

July 20 (WED)

Biomass Conversion

13:30-15:00

Shin-Yi Lecture Hall

Chair: Kevin Chia-Wen Wu (National Taiwan University, Taiwan) / Kuen-Song Lin (Yuan Ze University, Taiwan)

13:30-14:00

[Keynote Speaker]

Valorization of Cellulose and Chitin by Heterogeneous Catalysis

Atsushi Fukuoka* (Hokkaido University, Japan)

14:00-14:15

[Invited Speaker]

Depolymerization of Kraft Lignin by Electrochemical Advanced Oxidation in a Microreactor

Chawakorn Rittirong, Pakorn Vongngarmsilp, Varong Pavarajarn* (Chulalongkorn University, Thailand)

14:15-14:30

[Invited Speaker]

Direct Hydrodeoxygenation of Biomass-Derived Esters to Ethers Using Pt-Mo/ZrO₂ Catalyst

Tomoo Mizugaki* (Osaka University, Japan)

14:30-14:45

[Invited Speaker]

Silica-Supported Nanoscale Hydrotalcite-Derived Oxides for C₄ Chemicals from Ethanol Condensation

Po-Wen Chung* (Academia Sinica, Taiwan)

14:45-15:00

[Invited Speaker]

Effective Dispersion of MgO Nanostructure on Biochar Support for Glucose Isomerization

Season Si Chen (The Hong Kong Polytechnic University & City University of Hong Kong, China & National Taiwan University, Taiwan); Daniel Chiu Wa Tsang* (The Hong Kong Polytechnic University, China); Chia-Wen Wu (National Taiwan University, Taiwan)

Modeling and Simulation of Catalysis

13:30-15:00

Ching-Lang Lecture Hall

Chair: Yi-Pei Li (National Taiwan University, Taiwan)

13:30-14:00

[Keynote Speaker]

Data-Driven Multiscale Models to Understand Electrochemical Reactions

Yousung Jung* (Korea Advanced Institute of Science and Technology, Korea)

July 20 (WED)

Modeling and Simulation of Catalysis

13:30-15:00

Ching-Lang Lecture Hall

Chair: Yi-Pei Li (National Taiwan University, Taiwan)

14:00-14:30

[Keynote Speaker]

Development and Application of the Hybrid Quantum/Classical Approaches for the Study of the Plasmon-Mediated Molecular Spectra and Water Splitting Reaction

WanZhen Liang* (Xiamen University, China)

14:30-14:45

[Invited Speaker]

Applications of Quantum Mechanics to Study and Design Electrocatalysts for Hydrocarbon Partial Oxidation

Mu-Jeng Cheng* (National Cheng Kung University, Taiwan)

14:45-15:00

[Invited Speaker]

Designing Catalyst-Electrolyte Interfaces for Electrocatalytic Carbon Dioxide Conversion

Youngkook Kwon* (Ulsan National Institute of Science and Technology, Korea)

CO2 Conversion and Utilization

13:30-15:00

P. Y. Young Lecture Hall

Chair: Kevin Chia-Wen Wu (National Taiwan University, Taiwan) / Bing-Hung Chen (National Cheng Kung University, Taiwan)

13:30-14:00

[Keynote Speaker]

Recent Trends in Artificial Photosynthesis: Atomic Design and Surface Probing of Selective Two-Dimensional Nano-Photocatalysts

Li-Chyong Chen* (National Taiwan University, Taiwan)

14:00-14:30

[Keynote Speaker]

Understanding Elementary Electrocatalytic Reaction Steps for CO₂ Reduction Using Immobilized Molecular Catalysts

Kazuhiro Takanabe* (The University of Tokyo, Japan)

14:30-14:45

[Invited Speaker]

Visible-Light Driven 3-Hydroxybutyrate Production from CO₂ And Acetone with the Hybrid System of Photocatalytic Dye and Biocatalysts

Yutaka Amao* (Osaka Metropolitan University, Japan)

July 20 (WED)

CO2 Conversion and Utilization

13:30-15:00

P. Y. Young Lecture Hall

Chair: Kevin Chia-Wen Wu (National Taiwan University, Taiwan) / Bing-Hung Chen (National Cheng Kung University, Taiwan)

14:45-15:00

[Invited Speaker]

Single-Atom Catalysts in a Flow cell Meet the Industrial Criteria of Carbon Dioxide Reduction Reaction to C1 Products

Sung-Fu Hung* (National Yang Ming Chiao Tung University, Taiwan)

Oxide Catalysis

13:30-15:00

Room N203

Chair: Yu-Chuan Lin (National Cheng Kung University, Taiwan)

