

International Symposium on
Nanostructured
Photocatalysts and Catalysts
(NPC2016)

(Post-symposium of IUPAC2016 Photochemistry)

Program and Abstracts

April 8-10, 2016

Icho-Kaikan

Suita Campus, Osaka University

Osaka, Japan

General Information

“International Symposium on Nanostructured Photocatalysts and Catalysts (NPC2016)”

Date: April 8-10, 2016

Venue: Icho-Kaikan, Suita Campus, Osaka University

Chairman: Hiromi YAMASHITA (Osaka Univ.)

Local Members: Kohsuke MORI (Osaka Univ.)

Yasutaka KUWAHARA (Osaka Univ.)

Takashi KAMEGAWA (Osaka Prefecture Univ.)

Tetsutaro OHMICHII (Osaka Univ.)

Supported and Organized by

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Division of Materials and Manufactures Science, Graduate School of Engineering,
Osaka University

Kansai Branch of The Iron and Steel Institute of Japan

IUPAC2016 Photochemistry

Presentations:

Plenary Lecturers: 40 min including discussion

Keynote Lectures and Invited Lecturers: 20 min including discussion

Timetable

April 8th, 2016	
19:30 – 21:30	Discussion & Reception @ Hotel Hankyu Expo Park

April 9th, 2016		
~ 9:00	Registration	
9:00 – 9:10	Opening Address	
9:10 – 9:30	KN-1	Wan In Lee
9:30 – 9:50	IL-1	Takanori Miyake
9:50 – 10:10	KN-2	Zhenfeng Bian
10:10 – 10:30	IL-2	Hisao Yoshida
10:30 – 10:40	Break	
10:40 – 11:00	KN-3	Fang Zhang
11:00 – 11:20	IL-3	Takashi Tachikawa
11:20 – 12:00	PL-1 Hexing Li	
12:00 – 13:00	Lunch	Poster
13:00 – 13:20	KN-4	Kevin C.-W. Wu
13:20 – 13:40	IL-4	Masaya Matsuoka
13:40 – 14:00	KN-5	Weifeng Yao
14:00 – 14:20	IL-5	Kohsuke Mori
14:20 – 14:40	IL-6	Yu-Tzu Huang
14:40 – 15:00	Break	Poster
15:00 – 15:20	KN-6	Yongfa Zhu
15:20 – 15:40	IL-7	Ryu Abe
15:40 – 16:00	KN-7	Yuning Huo
16:00 – 16:20	IL-8	Hiroshi Kominami
16:20 – 16:40	Break	Poster
16:40 – 17:00	KN-8	Yixin Zhao
17:00 – 17:20	IL-9	Tetsuro Majima
17:20 – 18:00	PL-2 Wonyong Choi	
18:30 – 20:30	Discussion & Banquet @ Hotel Hankyu Expo Park	

PL: Plenary lecture (40 min), KN: Keynote lecture (20 min),
IL: Invited lecture (20 min), Poster: Poster session

April 10th, 2016		
~ 9:00	Registration	
9:00 – 9:20	KN-9	Wenzhong Wang
9:20 – 9:40	IL-10	Yusuke Yamada
9:40 – 10:00	IL-11	Shinya Higashimoto
10:00 – 10:20	IL-12	Kentaro Teramura
10:20 – 10:30	Break	Poster
10:30 – 10:50	KN-10	Taicheng An
10:50 – 11:10	IL-13	Feng Jiang
11:10 – 11:30	IL-14	Tomoko Yoshida
11:30 – 12:10	PL-3 Jiaguo Yu	
12:10 – 13:00	Lunch	Poster
13:00 – 13:30	Poster	
13:30 – 13:50	KN-11	Jinlong Zhang
13:50 – 14:10	IL-15	Yutaka Amao
14:10 – 14:30	IL-16	Takato Mitudome
14:30 – 14:50	Break	Poster
14:50 – 15:10	KN-12	Yuanzhi Li
15:10 – 15:30	IL-17	Takashi Kamegawa
15:30 – 15:50	IL-18	Shaowen Cao
15:50 – 16:10	IL-19	Kojirou Fuku
16:10 – 16:30	Break	
16:30 – 16:50	IL-20	Yuichi Ichihashi
16:50 – 17:10	IL-21	Miriam Navlani Garcia
17:10 – 17:30	IL-22	Yasutaka Kuwahara
17:30 – 17:40	Closing Remarks	
18:30 – 20:00	Discussion & Reception @ Hotel Hankyu Expo Park	

