

**12th International Conference on
Environmental Catalysis
(ICEC2022)**



July 30 - August 2, 2022

Osaka, Japan

Program and Abstracts

Program of ICEC2022 (Japan Standard Time)

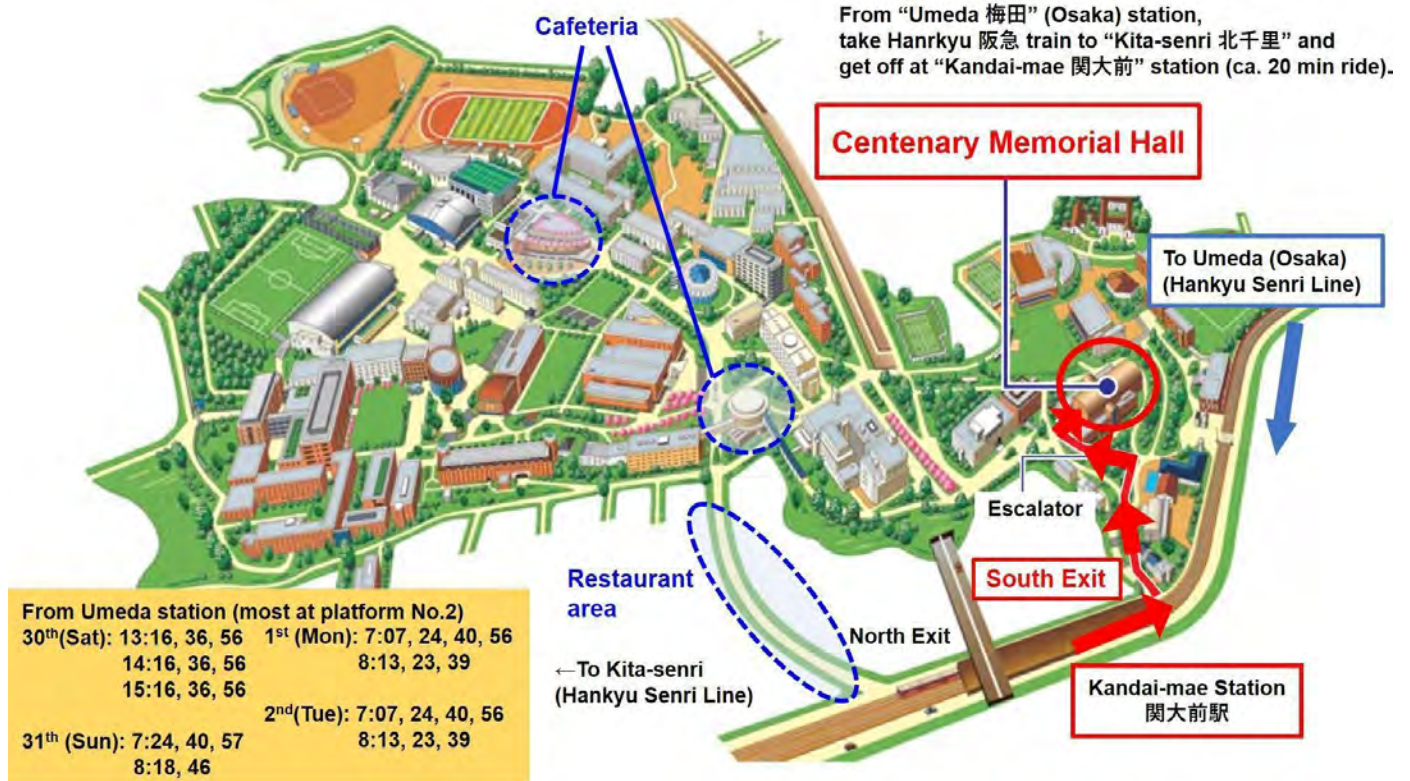
		July 31st (Sun)				August 1st (Mon)				August 2nd (Tue)																			
July 30th (Sat)		Room A	Room B	Room C	Room D	Room A	Room B	Room C	Room D	Room A	Room B	Room C	Room D																
8:00		Registration				Registration				Registration																			
9:00		PL-2 Christopher W. Jones				PL-3 Hirohito Hirata				PL-4 Junhua Li																			
10:00		Break				Break				Break																			
		KN-1 Hong He	OB01	OC01	OD01	OA16	KN-6 Do Heui Kim	OC18	OD18	KN-10 Jingguang Chen	OB33	OC35	OD23																
			OB02	OC02	OD02	OA17		OC19	OD19		OB34	OC36	OD24																
11:00		OA01	OB03	OC03	OD03	OA18	OB18	OC20	OD20	OA33	OB35	OC37	OD25																
		OA02	KN-2 Todd J. Toops	OC04	OD04	OA19	OB19	OC21	OD21	OA34	OB36	OC38	KN-11 Atsushi Urakawa																
		OA03		OC05	OD05	OA20	OB20	OC22	OD22	OA35	OB37	OC39																	
12:00		Lunch				Lunch				Lunch																			
13:00		KN-3 Michael Stockenhuber	OB04	OC06	OD06	KN-7 Masaru Ogura	OB21	OC23	Special Session Opening	OA36	KN-12 Jiaguo Yu	OC40	OD26																
			OB05	OC07	OD07		OB22	OC24	SIL-01	OA37		OC41	OD27																
		OA04	OB06	OC08	OD08	OA21	OB23	OC25	SIL-02	OA38	OB38	OC42	OD28																
14:00	Registration	OA05	OB07	OC09	OD09	OA22	OB24	OC26	SIL-03	KN-13 Wonyong Choi	OB39	OC43	OD29																
		OA06	OB08	OC10	OD10	OA23	OB25	OC27	SIL-04		OB40	OC44	OD30																
		OA07	OB09	KN-4 Yongdan Li	OD11	OA24	KN-8 Kevin C. W. Wu	OC28	SIL-05	OA39	OB41	OC45	KN-14 Ning Yan																
15:00		OA08	OB10		OD12	OA25		OC29		OA40	OB42	OC46																	
		Break				Break				Break																			
16:00	Opening	OA09	OB11	OC11	OD13	OA26	OB26	OC30	SIL-06	OA41	OB43	KN-15 Anne Giroir- Fendler	OD31																
		OA10	OB12	OC12	OD14	OA27	OB27	OC31	SIL-07	OA42	OB44		OD32																
	PL-1 Christopher Hardacre	OA11	OB13	OC13	OD15	OA28	OB28	OC32	SIL-08	OA43	OB45	OC47	OD33																
17:00		OA12	OB14	OC14	KN-5 Stefan Marx	OA29	OB29	KN-9 Gabriele Centi	SIL-09	KN-16 Jan-Dierk Grunwaldt	OB46	OC48	OD34																
		OA13	OB15	OC15		OA30	OB30		SIL-10		OB47	OC49	OD35																
		OA14	OB16	OC16	OD16	OA31	OB31	OC33	Closing	OA44	OB48	OC50	OD36																
		OA15	OB17	OC17	OD17	OA32	OB32	OC34		OA45	OB49	OC51	OD37																
18:00		Break				Break				Break																			
19:00		Short Presentation of Poster (Room A) in-person only	Poster P01 - P40 (Room P-1)	Poster P41 - P83 (Room P-2)	Short Presentation of Poster (Room A) in-person only	Poster P84 - P130 (Room P-1)	Poster P131 - P175 (Room P-2)	Closing	<table border="1" style="font-size: small; text-align: left; width: 100%;"> <thead> <tr> <th colspan="2">Presentation time including Q&A (min)</th> </tr> </thead> <tbody> <tr><td>Plenary</td><td>60</td></tr> <tr><td>Keynote</td><td>40</td></tr> <tr><td>Special Invited</td><td>25</td></tr> <tr><td>Invited</td><td>20</td></tr> <tr><td>Oral</td><td>20</td></tr> <tr><td>Poster</td><td>90</td></tr> <tr><td>Short Presentation</td><td>5</td></tr> </tbody> </table>					Presentation time including Q&A (min)		Plenary	60	Keynote	40	Special Invited	25	Invited	20	Oral	20	Poster	90	Short Presentation	5
Presentation time including Q&A (min)																													
Plenary	60																												
Keynote	40																												
Special Invited	25																												
Invited	20																												
Oral	20																												
Poster	90																												
Short Presentation	5																												

20:00

Conference Venue

"Centenary Memorial Hall" at Kansai University (Senriyama campus)

Address: 3-3-35 Yamate-cho, Suita-shi, Osaka 564-8680



Floor Map



General Information

12th International Conference on Environmental Catalysis (ICEC2022)

<http://www.mat.eng.osaka-u.ac.jp/msp1/ICEC2022/>

Date: July 30 (Sat) - August 2 (Tue), 2022

Hybrid System (in-person & in-virtual):

Venue: Centenary Memorial Hall, Kansai University, Osaka, Japan

Virtual: Zoom (see below Meeting ID & P W)

Secretary Office of ICEC2022 (E-mail): icec2022@mat.eng.osaka-u.ac.jp

Meeting ID & PW:

For security, information on Zoom (URL, ID, PW) was already sent to all registered attendants from ICEC2022 office using e-mail.

If you did not get the information, please contact ICEC2022 office:

ICEC2022 office (E-mail): ICEC2022@mat.eng.osaka-u.ac.jp

July 30th (Sat)

Room:	URL	ID:	PW:
Room A Opening PL-1	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX	XXXX

July 31st (Sun)

Room:	URL	ID:	PW:
Room A PL-2 Oral session	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX	XXXX
Room B Oral session	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX	
Room C Oral session	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX	
Room D Oral session	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX	
Poster Room P-1 (P01-P40)	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX	
Poster Room P-2 (P41-P83)	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX	

Aug. 1st (Mon)

Room:	URL	ID:	PW:
Room A PL-3 Oral session	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX	XXXX
Room B Oral session	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX	
Room C Oral session	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX	
Room D Oral session Special Session	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX	
Poster Room P-1 (P84-P130)	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX	
Poster Room P-2 (P131-P175)	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX	

Aug. 2nd (Tue)

Room:	URL	ID:	PW:
Room A PL-4 Oral session	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX	XXXX
Room B Oral session	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX	
Room C Oral session	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX	
Room D Oral session	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX	

For security, information on Zoom (URL, ID, PW) was already sent to all registered attendants from ICEC2022 office using e-mail.

If you did not get the information, please contact ICEC2022 office:

ICEC2022 office (E-mail): ICEC2022@mat.eng.osaka-u.ac.jp

Welcome to ICEC2022

On the behalf of the organizing committee, we welcome you to the 12th International Conference on Environmental Catalysis (ICEC2022) at "Centenary Memorial Hall" of Kansai University (Senriyama campus) in Osaka, Japan from July 30 to August 2, 2022. This conference has been held in every two years since 1995. The main objective of the conference is to exchange the latest researches on environmental catalysis and to promote friendship among catalyst scientists and engineers all over the world. The conference will cover the fundamental and applied researches on environmental catalysis and catalysts for a wide range of applications including following topics: Sustainable and Clean Energy Production, Automotive and Stationary Emission Control, Air Cleaning and Combustion, Water Treatment, Green Chemistry and Biomass Transformation, CO₂ Utilization and Recycling, H₂ Storage and Transportation, Photocatalysis, Advanced Process with Electrocatalysis and Plasma Utilization.

The ICEC2022 is held by hybrid system with in-person and in-virtual. Although we have met the COVIT-19 situation, we are very happy to have 4 plenary lectures, 16 keynote lectures, 10 special invited lectures, 182 oral presentations and more than 175 poster presentations and about 450 attendants are gathering.

We are delighted to welcome you to an inspiring and enjoyable program of the ICEC2022. Please enjoy the conference and make good friendship through the fruitful discussion on environmental catalysis.

July 30, 2022



Hiromi Yamashita

Hiromi YAMASHITA

Chair, ICEC2022

Professor

Osaka University



Atsushi Satsuma

Atsushi SATSUMA

Chair, ICEC2022

Professor

Nagoya University

History of ICEC

This conference has been held in every two years since 1995.