13:30-14:00

[Keynote Speaker]

Innovating Sustainable Catalyst Systems for Tackling Energy and Environmental Challenges

Sibudjing Kawi* (National University of Singapore, Singapore)

14:00-14:15

[Invited Speaker]

Selective Dehydration of 4-Methyl-2-Pentanol to 4-Methyl-1-Pentene over Yttria-Stabilized Zirconia

Jae-Hong Lee, Young-Woong Suh* (Hanyang University, Korea)

14:15-14:30

[Invited Speaker]

Design, Synthesis, and Unique Catalysis of Crystalline Metal Oxides

Keigo Kamata* (Tokyo Institute of Technology, Japan)

14:30-14:45

[Invited Speaker]

Air-Stable, Highly Active, and Reusable Metal Phosphide Catalysts for Liquid-Phase Hydrogenation Reactions

Takato Mitsudome* (Osaka University, Japan)

14:45-15:00

[Invited Speaker]

Synthesis of Mesoporous Metal-Silicates Metal-Alumina Catalysts

Hong-Ping Lin* (National Cheng Kung University, Taiwan)

July 20 (WED)

Zeolites

16:30-18:00

Shin-Yi Lecture Hall

Chair: Kevin Chia-Wen Wu (National Taiwan University, Taiwan) / Tseng-Chang Tsai (National University of Kaohsiung, Taiwan)

16:30-17:00

[Keynote Speaker]

Metal Nanoparticles Enveloped within Zeolite Crystals as Stable and Selective Heterogeneous Catalysts

Liang Wang, Feng-Shou Xiao* (Zhejiang University, China)

17:00-17:15

[Invited Speaker]

Hierarchical Zeolitic Materials Comprising Stacked MFI Nanosheets for Adsorption and Catalytic Applications

Chia-Min Yang*, Albert Chang, Tsung-Cheng Yang, Ming-Yi Chen, Hsu-Ming Hsiao (National Tsing Hua University, Taiwan)

17:15-17:30

[Invited Speaker]

Extremely Stable Zeolites Developed via Liquid-Mediated Self-Defect-Healing

Toru Wakihara* (The University of Tokyo, Japan)

17:30-17:45

[Invited Speaker]

Ionic Liquid-templated Synthesis of 10-Membered Ring Zeolites: Experimental and Theoretical Evidence

Xuemin Li, Alex Yip* (University of Canterbury, New Zealand)

17:45-18:00

[Invited Speaker]

Oxidative Reforming of Methane over Rh Ion-Exchanged MFI-Type Zeolite with Different Framework Al Distributions

Ryota Osuga, Saikhantsetseg Bayarsaikhan, Shuhei Yasuda, Toshiyuki Yokoi* (Tokyo Institute of Technology, Japan)

In-Situ Characterizations

16:30-18:00

Ching-Lang Lecture Hall

Chair: Heng-Liang Wu & Wen-Yueh Yu (National Taiwan University, Taiwan)

16:30-17:00

[Keynote Speaker]

In-situ Observation of Reaction Intermediates in Polaritonic States

Kei Murakoshi* (Hokkaido University, Japan)

July 20 (WED)

In-Situ Characterizations

16:30-18:00

Ching-Lang Lecture Hall

Chair: Heng-Liang Wu & Wen-Yueh Yu (National Taiwan University, Taiwan)

17:00-17:15

[Invited Speaker]

Structures and Dynamics at Electrochemical Interfaces Studied by Nonlinear Spectroelectrochemistry

Yujin Tong* (University of Duisburg-Essen, Germany)

17:15-17:30

[Invited Speaker]

NO_x Conversion Using PEM Electrolyzer

Atsushi Urakawa* (Delft University of Technology, Netherlands)

17:30-17:45

[Invited Speaker]

Tailoring the properties of surface Cu atoms in oxidation chemistry

Feng Ryan Wang* (University College London, United Kingdom)

17:45-18:00

[Invited Speaker]

Development of Active Electrochemical Catalysts for Ammonia Evolution Reaction

Di-Yan Wang* (Tunghai University, Taiwan)

Polymer Photocatalysts

16:30-18:00

P. Y. Young Lecture Hall

Chair: Ho-Hsiu Chou (National Tsing Hua University, Taiwan)

16:30-17:00

[Keynote Speaker]

Polythiophenes as Photocathodes to Produce Hydrogen and H₂O₂ from Water

Hiroyuki Nishide* (Waseda University, Japan)

17:00-17:15

[Invited Speaker]

