

----- August 1, 2024 (Thursday) Room A-----

[Chair : Hiromi Yamashita, Manabu Abe]

10:45-11:00 4A-01-OR

**\*Yutaka Takaguchi<sup>1</sup>, Arif Efendi<sup>1</sup>, Van Ninh Tran<sup>1</sup>, Mariko Yukimoto<sup>1</sup>, Tomoki Matsuura<sup>2</sup>, Tomoyuki Tajima<sup>2</sup>** (1.University of Toyama, 2.Okayama University)  
MoSe<sub>2</sub>-sensitized water splitting assisted by C<sub>60</sub>-dendron on the basal surface

11:00-11:15 4A-02-OR

**\*Greg Metha<sup>1</sup>, Talib Rahman<sup>1</sup>, D.J. Osborn<sup>1</sup>, Gunther Andersson<sup>2</sup>, Hiroki Nishiyama<sup>4</sup>, Takashi Hisatomi<sup>3</sup>, Kazunari Domen<sup>4</sup>** (1.University of Adelaide, 2.Flinders University, 3.Shinshu University, 4.University of Tokyo)  
Performance of Al:TiO<sub>3</sub> photocatalyst sheet under intense UV irradiation and increased temperature

11:15-11:30 4A-03-OR

**\*Ryota Shoji<sup>1</sup>, Vikas Nandal<sup>2</sup>, Hiroyuki Matsuzaki<sup>1</sup>, Kazuhiko Seki<sup>2</sup>, Hiroaki Yoshida<sup>3</sup>, Lishua Lin<sup>4</sup>, Xiaoping Tao<sup>4</sup>, Chen Gu<sup>4</sup>, Tsuyoshi Takata<sup>4</sup>, Takashi Hisatomi<sup>4</sup>, Akihiro Furube<sup>5</sup>, Kazunari Domen<sup>4, 6</sup>** (1.Research Institute for Material and Chemical Measurement, AIST, 2.Global Zero Emission Research Center, AIST, 3.Mitsubishi Chemical Corp., 4.Shinshu University, 5.Tokushima University, 6.Tokyo University)  
Correlation between photocatalytic activity and material parameters of oxysulfide photocatalysts; quantitative evaluation by transient absorption spectroscopy and theoretical analysis

11:30-11:45 4A-04-OR

**\*Vikas Nandal<sup>1</sup>, Ryota Shoji<sup>1</sup>, Hiroyuki Matsuzaki<sup>1</sup>, Xiaoping Tao<sup>2</sup>, Akihiro Furube<sup>3</sup>, Takashi Hisatomi<sup>2</sup>, Hiroaki Yoshida<sup>4, 5</sup>, Tsuyoshi Takata<sup>2</sup>, Masanori Kaneko<sup>6</sup>, Koichi Yamashita<sup>6</sup>, Kazunari Domen<sup>2, 7</sup>, Kazuhiko Seki<sup>1</sup>** (1.AIST, 2.Shinshu University, 3.Tokushima University, 4.Mitsubishi Chemical Corporation, 5.ARPChem, 6.Yokohama City University, 7.The University of Tokyo)  
Quantifying the prospect of visible-light-absorbing particulate oxysulfide photocatalyst by probing transient absorption and photoluminescence

11:45-12:00 4A-05-OR

**\*Dominik Eder<sup>1</sup>, Shaghayegh Naghdi<sup>1</sup>, Jia Wang, Pablo Ayala<sup>1</sup>, Alexey Cherevan<sup>1</sup>** (1.Technische Universität Wien)  
SELECTIVE LIGAND REMOVAL AS A POWERFUL STRATEGY TOWARDS ADVANCED PHOTOCATALYSTS

12:00-12:15 4A-06-OR

**\*Congcong Xing<sup>1</sup>, Tianqi Liu<sup>1</sup>, Yong Gao<sup>1</sup>, Xiaolei Fan<sup>1</sup>** (1.Zhejiang University)  
Length and Temperature Optimization for Efficient Hydrogen Production in Brookite-phase TiO<sub>2</sub> Nanorods