PL: Plenary lecture (40 min), KN: Keynote lecture (20 min),
IL: Invited lecture (20 min), Poster: Poster session

Program

April 8th

Discussion & Reception (19:30 – 21:30) @ Hotel Hankyu Expo Park

April 9th

Opening Address (9:00 – 9:10)

KN-1 (9:10 – 9:30)

Ji Eun LEE, Sandipan BERA, Wan In LEE (*Inha University*)

“Design of Visible-Light Photocatalysts by Coupling of Semiconductors”

IL-1 (9:30 – 9:50)

Masahiro OHIRA,¹ Huimin LIU,¹ Dehua HE,² Makoto SANO,¹ Toshimitsu SUZUKI,¹
Takanori MIYAKE¹ (¹*Kansai University*, ²*Tsinghua University*)

“Catalytic Performance and Reaction Mechanism of Cu/SiO₂ and ZnO/SiO₂ for Dehydrogenation of Ethanol”

KN-2 (9:50 – 10:10)

Xinru LI, Zhenfeng BIAN (*Shanghai Normal University*)

“TiO₂ Mesocrystal with Exposed (001) Facets and CdS Quantum Dots as an Active Visible Photocatalyst for Selective Oxidation Reactions”

IL-2 (10:10 – 10:30)

Hisao YOSHIDA^{1,2} (¹*Kyoto University*, ²*ESICB, Kyoto University*)

“Photocatalytic Hydrogen Production and Carbon Dioxide Reduction with Metal Loaded Semiconductor Crystals”

Coffee Break (10:30 – 10:40)

KN-3 (10:40 – 11:00)

Fang ZHANG (*Shanghai Normal University*)

“Highly Active and Reusable Mesoporous Lewis Acids Catalysts for Water-medium Organic Synthesis”

IL-3 (11:00 – 11:20)

Takashi TACHIKAWA^{1,2} (¹*Kobe University*, ²*PRESTO, JST*)

“Single-Molecule, Single-Particle Fluorescence Spectroscopy as a Tool for Investigating Heterogeneous Photocatalytic Reactions”

PL-1 (11:20 – 12:00)

Fang ZHANG,¹ Hexing LI² (¹*Shanghai Normal University*, ²*Shanghai University of Electric Power*)

“Mesoporous Catalysts for Efficient Water-Medium Clean Organic Reactions”

Lunch & Poster Session (12:00 – 13:00)

KN-4 (13:00 – 13:20)

Kevin C.-W. WU (*National Taiwan University*)

“Multi-functionalized Mesoporous Heterogeneous Catalysts for Biofuel Production from Cellulose”

IL-4 (13:20 – 13:40)

Masaya MATSUOKA,¹ Yu HORIUCHI,¹ Takashi TOYAO² (¹*Osaka Prefecture University*, ²*Hokkaido University*)

“Design and Development of Visible-Light-Responsive MOF Photocatalysts”

KN-5 (13:40 – 14:00)

Muhua LUO, Pan LU, Yuanchen HONG, Xiulan SONG, Cunping HUANG, Weifeng YAO (*Shanghai University of Electric Power*)

“Photocatalysts Design and Preparation for an Ammonia Sulfite Based Hybrid Solar-thermochemical Water Splitting Cycle”

IL-5 (14:00 – 14:20)

Kohsuke MORI,^{1,2,3} Hiromasa TANAKA,^{2,4} Masahiro DOJO,¹ Kazunari YOSHIZAWA,^{2,4} Hiromi YAMASHITA^{1,2} (¹*Osaka University*, ²*ESICB, Kyoto University*, ³*PRESTO, JST*, ⁴*Kyushu University*)

