The 8th Japan-China Workshop on Environmental Catalysis and Eco-Materials

Tsukuba International Congress Center, Tsukuba, Japan, December 5 – 6, 2017

Program

Plenary Lecture: 50 min including discussion
Keynote Lecture: 25 min including discussion
Oral (General) Presentation: 15 min (presentation, 10 min; discussion, 5 min)
Oral (Youth) Presentation: 10 min (presentation, 8 min; discussion, 2 min)

December 5 (Tuesday), 2017

8:30 – **Registration**

9:00 – 9:05 **Opening Remarks**

Plenary Session 1
(Chair: Prof. H. Yamashita, Osaka University)

9:05 – 9:55 **PL-1: Water splitting and CO_2 reduction using photocatalyst and photoelectrode systems aiming at artificial photosynthesis**
Akihiko Kudo (Tokyo University of Science)

9:55 – 10:15 **Coffee Break**

Youth Session 1
(Chair: Prof. Y. Chen, Chinese Academy of Sciences & Prof. H. Einaga, Kyushu University)

10:15 – 10:25 **YO-1: Nanometric Rh overlayer formed on Fe-Cr-Al metal foils and its application to super high-density honeycomb catalysts**
Satoshi Misumi[1], Yusuke Kuzuhara[1], Akinori Matsumoto[1], Hiroshi Yoshida[1,2], Tetsuya Sato[1], Masato Machida[1,2] ([1]Kumamoto University, [2]ESICB, Kyoto University)

10:25 – 10:35 **YO-2: Simulation on soot deposition in in-wall or on-wall catalyzed filter**
Hyeonoh Kong, Kazuhiro Yamamoto (Nagoya University)

10:35 – 10:45 **YO-3: PM oxidation of Ag-loaded perovskite-type oxide catalyst prepared by thermal decomposition of heteronuclear cyano-complex precursor**

Hiroki Takahashi, Hiroyuki Yamaura, Makoto Fukuoka, Syuhei Yamaguchi, Hidenori Yahiro (Ehime University)

10:45 – 10:55 **YO-4: A facile method to enhance the activity and durability of CeO_2-supported Pt nanocatalysts by tuning metal-support interaction**

Zhentao Feng[1], Quanming Ren[1], Ruosi Peng[1], Bangfen Wan[1], Daiqi Ye[1,2,3,4] ([1]South China University of Technology, [2]National Engineering Laboratory for the technologies and Equipments of VOCs Control, [3]Guangdong Provincial Key Laboratory of Atmospheric Environment and Pollution Control, [4]Guangdong Provincial Engineering and Technology Research Centre for Environmental Risk Prevention and Emergency Disposal)

10:55 – 11:05 **YO-5: *In situ* FT-IR study of three-way catalytic reaction over palladium catalysts supported on CeO_2-ZrO_2 based materials**

Yuuichiro Nakamura, Masaaki Haneda (Nagoya Institute of Technology)

11:05 – 11:15 **YO-6: Hydrothermal stability of core-shell $Pd@Ce_{0.5}Zr_{0.5}O_2/Al_2O_3$ catalysts for automobile three-way reactions**

Lingcong Li[1], Ningqiang Zhang[1], Rui Wu[1], Guizhen Zhang[1], Wenge Qiu[1], Hong He[1,2] ([1]Beijing University of Technology, [2]Collaborative Innovation Center of Electric Vehicles in Beijing)

11:15 – 11:25 **YO-7: Structure-activity relationship of iron-based oxide for NO–C_3H_6–CO–O_2 reaction**

Kakuya Ueda, Junya Ohyama, Atsushi Satsuma (Nagoya University)

11:25 – 11:35 **YO-8 Extraordinary localized surface plasmon resonances in plasmonic molybdenum tungsten oxide hybrid for visible-light-enhanced catalytic reaction**

Haibo Yin[1], Yasutaka Kuwahara[1,2], Kohsuke Mori[1,2,3], Hefeng Cheng[1], Meicheng Wen[1], Yuning Huo[4], Hiromi Yamashita[1,2] ([1]Osaka University, [2]ESICB, Kyoto University,[3]JST, PRESTO, [4]Shanghai Normal University)