EDOT-Based Conjugated Polymers via C–H Direct Arylation for Highly Efficient Photocatalytic Hydrogen Production

Zhi-Rong Tan, Shi-Yong Liu* (Jiangxi University of Science and Technology, China)

17:15-17:30

[Invited Speaker]

Structure-Property Relationships in Polymer Photocatalysts

Sebastian Sprick* (University of Strathclyde, United Kingdom)

July 20 (WED)

Polymer Photocatalysts

16:30-18:00

P. Y. Young Lecture Hall

Chair: Ho-Hsiu Chou (National Tsing Hua University, Taiwan)

17:30-17:45

[Invited Speaker]

Design and Synthesis of Conjugated Polymers for Visible-Light-Driven Hydrogen Evolution

Ho-Hsiu Chou* (National Tsing Hua University, Taiwan)

Carbon-Based Catalysts

16:30-18:00

Room N203

Chair: Kevin Chia-Wen Wu (National Taiwan University, Taiwan) / Yu-Tzu Huang (Ching Yun University, Taiwan)

16:30-17:00

[Keynote Speaker]

Stoichiometric Carbocatalysis of Sulfur-Doped Biochar for Environmental Remediation

Dan Tsang* (The Hong Kong Polytechnic University, Hong Kong)

17:00-17:15

[Invited Speaker]

Strategic Utilization of Bio-Circular Resources for Producing and Applying Carbonaceous Nanomaterials

G.T.T. Le, Rodruangnon, Wandaw, P. Thairattananon, K. Ariya, P. Bunwichian (Chulalongkorn University, Thailand); K. Laohhasurayotin (National Nanotechnology Center, Thailand); K. Pimraksa (Chiang Mai University, Thailand); P. Jongvivatsakul (Chulalongkorn University, Thailand); N. Sano (Kyoto University, Japan); I. Charinpanitku* (Chulalongkorn University, Thailand)

17:15-17:30

[Invited Speaker]

Production of Activated Carbon with Large Specific Surface Area from Banana Peel

Jun'ichi Hayashi*, Isao Hasegawa, Toki Hagihara, Takumi Takara (Kansai University, Japan)

17:30-17:45

[Invited Speaker]

Carbon Dots-Based Nanomaterials for Photo(electro)Chemical Antibiotic Degradation and Energy Applications

Van Dien Dang (National Yang Ming Chiao Tung University, Taiwan & Ho Chi Minh City University of Food Industry, Vietnam); Ruey-An Doong* (National Tsing Hua University, Taiwan)

17:45-18:00

[Invited Speaker]

Oxidative Conversion of Biomass Compounds Using Metal-Organic Framework (MOF)-Derived Nitrogen-Doped Carbon as Effective Metal-Free Catalyst

Nguyen Van Chi* (Van Lang University, Vietnam); Kevin C.-W. Wu (National Taiwan University, Taiwan)

July 21 (THU)

Electrocatalysis-I

08:30-10:00

Shin-Yi Lecture Hall

Chair: Hao-Ming Chen (National Taiwan University, Taiwan)

08:30-09:00

[Keynote Speaker]

A Design Strategy for Oxygen Electrocatalysts

Bin Liu* (Nanyang Technological University, Singapore)

09:00-09:30

[Keynote Speaker]

Electronic Structure Modulation of Non-Noble Single-Atom Electro-Catalysts and Mechanistic Studies via X-Ray Spectroscopies

Palani Sabhpathy (National Taiwan University, Taiwan); Indrajit Shown, Amr Sabbah (Academia Sinica, Taiwan); Hsiang-Ting Lien, Po-Tuan Chen, Tsu-Chin Chou, Sun-Tang Chang (National Taiwan University, Taiwan); Ying-Rui Lu, Yan-Gu Lin, Chung-Li Dong, Jyh-Fu Lee, Jeng-Lung Chen (National Synchrotron Radiation Research Center, Taiwan), Yu-Chung Chang (National Taiwan University of Science and Technology, Taiwan), Puttikam Raghunath (National Yang-Ming Chiao-Tung University, Taiwan), Chen-Hao Wang (National Taiwan University of Science and Technology, Taiwan), Li-Chyong Chen (National Taiwan University, Taiwan), Kuei-Hsien Chen* (Academia Sinica & National Taiwan University, Taiwan)

09:30-09:45

[Invited Speaker]

Application of Intermetallic Compounds in Electrocatalytic Water Splitting: The Correlation between Crystal/Electronic Structure and Electrocatalytic Performance

Nian-Tzu Suen* (Yangzhou University, China)

09:45-10:00

[Invited Speaker]