“Design of Nano-Catalysts for Hydrogen Production from Formic Acid as an Energy Storage Material”

IL-6 (14:20 – 14:40)

Ren-Huei KUO, Yu-Tzu HUANG (*Chung Yuan Christian University*)

“The Effects of Light on the Accumulation of Algal Bioenergy and Toxicity of Derived Biodiesel”

Coffee Break & Poster Session (14:40 – 15:00)

KN-6 (15:00 – 15:20)

Yongfa ZHU (*Tsinghua University*)

“Supermolecular Organic Photocatalysts with High Visible Light Performances”

IL-7 (15:20 – 15:40)

Ryu ABE (*Kyoto University*)

“Visible-Light-Responsive Photocatalysts for Solar Hydrogen Production”

KN-7 (15:40 – 16:00)

Yuning HUO, Haibo YIN, Xiaofang CHEN, Rujing HOU, Yuan GAO, Hexing LI
(*Shanghai Normal University*)

“Photocatalytic Reactor Based on BiOBr Film and Its Applications for Organic Pollutants Removal”

IL-8 (16:00 – 16:20)

Hiroshi KOMINAMI, Atsuhiko TANAKA (*Kinki University*)

“Unique performance of functionalized gold plasmonic photocatalysts”

Coffee Break & Poster Session (16:20 – 16:40)

KN-8 (16:40 – 17:00)

Yixin ZHAO (*Shanghai Jiao Tong University*)

“Photoelectrode Interface Engineering for High Performance Photoelectrochemical Water Splitting”

IL-9 (17:00 – 17:20)

Tetsuro MAJIMA (*Osaka University*)

“Single-Molecule and Single-Particle Imaging of TiO₂ Photocatalytic Reactions”

PL-2 (17:20 – 18:00)

Wonyong CHOI (*Pohang University of Science and Technology*)

“Interfacial Engineering of Semiconductors for Energy and Environmental Photocatalysis”

Discussion & Banquet (18:30 – 20:30) @ Hotel Hankyu Expo Park

April 10th

KN-9 (9:00 – 9:20)

Ling ZHANG, Wenzhong WANG (*Chinese Academy of Sciences*)

“Size and Surface Structure Control for Solar Fuel”

IL-10 (9:20 – 9:40)

Yusuke YAMADA,¹ Hideyuki TADOKORO,² Shunichi FUKUZUMI² (¹*Osaka City University*, ²*Osaka University*)

“Composite Photocatalysts Utilizing Interspaces of Nanoparticles Assembly”

IL-11 (9:40 – 10:00)

Shinya HIGASHIMOTO, Yuta NAKAI (*Osaka Institute of Technology*)

“One-pot Synthesis of Imine from Benzyl Alcohol and Nitrobenzene on Visible-light Responsive CdS-TiO₂ Photocatalysts”

IL-12 (10:00 – 10:20)

Kentaro TERAMURA,^{1,2} Hiroyuki TATSUMI,¹ Shoji IGUCHI,¹ Zheng WANG,¹ Saburo HOSOKAWA,^{1,2} Tsunehiro TANAKA^{1,2} (¹*Kyoto University*, ²*ESICB, Kyoto University*)
“Artificial Photosynthesis Using All-solid-state Photocatalysts - Photocatalytic Conversion of CO₂ by H₂O as an Electron Donor”

Coffee Break & Poster Session (10:20 – 10:30)

KN-10 (10:30 – 10:50)

Hongli LIU,¹ Jiangyao CHEN,¹ Guiying LI,¹ Taicheng AN,^{1,2} (¹*Guangdong University of Technology*, ²*Chinese Academy of Sciences*)
“Visible Light Photocatalytic Degradation of Volatile Organic Compounds on Fe-based Metal–Organic Frameworks”

IL-13 (10:50 – 11:10)

Feng JIANG, Shigeru IKEDA, Takashi HARADA (*Osaka University*)
“Cu₂ZnSnS₄ Thin Film as a Promising Photoabsorber for Solar Cell and Photoelectrochemical Applications”