11:35 – 11:45 **YO-9: Low-temperature NO_x trapping on alkali or alkaline earth metals modified TiO_2 photocatalysts**

Kazuki Tamai[1], Saburo Hosokawa[1,2], Hiroyuki Asakura[1,2], Kentaro Teramura[1,2], Tsunehiro Tanaka[1,2] ([1]Kyoto University, [2]ESICB, Kyoto University)

11:45 – 13:00 **Photo & Lunch**

Keynote Session 1

(Chair: Prof. H. He, Chinese Academy of Sciences & Prof. M. Ogura, Tokyo University)

13:00 – 13:25 **KL-1: Design, preparation, and catalytic performance of the macropore-based catalysts for soot oxidation**

Zhen Zhao[1,2], Yuechang Wei[1], Xuehu Yub[2], Jian Liu[1] ([1]China University of Petroleum, [2]Shenyang Normal University)

Youth Session 2

(Chair: Prof. H. He, Chinese Academy of Sciences & Prof. M. Ogura, Tokyo University)

13:25 – 13:35 **YO-10: Cu/ZnO (0001) plate model catalyst for CO_2 hydrogenation to methanol under the realistic reaction condition: Strong metal-support interactions**

Yuhai Sun, Chunlei Huang, Limin Chen, Daiqi Ye (South China University of Technology)

13:35 – 13:45 **YO-11: Direct synthesis of methyl *N*-phenylcarbamates from CO_2, anilines and methanol using CeO_2 and 2-cyanopyridine**

Yu Gu, Ayaka Miura, Masazumi Tamura, Yoshinao Nakagawa, Keiichi Tomishige (Tohoku University)

13:45 – 13:55 **YO-12: Polyoxomolybdates catalysed cascade conversions of cellulose to glycolic acid with molecular oxygen via selective aldohexoses pathways (an epimerization and a [2+4] retro-aldol reaction)**

Asep Bayu[1], Surachai Karnjanakom[1], Akihiro Yoshida[1,2], Katsuki Kusakabe[3], Abuliti Abudula[1], Guoqing Guan[1,2] ([1]Hirosaki University, [2]NJRISE, [3]Sojo University)

13:55 – 14:05 **YO-13: Hydrogenation of aqueous acetic acid from lignocellulosics for bioethanol production over Ru-Sn/TiO_2 with a flow-type reactor**

Kose Konishi, Yuanyuan Zhao, Haruo Kawamoto, Shiro Saka (Kyoto University)

14:05 – 14:15 **YO-14: The effect of Keggin -Type heteropolymolybdate catalysts on low temperature NH_3-SCR**

Rui Wu[1,2], Hong He[1,2,3], Ningqiang Zhang[1,2], Lingcong Li[1,2] ([1]Key Laboratory of Beijing on Regional Air Pollution Control, [2]Beijing University of Technology, [3]Collaborative Innovation Center of Electric Vehicles in Beijing)

14:15 – 14:25 **YO-15: The Synthesis of new zeolite; GeAPO-18 and the catalyst performance**

Kaito Ono[1], Koji Miyake[1], Yuichiro Hirota[1], Yoshiaki Uchida[1], Shunsuke Tanaka[2], Manabu Miyamoto[3], Norikazu Nishiyama[1] ([1]Osaka University, [2]Kansai University, [3]Gifu University)

Keynote Session 2

(Chair: Prof. H. He, Chinese Academy of Sciences & Prof. M. Ogura, Tokyo University)

14:25 – 14:50 **KL-2: Improvement of automotive catalysts at low temperature with highly durable zeolites**

Yoshinori Endo[1], Joe Nishikawa[1], Hironori Iwakura[1], Masaaki Inamura[1], Takashi Wakabayashi[1], Yunosuke Nakahara[1], Masataka Ogasawara[2], Sumio Kato[2] ([1]Mitsui Mining & Smelting Co., Ltd., [2]Akita University)

14:50 – 15:50 **Coffee Break & Poster Session**

Keynote Session 3

(Chair: Prof. Y. Zhu, Tsinghua University & Prof. A. Satsuma, Nagoya University)

15:50 – 16:15 **KL-3: High efficient Pd/TiO_2 catalyst for catalytic oxidation of formaldehyde at ambient temperature**