- 1st 1995 Pisa
- 2nd 1998 Miami
- 3rd 2001 Tokyo
- 4th 2005 Heidelberg
- 5th 2008 Belfast
- 6th 2010 Beijing
- 7th 2012 Lyon
- 8th 2014 Asheville
- 9th 2016 New Castle
- 10th 2018 Tianjin
- 11th 2020 Manchester
- **12th 2022 Osaka**

Organization

Chairs:

Hiromi YAMASHITA (Osaka University)

Atsushi SATSUMA (Nagoya University)

Vice Chair:

Takanori MIYAKE (Kansai University)

Naoki IKENAGA (Kansai University)

Tsunehiro TANAKA (Kyoto University)

Secretary:

Masaaki HANEDA (Nagoya Institute of Technology)

Kohsuke MORI (Osaka University)

Program:

Masato MACHIDA (Kumamoto University)

Masaru OGURA (The University of Tokyo)

Yasutaka KUWAHARA (Osaka University)

Treasure:

Takashi KAMEGAWA (Osaka Metropolitan University)

International Advisory Board:

Michael Stockenhuber (Australia) <Chair>

Harry Bitter (The Netherlands)

Gabriele Centi (Italy)

Lucjan Chmielarz (Poland)

Laura Cornaglia (Argentina)

Anne Giroir-Fendler (France)

Eric Gaigneaux (Belgium)

Jan-Dierk Grunwaldt (Germany)

Justin Hargreaves (UK)

Suk Bong Hong (South Korea)

Enrique Iglesia (USA)

Nitin Labhsetwar (India)

Can Li (China)

Yongdan Li (Finland/China)

Flora Ng (Canada)

Lars Pettersson (Sweden)

Vladislav Sadykov (Russia)

Atsushi Satsuma (Japan)

Johannes W. Schwank (USA)

Zdenek Sobalik (Czech Republic)

Jerry Spivey (USA)

Todd J. Toops (USA)

Xenophon Verykios (Greece)

Hiromi Yamashita (Japan)

Local Directors:

Koujirou Fuku (Kansai University)
Yu Horiuchi (Osaka Metropolitan University)
Saburo Hosokawa (Kyoto Institute of Technology)
Hiroshi Kominami (Kindai University)
Masaya Matsuoka (Osaka Metropolitan University)
Tomoo Mizugaki (Osaka University)
Atsuhiro Tanaka (Kindai University)
Sho Yamaguchi (Osaka University)

Local Committee:

Ryu Abe (Kyoto University)
Yutaka Amao (Osaka Metropolitan University)
Hiroyuki Asakura (Kyoto University)
Koichi Eguchi (Kyoto University)
Hisahiro Einaga (Kyushu University)
Hiroyuki Fueno (Kyoto University)
Kenichi Fukui (Osaka University)
Masanobu Higashi (Osaka Metropolitan University)
Shinya Higashimoto (Osaka Institute of Technology)
Hirohito Hirata (Toyota Motor Corp.)
Masao Hori (Umicore Shokubai)
Yuichi Ichihashi (Kobe University)
Shigeru Ikeda (Konan University)
Nobuhito Imanaka (Osaka University)
Akihito Imanishi (Osaka University)
Kinichi Iwachido (Mitsubishi Motors)
Naoto Kamiuchi (Osaka University)
Junichiro Kugai (Kobe City College of Technology)
Toshiaki Matsui (Kyoto University)
Takato Mitsudome (Osaka University)

Yoshitada Morikawa (Osaka University)
Takahiko Moteki (The University of Tokyo)
Toru Murayama (Tokyo Metropolitan University)
Hiroki Muroyama (Kyoto University)
Tetsuya Nanba (AIST)
Norikazu Nishiyama (Osaka University)
Satoru Nishiyama (Kobe University)
Ai Nozaki (University of Hyogo)
Naoyoshi Nunotani (Osaka University)
Akira Obuchi (AIST)
Akira Oda (Nagoya University)
Hirofumi Ohtsuka (Osaka Gas Co., Ltd.)
Junya Ohyama (Kumamoto University)
Hideyuki Okumura (Kyoto University)
Mitsutaka Okumura (Osaka University)
Hiroshi Onishi (Kobe University)
Kenichi Shimizu (Hokkaido University)
Yasuhiro Shiraishi (Osaka University)
Hajime Suzuki (Kyoto University)
Sakae Takenaka (Doshisha University)
Masato Takeuchi (Osaka Metropolitan University)
Masazumi Tamura (Osaka Metropolitan University)
Keita Taniya (Kobe University)
Kentaro Teramura (Kyoto University)
Osamu Tomita (Kyoto University)
Hidenori Yahiro (Ehime University)
Yusuke Yamada (Osaka Metropolitan University)
Akira Yamamoto (Kyoto University)
Hisao Yoshida (Kyoto University)
Tomoko Yoshida (Osaka Metropolitan University)
Hiroshi Yoshida (Kumamoto University)

Organizer:

Catalysis Society of Japan



Co-organizers:

Osaka University (Division of Materials and Manufacturing Science)

Kansai University (Faculty of Environmental and Urban Engineering)

Catalysis Society of Japan (Environmental Catalyst Division)

Supporters:

American Chemical Society (ACS ES & T Engineering)

Royal Society of Chemistry (Catalysis Science & Technology, Energy Advances)

Elsevier (Applied Catalysis B: Environmental)

The Iron and Steel Institute of Japan (Kansai Branch)

Microtrac MRB

Kansai Research Foundation for Technology Promotion

Suzuki Foundation



Presentation Awards

ICEC2022 Best Presentation Award:

The ICEC2022 committee intends to award young scientists who make excellent presentations during the symposium.

ACS Best Presentation Award:

Among the young scientists who make excellent Oral presentations during the symposium, a scientist of exceptional ability who show promise for significant future achievements in catalysis research will be selected to provide following award from American Chemical Society (ACS)



ACS ES&T Engineering Best Young Scientist Award

RSC Best Presentation Award:

Among the awardees selected from Young Poster presenters, two young scientists of exceptional ability who show promise for significant future achievements in catalysis research will be selected to provide following awards from Royal Society of



Catalysis Science & Technology Best Presentation Award



Energy Advances Best Presentation Award

Publication of Special Issue



in Applied Catalysis B: Environmental

Selected papers presented at the conference will be published in Special Issue of Appl. Cat. B (Elsevier)

Impact factor: 24.319 (in 2022)

Short title of the SI: **ICEC2022**

Submission period: 1st August - 31st October, 2022

Manuscript type: Full paper

Review process: Selected papers will be published, after the standard refereeing process of the journal.

Web for submission: <https://www.editorialmanager.com/apcatb/default.aspx>

Guest Editors: Hiromi Yamashita (Osaka University)

Zhenfeng Bian (Shanghai Normal University)

Atsushi Urakawa (TU Delft)

Michael Stockenhuber (University of Newcastle)

Program of ICEC2022

<Hybrid with In-person & In-vietual>

July 30th (Sat), 2022

Room A: Opening, Plenary (PL-1)

July 31st (Sun), 2022

Room A: Plenary (PL-2), Keynote (KN-1, 3),
Oral (OA01_15), Short presentation of poster

Room B: Keynote (KN-2), Oral (OB01_17)

Room C: Keynote (KN-4), Oral (OC01_17)

Room D: Keynote (KN-5), Oral (OD01_17)

Room P-1: Poster (P01_40)

Room P-2: Poster (P41_84)

August 1st (Mon), 2022

Room A: Plenary (PL-3), Keynote (KN-7),
Oral (OA16_32), Short presentation of poster

Room B: Keynote (KN-6,8), Oral (OB18_32)

Room C: Keynote (KN-9), Oral (OC18_34)

Room D: Oral (OD18_22), Special Invited (SIL-01_10)

Room P-1: Poster (P84_130)

Room P-2: Poster (P131_175)

August 2nd (Tue), 2022

Room A: Plenary (PL-4), Keynote (KN-10,13,16),
Oral (OA33_45), Closing

Room B: Keynote (KN-12), Oral (OB33_49)

Room C: Keynote (KN-15), Oral (OC35_51)

Room D: Keynote (KN-11,14), Oral (OD23_37)

Presentation time including question:

Plenary Lecture	(PL)	60 min
Keynote Lecture	(KN)	40 min
Special Invited Lecture	(SIL)	25min
Oral Presentation	(O)	20 min
Poster Presentation	(P)	90 min
Short Presentation	(SP)	5 min

Program of ICEC2022 (Japan Standard Time)

		July 31st (Sun)				August 1st (Mon)				August 2nd (Tue)			
July 30th (Sat)		Room A	Room B	Room C	Room D	Room A	Room B	Room C	Room D	Room A	Room B	Room C	Room D
8:00		Registration				Registration				Registration			
9:00		PL-2 Christopher W. Jones				PL-3 Hirohito Hirata				PL-4 Junhua Li			
10:00		Break				Break				Break			
		KN-1 Hong He	OB01	OC01	OD01	OA16	KN-6 Do Heui Kim	OC18	OD18	KN-10 Jingguang Chen	OB33	OC35	OD23
			OB02	OC02	OD02	OA17		OC19	OD19		OB34	OC36	OD24
11:00		OA01	OB03	OC03	OD03	OA18	OB18	OC20	OD20	OA33	OB35	OC37	OD25
		OA02	KN-2 Todd J. Toops	OC04	OD04	OA19	OB19	OC21	OD21	OA34	OB36	OC38	KN-11 Atsushi Urakawa
		OA03		OC05	OD05	OA20	OB20	OC22	OD22	OA35	OB37	OC39	
12:00		Lunch				Lunch				Lunch			
13:00		KN-3 Michael Stockenhuber	OB04	OC06	OD06	KN-7 Masaru Ogura	OB21	OC23	Special Session Opening	OA36	KN-12 Jiaguo Yu	OC40	OD26
			OB05	OC07	OD07		OB22	OC24	SIL-01	OA37		OC41	OD27
		OA04	OB06	OC08	OD08	OA21	OB23	OC25	SIL-02	OA38	OB38	OC42	OD28
14:00	Registration	OA05	OB07	OC09	OD09	OA22	OB24	OC26	SIL-03	KN-13 Wonyong Choi	OB39	OC43	OD29
		OA06	OB08	OC10	OD10	OA23	OB25	OC27	SIL-04		OB40	OC44	OD30
		OA07	OB09	KN-4 Yongdan Li	OD11	OA24	KN-8 Kevin C. W. Wu	OC28	SIL-05	OA39	OB41	OC45	KN-14 Ning Yan
		OA08	OB10		OD12	OA25		OC29		OA40	OB42	OC46	
15:00		Break				Break				Break			
16:00	Opening	OA09	OB11	OC11	OD13	OA26	OB26	OC30	SIL-06	OA41	OB43	KN-15 Anne Giroir- Fendler	OD31
		OA10	OB12	OC12	OD14	OA27	OB27	OC31	SIL-07	OA42	OB44		OD32
	PL-1 Christopher Hardacre	OA11	OB13	OC13	OD15	OA28	OB28	OC32	SIL-08	OA43	OB45	OC47	OD33
17:00		OA12	OB14	OC14	KN-5 Stefan Marx	OA29	OB29	KN-9 Gabriele Centi	SIL-09	KN-16 Jan-Dierk Grunwaldt	OB46	OC48	OD34
		OA13	OB15	OC15		OA30	OB30		SIL-10		OB47	OC49	OD35
		OA14	OB16	OC16	OD16	OA31	OB31	OC33	Closing	OA44	OB48	OC50	OD36
		OA15	OB17	OC17	OD17	OA32	OB32	OC34		OA45	OB49	OC51	OD37
18:00		Break				Break				Break			
19:00		Short Presentation of Poster (Room A) in-person only	Poster P01 - P40 (Room P-1)	Poster P41 - P83 (Room P-2)		Short Presentation of Poster (Room A) in-person only	Poster P84 - P130 (Room P-1)	Poster P131 - P175 (Room P-2)		Closing			
20:00													

Presentation time including Q&A (min)	
Plenary	60
Keynote	40
Special Invited	25
Invited	20
Oral	20
Poster	90
Short Presentation	5

Program of ICEC2022

Plenary Lectures (Room A) (Japan Standard Time)

July 30th (Sat) 16:30-17:30 Room A

PL-1

**Investigating non thermal plasma catalysis
using in-situ methods**

Christopher Hardacre

**University of
Manchester**

July 31st (Sun) 9:00-10:00 Room A

PL-2

**Porous materials in CO₂ capture
& conversion**

Christopher W. Jones

**Georgia
Institute of
Technology**

Aug 1st (Mon) 9:00-10:00 Room A

PL-3

**Progress and future of automotive exhaust
gas purification catalysts: materials, parts
and R&D methods**

Hirohito Hirata

**Toyota Motor
Corporation**

Aug 2nd (Tue) 9:00-10:00 Room A

PL-4

**Studies on environmental catalysis for haze
and ozone precursors: NO_x and VOCs**

Junhua Li

**Tsinghua
University**

Plenary Lecture Speakers



Chris Hardacre
The University of Manchester
UK



Hirohito Hirata
Toyota Motor Corporation
Japan



Christopher W. Jones
Georgia Institute of Technology
USA



Junhua Li
Tsinghua University
China

Program of ICEC2022

Keynote Lectures (Room A-D) (Japan Standard Time)

July 31st (Sun) 10:20-11:00 Room A			
KN-1	Why Cu-zeolites are efficient and stable catalysts for NH₃-SCR of NO_x	Hong He	Chinese Academy of Sciences
July 31st (Sun) 11:20-12:00 Room B			
KN-2	Novel low-temperature emission control catalysts for lean and stoichiometric applications	Todd J. Toops	Oak Ridge National Laboratory
July 31st (Sun) 13:00-13:40 Room A			
KN-3	Controlling catalytic processes via catalytic acid and redox site manipulation for environmental applications	Michael Stockenhuber	The University of Newcastle
July 31st (Sun) 14:40-15:20 Room C			
KN-4	Reaction pathways of catalytic lignin conversion in ethanol	Yongdan Li	Aalto University
July 31st (Sun) 16:50-17:30 Room D			
KN-5	Scale-up and application of MOF "CALF-20" for CO₂ capture from Flue Gases	Stefan Marx	BAFS
Aug 1st (Mon) 10:20-11:00 Room B			
KN-6	Novel method to overcome the sulfur poisoning of vanadia catalyst for NO_x removal	Do Heui Kim	Seoul National University
Aug 1st (Mon) 13:00-13:40 Room A			
KN-7	From deNO_x to reNO_x: NH₃ generation by use of NO in combustion exhaust	Masaru Ogura	The University of Tokyo
Aug 1st (Mon) 14:40-15:20 Room B			
KN-8	Functional MOFs and their derivatives for clean energy production and waste conversion	Kevin C. W. Wu	National Taiwan University