IL-14 (11:10 – 11:30)

Tomoko YOSHIDA,¹ Satoshi NIIMI,² Muneaki YAMAMOTO,² Shunsuke Muto,³ Shinya YAGI³ (¹*Osaka City University*, ²*Graduate School of Engineering, Nagoya University*, ³*Institute for Materials and systems for sustainability, Nagoya University*)
“Chemical and Electronic State Analysis of Nitrogen Implanted TiO₂ Photocatalysts”

PL-3(11:30 – 12:10)

Jianguo YU (*Wuhan University of Technology*)
“Graphene-Based Photocatalysts for Solar-Fuel Generation”

Lunch (12:10 – 13:00)

Poster Session (12:10 – 13:30)

KN-11 (13:30 – 13:50)

Lingzhi WANG, Mingyang XING, Jinlong ZHANG (*East China University of Science and Technology*)
“Surface-enhanced Raman Scattering (SERS) Achieved by TiO₂ Photocatalysts”

IL-15 (13:50 – 14:10)

Yutaka AMAO^{1,2,3} (¹*Osaka City University*, ²*ReCAP, Osaka City University*, ³*PRESTO, JST*)
“Visible Light Induced Carbon Dioxide Reduction with Dye-biocatalyst Conjugated System”

IL-16 (14:10 – 14:30)

Takato MITSUDOME (*Osaka University*)

“Design of Core-Shell Nanocomposite Catalysts for Highly Chemoselective Hydrogenations”

Coffee Break & Poster Session (14:30 – 14:50)

KN-12 (14:50 – 15:10)

Jingtao HOU, Mingyang MAO, Yan MA, Ming ZENG, Yuanzhi LI (*Wuhan University of Technology*)

“UV-Vis-Infrared Light Driven Catalytic Purification of VOCs on Nanostructured Metal Oxides”

IL-17 (15:10 – 15:30)

Takashi KAMEGAWA,¹ Hiromi YAMASHITA² (¹*Osaka Prefecture University*, ²*Osaka University*)

“Photocatalytic Properties of TiO₂-Loaded Porous Siliceous Materials for Environmental Purification”

IL-18 (15:30 – 15:50)

Shaowen CAO (*Wuhan University of Technology*)

“g-C₃N₄-Based Composite Photocatalysts for Solar-to-Fuel Conversion”

IL-19 (15:50 – 16:10)

Kojiro FUKU, Kazuhiro SAYAMA (*National Institute of Advanced Industrial Science and Technology (AIST)*)

“Photoelectrode System for Oxidative Production and Accumulation of Hydrogen Peroxide in Water Splitting”

Coffee Break (16:10 – 16:30)

IL-20 (16:30 – 16:50)

Yuichi ICHIHASHI, Atsushi OKEMOTO, Syun WATANABE, Keita TANIYA, Satoru NISHIYAMA (*Kobe University*)

“The Study of Reaction Mechanism for Benzene Oxidation over Cu/HZSM-5 Catalysts”

IL-21 (16:50 – 17:10)

Miriam NAVLANI-GARCÍA,¹ Kohsuke MORI,^{1,2,3} Yasutaka KUWAHARA,^{1,2} Hiromi YAMASHITA^{1,2} (¹*Osaka University*, ²*ESICB, Kyoto University*, ³*PRESTO, JST*)

“Investigation of Size Sensitivity in the Hydrogen Production from Formic Acid over Carbon-supported Pd Nanoparticles”

IL-22 (17:10 – 17:30)

Yasutaka KUWAHARA,^{1,2} Yuki SUMIDA,¹ Hiromi YAMASHITA^{1,2} (¹*Osaka University*, ²*ESICB, Kyoto University*)

“Fabrication of Hollow Silica Spheres Encapsulating TiO₂ Photocatalysts with Improved Adsorption Property and Photocatalytic Activity”

Closing Remarks (17:30 – 17:40)

