

----- July 30, 2024 (Tuesday) Room A-----

[Chair : Eiji Shirakawa, Norbert Hoffmann]

10:30-11:00 1A-01-KL

[changed] *Eiji Shirakawa¹ (1.Kwansei Gakuin University)

Electron-Catalyzed Cross-Coupling Reaction with Manipulation of an Electron by Photoirradiation

11:00-11:25 2A-02-IL

*Anna D. Gudmundsdottir¹ (1.University of Cincinnati)

Photopatterning Organic Azido Crystals

11:25-11:40 2A-03-OR

*Haifan Huang¹, Zihan Lin¹, Yagna Prakash Bhoi¹, Gunik Lee², Jun Kumagai², Kexin Zou¹, Akira Yamamoto¹, Shohichi Furukawa¹, Ken-ichi Fujita¹, Hisao Yoshida¹ (1.Kyoto University, 2.Nagoya University)

Synthesis of deuterated alkanes by photocatalytic decarboxylation

11:40-11:55 2A-04-OR

*Sapna Ahuja^{1, 2}, Sruthy Baburaj², Lakshmy Kannadi Valloli², Sarvar Aminovich Rakhimov², Kavyasree Manal², Aakrati Kushwaha², Steffen Jockusch², Malcolm D. E. Forbes², Jayaraman Sivaguru² (1.CSIRO, 2.Bowling Green State University)

Photochemical [2+4]-Dimerization Reaction from the Excited State

11:55-12:10 2A-05-OR

*Chomponoot Suppasso¹, Yoshinobu Kamakura¹, Misaki Ueno², Sawa Hongo², Ryohei Akiyoshi², Fumitaka Ishiwari³, Akinori Saeki³, Daisuke Tanaka², Kazuhiko Maeda¹ (1.Tokyo Tech., 2.Kwansei Gakuin University, 3.Osaka University)

Boosting photocatalytic CO₂ reduction over Pb-S coordination polymer, [Pb(tadt)]_n, KGF-9, through various synthesis routes

12:10-12:25 2A-06-OR

*Philip Petzoldt¹, Moritz Eder², Anna Lemperle¹, Clara Aletsee¹, Paula Neumann¹, Lucia Mengel¹, Martin Tschurl¹, Ueli Heiz¹ (1.Technical University of Munich, 2.Technische Universität Wien)

Closing the Pressure Gap in Photocatalysis

(Lunch Break)

[Chair : Jye-Shane Yang, Manabu Abe]

14:30-14:45 2A-07-OR

*Yuu Shioiri¹, Keisuke Obata¹, Yudai Kawase¹, Tomohiro Higashi², Masao Katayama¹, Kazuhiro Takanabe¹ (1.The University of Tokyo, 2.University of Miyazaki)

Quantitative estimation of quasi-Fermi level of holes at the surface of semiconductor photoanodes

14:45-15:00 2A-08-OR

***Rhauane Almeida Galvao¹, Swarnava Nandy¹, Akio Hirako¹, Junie Jhon Vequizo¹, Takashi Hisatomi^{1, 2}, Akira Yamakata³, Kazunari Domen¹** (1.Shinshu University, 2.PRESTO-JST, 3.Okayama University)

Effect of surface modification of SrTaO₂N on the carrier dynamics and Z-scheme water splitting activity

15:00-15:15 2A-09-OR

***Hamad Almohamadi¹, M. Mottakin², Vidhya Selvanathan³, Md. Akhtaruzzaman¹** (1.Islamic University of Madinah, 2.Universiti Kebangsaan Malaysia (UKM), 3.Universiti Tenaga Nasional (The Energy University))

Design of a Transition Metal Sulfides-Based Electrocatalyst for Efficient Oxygen Evolution Reaction

15:15-15:30 2A-10-OR

***Haruka Yamamoto¹, Yugo Miseki², Megumi Okazaki¹, Kazuhiro Sayama², Thomas E. Mallouk³, Kazuhiko Maeda¹** (1.Tokyo Tech., 2.AIST, 3.University of Pennsylvania)