Program of ICEC2022

Keynote Lectures (Room A-D) (Japan Standard Time)

Aug 1st (Mon) 16:50-17:30 Room C			
KN-9	Catalysis for the net zero emission challenge	Gabriele Centi	Università degli Studi di Messina
Aug 2nd (Tue) 10:20-11:00 Room A			
KN-10	CO₂-assisted activation of light alkanes	Jingguang Chen	Columbia University
Aug 2nd (Tue) 11:20-12:00 Room D			
KN-11	Understanding catalytic performance through physicochemical gradients on the reactor scale	Atsushi Urakawa	Delft University of Technology
Aug 2nd (Tue) 13:00-13:40 Room B			
KN-12	S-scheme heterojunction photocatalyst and its environmental application	Jianguo Yu	China University of Geosciences
Aug 2nd (Tue) 14:00-14:40 Room A			
KN-13	Photo(electro)catalytic conversion of inorganic nitrogenous pollutants to dinitrogen	Wonyong Choi	Korea Institute of Energy Technology
Aug 2nd (Tue) 14:40-15:20 Room D			
KN-14	Catalyst development for CO₂ hydrogenation	Ning Yan	National University of Singapore
Aug 2nd (Tue) 15:50-16:30 Room C			
KN-15	Total oxidation of VOCs over cobalt oxide-based catalysts	Anne Giroir-Fendler	Université Claude Bernard Lyon
Aug 2nd (Tue) 16:50-17:30 Room A			
KN-16	Catalysts under dynamic reaction conditions for emission control and sustainable production of chemicals	Jan-Dierk Grunwaldt	Karlsruher Institut für Technologie

Keynote Lecture Speakers



Gabriele Centi
Università degli Studi di Messina
Italy



Jinquang Chen
Columbia University
USA



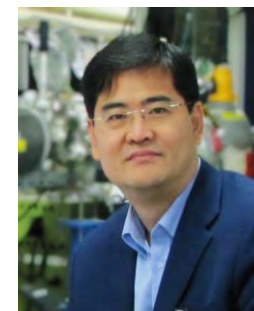
Wonyong Choi
Korea Institute of Energy Technology
Korea



Anne Giroir-Fendler
Université Claude Bernard Lyon
France



Jan-Dierk Grunwaldt
Karlsruher Institute of Technology
Germany



Hong He
Chinese Academy of Sciences
China



Do Heui Kim
Seoul National University
Korea



Yongdan Li
Aalto University
Finland



**Stefan
Marx BAFS
Germany**



**Masaru Ogura
The University of Tokyo
Japan**



**Michael Stockenhuber
The University of Newcastle
Australia**



**Todd J. Toops
Oak Ridge National Laboratory
USA**



**Atsushi Urakawa
Delft University of Technology
Netherlands**



**Kevin C. W. Wu
National Taiwan University
Taiwan**



**Ning Yan
National University of Singapore
Singapore**



**Jianguo Yu
China University of Geosciences
China**

Program of ICEC2022

Special Session of Applied Catalysis B

Session Coordinator: Hiromi Yamashita (Osaka University)
(Room D)
(Japan Standard Time)

Aug 1st (Mon) 13:00-13:10 Room D

Opening of Session
In-Sik Nam (Pohang University of Science and Technology)
Natalia Lee (Elsevier)

Aug 1st (Mon) 13:10-13:35 Room D

SIL-1	Catalyst advances for highly performing and durable anion exchange membrane fuel cells	William E. Mustain	University of South Carolina
--------------	---	---------------------------	-------------------------------------

Aug 1st (Mon) 13:35-14:00 Room D

SIL-2	Challenges of photocatalysis and their coping strategies	Hexing Li	Shanghai Normal University
--------------	---	------------------	-----------------------------------

Aug 1st (Mon) 14:00-14:25 Room D

SIL-3	Photocatalytic self-Fenton high-throughput mineralization of organic pollutants in water	Yongfa Zhu	Tsinghua University
--------------	---	-------------------	----------------------------

Aug 1st (Mon) 14:25-14:50 Room D

SIL-4	Heterogenous reaction mechanism of typical VOCs for SOA formation and implication for VOCs catalytic abatement	Taicheng An	Guangdong University of Technology
--------------	---	--------------------	---

Aug 1st (Mon) 14:50-15:15 Room D

SIL-5	Nanocatalyst engineering for CO₂ hydrogenation to formic acid as a promising hydrogen storage material	Kohsuke Mori	Osaka University
--------------	--	---------------------	-------------------------

Program of ICEC2022

Special Session of Applied Catalysis B

Session Coordinator: Hiromi Yamashita (Osaka University)
(Room D)
(Japan Standard Time)

Aug 1st (Mon) 15:50-16:15 Room D

SIL-6	Scale-up and demonstration of photocatalytic nanofiltration reactor for water purification and reuse	Polycarpos Falaras	Institute of Nanoscience and Nanotechnology
--------------	---	---------------------------	--

Aug 1st (Mon) 16:15-16:40 Room D

SIL-7	CO₂ reduction to fuels by water driven by photocatalysis	Junwang Tang	University College London
--------------	--	---------------------	----------------------------------

Aug 1st (Mon) 16:40-17:05 Room D

SIL-8	Novel multifunctional microbial photo-electro-catalytic systems for conversion of inorganic carbon to acetate using semiconductor z-scheme heterojunctions	Gianluca Li Puma	Loughborough University
--------------	---	-------------------------	--------------------------------

Aug 1st (Mon) 17:05-17:30 Room D

SIL-9	Modifications of porous Ti-based photocatalysts and applied in CO₂ photocatalytic reduction	Jinlong Zhang	East China University of Science and Technology
--------------	---	----------------------	--

Aug 1st (Mon) 17:30-17:55 Room D

SIL-10	Design and preparation of efficient heterogeneous catalysts for full oxidation of HCHO: from Pt-based to Ag-based catalysts	Feng-Shou Xiao	Zhejiang University
---------------	--	-----------------------	----------------------------

Aug 1st (Mon) 17:55-18:05 Room D

Closing of Session

Xenophon Verykios (University of Patras)

Program of ICEC2022 (Japan Standard Time)

	July 30th (Sat)	July 31st (Sun)				August 1st (Mon)				August 2nd (Tue)			
	Room A	Room A	Room B	Room C	Room D	Room A	Room B	Room C	Room D	Room A	Room B	Room C	Room D
8:00		Registration				Registration				Registration			
9:00		PL-2 Christopher W. Jones				PL-3 Hirohito Hirata				PL-4 Junhua Li			
10:00		Break				Break				Break			
		KN-1 Hong He	OB01	OC01	OD01	OA16	KN-6 Do Heui Kim	OC18	OD18	KN-10 Jingguang Chen	OB33	OC35	OD23
			OB02	OC02	OD02	OA17		OC19	OD19		OB34	OC36	OD24
11:00		OA01	OB03	OC03	OD03	OA18	OB18	OC20	OD20	OA33	OB35	OC37	OD25
		OA02	KN-2 Todd J. Toops	OC04	OD04	OA19	OB19	OC21	OD21	OA34	OB36	OC38	KN-11 Atsushi Urakawa
		OA03	OC05	OD05	OA20	OB20	OC22	OD22	OA35	OB37	OC39		
12:00		Lunch				Lunch				Lunch			
13:00		KN-3 Michael Stockenhuber	OB04	OC06	OD06	KN-7 Masaru Ogura	OB21	OC23	OD26	OA36	KN-12 Jiaguo Yu	OC40	OD26
			OB05	OC07	OD07		OB22	OC24	OD27	OA37		OC41	OD27
		OA04	OB06	OC08	OD08	OA21	OB23	OC25	OD28	OA38	OB38	OC42	OD28
14:00	Registration	OA05	OB07	OC09	OD09	OA22	OB24	OC26	OD29	KN-13 Wonyong Choi	OB39	OC43	OD29
		OA06	OB08	OC10	OD10	OA23	OB25	OC27	OD30		OB40	OC44	OD30
		OA07	OB09	KN-4 Yongdan Li	OD11	OA24	KN-8 Kevin C. W. Wu	OC28	OD31	OA39	OB41	OC45	KN-14 Ning Yan
15:00			OA08	OB10	OD12	OA25		OC29	OD32	OA40	OB42	OC46	
		Break				Break				Break			
16:00	Opening	OA09	OB11	OC11	OD13	OA26	OB26	OC30	OD31	OA41	OB43	KN-15 Anne Giroir- Fendler	OD31
		OA10	OB12	OC12	OD14	OA27	OB27	OC31	OD32	OA42	OB44		OD32
	PL-1 Christopher Hardacre	OA11	OB13	OC13	OD15	OA28	OB28	OC32	OD33	OA43	OB45	OC47	OD33
17:00		OA12	OB14	OC14	KN-5 Stefan Marx	OA29	OB29	KN-9 Gabriele Centi	OD34	KN-16 Jan-Dierk Grunwaldt	OB46	OC48	OD34
		OA13	OB15	OC15	OD16	OA30	OB30	OC33	OD35		OB47	OC49	OD35
		OA14	OB16	OC16	OD17	OA31	OB31	OC34	OD36	OA44	OB48	OC50	OD36
18:00		OA15	OB17	OC17	OD17	OA32	OB32	OC34	OD37	OA45	OB49	OC51	OD37
		Break				Break				Break			
19:00		Short Presentation of Poster (Room A) in-person only	Poster P01 - P40 (Room P-1)	Poster P41 - P83 (Room P-2)		Short Presentation of Poster (Room A) in-person only	Poster P84 - P130 (Room P-1)	Poster P131 - P175 (Room P-2)		Closing			
20:00													

Presentation time including Q&A (min)	
Plenary	60
Keynote	40
Special Invited	25
Invited	20
Oral	20
Poster	90
Short Presentation	5

Program of ICEC2022

July 30th (Sat) **Room A** (Japan Standard Time)

16:00-16:30	Opening	
	Hiromi Yamashita	(Chair of ICEC2022, Osaka University)
	Atsushi Satsuma	(Chair of ICEC2022, Nagoya University)
	Michael Stockenhuber	(Chair of IAB of ICEC, The University of Newcastle)
	Ichiro Yamanaka	(President of CSJ, Tokyo Institute of Technology)

Room A July 30th(Sat) 16:30-17:30			
Chair: Atsushi Satsuma (Nagoya University)			
No.	Title of Paper	Authors	Affiliation
PL-1 16:30-17:30	Investigating non thermal plasma catalysis using in-situ methods	Christopher Hardacre	University of Manchester

Program of ICEC2022

July 31st (Sun) **Room A** (Japan Standard Time)

Room A July 31st (Sun) 9:00-10:00			
Chair: Masato Machida (Kumamoto University)			
No.	Title of Paper	Authors	Affiliation
PL-2 9:00-10:00	Porous materials in CO ₂ capture & conversion	Christopher W. Jones	Georgia Institute of Technology

Room A July 31st (Sun) 10:20-12:00			
Chair: Masaaki Haneda (Nagoya Institute of Technology)			
Xinyong Li (Dalian University of Technology)			
No.	Title of Paper	Authors	Affiliation
KN-1 10:20-11:00	Why Cu-zeolites are efficient and stable catalysts for NH ₃ -SCR of NO _x	Yulong Shan, Jinpeng Du, Feng-Shou Xiao, <u>Hong He</u>	Chinese Academy of Sciences
OA01 11:00-11:20	Silica modulated palladium catalyst with superior activity for the selective catalytic reduction of nitrogen oxides with hydrogen	<u>Shaohua Xie</u> , Yuejin Li, Fudong Liu	University of Central Florida
OA02 11:20-11:40	Microwave-assisted synthesis of manganese oxide catalysts for total toluene oxidation	<u>Peifen Wang</u> , Xiaowei An, Xuli Ma, Xiaogang Hao, Abuliti Abudula, Guoqing Guan	Taiyuan University of Technology
OA03 11:40-12:00	Selective catalytic reduction of NO _x by methanol on metal-free zeolite with Brønsted and Lewis acid pair	<u>Han Sun</u> , Fei Han, Yaxin Xu, Haijun Chen	Nankai University

Program of ICEC2022

July 31st (Sun) Room A (Japan Standard Time)