(Break)

[Chair : Vladimir Golovko, Manabu Abe]

14:30-14:45 4A-07-OR

**\*Hajime Suzuki<sup>1</sup>, Toshiki Abe<sup>1</sup>, Takahide Otsubo<sup>1</sup>, Yasunori Watanabe<sup>1</sup>, Osamu Tomita<sup>1</sup>, Masanobu Higashi<sup>1</sup>, Akinori Saeki<sup>2</sup>, Ryu Abe<sup>1</sup>** (1.Kyoto University, 2.Osaka University)

Arc Plasma Deposition as an Effective Method for Loading Highly Active Nanococatalysts onto Photocatalysts for Efficient H<sub>2</sub> Evolution

14:45-15:00 4A-08-OR

**\*Jérôme Fortage<sup>1</sup>, Lucile Termeau<sup>1</sup>, Juan Aguirre-Araque<sup>1</sup>, Fakourou Camara<sup>1</sup>, Philippe Lainé<sup>2</sup>, Marie-Noëlle Collomb<sup>1</sup>** (1.Université Grenoble Alpes, CNRS, 2.Université de Paris, CNRS)

DuBois-type nickel phosphine catalyst vs cobalt tetraazamacrocyclic catalyst for light-driven H<sub>2</sub> production in water combined with the organic dye triazatriangulenium

15:00-15:15 4A-09-OR

**\*Tsubasa Mikie<sup>1</sup>, Koichiro Hayashi<sup>1</sup>, Chiyu Fujita<sup>1</sup>, Itaru Osaka<sup>1</sup>** (1.Hiroshima University)

Organic p/n Heterojunction Nanoparticles Based on A Crystalline Semiconducting Polymer for Efficient Photocatalytic Hydrogen Evolution

15:15-15:30 4A-10-OR

**\*Yasuhiko Takeda<sup>1</sup>, Tamoko M Suzuki<sup>1</sup>, Shunsuke Sato<sup>1</sup>, Takeshi Morikawa<sup>1</sup>** (1.Toyota Central R&D Labs., Inc.)

Solar-spectrum splitting for photocatalytic reactors used for artificial photosynthesis

15:30-15:45 4A-11-OR

**Jeiwan Tan<sup>1</sup>, Demelza Wright<sup>1</sup>, Md Azimul Haque<sup>1</sup>, Debjit Ghoshal<sup>1</sup>, Trung Huu Lee<sup>1</sup>, Michelle Smeaton<sup>1</sup>, Katie Jungjohann<sup>1</sup>, Elisa M. Miller<sup>1</sup>, Nathan R. Neale<sup>1</sup>, \*Jao van de Lagemaat<sup>1</sup>** (1.National Renewable Energy Laboratory)

Controlling water splitting using chirality-induced spin in electrocatalysis

(Break)

[Chair : Hajime Suzuki, Manabu Abe]

16:25-16:40 4A-13-OR

**\*Atsushi Kobayashi<sup>1</sup>** (1.Hokkaido University)

Photoredox cascade catalytic system for solar hydrogen production during oxidation transformations of organic substrates

16:40-16:55 4A-14-OR

**\*Wenjing Song<sup>1</sup>, Tongtong Jia, Bangrong Ming, Jincal Zhao** (1.Institute of Chemistry Chinese Academy of Sciences)

Tailoring one- or two- electron transfer over single Ni site in the light-driven reduction of organohalides

16:55-17:10 4A-15-OR

**\*Kazuyuki Ishii<sup>1</sup>** (1.The University of Tokyo)

Photochemical oxygen reactions using phthalocyanines

17:10-17:25 4A-16-OR

**\*Hiromi Yamashita<sup>1</sup>, Yifan Zhao<sup>1</sup>, Yoshifumi Kondo<sup>1</sup>, Yasutaka Kuwahara<sup>1</sup>, Kohsuke Mori<sup>1</sup>**  
(1.Osaka University)