Anionic polymer modification of dye-sensitized TiO₂ for improved Z-scheme water splitting

15:30-15:45 2A-11-OR

***Suraj Gupta¹, Nina Daneu¹, Jeffrey C. S. Wu², Matjaž Spreitzer¹, Marjeta Maček Kržmanc¹** (1.Jozef Stefan Institute, 2.National Taiwan University)

Tailoring two-dimensional photocatalysts for efficient solar hydrogen generation

15:45-16:00 2A-12-OR

***Yue Jiang¹, Sajjad S. Mofarah¹, Danyang Wang¹, Pramod Koshy¹, Charles C. Sorrell¹** (1.University of New South Wales)

Piezo-Photocatalysis – A Promising Strategy for Energy Conversion

16:00-16:15 2A-13-OR

***Denny Gunawan¹** (1.The University of New South Wales)

Upscaling Photoreforming of Organic Feedstocks for Solar Hydrogen Production: Material Design, Reactor Engineering, and Cost Analysis

(Break)

[Chair : Anna D Gudmundsdottir, Tomoko Yajima]

16:25-16:40 2A-14-OR

***Makoto Ogawa¹, Hajime Suzuki¹, Osamu Tomita¹, Akinobu Nakada¹, Akinori Saeki², Ryu Abe¹** (1.Kyoto University, 2.Osaka University)

Flux-Assisted Synthesis of Layered Perovskite Oxyiodide Photocatalyst for Improved O₂ Evolution under Visible Light

16:40-16:55 2A-15-OR

***Yagna Prakash Bhoi¹, Kexin Zou¹, Haifan Huang¹, Ohama Akeru¹, Akira Yamamoto¹, Hisao Yoshida¹** (1.Kyoto University)

Dehalogenative deuteration of organic halides using palladium loaded TiO₂ photocatalyst and D₂O as green deuterium source

16:55-17:10 2A-16-OR

***Sushu Zhang¹, Jingyu Wang¹** (*1.Huazhong University of Science and Technology*)

Identifying and eliminating the interference of surface carbon residues with CO₂ conversion on photocatalyst

17:10-17:25 2A-17-OR

***Bunsho Ohtani¹, Mai Takashima²** (*1.Nonprofitable Organization touche NPO, 2.Nagoya University*)

DNA beyond fingerprint: Whole structural characterization of titania powders only using their electron trap-distribution patterns

17:25-17:40 2A-18-OR

***Chechia Hu¹, Fang-Ting Tao², Kuo-Lun Tung²** (*1.National Taiwan University of Science and Technology, 2.National Taiwan University*)

Ultrafast synthesis of N-doped reduced TiO₂ by atmospheric plasma spraying for photocatalytic degradation of tetracycline and ciprofloxacin

----- July 30, 2024 (Tuesday) Room B-----

[Chair :Takahiro Kojima, Hiroaki Misawa]

10:30-11:00 2B-01-KL

***Tomoya Oshikiri^{1,2}** (1.Tohoku University, 2.Hokkaido University)

Visible light active photocathode under modal coupling regime

11:00-11:25 2B-02-IL

***Akinobu Nakada^{1,2}** (1.Kyoto University, 2.PRESTO/JST)

Tailor-Made Photocatalysts Constructed with Conjugated Polymers and Metal Complexes for CO₂ Reduction

11:25-11:40 2B-03-OR

***Ryo Koibuchi¹, Isao Yoshikawa¹, Hirohiko Houjou¹** (1.The University of Tokyo)

Photoinduced Crystal-to-Liquid Transition based on the Solid-State Photoreaction of Acylhydrazone-Based Photoswitching Molecules

11:40-11:55 2B-04-OR

***Shunsuke Sato¹, Keita Sekizawa¹, Soichi Shirai¹, Naonari Sakamoto¹, Takeshi Morikawa¹** (1.Toyota Central R&D labs. Inc.)