Room A July 31st (Sun) 13:00-15:20			
Chair: Atsushi Satsuma (Nagoya University)			
Haijun Chen (Nankai University)			
No.	Title of Paper	Authors	Affiliation
KN-3 13:00- 13:40	Controlling catalytic processes via catalytic acid and redox site manipulation for environmental applications	Penghui Yan, Luke Harvey, Xinxin Tian, Eric Kennedy, <u>Michael Stockenhuber</u>	The University of Newcastle
OA04 13:40- 14:00	Oxidation of carbon monoxide at low temperature over silver supported on titanium dioxide	<u>Naoki Mimura</u> , Maya Chatterjee, Norihito Hiyoshi, Takashi Fukuda, Masateru Nishioka	National Institute of Advanced Industrial Science and Technology (AIST)
OA05 14:00- 14:20	Preparation of atomic Pd site supported Ti-SBA-15 for efficient typical VOCs combustion	<u>Meicheng Wen</u> , Shengnan Song, Qiuxia Liu, Meiyu Lv, Taicheng An	Guangdong University of Technology
OA06 14:20- 14:40	<u>Invited</u> Efficient adsorption and destructive desorption of VOCs on copper-manganese spinel oxides with microwave heating process	Siyu Ding, Tatsuya Hamashima, Hajime Hojo, <u>Hisahiro Einaga</u>	Kyushu University
OA07 14:40- 15:00	Adsorption and catalysis conversion for removal and recovery of volatile organic compounds	<u>Xinyong Li</u>	Dalian University of Technology
OA08 15:00- 15:20	Tuning SMSI to improve the catalytic performance of Pd/TiO ₂ for HCHO oxidation	<u>Chunying Wang</u> , Yaobin Li, Changbin Zhang, Wenpo Shan, Hong He	Chinese Academy of Sciences

Program of ICEC2022

July 31st (Sun) Room A (Japan Standard Time)

Room A July 31st (Sun) 15:50-18:10 Chair: Hisahiro Einaga (Kyushu University) Meicheng Wen (Guangdong University of Technology)			
No.	Title of Paper	Authors	Affiliation
OA09 15:50-16:10	Reaction mechanism of NO _x reduction in an electric field at low temperatures	<u>Ayaka Shigemoto</u> , Takuma Higo, Yuki Narita, Yuki Omori, Kohei Sugihara, Toru Uenishi, Yasushi Sekine	Waseda University
OA10 16:10-16:30	<u>Invited</u> Selective catalytic reduction of NO _x by methanol on zeolites	<u>Haijun Chen</u> , Han Sun, Yaxin Xu, Dekai Liu	Nankai University
OA11 16:30-16:50	<u>Invited</u> Interplay between NO Reduction and NH ₃ Oxidation during SCR Reaction over CuSSZ-13 Catalysts Revealed by Isotopic ¹⁵ NH ₃ and ¹⁸ O ₂ Catalytic Studies Supported by EPR and IR Spectroscopy and First Principles Thermodynamic Modelling	P. Pietrzyk, M. Fedyna, K. Gora-Marek, B. Mozgawa, F. Zasada, Ch. Yin, Zh. Zhao, <u>Z. Sojka</u>	Jagiellonian University
OA12 16:50-17:10	Catalytic activity of Co ₃ O ₄ nanoparticles embedded in yolk-shell structures in combustion of toluene	<u>Anna Rokicińska</u> , Piotr Łatka, Bazyli Olszański, Magdalena Żurowska, Marek Drozdek, Marek Michalik, Piotr Kuśtrowski	Jagiellonian University
OA13 17:10-17:30	Maximizing information with a data-driven modeling framework for NH ₃ adsorption in a vanadium-based SCR catalyst	<u>Andres F. Suarez-Corredor</u> , Matthäus U. Bäbler, Louise Olsson, Magnus Skoglundh, Björn Westerberg	Chalmers University of Technology
OA14 17:30-17:50	Reactivity of Fe-MOR and Fe-FER in the catalytic abatement of N ₂ O with CH ₄ : in situ UV-vis and operando FT-IR study	Maria Cristina Campa, Daniela Pietrogiaconi, Carlotta Catracchia, Joanna Olszowka, Kinga Mlekodaj, Mariia Lemishka, Jiri Dedecek, <u>Edyta Tabor</u>	Sapienza University of Rome
OA15 17:50-18:10	Investigation of hysteresis phenomena during CO oxidation over Pt-based catalyst: a SSITKA-IR study	Ibrahim Hatoum, Méliissandre Richard, <u>Christophe Dujardin</u>	UCCS Centrale Lille

Program of ICEC2022

July 31st (Sun) Room B (Japan Standard Time)

Room B July 31st (Sun) 10:20-12:00			
Chair: Machida Masato (Kumamoto University)			
Tetsuya Shishido (Tokyo Metropolitan University)			
No.	Title of Paper	Authors	Affiliation
OB01 10:20-10:40	Reactivity of lattice oxygen in Ti-site substituted SrTiO ₃ catalyst for CO oxidation	<u>Saburo Hosokawa</u> , Yuji Yoshiyama, Masaaki Haneda, Hiroyuki Asakura, Kentaro Teramura, Tsunehiro Tanaka	Kyoto Institute of Technology
OB02 10:40-11:00	<u>Invited</u> Vanadium-titanium catalysts for synergistic elimination of VOCs and NOx from coal-fired flue gas	<u>Yun Hu</u> , Gaofei Xiao, Ziyang Guo, Beilong Lin	South China University of Technology
OB03 11:00-11:20	<u>Invited</u> Catalytic Non-thermal Plasma Reactor for Air Cleaning	KVSS Bhargavi, M. Umamaheshwara Rao, <u>Ch. Subrahmanyam</u>	Indian Institute of Technology, Hyderabad
KN-2 11:20-12:00	Novel low-temperature emission control catalysts for lean and stoichiometric applications	<u>Todd J. Toops</u>	Oak Ridge National Laboratory

Program of ICEC2022

July 31st (Sun) Room B (Japan Standard Time)

Room B July 31st (Sun) 13:00-15:20			
Chair: Shinji Iwamoto (Gunma University) Yun Hu (South China University of Technology)			
No.	Title of Paper	Authors	Affiliation
OB04 13:00-13:20	Influence of supporting substrates to the adsorption mechanism of toxic gases on graphene surface for environmental monitoring: first principle investigation	<u>Viet Bac T. Phung</u> , Van An Dinh	VNU Vietnam Japan University
OB05 13:20-13:40	Low-temperature NO _x removal (NH ₃ -SCR) in the presence of water over Na incorporated V ₂ O ₅	Yusuke Inomata, Hiroe Kubota, Yoshinori Honmatsu, Sosuke Sakotani, Kazuhiro Yoshida, Takashi Toyao, Ken-ichi Shimizu, <u>Toru Murayama</u>	Tokyo Metropolitan University
OB06 13:40-14:00	Aerosol-assisted synthesis of mesoporous titanium oxide with controlled porosity	<u>Yuxiao Zhang</u> , Ryutaro Wakabayashi, Tatsuo Kimura	National Institute of Advanced Industrial Science and Technology
OB07 14:00-14:20	<u>Invited</u> Ethylene oxidation by supported platinum catalyst for preservation of fruits and vegetables	<u>Atsushi Fukuoka</u>	Hokkaido University
OB08 14:20-14:40	<u>Invited</u> Selective catalytic reduction of NO over Rh supported on hydroxyapatite	Shun Doi, Hiroki Miura, <u>Tetsuya Shishido</u>	Tokyo Metropolitan University
OB09 14:40-15:00	Anchoring on the surface and doping in the structure: the two existing forms of Ag in perovskite realize the simultaneous catalytic oxidation or removal of various pollutants from diesel emissions	<u>Lijun He</u> , Yan Zhang, Liehao Wei, Weichao Wang, Caixia Liu, Qingling Liu	Tianjin University
OB10 15:00-15:20	<u>Invited</u> A diffusion blocking effect of hexaaluminate in inhibiting thermal deactivation of supported Rh nanoparticle catalyst	Shundai Iwashita, Hiroshi Yoshida, Junya Ohyama, <u>Masato Machida</u>	Kumamoto University

Program of ICEC2022

July 31st (Sun) Room B (Japan Standard Time)

Room B July 31st (Sun) 15:50-18:10			
Chair: Toru Murayama (Tokyo Metropolitan University)			
Ch. Subrahmanyam (Indian Institute of Technology)			
No.	Title of Paper	Authors	Affiliation
OB11 15:50- 16:10	Boosting the catalytic reduction performance and resistance of deactivation to vanadium based catalyst	<u>Bora Jeong</u> , Myeung-jin Lee, Geumyeon Lee, Bora Ye, Hong-Dae Kim	Korea Institute of Industrial Technology
OB12 16:10- 16:30	Insight into the interaction of Ce-W active sites at different temperatures and their effects on NH ₃ -SCR performance	<u>Jingjing Liu</u> , Yunbo Yu, Xiaoyan Shi, Qingcai Feng, Hong He	Chinese Academy of Sciences
OB13 16:30- 16:50	<u>Invited</u> Elucidation of oxygen reactivity at Pd-CZ interface in engine-aged three-way catalyst	<u>Masaaki Haneda</u> , Yuichiro Nakamura, Toyofumi Tsuda, Fumikazu Kimata, Saburo Hosokawa, Hiroyuki Asakura, Kinichi Iwachido	Nagoya Institute of Technology
OB14 16:50- 17:10	Design of Ag and Ag-Pt catalysts on Ce-Mn oxides for aftertreatment of exhaust gases emitted by diesel engines	Maria Grabchenko, Daria Savenko, Tamara Kharlamova, Eleonora La Greca, Giuseppe Pantaleo, Luca Consentino, Valeria La Parola, Olga Vodyankina, <u>Leonarda Francesca Liotta</u>	National Research Council (CNR)
OB15 17:10- 17:30	Mesoporous silica materials modified with copper by TIE method as catalysts for low-temperature NH ₃ -SCR process	<u>Lucjan Chmielarz</u> , Aleksandra Jankowska, Andrzej Kowlaczyk, Małgorzata Rutkowska	Jagiellonian University
OB16 17:30- 17:50	A green route to the catalytic nitrous oxide decomposition by copper doped hydroxyapatites	<u>Sebastiano Campisi</u> , Melissa G. Galloni, Sara Morandi, Maela Manzoli, Antonella Gervasini	Università degli Studi di Milano
OB17 17:50- 18:10	Study of a basic support in the oxidation of humid, lean methane gas streams	<u>Matthew Bligh</u> , Matthew Drewery, Eric M. Kennedy, Michael Stockenhuber	University of Newcastle

Program of ICEC2022

July 31st (Sun) Room C (Japan Standard Time)

Room C July 31st (Sun) 10:20-12:00			
Chair: Takato Mistudome (Osaka University)			
Gokhan Celik (Middle East Technical University)			
No.	Title of Paper	Authors	Affiliation
OC01 10:20- 10:40	Elucidation of ammonia synthesis over Cs-promoted Ru catalysts supported on mesoporous carbon	Wei-Chih Hsiao, <u>Shih-Yuan Chen</u> , Masayasu Nishi, Takehisa Mochizuki, Ho-Hsiu Chou, Hsin-Yi Tiffany Chen, Chia-Min Yang	National Institute of Advanced Industrial Science and Technology (AIST)
OC02 10:40- 11:00	Reduction of 1,2-octanediol to dioctyl ether over WO _x -Pd/TiO ₂ catalyst	<u>Yoshinao Nakagawa</u> , Hiroki Hayasaka, Masazumi Tamura, Keiichi Tomishige	Tohoku University
OC03 11:00- 11:20	Edge-confined 2D 1T-MoS ₂ boosting selective hydrogenation of maleic anhydride	<u>Yi Zhao</u> , Yongfa Zhu, Yang Lou	Jiangnan University
OC04 11:20- 11:40	Phthalic acid-immobilized polymer beads of hyperbranched poly(ether ketone) for hydrolysis of glycosidic bonds	<u>Yuta Nabae</u> , Tomomi Onitake, Teruaki Hayakawa, Cheng Yang, Atsushi Fukuoka, Hirokazu Kobayashi	Tokyo Institute of Technology
OC05 11:40- 12:00	Low-temperature hydrocracking of pyrolytic lignin over nickel-ruthenium/ceria-modified HZSM-5	<u>Lien Thi Do</u> , Jae-Wook Choi, Jeong-Myeong Ha, Chun-Jae Yoo	Korea Institute of Science and Technology

Program of ICEC2022

July 31st (Sun) Room C (Japan Standard Time)

Room C July 31st (Sun) 13:00-15:20			
Chair: Yoshinao Nakagawa (Tohoku University) Yuta Nabae (Tokyo Institute of Technology)			
No.	Title of Paper	Authors	Affiliation
OC06 13:00- 13:20	Controlling surface hydrogen and its utilization for low temperature ammonia synthesis	<u>Hiroshi Sampei</u> , Kota Murakami, Atsushi Ishikawa, Takuma Higo, Hideaki Tsuneki, Hiromi Nakai, Yasushi Sekine	Waseda University
OC07 13:20- 13:40	Effect of chlorination on the catalytic activity of ZrO ₂ toward nonoxidative propane dehydrogenation	<u>Gokhan Celik</u> , Asmae Bouziani	Middle East Technical University
OC08 13:40- 14:00	Air-stable non-noble metal phosphide catalysts for selective hydrogenation reactions	<u>Takato Mitsudome</u> , Min Sheng, Sho Yamaguchi, Tomoo Mizugaki	Osaka University
OC09 14:00- 14:20	Selective reduction of cinnamaldehyde over Zr-based MOF catalysts in the presence of water	<u>Keita Taniya</u> , Atsushi Sakamoto, Takafumi Horie, Yuichi Ichihashi, Satoru Nishiyama	Kobe University
OC10 14:20- 14:40	Invited Design of supported iridium catalysts for the synthesis of benzoxazoles via a borrowing hydrogen route	<u>Kenji Wada</u> , Han Yu, Qi Feng	Kagawa University
KN-4 14:40- 15:20	Reaction pathways of catalytic lignin conversion in ethanol	<u>Yongdan Li</u> , Yushuai Sang	Aalto University