Changbin Zhang[1], Yaobin Li[2], Hong He[1,2] ([1]Research Center for Eco-environmental Sciences, Chinese Academy of Sciences, [2]Institute of Urban Environment, Chinese Academy of Sciences)

General Session 1

(Chair: Prof. Y. Zhu, Tsinghua University & Prof. A. Satsuma, Nagoya University)

16:15 – 16:30 **GO-1: A scalable and "Green" approach for the syntheses of inorganic nano-catalysts for air pollution control**

Xiaole Weng, Shuang Cao, Zhongbiao Wu (Zhejiang University)

16:30 – 16:45 **GO-2: Catalytic oxidation of toluene over metal-organic frameworks with encapsulated noble-metal nanoparticles**

Hui He[1], Mingli Fu[1,2,3], Xueting Lin[1], Daiqi Ye[1,2,3], Yun Hu[1], William Wen[4] ([1]South China University of Technology, [2]National Engineering Laboratory for the technologies and Equipments of VOCs Control, [3]Guangdong Provincial Key Laboratory of Atmospheric Environment and Pollution Control, [4]Griffith University)

16:45 – 17:00 **GO-3: Pd/mesoporous CoO nanocatalysts with high performance for *o*-xylene combustion**

Shaohua Xie[1], Yuxi Liu[1], Jiguang Deng[1], Jun Yang[1], Xingtian Zhao[1], Zhuo Han[1], Kunfeng Zhang[1], Yuan Wang[2], Hamidreza Arandiyan[2], Hongxing Dai[1] ([1]Beijing University of Technology, [2]The University of New South Wales)

17:00 – 17:15 **GO-4: Novel nanowire self-assembled hierarchical CeO_2 microspheres for low temperature toluene catalytic combustion**

Fangyun Hu[1], Jianjun Chen[1], Yaqing Zhang[1], Yue Peng[1], Hua Song[1], Kezhi Li[1], Junhua Li[1,2] ([1]Tsinghua University, [2]State Key Joint Laboratory of Environment Simulation and Pollution Control)

17:15 – 17:30 **GO-5: New class of two-dimensional transition-metal compound nanoplatelets for electrochemical energy storage**

Zhiting Liu, Yao Chen (Guangzhou University)

17:30 – 17:45 **GO-6: Plasma-assisted catalytic reaction for air purification - Effect of catalyst composition and reactor configuration on benzene oxidation -**

Shoma Hamada, Yusuke Nagai, Hajime Hojo, Hisahiro Einaga (Kyushu University)

18:00 – 20:00 **Banquet**

December 6 (Wednesday), 2017

Plenary Session 2

(Chair: Prof. F. Xiao, Zhejiang University)

9:00 – 9:50 **PL-2: Designed complex micro-structure catalysts for highly efficient removal of NO_x and volatile organic compounds (VOCs)**
Junhua Li (Tsinghua University)

General Session 2

(Chair: Prof. W. Shangguan, Shanghai Jiao Tong University & Prof. K. Shimizu, Hokkaido University)

9:50 – 10:05 **GO-7: Separation-free photocatalyst with 3D hierarchical structure**
Yongfa Zhu (Tsinghua University)

10:05 – 10:20 **GO-8: Red phosphorus decorated g-C_3N_4 hybrid nanosheets as a wide-spectral-responsive photocatalyst for hydrogen evolution from water**
Wanjun Wang[1], Taicheng An[1], Guiying Li[1], Jimmy C. Yu[2] ([1]Guangdong University of Technology, [2]The Chinese University of Hong Kong)

10:20 – 10:40 **Coffee Break**

10:40 – 10:55 **GO-9: Photocatalytic enhancement of H_2 production from hydrogen carrier molecules over visible-light-responsive MOF**
Meicheng Wen[1], Yasutaka Kuwahara[1,2], Kohsuke Mori[1,2,3], Hiromi Yamashita[1,2] ([1]Osaka University, [2]ESICB, Kyoto University,[3]JST, PRESTO)

10:55 – 11:10 **GO-10: Versatile photocatalytic technology in environmental purification of biohazards and organic pollutants in water and air**
Taicheng An, Guiying Li, Jiangyao Chen, Hongli Liu, Wanjun Wang (Guangdong University of Technology)