Unveiling the Dynamic Structure of Atomically Dispersed Fe Electrocatalyst toward Urea Oxidation Reaction

Hsiao-Chien Chen* (Chang Gung University, Taiwan)

Plastics Conversion

08:30-10:00

Ching-Lang Lecture Hall

Chair: Kevin Chia-Wen Wu (National Taiwan University, Taiwan)

08:30-08:45

[Invited Speaker]

Hydrothermal Liquefaction of Pretreated Polyethylene-Based Ocean-Bound Plastic Waste in Supercritical Water

Taofeng Lu, Kalsoom Jan, Wan-Ting Chen* (University of Massachusetts Lowell, United States of America)

July 21 (THU)

Plastics Conversion

08:30-10:00

Ching-Lang Lecture Hall

Chair: Kevin Chia-Wen Wu (National Taiwan University, Taiwan)

08:45-09:00

[Invited Speaker]

Molecular-Level Interplays during Copyrolysis of Cellulose and Thermoplastics

Melisa Nallar, Fuat Şakirler, Hsi-Wu Wong* (University of Massachusetts Lowell, United States of America)

09:00-09:15

[Invited Speaker]

Effective Strategy for High-Yield Furan Dicarboxylate Production for Biobased Polyester Applications

Kiyotaka Nakajima* (Hokkaido University, Japan)

09:15-09:30

[Invited Speaker]

Development of Bio-Based Acrylic Resins by Group-Transfer Polymerization of Bio-Based Acrylic Monomers

Yasumasa Takenaka* (RIKEN, Japan)

09:30-09:45

[Invited Speaker]

Hydrogenolysis of Polyolefins To Valuable Chemicals over Ru Catalysts

Masazumi Tamura* (Osaka Metropolitan University, Japan)

09:45-10:00

[Invited Speaker]

Catalytic Valorization of Lignin-Derived Liquid For Producing Phenols Using Iron Oxide-Based Catalysts

Takuya Yoshikawa* (Obihiro University of Agriculture and Veterinary Medicine, Japan); Hiroya Ishimaru, Yuta Nakasaka, Takao Masuda (Hokkaido University, Japan)

Hydrogen Production and Use-I

08:30-10:00

P. Y. Young Lecture Hall

Chair: Wen-Yueh Yu (National Taiwan University, Taiwan) / Andrew C. Chien (Feng Chia University, Taiwan)

08:30-09:00

[Keynote Speaker]

Metal Catalysts Modified with Metal Oxides for Hydrodeoxygenation of Biomass-Related Molecules

Keiichi Tomishige* (Tohoku University, Japan)

July 21 (THU)

Hydrogen Production and Use-I

08:30-10:00

P. Y. Young Lecture Hall

Chair: Wen-Yueh Yu (National Taiwan University, Taiwan) / Andrew C. Chien (Feng Chia University, Taiwan)

09:00-09:15

[Invited Speaker]

Inadvertent or Intentional Creation of Surface Redox Mediators on Pd Nanoparticles: Evidence, Mechanism, and Opportunity

David W. Flaherty* (University of Illinois, United States of America)

09:15-09:30

[Invited Speaker]

Active Sites of Cu and Cu-ZnO Catalysts for WGS Reaction

Weixin Huang* (University of Science and Technology of China, China)

09:30-09:45

[Invited Speaker]

Controlled Release of Hydrogen Isotope Compounds in the Heterogeneously-Catalyzed Formic Acid Dehydrogenation

Kohsuke Mori* (Osaka University, Japan)

09:45-10:00

[Invited Speaker]

Hydrogenation Catalysts Derived from Phyllosilicates and Layered Double Hydroxides

Yu-Chuan Lin* (National Cheng Kung University, Taiwan)

Photocatalysis-I

08:30-10:00

Room N203

Chair: Che-Chia Hu (National Taiwan University of Science and Technology, Taiwan)

08:30-09:00

[Keynote Speaker]

Photocatalytic Water Splitting and CO₂ Reduction

Akihiko Kudo* (Tokyo University of Science, Japan)

09:00-09:15

[Invited Speaker]

Visible-Light-Responsive Lead-Titanium Oxyfluoride for Photocatalytic and Photoelectrochemical Water Splitting

Kazuhiro Maeda* (Tokyo Institute of Technology, Japan)

July 21 (THU)

Photocatalysis-I

08:30-10:00
Room N203

Chair: Che-Chia Hu (National Taiwan University of Science and Technology, Taiwan)

09:15-09:30

[Invited Speaker]

Photocatalytic Decomposition of Water over Organic Semiconductor

Yuichi Ichihashi*, Keita Taniya, Satoru Nishiyama (Kobe University, Japan)