Enhanced performance of molecular electrocatalysts for CO₂ reduction by cations and highly efficient reaction to reduce CO₂ using sunlight using PV-EC System

(Lunch Break)

[Chair : Tomoya Oshikiri, Yasuomi Yamazaki]

14:30-15:00 2B-05-KL

***Masaaki Kitano¹** (1.Tokyo Tech.)

Development of highly active solid catalysts with functional anion sites for green ammonia synthesis

15:00-15:15 2B-06-OR

***Kosei Yamauchi¹, Masanori Kan¹, Ken Sakai¹** (1.Kyushu University)

Co-NHC Catalysts Promoting Hydrogen Evolution from Water with High Turnover Frequency

15:15-15:30 2B-07-OR

***Roland Marschall¹** (1.University of Bayreuth)

Light-induced nitrogen reduction (NRR) with earth-abundant photocatalysts

(Break)

[Chair : Masaaki Kitano, Akinobu Nakada]

16:25-16:55 2B-08-KL

***Takahiko Kojima¹** (1.University of Tsukuba)

Photocatalytic CO₂ reduction by metal complexes in high selectivity and efficiency

16:55-17:20 2B-09-IL

***Yasuomi Yamazaki¹, Taro Tsubomura², Yoshiaki Nishibayashi¹** (1.The University of Tokyo, 2.Seikei University)

Solvent Effect on Photocatalytic CO₂ Reduction Using Metal Complexes

17:20-17:35 2B-10-OR

***Hiromu Kumagai¹, Tsutomu Minegishi¹, Hiroji Ebe¹, Masakazu Sugiyama¹** (*1.The University of Tokyo*)

Electrochemical Reduction of CO₂ using Al, K-added CuO Catalyst

17:35-17:50 2B-11-OR

**Jukai Zhou¹, Weixuan Nie^{1, 2}, Mohammed Waseem Hussain¹, Drew Tarnopol Tarnopol¹,
*Charles Chauncey Luther McCrory¹** (*1.University of Michigan, 2.Westlake University*)

Breaking Scaling Relationships in Molecular Electrocatalysis for the CO₂ Reduction Reaction

----- July 30, 2024 (Tuesday) Room C-----

[Chair : Hui Seon Kim, Liang Wang]

10:30-11:00 2C-01-KL

***Prashant V Kamat¹** (*1. University of Notre Dame*)

Ion Migration in Metal Halide Perovskites and Its Impact on Solar Cell Performance

11:00-11:25 2C-02-IL

***Akinori Saeki¹** (*1. Osaka University*)

Development of solution-processed Bi/Sb solar cells using automated experiments

11:25-11:50 2C-03-IL

***Satoshi Uchida¹, Hiroshi Segawa¹** (*1. The University of Tokyo*)

Nanoscope Observation of Perovskite Solar Cell by FIB/TEM System

11:50-12:15 2C-04-IL

***Marina Freitag¹** (*1. Newcastle University*)

Tailoring Charge Transport in Mixed-Valence Coordination Polymers for Molecular PV

(Lunch Break)

[Chair : Qing Shen, Tsutomu Miyasaka]

14:30-15:00 2C-05-KL

***Sang Il Seok¹** (*1. UNIST*)

Advancements in Perovskite and Electron Transport Layers for High-Efficiency Solar Cells

15:00-15:25 2C-06-IL

***Tingli Ma¹** (*1. Kyushu Institute of Technology*)

Development of materials for perovskites solar cells

15:25-15:40 2C-07-OR

***Kei Ito¹, Kazuteru Nonomura¹, Ryota Kan¹, Keishi Tada¹, Ching Chang Lin¹, Takumi Kinoshita¹, Takeru Bessho¹, Satoshi Uchida¹, Hiroshi Segawa¹** (*1. The University of Tokyo*)