11:10 – 11:25 **GO-11: Design preparation of highly efficient heterogeneous catalysts for CO_2 cycloaddition and HCHO oxidation at room temperature**
Qi Sun, Ling Zhang, Xiangju Meng, Feng-Shou Xiao (Zhejiang University)

Keynote Session 4

(Chair: Prof. W. Shangguan, Shanghai Jiao Tong University & Prof. K. Shimizu, Hokkaido University)

11:25 – 11:50 **KL-4: Metal-modified ReO_x/CeO_2 catalysts for deoxydehydration of vicinal OH groups in biomass-related substrates**
Keiichi Tomishige (Tohoku University)

11:50 – 13:00 **Lunch**

Keynote Session 5

(Chair: Dr. T. Nanba, AIST & Prof. M. Haneda, Nagoya Institute of Technology)

13:00 – 13:25 **KL-5: Selective transformation of various nitrogen-containing exhaust gases towards N_2 over zeolite catalysts**

Runduo Zhang, Ning Liu, Dongjun Shi, Ruinian Xu, Perixin Li (Beijing University of Chemical Technology)

General Session 3

(Chair: Dr. T. Nanba, AIST & Prof. M. Haneda, Nagoya Institute of Technology)

13:25 – 13:40 **GO-12: Interface effect of mixed phase Pt/ZrO_2 catalyst for HCHO oxidation at ambient temperature**

Xueqin Yang, Xiaolin Yu, Mengya Lin, Maofa Ge (Institute of Chemistry, Chinese Academy of Sciences)

13:40 – 13:55 **GO-13: CO_2-assisted fabrication of hierarchical N-doped TiO_2@C from metal-organic frameworks for enhanced photocatalytic oxidation of VOCs**

Hongli Liu, Jiangyao Chen, Guiying Li, Taicheng An (Guangdong University of Technology)

13:55 – 14:10 **GO-14: Effective oxygen storage and release performances of Pt/CeO_2-ZrO_2 catalysts**

Fei Dong, Toshitaka Tanabe, Naoki Takahashi, Hirofumi Shinjoh (Toyota Central R&D Labs., Inc.)

14:10 – 14:25 **GO-15: Core-shell catalysts with silver confined by porous alumina have exceptional thermal stability and ultrahigh soot oxidation activity**

Shuang Liu, Houlin Wang (Ocean University of China)

14:25 – 14:40 **GO-16: Promoting effect of Au on Pd/TiO_2 catalyst for the selective catalytic reduction of NO_x by H_2**

Kaijiao Duan, Wenjun Cai, Zhiming Liu (Beijing University of Chemical Technology)

14:40 – 14:55 **GO-17: Improvement of low temperature hydrothermal stability of one-pot synthesized Cu-SAPO-34 for NH_3-SCR reduction of NO_x by cerium**

Xiaoyan Shi[1,3], Can Niu[1,3], Hong He[1,2,3] ([1]Research Center for Eco-Environmental Sciences, Chinese Academy of Sciences, [2]Institute of Urban Environment, Chinese Academy of Sciences, [3]University of Chinese Academy of Sciences)

14:55 – 15:10 **GO-18: The promotional role of Nd on Mn/TiO_2 catalyst for the low-temperature NH_3-SCR of NO_x**

Jun Huang[1,2,3], Licheng Liu[1], Hongtao Jiang[2,3] ([1]Qingdao Institute of Bioenergy and Bioprocess Technology, Chinese Academy of Sciences, [2]Zhejiang Province Key Laboratory of Biofuel, [3]Zhejiang University of Technology)

15:10 – 15:30 **Coffee Break**

Keynote Session 6

(Chair: Prof. Z. Zhao, China University of Petroleum & Prof. M. Haneda, Nagoya Institute of Technology)

15:30 – 15:55 **KL-6: Hydrogen storage catalysis for effective usage of renewable energy**

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

General Session 4

(Chair: Prof. Z. Zhao, China University of Petroleum & Prof. M. Haneda, Nagoya Institute of Technology)

15:55 – 16:10 **GO-19: *In situ* UV-vis observation of Cu^{2+}/Cu^{+} redox cycle in Cu-zeolites during NH_3-SCR**