09:30-09:45

[Invited Speaker]

Advanced High-Entropy Ceramic for Electrocatalytic Seawater Splitting

Wei Hsuan Hung* (National Central University, Taiwan)

09:45-10:00

[Invited Speaker]

Impacts of Crystal Engineering on Photocatalytic Water Splitting

Jr-Jeng Ruan* (National Cheng Kung University, Taiwan)

Electrocatalysis-II

10:30-12:15
Shin-Yi Lecture Hall

Chair: Chia-Ying Chiang (National Taiwan University of Science and Technology, Taiwan)

10:30-11:00

[Keynote Speaker]

Twinning Enhances Electrolytic Water Splitting

Chun-Lung Huang (National Tsing Hua University, Taiwan); Kotaro Sasaki (Brookhaven National Laboratory, United States of America); Duraisamy Senthil Raja, Cheng-Ting Hsieh, Yen-Ju Wu, Jing-Ting Su, Chih-Chieh Cheng, Po-Yin Cheng, Shin-Hong Lin (National Tsing Hua University, Taiwan); Yongman Choi (National Yang Ming Chiao Tung University, Taiwan); Shih-Yuan Lu* (National Tsing Hua University, Taiwan)

11:00-11:15

[Invited Speaker]

Operando Observation of All Elements in Water Splitting Electrocatalysts by XAFS

Masaaki Yoshida* (Yamaguchi University, Japan)

11:15-11:30

[Invited Speaker]

Synthesis and Assembly of Metal Phosphide Nanoparticles for Hydrogen Evolution Reaction Catalysis

Don-Hyung Ha* (Chung-ang University, Korea)

July 21 (THU)

Electrocatalysis-II

10:30-12:15

Shin-Yi Lecture Hall

Chair: Chia-Ying Chiang (National Taiwan University of Science and Technology, Taiwan)

11:30-11:45

[Invited Speaker]

Platinum Nanoparticles Supported on Silica-Carbon Black Nanocomposites for Methanol Oxidation Reaction

Cheng-Lan Lin* (Tamkang University, Taiwan)

11:45-12:00

[Invited Speaker]

Surface-Engineered N-Doped Carbon Nanotubes with B-Doped Graphene Quantum Dots: Strategies to Develop Highly-Efficient Noble Metal-Free Electrocatalyst for Online-Monitoring Dissolved Oxygen

Min-Hsin Yeh* (National Taiwan University of Science and Technology, Taiwan)

12:00-12:15

[Invited Speaker]

Electrocatalysis of Efficient and Selective Methane Oxidation by Tricopper Clusters under Ambient Conditions

Steve Yu*, Yi-Fang Tsai, Thiyagarajan Natarajan, Sunney Chan (Academia Sinica, Taiwan)

C1 Chemistry

10:30-12:00

Ching-Lang Lecture Hall

Chair: Wen-Yueh Yu (National Taiwan University) / Wei-Fan Kuan (Chang Gung University, Taiwan)

10:30-11:00

[Keynote Speaker]

Solar Fuels: Aspects of Device Engineering

Jinlong Gong* (Tianjin University, China)

11:00-11:15

[Invited Speaker]

Development of Ultra-Stable Nanocatalysts for CO₂ Reforming of Methane by in situ Microscopy

Jun Huang* (The University of Sydney, Australia)

11:15-11:30

[Invited Speaker]

Understanding and Engineering Catalytic Materials Using Nanocrystal Precursors

Matteo Cargnello* (Stanford University, United States of America)

July 21 (THU)

C1 Chemistry

10:30-12:00

Ching-Lang Lecture Hall

Chair: Wen-Yueh Yu (National Taiwan University) / Wei-Fan Kuan (Chang Gung University, Taiwan)

11:30-11:45

[Invited Speaker]

CO-Assisted Methane Conversion over Metal Supported CHA-Type Zeolite Catalysts Prepared by Direct Synthesis

Takahiko Moteki* (The University of Tokyo, Japan)

11:45-12:00

[Invited Speaker]

Facile Reflux Preparation of Defective Ceria Nanorods for Catalytic Conversion of Carbon Dioxide

Wei-Fan Kuan* (Chang Gung University, Taiwan)

Hydrogen Production and Use-II

10:30-12:00

P. Y. Young Lecture Hall

Chair: Cheng-Yu Wang (National Yang Ming Chiao Tung University, Taiwan)

10:30-10:45

[Invited Speaker]