Program of ICEC2022

July 31st (Sun) Room C (Japan Standard Time)

Room C July 31st (Sun) 15:50-18:10			
Chair: Kenji Wada (Kagawa University) Keita Taniya (Kobe University)			
No.	Title of Paper	Authors	Affiliation
OC11 15:50- 16:10	Metal sulfates as air cleaning catalysts under ambient conditions	<u>Hideyuki Okumura</u> , Shohei Nakanishi, Yusuke Sawashima, Koji Yoshikawa, Keiichi N. Ishihara	Kyoto University
OC12 16:10- 16:30	Enzyme-mimicking single-atom catalysts for boosted Fenton-like reactions and catalytic water decontamination	Zhongshuai Zhu, Shaobin Wang, <u>Xiaoguang Duan</u>	The University of Adelaide
OC13 16:30- 16:50	Catalytic Liquid-phase oxidation of phenol using novel catalysts based on lanthanum oxyfluoride	<u>Naoyoshi Nunotani</u> , Zhuowei Li, Nobuhito Imanaka	Osaka University
OC14 16:50- 17:10	Carbon quantum dots Fenton-like catalysis	<u>Ting Zhang</u> , Xufang Qian	Shanghai Jiao Tong University
OC15 17:10- 17:30	Efficient activation of peroxymonosulfate (PMS) by metal oxides for degradation of ibuprofen (IBF)	Cheng-Wei Lin, Meng-Wei Zheng, <u>Shou-Heng Liu</u>	National Cheng Kung University
OC16 17:30- 17:50	Water flow-triggered piezo-activation of persulfate for water treatment	<u>Mingshan Zhu</u> , Shenyu Lan	Jinan University
OC17 17:50- 18:10	Removal and decomposition of nitrate over anion-exchange resin containing gold nanoparticles toward purification of groundwater polluted with nitrate	<u>Bobo Yan</u> , Koki Kato, Ryoichi Otomo, Yuichi Kamiya	Hokkaido University

Program of ICEC2022

July 31st (Sun) Room D (Japan Standard Time)

Room D July 31st (Sun) 10:20-12:00			
Chair: Hiroshi Onishi (Kobe University)			
Zhenfeng Bian (Shanghai Normal University)			
No.	Title of Paper	Authors	Affiliation
OD01 10:20-10:40	<u>Invited</u> Initiative invasion assisted photoelectrocatalytic antibacterial route based on ZIF-67@CoO photoanode	Mengna Ding, <u>Yuning Huo</u> , Hexing Li	Shanghai Normal University
OD02 10:40-11:00	Photoelectrochemical oxidation of cellulose dissolved in aqueous solution for electric power generation or hydrogen evolution	<u>Yosuke Kageshima</u> , Hiromasa Wada, Katsuya Teshima, Hiromasa Nishikiori	Shinshu University
OD03 11:00-11:20	Doping and build-in electric field mediated Z-scheme Mo-doped ZnIn ₂ S ₄ /NiTiO ₃ heterojunction for efficient photocatalytic hydrogen evolution	<u>Jinchen Fan</u> , Jiafeng Zhu, Xueling Song, Lei Wang, Guisheng Li	University of Shanghai for Science and Technology
OD04 11:20-11:40	<u>Invited</u> Graphitic carbon nitride-based materials for photothermal generation of hydrogen	Xiaojie Li, Huayang Zhang, Hongqi Sun, <u>Shaobin Wang</u>	The University of Adelaide
OD05 11:40-12:00	Greenhouse inspired supra-photothermal CO ₂ catalysis	Mujin Cai, Zhiyi Wu, <u>Le He</u>	Soochow University

Program of ICEC2022

July 31st (Sun) Room D (Japan Standard Time)

Room D July 31st (Sun) 13:00-15:20			
Chair: Yosuke Kageshima (Shinshu University) Shaobin Wang (The University of Adelaide)			
No.	Title of Paper	Authors	Affiliation
OD06 13:00- 13:20	<u>Invited</u> Defect-engineering-promoted photocatalysis for NO removal	Ting Gao, <u>Chuanyi Wang</u>	Shaanxi University of Science and Technology
OD07 13:20- 13:40	<u>Invited</u> Infrared absorption of semiconductor photocatalysts excited under water: operando study with an ATR prism	Zhebin Fu, <u>Hiroshi Onishi</u>	Kobe University
OD08 13:40- 14:00	Controllable synthesis and efficient hydrogen production of ultra-thin carbon nitride materials	<u>Hui Xu</u>	Energy Research Institute of Jiangsu University
OD09 14:00- 14:20	Fabrication of MnOOH modified TiO ₂ (B) microspheres to enhance photocatalytic NO _x conversion and selectivity	<u>He Ma</u> , Changhua Wang, Xintong Zhang	Northeast Normal University
OD10 14:20- 14:40	Design of metal-organic framework photocatalysts with linker defects for efficient hydrogen production under visible light	<u>Yu Horiuchi</u> , Masaya Matsuoka	Osaka Metropolitan University
OD11 14:40- 15:00	<u>Invited</u> Precious metals recovery through photocatalysis	<u>Zhenfeng Bian</u>	Shanghai Normal University
OD12 15:00- 15:20	<u>Invited</u> Robust construction of CdSe nanobelts@Ti ₃ C ₂ MXene nanosheet for superior photocatalytic H ₂ evolution	Huajun Gu, Huihui Zhang, Xinglin Wang, <u>Wei-Lin Dai</u>	Fudan University

Program of ICEC2022

July 31st (Sun) Room D (Japan Standard Time)

Room D July 31st (Sun) 15:50-18:10			
Chair: Takanori Miyake (Kansai University)			
Wei-Lin Dai (Fudan University)			
No.	Title of Paper	Authors	Affiliation
OD13 15:50- 16:10	Spinel based photocatalyst for efficient CO ₂ conversion	<u>Shiying Fan</u> , Xinong Li	Dalian University of Technology
OD14 16:10- 16:30	Surface engineering of titania boosts electro-assisted propane dehydrogenation at low temperature	<u>Jianshuo Zhang</u> , Shinya Furukawa	Hokkaido University
OD15 16:30- 16:50	New green path to high-value chemicals from CO ₂ by electrocatalysis	<u>Siglinda Perathoner</u> , Salvatore Abate, Rosalba Passalacqua, Gabriele Centi	University of Messina
KN-5 16:50- 17:30	Scale-up and application of MOF "CALF-20" for CO ₂ capture from Flue Gases	<u>Stefan Marx</u> , Omid Ghaffari-Nik, Pierre Hovington, George K. H. Shimizu	BAFS
OD16 17:30- 17:50	<u>Invited</u> Hydrolysis behaviour of polyester resins in high-temperature liquid water	<u>Masayuki Shirai</u> , Kenkichi Taniguchi, Etty N. Kusumawati, Hidetaka Nanao, Aritomo Yamaguchi, Osamu Sato	Iwate University
OD17 17:50- 18:10	New electrodes for CO ₂ reduction using zeolite-template carbon to close the C-cycle in industrial processes	G. Papanikolaou, G. Centi, <u>S. Perathoner</u> , P. Lanzafame	University of Messina

Program of ICEC2022 (Japan Standard Time)

		July 31st (Sun)				August 1st (Mon)				August 2nd (Tue)			
July 30th (Sat)		Room A	Room B	Room C	Room D	Room A	Room B	Room C	Room D	Room A	Room B	Room C	Room D
8:00		Registration				Registration				Registration			
9:00		PL-2 Christopher W. Jones				PL-3 Hirohito Hirata				PL-4 Junhua Li			
10:00		Break				Break				Break			
		KN-1 Hong He	OB01	OC01	OD01	OA16	KN-6 Do Heui Kim	OC18	OD18	KN-10 Jingguang Chen	OB33	OC35	OD23
			OB02	OC02	OD02	OA17		OC19	OD19		OB34	OC36	OD24
11:00		OA01	OB03	OC03	OD03	OA18	OB18	OC20	OD20	OA33	OB35	OC37	OD25
		OA02	KN-2 Todd J. Toops	OC04	OD04	OA19	OB19	OC21	OD21	OA34	OB36	OC38	KN-11 Atsushi Urakawa
		OA03		OC05	OD05	OA20	OB20	OC22	OD22	OA35	OB37	OC39	
12:00		Lunch				Lunch				Lunch			
13:00		KN-3 Michael Stockenhuber	OB04	OC06	OD06	KN-7 Masaru Ogura	OB21	OC23	Special Session Opening	OA36	KN-12 Jiaguo Yu	OC40	OD26
			OB05	OC07	OD07		OB22	OC24	SIL-01	OA37		OC41	OD27
		OA04	OB06	OC08	OD08	OA21	OB23	OC25	SIL-02	OA38	OB38	OC42	OD28
14:00	Registration	OA05	OB07	OC09	OD09	OA22	OB24	OC26	SIL-03	KN-13 Wonyong Choi	OB39	OC43	OD29
		OA06	OB08	OC10	OD10	OA23	OB25	OC27	SIL-04		OB40	OC44	OD30
		OA07	OB09	KN-4 Yongdan Li	OD11	OA24	KN-8 Kevin C. W. Wu	OC28	SIL-05	OA39	OB41	OC45	KN-14 Ning Yan
		OA08	OB10		OD12	OA25		OC29		OA40	OB42	OC46	
		Break				Break				Break			
16:00	Opening	OA09	OB11	OC11	OD13	OA26	OB26	OC30	SIL-06	OA41	OB43	KN-15 Anne Giroir- Fendler	OD31
		OA10	OB12	OC12	OD14	OA27	OB27	OC31	SIL-07	OA42	OB44		OD32
	PL-1 Christopher Hardacre	OA11	OB13	OC13	OD15	OA28	OB28	OC32	SIL-08	OA43	OB45	OC47	OD33
17:00		OA12	OB14	OC14	KN-5 Stefan Marx	OA29	OB29	KN-9 Gabriele Centi	SIL-09	KN-16 Jan-Dierk Grunwaldt	OB46	OC48	OD34
		OA13	OB15	OC15		OA30	OB30		SIL-10		OB47	OC49	OD35
		OA14	OB16	OC16	OD16	OA31	OB31	OC33	Closing	OA44	OB48	OC50	OD36
		OA15	OB17	OC17	OD17	OA32	OB32	OC34		OA45	OB49	OC51	OD37
18:00		Break				Break				Break			
19:00		Short Presentation of Poster (Room A) in-person only	Poster P01 - P40 (Room P-1)	Poster P41 - P83 (Room P-2)		Short Presentation of Poster (Room A) in-person only	Poster P84 - P130 (Room P-1)	Poster P131 - P175 (Room P-2)		Closing			
20:00													

Presentation time including Q&A (min)	
Plenary	60
Keynote	40
Special Invited	25
Invited	20
Oral	20
Poster	90
Short Presentation	5

Program of ICEC202

August 1st (Mon) **Room A** (Japan Standard Time)

Room A August 1st (Mon) 9:00-10:00			
Chair: Masaru Ogura (The University of Tokyo)			
No.	Title of Paper	Authors	Affiliation
PL-3 9:00-10:00	Progress and future of automotive exhaust gas purification catalysts: materials, parts and R&D methods	Hirohito Hirata	Toyota Motor Corporation

Room A August 1st (Mon) 10:20-12:00			
Chair: Tatsumi Ishihara (Kyushu University)			
Chuanyi Wang (Shaanxi University of Science and Technology)			
No.	Title of Paper	Authors	Affiliation
OA16 10:20-10:40	Efficient NO reduction over Rh-modified Ir overlayer	<u>Hiroshi Yoshida</u> , Tomoyo Koide, Takuya Uemura, Junya Ohyama, Masato Machida	Kumamoto University
OA17 10:40-11:00	Nanoscale visualization of oxygen storage at Pd/CeO ₂ -ZrO ₂ solid solution interface through oxygen isotope labeling	<u>Tsuyoshi Nagasawa</u> , Shun Ishikawa, Susumu Sato, Hidenori Kosaka	Tokyo Institute of Technology
OA18 11:00-11:20	Comparison of catalytic technologies for oxidation of humid, lean methane gas streams	<u>Matthew Drewery</u> , Matthew Bligh, Eric M. Kennedy, Michael Stockenhuber	University of Newcastle
OA19 11:20-11:40	<u>Invited</u> Synthesis of core-shell structured FAU@BEA zeolites and their HC trap performance	<u>Shinji Iwamoto</u> , Takashi Kubota, Fuya Sugiyama, Maki Fukuda, Yutaro Tsuji, Yasuyuki Takeda	Gunma University
OA20 11:40-12:00	Understanding morphology-dependent BaCoO ₃ /CeO ₂ interactions for highly efficient NO direct decomposition	<u>Running Kang</u> , Xuehai Wang, Gang Wang, Yongdan Li	Aalto University