Ken-ichi Shimizu[1], Takehiro Amada[1], Ken-ichi Kon[1], Takashi Toyao[1], Kakuya Ueda[2], Junya Oyama[2], Atsushi Satsuma[2] ([1]Hokkaido University, [2]Nagoya University)

16:10 – 16:25 **GO-20: Using impregnation–activation method on Cu-SAPO-34 for NH_3-selective catalytic reduction: Precise control of quantity and nature of copper active sites**

Zhenwei Wu[1,2], Rui Ran[1], Yue Ma[1], Xiaodong Wu[1], Zichun Si[3], Duan Weng[1] ([1]Tsinghua University, [2]Purdue University, [3]Advanced Materials Institute, Tsinghua University)

16:25 – 16:40 **GO-21: Copper-amine complex assisted one-pot synthesis of Cu-SAPO-44 zeolite with excellent activity for selective catalytic reduction of NO_x by NH_3**

Ying Xin[1], Qian Li[1], Lirong Zheng[2], James A. Anderson[3], Zhaoliang Zhang[1] ([1]University of Jinan, [2]Institute of High Energy Physics, Chinese Academy of Sciences, [3]University of Aberdeen)

16:40 – 16:55 **GO-22: Tunable morphological transformation of flexible and monolithic structured catalysts through in situ growth Co_3O_4 nanoarrays on Ni foam for CO oxidation**

Shuangde Li[1], Shengpeng Mo[1,2], Ning Han[1], Yunfa Chen[1] ([1]Institute of Process Engineering, Chinese Academy of Sciences, [2]South China University of Technology)

16:55 – 17:10 **GO-23: Covalent organic frameworks and porous polymers for electrochemical oxygen reduction**

Subhabrata Banerjee, Yuta Nabae (Tokyo Institute of Technology)

17:10 – 17:25 **GO-24: Selective hydrogenation of palm oil-derived biodiesel fuels over supported Pd catalysts to H-FAME for high-blend fuels**

Shih-Yuan Chen[1], Lalita Attanatho[2], Takehisa Mochizuki[1], Masayasu Nishi[1], Hideyuki Takagi[1] ([1]National Institute of Advanced Industrial Science and Technology, [2]Thailand Institute of Scientific and Technological Research)

17:25 – 17:40 **GO-25: Hydrocracking of algae oil to aviation fuel-ranged hydrocarbons over NiMo catalysts supported on polyoxocation-pillared clays**

Yanyong Liu, Megumu Inaba, Kazuhisa Murata (National Institute of Advanced Industrial Science and Technology)

17:40 – 17:45 **Closing Remarks**

December 7 (Thursday), 2017

Excursion

Poster Program, December 5 (Tuesday), 2017

15:10 – 16:10

P01 **Environmental catalysis and material research works published in Journal of Environmental Sciences**

Qingcai Feng, Kuo Liu, Suqin Liu, Zixuan Wang, Jian Xu (Editorial Office of Journal of Environmental Sciences)

P02 **Effect of CO_2 and siloxane on hydrogen production by methane decomposition using Fe-supported alumina catalysts**

Megumu Inaba, Zhanguo Zhang, Koichi Matsuoka (National Institute of Advanced Industrial Science and Technology)

P03 **A comprehensive study on the behavior of Ru catalyst for ammonia synthesis**

Rahat Javaid, Tetsuya Nanba (National Institute of Advanced Industrial Science and Technology)

P04 **Development of amine functionalized dual heterogeneous catalyst for interconversion of formic acid and CO_2**

Shinya Masuda[1], Kohsuke Mori[1,2,3], Hiromasa Tanaka[4], Kazunari Yoshizawa[3,4], Hiromi Yamashita[1,3] ([1]Osaka University, [2]JST, PRESTO, [3]ESICB, Kyoto University, [4]Kyushu University)

P05 **Syntheses of organozirconium complexes with Keggin-type mono- and di-aluminum-substituted polyoxotungustates and catalytic performances for esterification of fatty acids**

Akari Kondo[1], Tsukasa Ogasawara[1], Shunsaku Suzuki[1], Chika Kato[1,2] ([1]Shizuoka University, [2]Research Institute of Green Science and Technology, Shizuoka University)