Efficient Photocatalytic H<sub>2</sub>O<sub>2</sub> Production Using Metal-Organic Frameworks and Two-Phase Reaction System

17:25-17:40 4A-17-OR

**\*Xuanyu Wang<sup>1</sup>, Hong Lin<sup>1</sup>** (1.Tsinghua University)

Reciprocity between hollow AgGaS<sub>2</sub> nanoflake-clusters and g-C<sub>3</sub>N<sub>4</sub> sheets enabled by heterojunctions for H<sub>2</sub>O<sub>2</sub> photosynthesis with enhanced activity and stability

17:40-17:55 4A-18-OR

**\*Xintong Zhang<sup>1</sup>** (1.Northeast Normal University)

Activation of surface lattice oxygen boosting photocatalysis over CeO<sub>2</sub>

----- August 1, 2024 (Thursday) Room B-----

[Chair : Ayuko Kitajo, Hayami Takeda]

10:30-11:00 4B-01-KL

**\*Hikari Sakaebe<sup>1</sup>** (*1.Kyushu University*)

Development of high energy battery system and materials without metal resource constraints

11:00-11:25 4B-02-IL

**\*Yuki Oriksa<sup>1</sup>, Mao Matsumoto<sup>1</sup>, Kei Hirabayashi<sup>1</sup>, Yuya Sakka<sup>1</sup>, Yusuke Sakurai<sup>1</sup>**  
(*1.Ritsumeikan University*)

Analysis of Heterogeneous Reactions in Lithium-ion Batteries and All-solid-state Batteries

11:25-11:50 4B-03-IL

**\*Kiho Nishioka<sup>1</sup>** (*1.Kyoto University*)

Identification of the Accurate Location of Insulating Byproducts in Discharge Deposits in Lithium-Oxygen Batteries

(Lunch Break)

[Chair : Hikari Sakaebe, Yuki Oriksa]

14:30-15:00 4B-04-KL

**\*Ayuko Kitajou<sup>1</sup>** (*1.Yamaguchi University*)

Electrochemical properties of aqueous sodium ion batteries using highly concentrated electrolyte adding other solvent

15:00-15:25 4B-05-IL

**\*Hayami Takeda<sup>1</sup>** (*1.Nagoya Institute of Technology*)

Development of solid oxide electrolytes using combination of experimental techniques and materials informatics

(Break)

[Chair : Shinichi Komaba]

16:25-16:50 4B-06-IL

**\*Tomohiro Fukushima<sup>1</sup>** (*1.Hokkaido University*)

Reaction intermediates in the oxygen evolution reaction at Ni-based electrodes

16:50-17:20 4B-07-KL

**\*Kazuhiko Maeda<sup>1</sup>** (*1.Tokyo Tech.*)

Unconventional mixed-anion materials for artificial photosynthesis

----- August 1, 2024 (Thursday) Room C-----

[Chair : Yanfa Yan, Amrita Kumar Sana]

10:30-11:00 4C-01-KL

**\*Atsushi Wakamiya<sup>1</sup>** (*1.Institute for Chemical Research, Kyoto University*)

Charge Collecting and Passivation Materials for Efficient Perovskite Solar Cells

11:00-11:25 4C-02-IL

**\*Zhijun Ning<sup>1</sup>** (*1.ShanghaiTech University*)

Oxidation suppression of tin halide perovskites

11:25-11:55 4C-03-KL

**\*Shuzi Hayase<sup>1</sup>** (*1.The University of Electro-Communications*)

Guidelines for increasing efficiency and durability of tin based solar cells

11:55-12:20 4C-04-IL

**\*Ludmila Cojocar<sup>1</sup>, Yuka Yoshihara<sup>11</sup>, Nilanka Keppetipola<sup>3</sup>, Kamal Kamali<sup>2</sup>, Guido Sonnemann<sup>2</sup>, Thierry Toupance<sup>2</sup>, Ajay Kumar Jena<sup>1</sup>, Satoshi Uchida<sup>1</sup>, Hiroshi Segawa<sup>1</sup>**  
(*1.The University of Tokyo, 2.University of Bordeaux*)