Spectral Splitting Two-junction Solar Cells Consisting of a Mesoscopic Wide-Bandgap Perovskite Solar Cell and an Inverted Narrow-Bandgap Perovskite Solar Cell

15:40-16:05 2C-08-IL

***Hideo Ohkita¹** (*1. Kyoto University*)

Ternary blend polymer solar cells for improved light-harvesting and charge transport

[Chair : Tingli Ma, Hideo Ohkita]

16:25-16:55 2C-09-KL

***Hyun Suk Jung¹** (*1. SKKU*)

Eco-friendly Materials and Process for Sustainable Perovskite Solar Cells

16:55-17:20 2C-10-IL

***Qing Shen¹** (*1. The University of Electro-Communications*)

Colloidal Quantum Dots: Synthesis, Optical Property and Application to Solar Cells

17:20-17:35 2C-11-OR

***Yinglin Wang¹, Chao Wang¹, Zihan Wang¹, Xinlu Liu¹, Xintong Zhang¹** (*1. Northeast Normal University*)

Stable PbS Quantum Dot Inks Enables High-Efficiency Photovoltaics

17:35-17:50 2C-12-OR

***Liang Wang¹, Qing Shen¹, Shuzi Hayase¹** (*1. The University of Electro-Communications*)

Management of Energy Level Alignment Enables Over 15% Device performance for Tin-based Perovskite Solar Cells

----- July 30, 2024 (Tuesday) Room D-----

[Chair : Yasuhiro Kobori, Pravas Deria]

10:30-11:00 2D-01-KL

***Yasuhiro Kobori¹** (*1.Kobe University*)

Molecular Vibronic Control of Exciton Pairs: Transient EPR Study

11:00-11:25 2D-02-IL

***Jianzhang Zhao¹** (*1.Dalian University of Technology*)

Preparation of Compact Electron Donor-Acceptor Dyads and Study of the Long-Lived Charge Separation State with Transient Optical and Electron Paramagnetic Resonance Spectroscopies

11:25-11:50 2D-03-IL

***Ayumi Ishii¹** (*1.Waseda University*)

Circularly polarized light detection with spin polarization in one-dimensional helical perovskite

11:50-12:15 2D-04-IL

***Pravas Deria¹** (*1.Southern Illinois University Carbondale*)

Energy and Electron Transfer Processes in Metal-Organic Frameworks

(Lunch Break)

[Chair : Kirk Schanze, Hiroshi Imahori]

14:30-15:00 2D-05-KL

***Kirk Schanze¹** (*1.University of Texas at San Antonio*)

Photophysics and Electron Transfer Reactivity of Ion-Radical Photocatalysts

15:00-15:25 2D-06-IL

***Nikos Tagmatarchis¹** (*1.Theoretical and Physical Chemistry Institute, National Hellenic Research Foundation*)

Functionalization of transition metal dichalcogenides and hybrids for energy conversion

15:25-15:40 2D-07-OR

***Yusuke Kuramochi^{1,2}** (*1.Tokyo University of Science, 2.The University of Tokyo*)

Photocatalytic CO₂ reduction by Zn porphyrin and Re complex in close proximity

15:40-15:55 2D-08-OR

***Hiroshi Imahori¹** (*1.Kyoto University*)

Dynamic Exciton: Manipulation of Locally-Excited, Charge-Transfer, and Charge-Separated States

(Break)

[Chair : Etsuji Tsuji, Shigeru Ikeda]

16:25-16:50 2D-09-IL

***Hiroyasu Nishi¹** (*1.University of Toyama*)

Photoelectrochemical Fabrication of Metal and Compound Nanostructures

16:50-17:15 2D-10-IL

***Akira Yamakata¹** (*1.Okayama University*)

Defect Engineering for Prominent Photocatalytic Reactions

17:15-17:30 2D-11-OR

***Kenji Katayama¹, Yuya Nagai¹, Zhenhua Pan¹** (*1.Chuo University*)

Machine Learning Combined with Analytical Sciences to Optimize Photocatalytic Materials