P06 **Gas-phase dehydration of glycerol to acrolein catalyzed by combination of two sources of Brønsted acid sites**

Xin Ren[1,2], Nailiang Wang[1], Licheng Liu[1] ([1]Qingdao Institute of Bioenergy and BioprocessTechnology, Chinese Academy of Sciences, [2]Ocean University of China)

P07 **Development of innovative process for multi-dimensional utilization of methane with microwave heating**

Hiroya Ishimaru[1], Mai Hasegawa[1], Narumi Yoshida[1], Minoru Umeda[2], Mitsuhiro Inoue[3], Hiroya Ishikawa[4], Ryo Saito[5], Shogo Nakagawa[5], Fumihiro Kodera[1], Akihiko Miyakoshi[1] ([1]National Institute of Technology, Asahikawa College, [2]Nagaoka University of Technology, [3]University of Toyama, [4]Osaka University, [5]Hokkaido University)

P08 **Evaluation of cerium doped perovskites $(Ce_{0.1}Sr_{0.9})_xCo_{0.3}Fe_{0.7}O_{3-\delta}$ as cathode materials for solid oxide fuel cell**

Pairuzha Xiaokaiti[1], Tao Yu[1], Akihiro Yoshida[1,2], Guoqing Guan[1,2], Abuliti Abudula[1] ([1]Hirosaki University, [2]NJRISE, Hirosaki University)

P09 **Toluene hydrogenation over Ni catalyst under fluctuating supply of hydrogen**

Xieli Cui, Ryousuke Atsumi, Hideyuki Matsumoto, Tetsuya Nanba (National Institute of Advanced Industrial Science and Technology)

P10 **Conversion of levulinic acid to γ-valerolactone over Cu-Ni catalysts**

Rei Yoshida, Satoshi Sato, Yasuhiro Yamada (Chiba University)

P11 **Comparative study on thermal stability between Pd doped and loaded ceria based three-way catalysts**

Guizhen Zhang, Yaoyao Li, Ziwen Liu, Wensheng Li, Hong He, Liyun Song, Wenge Qiu (Beijing University of Technology)

P12 **Effect of chemical compositions of Ni-Ga-O_x on automotive three way catalytic reduction**

Masaki Ohshima[1], Kakuya Ueda[1], Junya Ohyama[1,2], Atsushi Satsuma[1,2] ([1]Nagoya University, [2]ESICB, Kyoto University)

P13 **Promoted OSC performance of CeO_2-ZrO_2 by doping transition metal and three-way catalytic activity of supported Pd catalysts**

Kento Kusatsugu, Masaaki Haneda (Nagoya Institute of Technology)

P14 **Activity controlling factors of NO-CO reaction over MCo_2O_4**

Masashi Tsuji[1], Kakuya Ueda[1], Junya Ohyama[1,2], Atsushi Satsuma[1,2] ([1]Nagoya University, [2]ESICB, Kyoto University)

P15 **Oxygen storage property and chemical stability of $SrFe_{1-x}Ti_xO_{3-\delta}$**

Akito Demizu[1], Kosuke Beppu[1], Saburo Hosokawa[1,2], Hiroyuki Asakura[1,2], Kentaro Teramura[1,2], Tsunehiro Tanaka[1,2] ([1]Kyoto University, [2]ESICB, Kyoto University)

P16 **Effect of TiO_2 crystalline structure for NO-CO-H_2O reaction using Pt/TiO_2 catalyst**

Keisuke Kobayashi[1], Tetsuya Nanba[2] ([1]University of Yamagata, [2]National Institute of Advanced Industrial Science and Technology)

P17 **Activation energy calculation of NO-CO reaction on rhodium surface by density functional theory**

Taisei Ito, Yukihiro Shimizu (Tohoku University)

P18 **Unique OSC performance of cerium oxide synthesized by dealloying oxidation method**

Rongguang Gan[1], Man Zhang[2], Takashi Kuwahara[3], Naoki Asao[2,3], Masaaki Haneda[1] ([1]Nagoya Institute of Technology, [2]Tohoku University, [3]Shinshu University)