Discussion & Reception (18:30 – 20:00) @ Hotel Hankyu Expo Park

Poster Session

PS-1

Chengxiang WANG,¹ Penghui SHI,^{1,2} Xiaodong CAI,¹ Qunjie XU,^{1,2} Xuejun ZHOU,¹ Xiaolv ZHOU,¹ Dong YANG,¹ Jinchen FAN,¹ Yulin MIN,^{1,2} Honghua GE,¹ Weifeng YAO¹
(¹Shanghai University of Electric Power, ²Shanghai Key Laboratory of Chemical Assessment and Sustainability)

“Synergistic Effect of Co₃O₄ Nanoparticles and Graphene as Catalysts for Peroxymonosulfate-based Orange II Degradation with High Oxidant Utilization Efficiency”

PS-2

Mingyang MAO, Haiqin LV, Yuanzhi LI, Yi YANG, Min ZENG, Xiujian ZHAO
(Wuhan University of Technology)

“Highly Efficient Catalytic Purification of VOCs on Pt Nanoparticles Partially Confined in the Mesopores of Microsized Mesoporous CeO₂”

PS-3

Zeai HUANG,¹ Kentaro TERAMURA,^{1,2} Saburo HOSOKAWA,^{1,2} Tsunehiro TANAKA^{1,2}
(¹Kyoto University, ²Elements Strategy Initiative for Catalysts & Batteries (ESICB), Kyoto University)

“Flux Method-Synthesized KSr₂Ta₅O₁₅ Photocatalyst for CO₂ Conversion using H₂O as an Electron Donor”

PS-4

Kohsuke BEPPU,¹ Saburo HOSOKAWA,^{1,2} Kentaro TERAMURA,^{1,2} Tsunehiro TANAKA^{1,2}

(¹Kyoto University, ²Elements Strategy Initiative for Catalysts & Batteries (ESICB), Kyoto University)

“Oxygen Release Property and Three Way Catalytic Reaction of Pd Catalyst Supported on Sr₃Fe₂O_{7-δ}”

PS-5

Rui PANG,¹ Kentaro TERAMURA,^{1,2} Saburo HOSOKAWA,^{1,2} Tsunehiro TANAKA^{1,2}
(¹Kyoto University, ²Elements Strategy Initiative for Catalysts & Batteries (ESICB), Kyoto University)

“Controlling Selectivity Toward CO Evolution by Crystal Phase Engineering for CO₂ Conversion using H₂O”

PS-6

Hirokatsu SAKAMOTO,¹ Naoki YASUMOTO,¹ Yasuhiro SHIRAISHI,^{1,2} Takayuki HIRAI¹ (¹Osaka University, ²PRESTO, JST)

“Hot-Electron-Induced Oxygen Activation by Platinum Nanoparticles Supported on Tantalum Oxide under Visible Light”

PS-7

Hiroaki HIRAKAWA,¹ Yasuhiro SHIRAIISHI,^{1,2} Takayuki HIRAI¹
(¹*Osaka University*, ²*PRESTO, JST*)

“Photocatalytic Reductions on the Surface Defects of Rutile Titanium Dioxide”

PS-8

Yusuke KOFUJI,¹ Yasuhiro SHIRAIISHI,^{1,2} Takayuki HIRAI¹
(¹*Osaka University*, ²*PRESTO, JST*)

“Visible-Light-Induced Photocatalytic Hydrogen Peroxide Production by Aromatic Diimide-Doped Polymeric Semiconductors

PS-9

Akanksha TYAGI,¹ Akira YAMAMOTO,^{1,2} Hisao YOSHIDA^{1,2}
(¹*Kyoto University*, ²*Elements Strategy Initiative for Catalysts & Batteries (ESICB), Kyoto University*)

“CO₂ Functionalization by Amines over Titania Photocatalysts”

PS-10

Chen YANG,¹ Akira YAMAMOTO,^{1,2} Hisao YOSHIDA^{1,2}
(¹*Kyoto University*, ²*Elements Strategy Initiative for Catalysts & Batteries (ESICB), Kyoto University*)

