki, Hiroki Okabayashi, and Masaharu Komatsu  
Tokai University, Japan
- PP-1-167 **Fabrication and Optimization of Dye-sensitized Solar Cell Using ZnTiO<sub>3</sub> Electrode by Pechini-Type Sol-gel Method**  
Sei Shinkuma, Yuto Okaniwa, and Masaharu Komatsu  
Tokai University, Japan

PP-1-168

**Effect of photocatalysts on lysozyme**

Yuuki Kawamura<sup>a,b</sup>, Sho Usuki<sup>a,b</sup>, Yuichi Yamaguchi<sup>a,b</sup>, Norihiro Suzuki<sup>a</sup>, Ken-ichi Katsumata<sup>a</sup>, Chiaki Terashima<sup>a</sup>, Akira Fujishima<sup>a</sup>, Akihiko Kudo<sup>a,c</sup>, Kenji Yamatoya<sup>b</sup>, and Kazuya Nakata<sup>a,b</sup>

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PP-1-169

**Hierarchical CdMoO<sub>4</sub> stalk-Graphene composite for Enhanced Photocatalytic Hydrogen Generation**

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PP-1-170

**A multifunctional mesoporous doped cobalt oxide/C composite for electrochemical energy storage applications**

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