17:30-17:45 2D-12-OR

Juan Carlos Expósito-Gálvez¹, Francisco J. Peón-Díaz^{2, 3}, Ludek Hromadko^{4, 5}, Marcela Sepúlveda⁴, Sayda Dinorah Coria-Quiñones⁶, Deimer R. Gómez-Mejía⁶, Omar Jiménez-Sandoval⁶, Jan M. Macak^{4, 5}, *Gerko Oskam^{1, 7} (*1.Universidad Pablo de Olavide, 2. Universidad de Valparaíso, 3.Universidad Técnica Federico Santa María – Universidad de Valparaíso, 4.University of Pardubice, 5.Brno University of Technology, 6.CINVESTAV-IPN, Querétaro, 7.CINVESTAV-IPN, Mérida*)

Metal oxide materials for photoelectrochemical water splitting: elucidation of performance-limiting processes using intensity-modulated photocurrent spectroscopy

----- July 30, 2024 (Tuesday) Room E-----

~~ "Meso-Hierarchy" Session ~~

[Chair : Ryu Abe, Shengnan Duan]

10:30-11:00 2E-01-KL

***Taku Hasobe¹** (*1.Keio University*)

Construction of Molecular Architectures for High-Yield Singlet Fission

11:00-11:25 2E-02-IL

***Sadahiro Masuo¹** (*1.Kwansei Gakuin University*)

Energy transfer in quantum dot-organic molecule systems toward effective utilization of solar energy

11:25-11:50 2E-03-IL

***Takatoshi Fujita¹** (*1.National Institutes for Quantum Science and Technology*)

Theoretical study of charge photogeneration dynamics in organic photovoltaics

11:50-12:15 2E-04-IL

***Hikaru Sotome¹, Sho Takahashi², Shiki Yagai², Hiroshi Miyasaka¹** (*1.Osaka University, 2.Chiba University*)

Time-resolved spectroscopic tracking of exciton diffusion dynamics in mesoscale molecular assemblies

(Break)

[Chair : Teruhisa Ohno, Chenliang Su]

14:30-15:00 2E-05-KL

***Bin Liu¹** (*1.City University of Hong Kong*)

Probing CO₂ Reduction Reaction under Operando Condition

15:00-15:30 2E-06-KL

***Lianzhou Wang¹** (*1.The University of Queensland*)

Semiconductor photoelectrodes for photoelectrochemical energy conversion

15:30-15:55 2E-07-IL

***Takashi Hisatomi¹** (*1.Shinshu University*)

Synthesis of narrow band gap GaN:ZnO solid solutions for photocatalytic water splitting

(Break)

[Chair : Hitoshi Tamiaki, Lianzhou Wang]

16:25-16:55 2E-08-KL

***Chenliang Su¹** (*1.Shenzhen University*)

Semiconductor Photo-redox Catalysis for Mild Synthesis of Fine Chemicals and Pharmaceuticals

16:55-17:20 2E-09-IL

***Masayuki Yagi¹, Zaki N. Zahran¹, Tomohiro Katsuki¹, Yuta Tsubonouchi¹, Norihisa Hoshino¹, Debraj Chandra¹** (*1.Niigata University*)

Efficient N-doped CuWO₄ photoanode and CuBi₂O₄ photocathode fabricated by mixed metal imidazole-complexes for solar energy conversion

17:20-17:45 2E-10-IL

***Tomiko Suzuki¹, Takeshi Morikawa¹** (*1. Toyota Central R&D Labs., Inc.*)

Aqueous Z-scheme photocatalytic CO₂ reduction by particulate semiconductors and a metal-complex

17:45-18:00 2E-11-OR

***Hitoshi Ishida¹, Taisei Monji¹, Rikuto Hayashi¹, Minami Otsuka¹, Akane Yokota¹** (*1. Kansai University*)

Photocatalytic CO₂ reduction by ruthenium complexes in aqueous micellar solutions