P19 **Selective catalytic reduction of NO with CO and C_3H_6 over $Rh/NbOPO_4$**

Shinsuke Imai[1], Hiroki Miura[1,2,3], Tetsuya Shishido[1,2,3] ([1]Tokyo Metropolitan University, [2]Research Center for Hydrogen Energy-Based Society, Tokyo Metropolitan University, [3]ESICB, Kyoto University)

P20 **Three way activities of low-content Pt catalysts supported by CeO_2 nanoparticles and core-shell type CeO_2/ZrO_2**

Masakuni Ozawa[1], Masaki Misaki[2], Masaki Iwakawa[2], Katsutoshi Kobayashi[1], Masatomo Hattori[1] ([1]IMass, Nagoya University, [2]Nagoya University)

P21 **Photoelectrocatalytic inactivation and elimination of antibiotic-resistance E. coli S1-23 bacteria and its antibiotic-resistance genes**

Guiying Li, Hongliang Yin, Taicheng An (Guangdong University of Technology)

P22 **The oriented adsorption and simultaneous removal of Cr(VI) and RhB pollutants on Pd@MIL-101/P25 photocatalyst**

Jinhui Zhang, Peipei Cui, Yun Hu, Mingli Fu (South China University of Technology)

P23 **Graphene regulated solar-light-driven photocatalytic degradation mechanism revelation of gaseous styrene on TiO_2 based on intermediates quantification**

Jiangyao Chen, Zilong Zhang, Guiying Li, Taicheng An (Guangdong University of Technology)

P24 **Synergetic removal of Pb(II) and dibutyl phthalate mixed pollutants on Bi_2O_3-TiO_2 composite photocatalyst under visible light**

Yun Hu, Suzhen You, Xingchen Liu (South China University of Technology)

P25 **Hydrogen evolution from aqueous triethanolamine solution under visible-light irradiation using Keggin-type platinum(II)-coordinated polyoxotungstates as co-catalysts**

Shunsaku Suzuki[1], Chika Kato[1,2], Rie Yamashita[3] ([1]Shizuoka University, [2]Research Institute of Green Science and Technology, Shizuoka University, [3]Industrial Research Institute of Shizuoka Prefecture)

P26 **Enhanced photocatalytic degradation and disinfection activity of oxidized nanoporous g-C_3N_4 by loading Ag nanoparticles under visible light illumination**

Jing Xu[1,2], Qiuzhu Gao[1,2], Zhouping Wang[1,2] ([1]State Key Laboratory of Food Science and Technology, Jiangnan University, [2]School of Food Science and Technology, Jiangnan University)

P27 **Removal of VOCs by post-plasma catalysis over Co-Mn oxides**

Zhixiang Zhang[1], Xin Yao[1], Yizhuo Li[2], Wenfeng Shangguan[1] ([1]Shanghai Jiao Tong University, [2]Shenyang Academy of Environmental Sciences)

P28 **Controllable synthesis of 3D hierarchical Co_3O_4 nanocrystals with various morphologies for toluene catalytic oxidation**

Quanming Ren[1], Shengpeng Mo[1], Ruosi Peng[1], Zhentao Feng[1], Daiqi Ye[1,2,3] ([1]South China University of Technology, [2]Guangdong Provincial Key Laboratory of Atmospheric Environment and Pollution Control, [3]National Engineering Laboratory for the technologies and Equipments of VOCs Control)

P29 **Pt_xCo/meso-MnO_y: Highly efficient catalysts for low-temperature methanol combustion**

Jun Yang, Yuxi Liu, Jiguang Deng, Shaohua Xie, Zhiquan Hou, Xingtian Zhao, Kunfeng Zhang, Zhuo Han, Hongxing Dai (Beijing University of Technology)

P30 **Pd-GaO_x/Al_2O_3: High-performance catalysts for methane combustion**

Zhiquan Hou, Yuxi Liu, Jiguang Deng, Shaohua Xie, Xingtian Zhao, Kunfeng Zhang, Zhuo Han, Jun Yang, Hongxing Dai (Beijing University of Technology)

P31 **The influence of dispersibility of copper oxide species on the state and CO oxidation activity**