Recent Development of Ammonia Borane for Fuel Cell System

Tessui Nakagawa*, Yoshihiro Shimizu, Shuji Takamine, Ko Kishimoto, Yuri Unten (University of the Ryukyus, Japan); Reiya Tamaki (National Institute of Technology, Japan); Hina Shinjo, Ankit Kumar Tripathi (University of the Ryukyus, Japan)

10:45-11:00

[Invited Speaker]

Research on Catalysis of Various Niobium Oxide for Magnesium as Hydrogen Storage Material

Hiroki Miyaoka* (Hiroshima University, Japan)

11:00-11:15

[Invited Speaker]

Design of Core-Shell Structured Metal Catalysts for Carbon-Free Ammonia Fuel Synthesis under Mild Reaction Conditions

Katsutoshi Nagaoka*, Katsutoshi Sato, Shin-Ichiro Miyahara (Nagoya University, Japan)

11:15-11:30

[Invited Speaker]

Stable Pd-Based Alloy Hydride Catalysts for Efficient Hydrogen Evolution

Shuan Lin, Yu-Min Yu (National Central University, Taiwan); Sheng Dai (East China University of Science & Technology, China); Kuan-Wen Wang* (National Central University, Taiwan)

July 21 (THU)

Hydrogen Production and Use-II

10:30-12:00

P. Y. Young Lecture Hall

Chair: Cheng-Yu Wang (National Yang Ming Chiao Tung University, Taiwan)

11:30-12:00

[Keynote Speaker]

Mesoporous Si₃N₄(C,O) Encapsulated Co or Ni nanocatalysts: from Design to Application in Catalyst-Assisted Reactions in Alkaline Media

Samuel Bernard* (CNRS, France)

Photocatalysis-II

10:30-12:00

Room N203

Chair: Chao-Wei Huang (National Cheng Kung University, Taiwan)

10:30-11:00

[Keynote Speaker]

Design of Stable Photocatalysts for Visible-Light-Induced Water Splitting

Ryo Abe* (Kyoto University, Japan)

11:00-11:15

[Invited Speaker]

Development of Photocatalysts for CO₂ Capture and Conversion

Kentaro Teramura*, Kazutaka Hori, Yudai Hasegawa, Yosuke Terao, Hiroyuki Tatsumi, Rui Pang, Zeai Huang, Shoji Iguchi, Zheng Wang, Hiroyuki Asakura, Saburo Hosokawa, Tsunehiro Tanaka (Kyoto University, Japan)

11:15-11:30

[Invited Speaker]

Perovskite-Type Photocatalyst Materials and Reactors for Water Splitting

Takashi Hisatomi* (Shinshu University & Presto, JST, Japan)

11:30-11:45

[Invited Speaker]

Photoelectrochemical Performances and Their Reaction Kinetics of Metal Sulphide/Selenides Based Photoelectrodes under Light Irradiation

Kong-Wei Cheng* (Chang Gung University, Taiwan)

11:45-12:00

[Invited Speaker]

Light-Enhanced Catalytic Activity of Intermetallic PdCd Nanocubes for the Suzuki Coupling Reaction

Hsin-Lun Wu*, Han-Tang Jhao, Cheng-Yu Zhan (National Cheng Kung University, Taiwan)

July 21 (THU)

AIST's Low-Carbon Energy Research

13:30-15:00
Shin-Yi Lecture Hall

Chair: Shih-Yuan Chen (National Institute of Advanced Industrial Science and Technology, Japan),
Hsin-Yi Chen (National Tsing Hua University, Taiwan)

13:30-14:00

[Keynote Speaker]

Trends in Technological Development of Japan and AIST's Activities on Hydrogen and Energy Carriers

Hideyuki Takagi* (National Institute of Advanced Industrial Science and Technology, Japan)

14:00-14:15

[Invited Speaker]

Ammonia Synthesis over Ru/CeO₂ for Utilization of Renewable Hydrogen

Tetsuya Nanba* (National Institute of Advanced Industrial Science and Technology, Japan)

14:15-14:30

[Invited Speaker]

Hydrogen Production from Formic Acid Catalyzed by Homogeneous Iridium Complexes

Yuichiro Himeda* (National Institute of Advanced Industrial Science and Technology, Japan)

14:30-14:45

[Invited Speaker]

Integrated CO₂ Capture and Reduction into Green Fuels Using Dual Function Materials towards Flue Gas CO₂ and Atmospheric CO₂ Utilization

Fumihiko Kosaka*, Tomone Sasayama, Koji Kuramoto (National Institute of Advanced Industrial Science and Technology, Japan)

14:45-15:00

[Invited Speaker]