Program of ICEC202

August 1st (Mon) Room A (Japan Standard Time)

Room A August 1st (Mon) 13:00-15:20 Chair: Masaaki Haneda (Nagoya Institute of Technology) Do Heui Kim (Seoul National University)			
No.	Title of Paper	Authors	Affiliation
KN-7 13:00-13:40	From deNO _x to reNO _x : NH ₃ generation by use of NO in combustion exhaust	<u>Masaru Ogura</u> , Tetsuya Nanba, Yuichi Manaka	The University of Tokyo
OA21 13:40-14:00	<u>Invited</u> Design of platinum group metal-free automotive three-way catalyst: MgMn ₂ O ₄ and CuCo ₂ O ₄ in tandem layout	Keisuke Maruichi, Ryosuke Sakai, Kakuya Ueda, Akira Oda, <u>Atsushi Satsuma</u>	Nagoya University
OA22 14:00-14:20	New insights into the influence of metal sulfides precursor on SO ₂ resistance property for NH ₃ -SCR catalyst	<u>Bora Ye</u> , Bora Jeong, Myeung-Jin Lee, Kyung-yo Park, Donghyeok Kim, Jung Jae il, Hong-Dae Kim	Korea Institute of Industrial Technology
OA23 14:20-14:40	<u>Invited</u> Simultaneous removal of particulate matter (PM) and NO _x from diesel engines exhaust gas	<u>Tatsumi Ishihara</u> , Ryo Takahashi, Jun Tae Song, Motoonoari Watanabe, and Atsushi Takagaki	Kyushu University
OA24 14:40-15:00	Three-way catalytic performance of IrRh nanoparticles supported on Y-stabilized ZrO ₂	<u>Yoshihide Nishida</u> , Koki Aono, Hiromi Togashi, Shunsuke Ohishi, Masaaki Haneda	Nagoya Institute of Technology
OA25 15:00-15:20	<u>Invited</u> Preparation of LaFeO ₃ perovskite-type mixed oxide partially substituted by Ce ion	<u>Hidenori Yahiro</u> , Hinano Tabara, Misaki Akai, Masami Mori, Hiroyuki Yamaura, Syuhei Yamaguchi, Kakeru Ninomiya, Maiko Nishibori	Ehime University

Program of ICEC202

August 1st (Mon) **Room A** (Japan Standard Time)

Room A August 1st (Mon) 15:50-18:10 Chair: Hui Xu (Energy Research Institute of Jiangsu University) Yuxiao Zhang (AIST)			
No.	Title of Paper	Authors	Affiliation
OA26 15:50-16:10	Efficiently non-sacrificial H ₂ O ₂ production on BiPO ₄ photocatalyst	<u>Chengsi Pan</u> , Gaoming Bian, Yaning Zhang, Ying Zhang, Yang Lou, Yongfa Zhu	Jiangnan University
OA27 16:10-16:30	Design of frustrated Lewis pair in defective TiO ₂ for photocatalytic non-oxidative methane coupling	<u>Jiayu Ma</u> , Qingqing Zhang, Ziyu Chen, Kai Kang, Jinlong Zhang, Lingzhi Wang	East China University of Science and Technology
OA28 16:30-16:50	Influence of amine functionalization in hierarchically-porous support framework for plasmon-mediated catalysis	<u>Priyanka Verma</u> , Panashe Mhembere, Kohsuke Mori, Yasutaka Kuwahara, Robert Raja, Hiromi Yamashita	Osaka University
OA29 16:50-17:10	Photocatalytic hydrogen-recovering dye wastewater treatment through dual-functional hierarchical heterostructure	Jian Zhao, <u>Peng Zhang</u>	Shanghai University
OA30 17:10-17:30	Mechanistic investigation of water oxidation reaction catalyzed by a dinuclear cobalt complex with doubly N-confused hexaphyrin	<u>Takashi Nakazono</u> , Tohru Wada, Yusuke Yamada	Osaka Metropolitan University
OA31 17:30-17:50	Reactive species-dependent toluene mineralization reaction mechanism	Qi Li, <u>Fa-tang Li</u>	Hebei University of Science and Technology
OA32 17:50-18:10	Photoelectrochemical CO ₂ reduction to formate over hybrid system of CdS photoanode and formate dehydrogenase under visible light irradiation	<u>Masanobu Higashi</u> , Takumi Toyodome, Itsuki Tanaka, Tomoko Yoshida, Yutaka Amao	Osaka Metropolitan University

Program of ICEC202

August 1st (Mon) **Room B** (Japan Standard Time)

Room B August 1st (Mon) 10:20-12:00			
Chair: Masaru Ogura (The University of Tokyo)			
Sung June Cho (Chonnam National University)			
No.	Title of Paper	Authors	Affiliation
KN-6 10:20-11:00	Novel method to overcome the sulfur poisoning of vanadia catalyst for NO _x removal	<u>Do Heui Kim</u>	Seoul National University
OB18 11:00-11:20	<u>Invited</u> Spectroscopy characterizations of active copper species in Cu-exchanged Ce-modified Y-zeolite for selective catalytic reduction of nitric oxide with ammonia	Ming-Pei Lin, Te-An Chiu, Soofin Cheng, <u>Wen-Yueh Yu</u>	National Taiwan University
OB19 11:20-11:40	Cesium as a dual-function promoter in Co/Ce-Sn catalyst for soot oxidation	<u>Meng Wang</u> , Yan Zhang, Yunbo Yu, Wenpo Shan, Hong He	Chinese Academy of Sciences
OB20 11:40-12:00	Utilization of highly crystallized CeO ₂ as an additive of Pt based catalyst for exhaust gas purification	<u>Hiroki Tanaka</u> , Itaru Morita, Yuki Nagao, Yoshinori Endo, Takashi Wakabayashi, Masaaki Haneda	Mitsui Mining & Smelting Co., Ltd.

Program of ICEC202

August 1st (Mon) Room B (Japan Standard Time)

Room B August 1st (Mon) 13:00-15:20			
Chair: Takanori Miyake (Kansai University) Zheng Wang (Chinese Academy of Sciences)			
No.	Title of Paper	Authors	Affiliation
OB21 13:00-13:20	Photo/electrochemical CO ₂ reduction to fuel by Cu _x O based nanomaterials	Wei Zhang, Luo Yu, <u>Ying Yu</u>	Central China Normal University
OB22 13:20-13:40	High-efficiency, carbon deposition-resistant Ni-CaO-based catalyst for integrated CO ₂ capture and conversion	Shuang Xing, <u>Rui Han</u> , Yang Wang, Caihong Pang, Yang Hao, Chunfeng Song, Qingling Liu	Tianjin University
OB23 13:40-14:00	Copolymerization of carbon dioxide and oxetane catalyzed by aluminum porphyrin complex system	<u>Masayoshi Honda</u> , Ryo Nakamura, Hiroshi Sugimoto	Tokyo University of Science
OB24 14:00-14:20	<u>Invited</u> One-step methyl acetate synthesis from CO ₂ on Cu-ZnO@SiO ₂ /FER	Xu Wang, So Yun Jeong, Eun Jeong Kim, <u>Jong Wook Bae</u>	Sungkyunkwan University
OB25 14:20-14:40	<u>Invited</u> Suppression of coke formation in controlled Ni particle catalyst supported on alumina with a secondary porosity over dry reforming of methane	Soon Hee Park, Kyeong Su Sin, <u>Sung June Cho</u>	Chonnam National University
KN-8 14:40-15:20	Functional MOFs and their derivatives for clean energy production and waste conversion	<u>Kevin C. W. Wu</u>	National Taiwan University

Program of ICEC202

August 1st (Mon) Room B (Japan Standard Time)

Room B August 1st (Mon) 15:50-18:10			
Chair: Ying Yu (Central China Normal University)			
Wen-Yueh Yu (National Taiwan University)			
No.	Title of Paper	Authors	Affiliation
OB26 15:50-16:10	Barium titanium oxyhydride: Synthesis and application as an ammonia synthesis catalyst	<u>Yoshihiro Goto</u> , Masashi Kikugawa, Keisuke Kobayashi, Yuichi Manaka, Tetsuya Nanba, Hideyuki Matsumoto, Marie Ishikawa, Mitsuru Matsumoto, Masakazu Aoki, Haruo Imagawa	Toyota Central R&D Labs., Inc.
OB27 16:10-16:30	Electrocatalytic ammonia synthesis via the reduction of nitrogen source under ambient conditions	<u>Haibo Yin</u> , Yue Peng, Junhua Li	Tsinghua University
OB28 16:30-16:50	Enhanced catalytic activity for ammonia synthesis over Ru/CaH ₂ by addition of oxygen	<u>Takaya Ogawa</u> , Ryusei Morimoto, Koichi Ueno, Hideyuki Okumura, Keiichi N. Ishihara	Kyoto University
OB29 16:50-17:10	Visible-light-driven overall water splitting on Ta-based oxynitride photocatalysts	<u>Zheng Wang</u>	Chinese Academy of Sciences
OB30 17:10-17:30	Low-temperature reverse water-gas shift reaction in the electric field	<u>Ryota Yamano</u> , Shuhei Ogo, Takuma Higo, Yasushi Sekine	Waseda University
OB31 17:30-17:50	Fe ₄ N promoted iron carbide for chemosynthesis of ethanol via hydrogenation of dimethyl oxalate	Huijiang Huang, Qiang Wang, Xin Shang, <u>Yujun Zhao</u> , Xinbin Ma	Tianjin University
OB32 17:50-18:10	3D carbon cage encapsulated ultrasmall MoC nanoparticles for promoting simultaneously photocatalytic hydrogen generation and organic wastewater degradation	<u>Sijia Liu</u> , Xifei Zhou, Junxian Qin, Yun Hu	South China University of Technology

Program of ICEC202

August 1st (Mon) Room C (Japan Standard Time)

Room C August 1st (Mon) 10:20-12:00			
Chair: Naoki Mimura (AIST)			
Jong Wook Bae (Sungkyunkwan University)			
No.	Title of Paper	Authors	Affiliation
OC18 10:20-10:40	Fibrous nano-carbon ring supported Au-Cu catalysts for the dehydrogenation of Ethanol to Acetaldehyde and its subsequent direct aldol reaction for the synthesis of 1,3-butanediol	<u>Mahlet N. Gebresillase</u> , Jeong Gil Seo	Hanyang University
OC19 10:40-11:00	Catalytic transesterification of polyesters using Lewis acid promoted heterogeneous metal oxide catalysts	<u>S. M. A. Hakim Siddiki</u> , Kotohiro Nomura	Tokyo Metropolitan University
OC20 11:00-11:20	High-efficient conversion of glycerol to methanol over CaO/HZSM-5 catalyst	<u>Thachapan Atchimarungsri</u> , Xinhua Gao, Prasert Reubroycharoen, Tiansheng Zhao	Chulalongkorn University
OC21 11:20-11:40	<u>Invited</u> Catalytic hydrogenolysis of alkanes and polyolefinic plastics catalyzed by ceria-supported Ru catalysts	<u>Keiichi Tomishige</u> , Masazumi Tamura	Tohoku University
OC22 11:40-12:00	Nitrous oxide reduction-coupled alkene-alkene coupling catalyzed by metalloporphyrin	Shunsuke Saito, Hiro Ohtake, Naoki Umezawa, Yuko Kobayashi, Masaaki Hirobe, <u>Tsunehiko Higuchi</u>	Nagoya City University

Program of ICEC202

August 1st (Mon) Room C (Japan Standard Time)

Room C August 1st (Mon) 13:00-15:20			
Chair: Saburo Hosokawa (Kyoto Institute of Technology)			
Young-Woong Suh (Hanyang University)			
No.	Title of Paper	Authors	Affiliation
OC23 13:00- 13:20	<u>Invited</u> Improvement of hydrogen production based on formate decomposition catalyzed with polyvinylpyrrolidone dispersed platinum nanoparticles using an isobaric system	<u>Yutaka Amao</u> , Masako Kuwata, Yumiko Muroga	Osaka Metropolitan University
OC24 13:20- 13:40	Selective oxidation of methane catalyzed by supported iron oxide subnanoclusters prepared from a diiron-introduced polyoxometalate precursor	<u>Tomohiro Yabe</u> , Keiju Wachi, Takaaki Suzuki, Kentaro Yonesato, Kosuke Suzuki, Kazuya Yamaguchi	The University of Tokyo
OC25 13:40- 14:00	Selective oxidation of furfural to succinic acid over Lewis acidic Sn-Beta	<u>Yayati Naresh Palai</u> , Abhijit Shrotri, Atsushi Fukuoka	Hokkaido University
OC26 14:00- 14:20	Catalytic transfer hydrogenation of furfural to gamma valerolactone (GVL) over copper phyllosilicate catalysts	Tanyarat Shoosri, Sanchai Kuboon, Tawan Sooknoi, <u>Patcharaporn Weerachawanasak</u>	King Mongkut's Institute of Technology Ladkrabang
OC27 14:20- 14:40	Hydrogenation activity of Cu(I)-based mixed metal oxides	<u>Soichi Kikkawa</u> , Chitomo Nagata, Kiyofumi Nitta, Seiji Yamazoe	Tokyo Metropolitan University
OC28 14:40- 15:00	Ammonia decomposition over Ru/CeO ₂ -PrO _x catalyst under high space velocity conditions for an onsite hydrogen-fueling station	<u>Kiyoshi Yamazaki</u> , Mitsuru Matsumoto, Marie Ishikawa, Akinori Sato	Toyota Central R&D Laboratories
OC29 15:00- 15:20	An in-situ DRIFTS study to probe the effect of Cs counterion of 12-moxybdophosphoric acid on the surface species during a selective oxidation of methacrolein to methacrylic acid	<u>Sarayute Chansaia</u> , Yuki Kato, Wataru Ninomiya, Christopher Hardacre	The University Manchester