Assessing Sustainable Approaches for Perovskite Solar Cells Fabrication

(Lunch Break)

[Chair : Shuzi Hayase, Elizabeth A Gibson]

14:30-14:55 4C-05-IL

**\*Taisuke Matsui<sup>1</sup>** (*1.Panasonic Holdings Corporation*)

Development of building glass integrated perovskite PV

14:55-15:20 4C-06-IL

**\*Tzu Chien Wei<sup>1, 2</sup>** (*1.National Tsing-Hua University, 2.National Yang Ming Chiao Tung University*)

Study on Production Technology for Perovskite Solar Cells

15:20-15:35 4C-07-OR

**\*JaeHong Park<sup>1</sup>** (*1.Ewha Womans University*)

Identification and Dynamics of Microsecond-Lived Charge-Carriers for CsPbBr<sub>3</sub> Perovskite Quantum Dots, Featuring Ambient Long-Term Stability

15:35-15:50 4C-08-OR

**\*Shahrir Razey Sahamir<sup>1</sup>, Takeru Bessho<sup>2</sup>, Hiroshi Segawa<sup>2</sup>, Qing Shen<sup>1</sup>, Shuzi Hayase<sup>1</sup>**  
(*1.The University of Electro-Communications, 2.The University of Tokyo*)

Adopting bulk heterojunction into tin-lead perovskite solar cells for enhanced Voc and improved overall performance

(Break)

[Chair : Tzu-Chien Wei, Zhijun Ning]

16:25-16:50 4C-09-IL

**\*Amrita Kumar Sana<sup>1</sup>, Mareedu Sreenivasu<sup>1</sup>, Devoju Harinada Chary<sup>1</sup>, Takayuki Shimizu<sup>1</sup>, Katsuya Tsuchimoto<sup>1</sup>, Tsuneaki Watanabe<sup>1</sup>, Junji Nakajima<sup>2</sup>** (1.*IMRA Japan Co., Ltd.*, 2.*AISIN CORPORATION*)

Design and Development of Low-Cost Donor-Acceptor-Donor (D-A-D) Hole Transport Materials for Efficient and Stable Perovskite Solar Cells

16:50-17:15 4C-10-IL

**\*Elizabeth A Gibson<sup>1</sup>, Bening Tirta Muhammad<sup>1</sup>, Amy Neild<sup>1</sup>, Susana Iglesias Porras<sup>1</sup>** (1.*Newcastle University*)

Project ViTAL: Decarbonise power using integrated solar technology

17:15-17:40 4C-11-IL

**\*Hui-Seon Kim<sup>1</sup>** (1.*Inha University*)

Control of lattice strain across  $\alpha$ -FAPbI<sub>3</sub> film

----- August 1, 2024 (Thursday) Room D-----

[Chair : Hiro Minamimoto, Yasunori Matsui]

10:30-11:00 4D-01-KL

**\*Hong Lin<sup>1</sup>, Xuanling Liu<sup>1</sup>, Jianhua Han<sup>1</sup>** (1. *Tsinghua University*)

Design and application of nanomaterials in photodevices

11:00-11:25 4D-02-IL

**\*Fatwa Firdaus Abdi<sup>1</sup>** (1. *City University of Hong Kong*)

Coupling H<sub>2</sub> production and upgrading of chemicals in a photoelectrochemical device

11:25-11:50 4D-03-IL

**\*Tomohiro Higashi<sup>1</sup>** (1. *University of Miyazaki*)

Photoelectrochemical Insights into Water Splitting Efficiency of (Oxy)Nitride-based Photoelectrode