Oxygen-Assisted Partial Hydrogenation of Biodiesel Fuel over Pd/Al₂O₃ Catalyst to Produce High Quality Biodiesel Fuel

Takehisa Mochizuki*, Shih-Yuan Chen (National Institute of Advanced Industrial Science and Technology, Japan); Yuji Yoshimura (National Energy Technology Center, Thailand)

July 21 (THU)

Environmental Applications

13:30-15:00

Ching-Lang Lecture Hall

Chair: Chia-Hung Hou (National Taiwan University)

13:30-13:45

[Invited Speaker]

Catalytic Photo-Fenton Oxidation with FeOx/TiO₂ Spheres in a Continuous-Flow Stirred-Tank Reactor for Pharmaceutical Wastewater Treatment

Chin-Jung Lin^{*}, Tsung-Han Huang (National Ilan University, Taiwan); Chi-Liang Chen (National Synchrotron Radiation Research Center, Taiwan); Sofia Ya-Hsuan Liou (National Taiwan University, Taiwan)

13:45-14:00

[Invited Speaker]

Design of Manganese-Based Catalysts for Air Purification under Microwave and Plasma Irradiation

Siyu Ding, Hajime Hojo, Hisahiro Einaga^{*} (Kyushu University, Japan)

14:00-14:15

[Invited Speaker]

Supported Ru Catalyst Active for Reduction of Perchlorate in Water toward Water Purification

Yuichi Kamiya^{*}, Daiki Yoshida, Jiahao Liu, Kaili Huang, Ryoichi Otomo (Hokkaido University, Japan)

14:14-14:30

[Invited Speaker]

Enhanced Activity and H₂O Resistance of Defect-Rich TiO₂ Supported Mn-Fe Oxide Catalyst for NH₃-SCR of NO at Low Temperature

Liang-Yi Lin^{*}, Yu-Chen Wang, Tsung-Ta Hsieh, Ju-Chen Hsu, Joy-In Huang (National Yang Ming Chiao Tung University, Taiwan)

14:30-15:00

[Keynote Speaker]

SMART Biochar Technology—A Shifting Paradigm towards Advanced Materials to Achieving the Sustainable Development Goals (SDGs)

Yong Sik Ok^{*} (Korea Biochar Research Center, APRU Sustainable Waste Management Program & Division of Environmental Science and Ecological Engineering, Korea University, Korea)

July 22 (FRI)

Electrocatalysis-III

09:00-10:30

Shin-Yi Lecture Hall

Chair: Yung-Tin Pan (National Tsing Hua University, Taiwan)

09:00-09:30

[Keynote Speaker]

Next Generation PtCo Catalysts for Polymer Electrolyte Fuel Cells

Jacob Spendelow* (Los Alamos National Laboratory, United States of America)

09:30-09:45

[Invited Speaker]

Highly Active and Durable Fuel Cell Electrocatalysts: From In Situ Understanding to Rational Design

Fenglei Shi, Fan Li, Yanling Ma, Tao Deng, Jianbo Wu* (Shanghai Jiao Tong University, China)

09:45-10:00

[Invited Speaker]

Atomically Dispersed M–N/C Electrocatalysts for Renewable Energy Conversion and Commodity Chemical Production

Sang Hoon Joo* (Ulsan National Institute of Science and Technology, Korea)

10:00-10:15

[Invited Speaker]

Shape-Controlled Non-Precious Metal Catalyst for Oxygen Reduction Reaction in Alkaline Media

Yusuf Pradesar, Hsueh-Yu Chen, Kai-Chin Wang, Afandi Yusuf, Hsin-Chih Huang, Chen-Hao Wang* (National Taiwan University of Science and Technology, Taiwan)

10:15-10:30

[Invited Speaker]

Next Generation Heterogeneous Catalysis: A Conceptual Design of Single Nanoparticle Reactor

Sheng Dai (East China University of Science and Technology, China); Jyh-Pin Chou (National Changhua University of Education, Taiwan); Kuan-Wen Wang (National Central University, Taiwan); Alice Hu (City University of Hong Kong, Hong Kong); Tsan-Yao Chen* (National Tsing Hua University, Taiwan)

Photoelectrocatalysis

09:00-10:30

Ching-Lang Lecture Hall

Chair: Chia-Yu Lin & Yi-Hsuan Lai (National Cheng Kung University, Taiwan)

09:00-09:30

[Keynote Speaker]

Rational Constructions of Intrinsic Defect Modified and Allotropic Heterojunction Carbon Nitrides for Efficient Solar Energy Conversion