Masatomo Hattori[1], Masaaki Haneda[2], Masakuni Ozawa[1] ([1]IMass, Nagoya University, [2]Nagoya Institute of Technology)

P32 **The investigation of CO catalytic oxidation mechanism over the Pt/MnO_x catalysts**

Ningqiang Zhang, Lingcong Li, Rui Wu, Guizhen Zhang, Wenge Qiu, Hong He (Beijing University of Technology)

P33 **Functionalization of metal-organic frameworks by encapsulating noble-metal nanoparticles towards toluene oxidation**

Mingli Fu[1,2,3], Hui He[1], Xueting Lin[1], Daiqi Ye[1,2,3], Yun Hu[1,2,3], William Wen[4] ([1]South China University of Technology, [2]National Engineering Laboratory for the technologies and Equipments of VOCs Control, [3]Guangdong Provincial Key Laboratory of Atmospheric Environment and Pollution Control, [4]Griffith University)

P34 **Effect of lanthanide-doping into Pt/CeO_2 catalysts for the catalytic oxidation of toluene**

Ruosi Peng[1], Daiqi Ye[1,2,3] ([1]South China University of Technology, [2]National Engineering Laboratory for the technologies and Equipments of VOCs Control, [3]Guangdong Provincial Key Laboratory of Atmospheric Environment and Pollution Control)

P35 **Shape dependence of nanoceria on completely catalytic oxidation of *o*-xylene**

Lian Wang[1], Yunbo Yu[1,2,3], Hong He[1,2,3], Shaoxin Wang[1] ([1]Research Center for Eco-environmental Sciences, Chinese Academy of Sciences, [2]Institute of Urban Environment, Chinese Academy of Sciences, [3]University of Chinese Academy of Sciences)

P36 **Effects of Fe doping to α-Mn_2O_3 catalyst on oxidation reaction of soot in diesel exhaust**

Akihiro Fujibayashi[1], Yasutaka Kuwahara[1,2], Kohsuke Mori[1,2,3], Hiromi Yamashita[1,2] ([1]Osaka University, [2]ESICB, Kyoto University,[3]JST, PRESTO)

P37 **Ozone-enhanced complete catalytic oxidation of toluene over platinum-cerium supported high silica BEA zeolite**

Hailin Xiao, Junliang Wu, Daiqi Ye (South China University of Technology)

P38 **C_3H_6 combustion over Mn-modified hexagonal $YbFeO_3$**

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P39 **H_2O and SO_2 effect on elimination of NO over V_2O_5/TiO_2 catalysts preferentially exposed anatase {001} and {101} facets**

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P40 **Synthesis of Co doped Mn/Al_2O_3-TiO_2 catalysts and their catalytic activity for NO removal**

Hong Liang, Tingwen Tan, Yimeng Mou, Shuhua Li, Zhiwei Qiao (Guangzhou University)

P41 **Promoting effect of organic ligand on the performance of ceria for the selective catalytic reduction of NO by NH_3**

Mengqi Yin, Wenge Qiu, Shining Li, Yun Chen, Guizhen Zhang, Hong He (Beijing University of Technology)

P42 **Promoting effect of iron modification on NO oxidation over single phase α-MnO_2 or γ-MnO_2 catalysts**

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P43 ***In situ*** **characterization of Cu-zeolites for NH_3-SCR**

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P44 **Effect of oxide supports on NO reduction over platinum-group metal catalysts: A computational study**

Hiroaki Koga[1], Akihide Hayashi[2], Yoshinori Ato[2], Kohei Tada[3], Saburo Hosokawa[1,4], Mitsutaka Okumura[1,2] ([1]ESICB, Kyoto University, [2]Osaka University, [3]National Institute of Advanced Industrial Science and Technology, [4]Kyoto University)

P45 **The dechlorination effect of chlorobenzene on catalytic performance of vanadium-based catalysts for low-temperature NH_3-SCR: an *in situ* DRIFTS study**

Dong Wang, Yue Peng, Jun-hua Li (Tsinghua University)

P46 **Preparation of Al_2O_3-SiO_2 porous material and the effect on NO decomposition in cement kiln**

Yanling Gan, Suping Cui, Hongxia Guo, Xiaoyu Ma, Yali Wang (Beijing University of Technology)