11:50-12:05 4D-04-OR

**\*Yuriy Pihosh<sup>1</sup>, Vikas Nandal<sup>2</sup>, Tomohiro Higashi<sup>3</sup>, Kazuhiko Seki<sup>2</sup>, Kazunari Domen<sup>1</sup>**

(1. *The University of Tokyo*, 2. *AIST*, 3. *University of Miyazaki*)

Nanostructured tantalum nitride enabled solar-to-hydrogen production with efficiency more than 10%

12:05-12:20 4D-05-OR

**\*Yosuke Kageshima<sup>1</sup>, Tatsuya Kanazawa<sup>1</sup>, Katsuya Teshima<sup>1</sup>, Kazunari Domen<sup>1, 2</sup>, Hiromasa Nishikiori<sup>1</sup>**

(1. *Shinshu University*, 2. *The University of Tokyo*)

Efficient hydrogen-evolving photocathodes consisting of Cu<sub>2</sub>Sn<sub>0.38</sub>Ge<sub>0.62</sub>S<sub>3</sub> crystalline particles synthesized via flux method

(Lunch Break)

[Chair : Tomohiro Higashi, Hong Lin]

14:30-15:00 4D-06-KL

**\*Tetsu Tatsuma<sup>1</sup>, Takuya Ishida<sup>1</sup>, Seung Hyuk Lee<sup>1</sup>** (1. *The University of Tokyo*)

Shaping nanomaterials by plasmon and Mie resonances for nanophotonic device fabrication

15:00-15:15 4D-07-OR

**\*Hiro Minamimoto<sup>1</sup>, Yuto Tajiri<sup>1</sup>, Minoru Mizuhata<sup>1</sup>** (1. *Kobe University*)

Investigations of Visible-Light-Driven Reduction Reaction Process at Plasmonic Cathode Electrode

15:15-15:30 4D-08-OR

**\*Debraj Chandra<sup>1</sup>, Yuta Tsubonouchi<sup>1</sup>, Norihisa Hoshino<sup>1</sup>, Zaki Zahran<sup>1</sup>, Masayuki Yagi<sup>1</sup>**

(1. *Niigata University*)

Designed nanoarchitectures of WO<sub>3</sub> photoanode towards efficient solar-driven water oxidation

15:30-15:45 4D-09-OR

**\*Yasunori Matsui<sup>1</sup>, Takumi Takahashi<sup>1</sup>, Masaya Kanoh<sup>1</sup>, Takuya Ogaki<sup>1</sup>, Hiroshi Ikeda<sup>1</sup>** (1. *Osaka Metropolitan University*)

Transient Absorption Spectroscopic Analysis of Energy Transfer Process in the Upconversion System Based on Polymer Composite

(Break)

[Chair : Yosuke Kageshima, Fatwa Firdaus Abdi]

16:25-16:40 4D-10-OR

**\*Etsushi Tsuji<sup>1</sup>, Yoshiki Degami<sup>1</sup>, Hiroyuki Okada<sup>1</sup>, Satoshi Suganuma<sup>1,2</sup>, Naonobu Katada<sup>1</sup>** (1. *Tottori University*, 2. *Hokkaido University*)

Brownmillerite-type  $\text{Ca}_2\text{FeCoO}_5$  as a cocatalyst of  $\text{WO}_3$  photoanode for water splitting

16:40-16:55 4D-11-OR

**\*Renato Gonçalves<sup>1</sup>, Washington Santa Rosa<sup>1</sup>, Victor Zamora Castaneda<sup>1</sup>** (1. *University of Sao Paulo*)

Optimizing  $\text{BiVO}_4/\text{FeNiO}_x$  p-n Heterojunctions via Magnetron Sputtering Deposition to Boost Photoelectrochemical Water Splitting Efficiency