Pei-Shan Wu, Kuan-Hsiang Hunag, Li-Che Chueh, Dai-Ling Tsai, Chih-Chia Chen, Jih-Jen Wu* (National Cheng Kung University, Taiwan)

July 22 (FRI)

Photoelectrocatalysis

09:00-10:30

Ching-Lang Lecture Hall

Chair: Chia-Yu Lin & Yi-Hsuan Lai (National Cheng Kung University, Taiwan)

09:30-09:45

[Invited Speaker]

Exploiting Black Phosphorus/Carbon Nitride Heterojunctions for Solar Driven Syngas Synthesis

Nicholas Pollak, Hannah Bell, Peipei Huang, Gonghu Li, Christine Caputo* (University of New Hampshire, United States of America)

09:45-10:00

[Invited Speaker]

Towards Solar Fuels from Water and CO₂

Chong-Yong Lee*, Jinshuo Zou, Gordon Wallace (University of Wollongong, Australia)

10:00-10:15

[Invited Speaker]

Catalytic Science under Operating Conditions Observed by in-situ Synchrotron Technique

Yan-Gu Lin* (National Synchrotron Radiation Research Center, Taiwan)

10:15-10:30

[Invited Speaker]

Crystal Facet Modulation of Nanoporous BiVO₄ Photoanode for Efficiency Improvement in Photoelectrochemical Water Splitting

Ying-Chih Pu* (National University of Tainan, Taiwan)

Catalysis in Frameworks

09:00-10:30

P. Y. Young Lecture Hall

Chair: Chung-Wei Kung (National Cheng Kung University, Taiwan)

09:00-09:30

[Keynote Speaker]

Smart and Programmable Crystalline Sponges for Protection From Bench to Market

Omar Farha* (Northwestern University, United States of America)

09:30-09:45

[Invited Speaker]

Exploration of Structural Transformations and Catalytic Selectivity in Tailored Flexible Metal-Organic Frameworks

Hoi Ri Moon* (Ulsan National Institute of Science and Technology, Korea)

July 22 (FRI)

Catalysis in Frameworks

09:00-10:30

P. Y. Young Lecture Hall

Chair: Chung-Wei Kung (National Cheng Kung University, Taiwan)

09:45-10:00

[Invited Speaker]

Design of Metal-Organic Polyhedra for Photocatalytic CO₂ Conversion

Kyungmin Choi* (Sookmyung Women's University, Korea)

10:00-10:15

[Invited Speaker]

MOFs and SiO₂@MOFs for CO₂ Cycloaddition Reactions

Chia-Her Lin* (National Taiwan Normal University, Taiwan); Bao-Tsan Ko (National Chung Hsing University, Taiwan); Chen-Yen Tsai (Chinese Culture University, Taiwan)

10:15-10:30

[Invited Speaker]

From Self-Assembly Structure to Mesoporous Materials and Conjugated Microporous Polymers

Shiao-Wei Kuo* (National Sun Yat-Sen University, Taiwan)

NO_x and NH₃ Removal

09:00-10:30

Room N203

Chair: Wen-Yueh Yu & Soofin Cheng (National Taiwan University)

09:00-09:30

[Keynote Speaker]

Influence of Framework Al Density and Zeolite Topology on Kinetics of Low-Temperature NO_x Selective Catalytic Reduction

Siddarth Krishna, Casey Jones, Mykela DeLuca (Purdue University, United States of America); Anshuman Goswami (University of Notre Dame, United States of America); Subramanian Prasad, Ahmad Moini (BASF Corporation, United States of America); William F. Schneider (University of Notre Dame, United States of America); Rajamani Gounder* (Purdue University, United States of America)

09:30-10:00

[Keynote Speaker]

AFX Zeolite as A Model Zeolite for NH₃-SCR Developed in the Japanese Automobile Consortium

Masaru Ogura* (The University of Tokyo, Japan)

10:00-10:15

[Invited Speaker]

Ag Size/Structure-Dependent Effect on Low-Temperature Selective Catalytic Oxidation of NH₃ over Ag/MnO₂

Haifeng Wang, Mingyue Lin, Toru Murayama, Masatake Haruta (Tokyo Metropolitan University, Japan); Hiroki Miura, Tetsuya Shishido* (Tokyo Metropolitan University & Kyoto University, Japan)

10:15-10:30

[Invited Speaker]

Synthesis and Application of Mn-Ce/zeolite SCR Catalysts for Low-temperature Denitrification

Jyh-Cherng Chen*, Chi-Feng Lin, Jun-Jie Wu, Yi-Jhen Lin (Feng Chia University, Taiwan)