Program of ICEC202

August 1st (Mon) Room C (Japan Standard Time)

Room C August 1st (Mon) 15:50-18:10			
Chair: Ryuji Kikuchi (Hokkaido University)			
Soichi Kikkawa (Tokyo Metropolitan University)			
No.	Title of Paper	Authors	Affiliation
OC30 15:50-16:10	Insight into the effect of CeO ₂ morphology on Ru/CeO ₂ for H ₂ generation from NH ₃ decomposition	<u>Thien An Le</u> , Young-Min Kim, Jeong-Rang Kim, Tae-Wan Kim, Su-Un Lee, Quoc-Cuong Do, Geo-Jong Kim, You-Jin Lee, Ho-Jeong Chae	Korea Research Institute of Chemical Technology
OC31 16:10-16:30	<u>Invited</u> Mesoporous Pt–MnO _x –Al ₂ O ₃ catalyst for dehydrogenation of perhydrobenzyltoluenes: Reconstruction of Pt–MnO _x clusters for activity boosting	Yeongin Jo, <u>Young-Woong Suh</u>	Hanyang University
OC32 16:30-16:50	Dehydrogenation of formic acid attained by biomass-derived carbon-supported catalysts	<u>Miriam Navlani-García</u> , Jessica Alejandra Chaparro-Garnica, David Salinas-Torres, Emilia Morallón, Diego Cazorla-Amorós	University of Alicante
KN-9 16:50-17:30	Catalysis for the net zero emission challenge	C. Ampelli, <u>G. Centi</u> , S. Perathoner	Università degli Studi di Messina
OC33 17:30-17:50	New catalytic process for more affordable polylactic acid	<u>Guillaume Pomalaza</u> , Bert Lagrain, Bert Sels	KU Leuven
OC34 17:50-18:10	Green electrocatalytic oxidation of furfural on gold nanoparticles stabilized in nanostructured carbon obtained by zeolites and mesoporous silica replica	<u>G. Papanikolaou</u> , D. Chillè, P. Squillaci, P. Lanzafame, G. Centi1, S. Perathoner, and M. Migliori, G. Giordano	University of Messina

Program of ICEC202

August 1st (Mon) **Room D** (Japan Standard Time)

Room D August 1st (Mon) 10:20-12:00 (Japan Standard Time)			
Chair: Yutaka Amao (Osaka Metropolitan University)			
Verma Priyanka (Shizuoka University)			
No.	Title of Paper	Authors	Affiliation
OD18 10:20-10:40	Ni-Pt thin film catalyst for hydrogen oxidation reaction under alkaline conditions	<u>Junya Ohyama</u> , Hideto Ushijima, Takashi Yamashita, Hiroshi Yoshida, Masato Machida	Kumamoto University
OD19 10:40-11:00	<u>Invited</u> Electrochemical CO ₂ conversion to hydrocarbon and alcohol	<u>Ryuji Kikuchi</u> , Naoya Fujiwara, Shohei Tada	Hokkaido University
OD20 11:00-11:20	Design and synthesis of ordered carbonaceous frameworks from metalloporphyrins for electrocatalytic application	<u>Takeharu Yoshii</u> , Koki Chida, Hirotomo Nishihara	Tohoku University
OD21 11:20-11:40	<u>Invited</u> Synthesis of liquid fuel from CO ₂ and H ₂ via FT synthesis method	<u>Shigeo Satokawa</u>	Seikei University
OD22 11:40-12:00	Effect of the in situ addition of chromate ions on H ₂ evolution during the photocatalytic conversion of CO ₂ using H ₂ O as the electron donor	<u>Xuanwen Xu</u> , Hiroyuki Asakura, Saburo Hosokawa, Tsunehiro Tanaka, Kentaro Teramura	Kyoto University

Program of ICEC202

August 1st (Mon) Room D (Japan Standard Time)

Special Session of Applied Catalysis B

Session Coordinator: Hiromi Yamashita (Osaka University)

13:00-
13:10

Opening of Session
In-Sik Nam (Pohang University of Science and Technology)
Natalia Lee (Elsevier)

Room D August 1st (Mon) 13:10-15:15

Chair: Hexing Li (Shanghai Normal University)

Taicheng An (Guangdong University of Technology)

Hiromi Yamashita (Osaka University)

No.	Title of Paper	Authors	Affiliation
SIL-1 13:10- 13:35	Catalyst advances for highly performing and durable anion exchange membrane fuel cells	<u>William E. Mustain</u> , Horie Adabi, Abolfazl Shakouri, Andrea Zitolo, Tristan Asset, Frédéric Jaouen, Christopher Williams, John R. Regalbuto	University of South Carolina
SIL-2 13:35- 14:00	Challenges of photocatalysis and their coping strategies	Zhenfeng Bian, Dieqing Zhang, Guisheng Li, Yuning Huo, <u>Hexing Li</u>	Shanghai Normal University
SIL-3 14:00- 14:25	Photocatalytic self-Fenton high-throughput mineralization of organic pollutants in water	<u>Yongfa Zhu</u>	Tsinghua University
SIL-4 14:25- 14:50	Heterogenous reaction mechanism of typical VOCs for SOA formation and implication for VOCs catalytic abatement	<u>Taicheng An</u> , Hongli Liu, Meicheng Wen, Weiping Zhang, Weina Zhang, Jiejing Kong	Guangdong University of Technology
SIL-5 14:50- 15:15	Nanocatalyst engineering for CO ₂ hydrogenation to formic acid as a promising hydrogen storage material	<u>Kohsuke Mori</u> , Hiromi Yamashita	Osaka University

Program of ICEC202

August 1st (Mon) **Room D** (Japan Standard Time)

Room D August 1st (Mon) 15:50-18:05 Chair: Yongfa Zhu (Tsinghua University) Hiromi Yamashita (Osaka University)			
No.	Title of Paper	Authors	Affiliation
SIL-6 15:50-16:15	Scale-up and demonstration of photocatalytic nanofiltration reactor for water purification and reuse	<u>Polycarpos Falaras</u> , George Em. Romanos	Institute of Nanoscience and Nanotechnology
SIL-7 16:15-16:40	CO ₂ reduction to fuels by water driven by photocatalysis	<u>Junwang Tang</u>	University College London
SIL-8 16:40-17:05	Novel multifunctional microbial photo-electrocatalytic systems for conversion of inorganic carbon to acetate using semiconductor z-scheme heterojunctions	<u>Gianluca Li Puma</u> , Liping Huang	Loughborough University
SIL-9 17:05-17:30	Modifications of porous Ti-based photocatalysts and applied in CO ₂ photocatalytic reduction	<u>Jinlong Zhang</u>	East China University of Science and Technology
SIL-10 17:30-17:55	Design and preparation of efficient heterogeneous catalysts for full oxidation of HCHO: from Pt-based to Ag-based catalysts	Xiangju Meng, <u>Feng-Shou Xiao</u>	Zhejiang University
17:55-18:05	Closing of Session Xenophon Verykios (University of Patras)		

Program of ICEC2022 (Japan Standard Time)

Program of ICEC2022 (Japan Standard Time)													
	July 30th (Sat)	July 31st (Sun)				August 1st (Mon)				August 2nd (Tue)			
	Room A	Room A	Room B	Room C	Room D	Room A	Room B	Room C	Room D	Room A	Room B	Room C	Room D
8:00		Registration				Registration				Registration			
9:00		PL-2 Christopher W. Jones				PL-3 Hirohito Hirata				PL-4 Junhua Li			
10:00		Break				Break				Break			
		KN-1 Hong He	OB01	OC01	OD01	OA16	KN-6 Do Heui Kim	OC18	OD18	KN-10 Jingguang Chen	OB33	OC35	OD23
			OB02	OC02	OD02	OA17		OC19	OD19		OB34	OC36	OD24
11:00		OA01	OB03	OC03	OD03	OA18	OB18	OC20	OD20	OA33	OB35	OC37	OD25
		OA02	KN-2 Todd J. Toops	OC04	OD04	OA19	OB19	OC21	OD21	OA34	OB36	OC38	KN-11 Atsushi Urakawa
		OA03	OC05	OD05	OA20	OB20	OC22	OD22	OA35	OB37	OC39		
12:00		Lunch				Lunch				Lunch			
13:00								Special Session					
		KN-3 Michael Stockenhuber	OB04	OC06	OD06	KN-7 Masaru Ogura	OB21	OC23	Opening	OA36	KN-12 Jiaguo Yu	OC40	OD26
			OB05	OC07	OD07		OB22	OC24	SIL-01	OA37		OC41	OD27
		OA04	OB06	OC08	OD08	OA21	OB23	OC25	SIL-02	OA38	OB38	OC42	OD28
14:00	Registration	OA05	OB07	OC09	OD09	OA22	OB24	OC26	SIL-03	KN-13 Wonyong Choi	OB39	OC43	OD29
		OA06	OB08	OC10	OD10	OA23	OB25	OC27	SIL-04		OB40	OC44	OD30
		OA07	OB09	KN-4 Yongdan Li	OD11	OA24	KN-8 Kevin C. W. Wu	OC28	SIL-05	OA39	OB41	OC45	KN-14 Ning Yan
15:00			OA08	OB10	OD12	OA25		OC29		OA40	OB42	OC46	
16:00		Break				Break				Break			
	Opening	OA09	OB11	OC11	OD13	OA26	OB26	OC30	SIL-06	OA41	OB43	KN-15 Anne Giroir- Fendler	OD31
		OA10	OB12	OC12	OD14	OA27	OB27	OC31	SIL-07	OA42	OB44		OD32
	PL-1 Christopher Hardacre	OA11	OB13	OC13	OD15	OA28	OB28	OC32	SIL-08	OA43	OB45	OC47	OD33
17:00		OA12	OB14	OC14	KN-5 Stefan Marx	OA29	OB29	KN-9 Gabriele Centi	SIL-09	KN-16 Jan-Dierk Grunwaldt	OB46	OC48	OD34
		OA13	OB15	OC15	OD16	OA30	OB30	OC33	SIL-10	OA44	OB47	OC49	OD35
		OA14	OB16	OC16	OD17	OA31	OB31	OC34	Closing	OA45	OB48	OC50	OD36
18:00		Break				Break				Break			
19:00		Short Presentation of Poster (Room A) in-person only	Poster P01 - P40 (Room P-1)	Poster P41 - P83 (Room P-2)	Short Presentation of Poster (Room A) in-person only	Poster P84 - P130 (Room P-1)	Poster P131 - P175 (Room P-2)		Closing				
20:00													

Presentation time including Q&A (min)	
Plenary	60
Keynote	40
Special Invited	25
Invited	20
Oral	20
Poster	90
Short Presentation	5

Program of ICEC2022

August 2nd (Tue) **Room A** (Japan Standard Time)

Room A August 2nd (Tue) 9:00-10:00			
Chair: Tsunehiro Tanaka (Kyoto University)			
No.	Title of Paper	Authors	Affiliation
PL-4 9:00- 10:00	Studies on environmental catalysis for haze and ozone precursors: NO _x and VOCs	Junhua Li	Tsinghua University

Room A August 2nd (Tue) 10:20-12:00			
Chair: Naoki Ikenaga (Kansai University)			
Liuyang Zhang (China University of Geosciences)			
No.	Title of Paper	Authors	Affiliation
KN-10 10:20- 11:00	CO ₂ -assisted activation of light alkanes	<u>Jingguang Chen</u>	Columbia University
OA33 11:00- 11:20	Sustainable and environmentally friendly Prussian blue analogues for the fixation of CO ₂ with glycidol	<u>Chinh Hoang Tran</u> , Byeong-Ryeol Moon, Eun-gyong Lee, Ha-Kyung Choi, Il Kim	Pusan National University
OA34 11:20- 11:40	<u>Invited</u> Process intensification of CO ₂ transformation by auto-methanation using structured catalyst system	<u>Choji Fukuhara</u> , Tomoya Taniguchi, Kentaro Uchida, Hiroshi Akama, Ryo Watanabe	Shizuoka University
OA35 11:40- 12:00	Modulating the local coordination environment of copper-based catalysts for carbon dioxide electroreduction	<u>Ying Zhang</u> , Guijia Ning, Yongfa Zhu	Jiangnan University