16:55-17:10 4D-12-OR

**\*Marcus Einert<sup>1</sup>, Arslan Waheed<sup>1</sup>, Stefan Lauterbach<sup>2</sup>, Maximilian Mellin<sup>1</sup>, Marcus Rohnke<sup>3</sup>, Lysander Quentin Wagner<sup>3, 4</sup>, Julia Gallenberger<sup>1</sup>, Chuanmu Tian<sup>1</sup>, Bernd Michael Smarsly<sup>3, 4</sup>, Wolfram Jaegermann<sup>1</sup>, Franziska Hess<sup>5</sup>, Helmut Schlaad<sup>6</sup>, Jan Philipp Hofmann<sup>1</sup>** (1. *Technical University of Darmstadt*, 2. *Technical University of Darmstadt*, 3. *Justus Liebig University Giessen*, 4. *Justus-Liebig University*, 5. *Technical University Berlin*, 6. *University of Potsdam*)

Photoelectrochemical and Electrocatalytic Water Oxidation Performance of Sol-Gel-derived Mesoporous High-Entropy Spinel Oxide Thin Films



----- August 1, 2024 (Thursday) Room E-----

[Chair : Yukina Takahashi, Haoxin Mai]

10:30-11:00 4E-01-KL

**\*Reiner Sebastian Sprick<sup>1</sup>** (1. *University of Strathclyde*)

Conjugated polymer photocatalysts for water splitting and carbon dioxide reduction

11:00-11:25 4E-02-IL

**\*Tomoko Yoshida<sup>1</sup>, Muneaki Yamamoto<sup>1</sup>, Tomoka Yamamoto<sup>2</sup>, Tetsuo Tanabe<sup>1</sup>** (1. *Nagoya University*, 2. *Osaka Metropolitan University*)

Multiple spectroscopic analyses for understanding functions of solid photocatalysts

11:25-11:50 4E-03-IL

**\*Ji-Hyun Jang<sup>1</sup>** (1. *UNIST*)

Enhancing the charge transport characteristics of hematite via morphology engineering

11:50-12:15 4E-04-IL

**\*Stuart Linley<sup>1</sup>** (1. *McMaster University*)

Floating Catalyst Composites for Solar Reforming

(Lunch Break)

[Chair : Jian-Ren Shen, Reiner Sebastian Sprick]

14:30-15:00 4E-05-KL

**\*Francesca Maria Toma<sup>1, 2</sup>** (1. *Helmholtz Zentrum Hereon*, 2. *Lawrence Berkeley National Laboratory*)

Stable and Efficient Photoelectrodes for Artificial Photosynthesis

15:00-15:25 4E-06-IL

**\*Haoxin Mai<sup>1</sup>, Xuying Li<sup>1</sup>, Rachel Caruso<sup>1</sup>** (1. *RMIT University*)

Development of Visible Light Photocatalysts Assisted by Theoretical Modelling

15:25-15:40 4E-07-OR

**\*Hisao Yoshida<sup>1</sup>, Hongxuan Qiu<sup>1</sup>, Akira Yamamoto<sup>1</sup>** (1. *Kyoto University*)

Modification of calcium titanate photocatalyst by gallium species for carbon dioxide reduction with water

(Break)

[Chair : Masahiro Miyauchi, Licheng Sun]

16:25-16:55 4E-08-KL

**\*Xiao-Feng Wang<sup>1</sup>** (1. *Jilin University*)

Chlorophyll derivative-based devices for photoenergy conversion and storage

16:55-17:20 4E-09-IL

**\*Yukina Takahashi<sup>1</sup>** (1. *Kyushu University*)

Investigation of the role of metal nanoparticles for efficiency improvement of photocatalysts

17:20-17:45 4E-10-IL

**\*Ritsuko Fujii<sup>1</sup>, Soichiro Seki<sup>2</sup>** (1.Osaka Metropolitan University, 2.Osaka City University)

Blue-green light utilization strategy of the siphonaxanthin-type photosynthetic antenna in a marine green alga, *Codium fragile*