“NO_x Storage over Cobalt-Titanium Oxide Catalysts”

PS-11

Tomoyuki OHARA,¹ Akira YAMAMOTO,^{1,2} Hisao YOSHIDA^{1,2}
(¹*Kyoto University*, ²*Elements Strategy Initiative for Catalysts & Batteries (ESICB), Kyoto University*)

“Direct Cross-coupling Reaction between Cyclohexane and Benzene over Palladium-loaded Titanium Oxide Photocatalysts”

PS-12

Kohei OYAMA,^{1,4} Tomoyoshi SUENOBU,^{1,4} Shunichi FUKUZUMI,^{2,4} Yusuke YAMADA^{3,4}
(¹*Osaka University*, ²*Meijo University*, ³*Osaka City University*, ⁴*ALCA&SENTAN, JST, Osaka University*)

“Prussian Blue Analogues Containing Cobalt and Redox-Inactive Metal Ions As Highly Reactive Catalysts for Light-Driven Water Oxidation”

PS-13

Hironobu KUNIOKU, Akitoshi NAKAMURA, Masanobu HIGASHI, Ryu ABE
(*Kyoto University*)

“Synthesis of a Series of Bismuth Mixed Anions Compounds and their Application to Photocatalytic Water Splitting and Photovoltaic Systems”

PS-14

Kousuke NAKANISHI,¹ Keiji HASHIMOTO,² Hiroshi KOMINAMI²

(¹*Graduate School of Science and Engineering, Kindai University,* ²*Faculty of Science and Engineering, Kindai University*)

“Photocatalytic Hydrogenation of Furans over Metal-loaded Titania”

PS-15

Makoto FUKUI,¹ Keiji HASHIMOTO,² Hiroshi KOMINAMI²

(¹*Graduate School of Science and Engineering, Kindai University,* ²*Faculty of Science and Engineering, Kindai University*)

“Chemoselective Reduction of Aromatic Aldehydes Having Other Reducible Groups over Titanium(IV) Oxide Photocatalyst”

PS-16

Yasumi KOJIMA,¹ Keiji HASHIMOTO,² Hiroshi KOMINAMI²

(¹*Graduate School of Science and Engineering, Kindai University,* ²*Faculty of Science and Engineering, Kindai University*)

“Photocatalytic Semihydrogenation of Triple Bond of Organosilanes without Use of H₂”

PS-17

Takayuki NAKAUE,^{1,2} Takashi KAMEGAWA¹

(¹*Nanoscience and Nanotechnology Research Center, Osaka Prefecture University,* ²*Graduate School of Engineering, Osaka Prefecture University*)

“Photocatalytic Performance of Pt/TiO₂ in the Treatment of Aqueous Ammonia-borane for H₂ Production and Water Purification”

PS-18

Yoshiya HIRATA, Makoto SANO, Toshimitsu SUZUKI, Takanori MIYAKE

(*Kansai University*)

“Dehydrogenation of Ethanol to Acetaldehyde on Supported Metal Oxide Catalysts”

PS-19

Atsushi OKEMOTO, Arisa UTSUNOMIYA, Keita TANIYA, Yuichi ICHIHASHI, Satoru NISHIYAMA

(*Kobe University*)

“Theoretical Study on Reaction Mechanism of Benzene Oxidation by Using Vanadium Complex Catalysts”

PS-20

Yasuhiro HORIE, Naoki FURUMOTO, Ryo FUJITA, Atsushi OKEMOTO, Keita TANIYA, Yuichi ICHIHASHI, Satoru NISHIYAMA

(*Kobe University*)

“Dynamic Behavior of Precursor Formation during Preparation of Cu-ZnO-Al₂O₃ Catalysts for Water Gas Shift Reaction”

PS-21

Ai NOZAKI,¹ Yasutomo TANIHARA,¹ Yasutaka KUWAHARA,^{1,2} Tetsutaro OHMICHII,¹
Kohsuke MORI,^{1,2,3} Hiromi YAMASHITA^{1,2}

(¹*Osaka University*, ²*Elements Strategy Initiative for Catalysts & Batteries (ESICB)*, *Kyoto University*, ³*PRESTO, JST*)

“Efficient Oxidation Reaction on Skeletal Au Catalysts Prepared from Au-Zr Amorphous Alloys”

PS-22

Kazuki NAKATSUKA,¹ Yasutaka KUWAHARA,^{1,2} Kohsuke MORI,^{1,2,3} Hiromi YAMASHITA^{1,2}

(¹*Osaka University*, ²*Elements Strategy Initiative for Catalysts & Batteries (ESICB)*, *Kyoto University*, ³*PRESTO, JST*)

“Synthesis of Uniform Ru nanoparticles by Photo-assisted Deposition Method over Fullerene C₆₀ Incorporated into SBA-15”

PS-23

Yusuke ISAKA,¹ Kohei OYAMA,¹ Yusuke YAMADA,² Tomoyoshi SUENOBU,¹ Shunichi FUKUZUMI^{3,4}

(¹*ALCA&SENTAN, JST, Osaka University*, ²*Osaka City University*, ³*Ewha Womans University*, ⁴*ALCA&SENTAN, JST, Meijo University*)

“Hydrogen Peroxide Production as a Solar Fuel from Water and Dioxygen Utilizing Cyano-Bridged Porous Coordination Polymers as Water Oxidation Catalysts”

PS-24

Meicheng WEN,¹ Yasutaka KUWAHARA,^{1,2} Kohsuke MORI,^{1,2,3} Hiromi YAMASHITA^{1,2}

(¹*Osaka University*, ²*Elements Strategy Initiative for Catalysts & Batteries (ESICB)*, *Kyoto University*, ³*PRESTO, JST*)

“Rhenium Complex Intercalated into Zirconium Phosphate Layered Matrix for Constructing Efficient CO₂ Reduction System”

PS-25

Priyanka VERMA,¹ Yasutaka KUWAHARA,^{1,2} Kohsuke MORI,^{1,2,3} Hiromi YAMASHITA^{1,2}

(¹*Osaka University*, ²*Elements Strategy Initiative for Catalysts & Batteries (ESICB)*, *Kyoto University*, ³*PRESTO, JST*)

“Design of Plasmonic Pd/Ag Bimetallic Nanocatalyst on Mesoporous Silica for Enhanced Activity under Visible Light Irradiation”

PS-26

Jiayuan SHI,^{1,2} Yasutaka KUWAHARA,^{1,3} Kohsuke MORI,^{1,3,4} Taicheng AN,² Hiromi YAMASHITA^{1,3}

(¹*Osaka University*, ²*Guangzhou Institute of Geochemistry, Chinese Academy of Sciences*,

³*Elements Strategy Initiative for Catalysts & Batteries (ESICB)*, *Kyoto University*, ⁴*PRESTO, JST*)

“Slag-made Calcium Silicate Supported Titania for the Photocatalytic Degradation of Dyes in Water”

PS-27

Yongmei WU,^{1,2} Lili SHI,¹ Chuanyi WANG³

(¹Xinjiang Institute of Engineering, ²Osaka University, ³The Xinjiang Technical Institute of Physics & Chemistry, Chinese Academy of Science)

“Mesoporous Graphitic Carbon Nitride and Carbon-TiO₂ Hybrid Composite Photocatalysts with Enhanced Photocatalytic Activity under Visible Light Irradiation”

PS-28

Miriam NAVLANI-GARCÍA,¹ Martin MARTIS,¹ Dolores LOZANO-CASTELLÓ,² Diego CAZORLA-AMORÓS,² Kohsuke MORI,^{1,3,4} Yasutaka KUWAHARA,^{1,3} Hiromi YAMASHITA^{1,3}

(¹Osaka University, ²Alicante University, ³Elements Strategy Initiative for Catalysts & Batteries (ESICB), Kyoto University, ⁴PRESTO, JST)

“Investigation of Pd/Zeolites Catalysts for H₂ Production from Formic Acid Dehydrogenation Reaction”