Program of ICEC2022

August 2nd (Tue) **Room A** (Japan Standard Time)

Room A August 2nd (Tue) 13:00-15:20 Chair: Shinya Higashimoto (Osaka Institute of Technology) Ying Zhang (Jiangnan University)			
No.	Title of Paper	Authors	Affiliation
OA36 13:00-13:20	Enhancement of titania photocatalytic performance by the deposition of size-controlled platinum	<u>Kunlei Wang</u> , Maya Endo-Kimura, Zhishun Wei, Christophe Colbeau-Justin, Bunsho Ohtani, Hynd Remita, Ewa Kowalska	Hokkaido University
OA37 13:20-13:40	Decomposition of water over picene derivatives photocatalyst under visible light irradiation	<u>Yuichi Ichihashi</u> , Tomoya Sekiguchi, Keita Taniya, Satoru Nishiyama	Kobe University
OA38 13:40-14:00	S-scheme heterojunction photocatalyst	<u>Liuyang Zhang</u>	China University of Geosciences (Wuhan)
KN-13 14:00-14:40	Photo(electro)catalytic conversion of inorganic nitrogenous pollutants to dinitrogen	<u>Wonyong Choi</u> , Shinbi Lee, Min Seok Koo	Korea Institute of Energy Technology (KENTECH)
OA39 14:40-15:00	A synergetic effect between Pt and Co doped Al ₂ O ₃ nanosheets leads to significantly enhanced solar fuel production rate and catalytic durability for photothermocatalytic CO ₂ reduction	Zhenghai Xie, Qianqian Hu, <u>Yuanzhi Li</u> , Zhiyuan Zhou, Jichun Wu, Shaowen Wu	Wuhan University of Technology
OA40 15:00-15:20	Preparation and photocatalytic activity of highly active titania-based photocatalysts	<u>Zhishun Wei</u> , Maya Endo-Kimura, Kunlei Wang, Ewa Kowalska	Hubei University of Technology

Program of ICEC2022

August 2nd (Tue) **Room A** (Japan Standard Time)

Room A August 2nd (Tue) 15:50-17:30 Chair: Shuji Tanabe (Nagasaki University) Zhishun Wei (Hubei University of Technology)			
No.	Title of Paper	Authors	Affiliation
OA41 15:50-16:10	Invited Visible-light sensitive Pd-Pt bimetal deposited-WO ₃ photocatalyst for selective hydroxylation of benzene to phenol	<u>Shinya Higashimoto</u> , Yuya Kurikawa, Yuki Tanabe, Yoshihisa Sakata, Hisayoshi Kobayashi	Osaka Institute of Technology
OA42 16:10-16:30	CuBTC-dendritic fibrous nanosilica composite for CO ₂ adsorption	<u>L. P. Teh</u> , Z. I. Zulkifli	Universiti Kebangsaan Malaysia
OA43 16:30-16:50	Non-noble-metallic Ni ₂ P nanoparticles modified OV-BiOBr with boosting photoelectrochemical hydrogen evolution without sacrificial agent	<u>Xibao Li</u> , Qiang Liu, Fan Dong, Juntong Huang, Zhi Chen, Zhijun Feng, Yongfa Zhu	Nanchang Hangkong University
KN-16 16:50-17:30	Catalysts under dynamic reaction conditions for emission control and sustainable production of chemicals	<u>Jan-Dierk Grunwaldt</u>	Karlsruher Institut für Technologie (KIT)
OA44 17:30-17:50	Exergy evaluation of CO ₂ methanation by spiral-type structured catalyst aimed for high-flow rate treatment of industrial exhaust gas	<u>Hiroshi Akama</u> , Kentaro Uchida, Ryo Watanabe, Yoshiumi Kohno, Choji Fukuhara	Shizuoka University
OA45 17:50-18:10	Utilization of carbon dioxide to industrial active chemicals: a machine learning approach	<u>Abhijit Chatterjee</u> , Maya Chatterjee	Dassault Systemes

18:30-19:00	Closing
-------------	----------------

August 2nd (Tue) Room B (Japan Standard Time)

Room B August 2nd (Tue) 10:20-12:00			
Chair: Masazumi Tamura (Osaka Metropolitan University)			
Xinhua Gao (Ningxia University)			
No.	Title of Paper	Authors	Affiliation
OB33 10:20-10:40	<u>Invited</u> Surface valence state of Cu on Cu-ZnO-Al ₂ O ₃ catalysts during water gas shift reaction	Keita Taniya, Yasuhiro Horie, Ryo Fujita, Yuichi Ichihashi, <u>Satoru Nishiyama</u>	Kobe University
OB34 10:40-11:00	Catalytic properties in cracking of waste organic solvents using liquid plasma for CO ₂ -free hydrogen production	<u>Kyong-Hwan Chung</u> , Sang-Chul Jung	Sunchon National University
OB35 11:00-11:20	Reaction pathways of oxidative coupling of methane on alkali metal doped lanthanum oxide	<u>Andrew C. Chien</u> , Ian Z. Xie, Ellen Y. Chen	Feng Chia University
OB36 11:20-11:40	Carbon-supported vanadium nitride catalyst, prepared from urea-loaded MIL-100(V) in the absence of external ammonia flow, having remarkable performance in oxidative desulfurization	<u>Imteaz Ahmed</u> , Sung Hwa Jhung	Kyungpook National University
OB37 11:40-12:00	Effects of Al distribution in the Cu-exchanged AEI zeolites on the reaction performance of continuous oxidation of methane	<u>Peipei Xiao</u> , Yong Wang, Toshiyuki Yokoi	Tokyo Institute of Technology

Program of ICEC2022

August 2nd (Tue) **Room B** (Japan Standard Time)

Room B August 2nd (Tue) 13:00-15:20			
Chair: Satoru Nishiyama (Kobe University)			
Zichao Lian (University of Shanghai for Science and Technology)			
No.	Title of Paper	Authors	Affiliation
KN-12 13:00-13:40	S-scheme heterojunction photocatalyst and its environmental application	<u>Jiaguo Yu</u>	China University of Geosciences.
OB38 13:40-14:00	Bi/UIO-66 derived electrocatalysts for highly efficient CO ₂ reduction	<u>Jun Tae Song</u> , Yuta Takaoka, Motonori Watanabe, Atsushi Takagaki, Tatsumi Ishihara	Kyushu University
OB39 14:00-14:20	Direct synthesis of dimethyl ether from CO ₂ over Cu-Ga/Al ₂ O ₃ catalysts prepared using the sol-gel method, and the catalytic effects by the pretreatments	<u>Kaoru Takeishi</u> , Yuya Takamori	Shizuoka university
OB40 14:20-14:40	An active and stable Ni/Ni ₃ C catalyst for CO ₂ methanation	<u>Xinhua Gao</u> , Yachao Li, Yan Li, Jianli Zhang, Tiansheng Zhao	Ningxia University
OB41 14:40-15:00	Direct synthesis of polycarbonate diols from atmospheric CO ₂ and α,ω -diols over CeO ₂ catalyst and CO ₂ flow reaction system	<u>Masazumi Tamura</u> , Yu Gu, Kenji Nakao, Hiraku Sato, Yoshinao Nakagawa, Keiichi Tomishige	Osaka Metropolitan University
OB42 15:00-15:20	Effects of crystalline ZrO ₂ phase on direct ethyl acetate synthesis from ethanol over supported copper catalysts	<u>Takashi Yamamoto</u> , Horitaka Mine, Shoki Katada	Tokushima University

Program of ICEC2022

August 2nd (Tue) Room B (Japan Standard Time)

Room B August 2nd (Tue) 15:50-18:10			
Chair: Takashi Yamamoto (Tokushima University)			
Andrew C. Chien (Feng Chia University)			
No.	Title of Paper	Authors	Affiliation
OB43 15:50-16:10	Effect of missing-linker sites in Zr-MOF photocatalyst for hydrogen peroxide production	<u>Yoshifumi Kondo</u> , Yasutaka Kuwahara, Kohsuke Mori, and Hiromi Yamashita	Osaka University
OB44 16:10-16:30	Infrared light-induced plasmonic hot electron transfer in ZnS/CuS heterostructured nanocrystals for photocatalytic H ₂ evolution	<u>Zichao Lian</u>	University of Shanghai for Science and Technology
OB45 16:30-16:50	Dependence of NO adsorption/desorption property on local environment surrounding Pd ²⁺ cation in Pd-CHA	<u>Shunsaku Yasumura</u> , Takashi Toyao, Zen Maeno, Ken-ichi Shimizu	Hokkaido University
OB46 16:50-17:10	Atomic-scale growth mechanisms of Si epitaxy from first principle calculations	<u>Laureline Treps</u> , Jing Li, Benoit Sklenard	University Grenoble Alpes
OB47 17:10-17:30	Solvolytic of lignin α -O-4 model compound in aqueous ethanol solution under high-pressure carbon dioxide	<u>Kenkichi Taniguchi</u> , Etty N. Kusumawati, Hidetaka Nanao, Osamu Sato, Aritomo Yamaguchi, Masayuki Shirai	Iwate University
OB48 17:30-17:50	Kinetics and low apparent activation energy of ammonia synthesis over Ru catalyst supported on hydrogen storage material	<u>Ryusei Morimoto</u> , Takaya Ogawa, Kazuma Torii, Hideyuki Okumura, Keiichi N. Ishihara	Kyoto University
OB49 17:50-18:10	Model Pd-perovskite three-way catalysts for natural gas engines: Impact of Pd incorporation on the kinetics	<u>Yuanshuang Zheng</u> , Pascal Granger	Unite de Catalyse et Chimie du Solide

Program of ICEC2022

August 2nd (Tue) Room C (Japan Standard Time)

Room C August 2nd (Tue) 10:20-12:00 Chair: Junya Oyama (Kumamoto University) Young-Sang Cho (Tech University of Korea)			
No.	Title of Paper	Authors	Affiliation
OC35 10:20-10:40	Superoxide radicals dominated visible light driven peroxymonosulfate activation using molybdenum selenide (MoSe ₂) for boosting catalytic degradation of pharmaceuticals and personal care products	<u>Chencheng Dong</u> , Zhiqiang Wang, Zhichao Ye, Juhua He, Zexiao Zheng, Xueqing Gong, Jinlong Zhang, Irene M.C. Lo	The University of Hong Kong
OC36 10:40-11:00	An efficient graphitic carbon nitride (C ₃ N ₄) for degradation of Bisphenol A	<u>Mahdieh Razi Asrami</u> , Milad Jourshabani, Byeong-Kyu Lee	University of Ulsan
OC37 11:00-11:20	The intrinsic activity of catalysts for persulfate activation to remove recalcitrant organic pollutants in water	Jie Miao, <u>Mingce Long</u>	Shanghai Jiao Tong University
OC38 11:20-11:40	Efficient degradation of organic pollutants by photo-Fenton with H ₂ O ₂ in situ generated from a CdS/g-C ₃ N ₄ composite of Z-Scheme	<u>Zhengying Jiang</u> , <u>Juying Lei</u> , Jinlong Zhang, Yongdi Liu	East China University of Science and Technology
OC39 11:40-12:00	<u>Invited</u> Utilization of cyano-bridged coordination polymers as designable heterogeneous catalysts for organophosphate hydrolysis	<u>Yusuke Yamada</u>	Osaka Metropolitan University

Program of ICEC2022

August 2nd (Tue) Room C (Japan Standard Time)

Room C August 2nd (Tue) 13:00-15:20 Chair: Yusuke Yamada (Osaka Metropolitan University) Mingce Long (Shanghai Jiao Tong University)			
No.	Title of Paper	Authors	Affiliation
OC40 13:00-13:20	Reversible structural transformation of isolated silver atoms anchored to specific sites on γ -Al ₂ O ₃	<u>Hiroe Kubota</u> , Shinya Mine, Takashi Toyao, Zen Maeno, Ken-ichi Shimizu	Hokkaido University
OC41 13:20-13:40	Modelling of fixed bed catalytic reactors packed with various shapes of pellets	<u>Young-Sang Cho</u>	Tech University of Korea
OC42 13:40-14:00	Engineering Molybdenum-Based Catalysts for Photoelectrochemical Nitrogen Reduction to ammonia	Weiye Jiang, Yuyin Mao, Renna Zhao, <u>Hefeng Cheng</u>	Shandong University
OC43 14:00-14:20	Enhanced activation of persulfate by La _{0.85} Fe _{0.9} Cu _{0.1} O ₃ perovskite for degradation of amoxicillin as an emerging water contaminants	Ali Mashayekh-Salehi, <u>Carmen Ciotonea</u> , Jeremy Dhainaut, Jean-Philippe Dacquin, Justine Criquet, Hervé Vezin, Sebastien Royer	Shahroud University of Medical Sciences
OC44 14:20-14:40	Unprecedentedly efficient mineralization performance of photocatalysis-self-Fenton system towards organic pollutants over oxygen-doped porous g-C ₃ N ₄ nanosheets	Fei Wang, Zhouping Wang, Yongfa Zhu, <u>Jing Xu</u>	Jiangnan University
OC45 14:40-15:00	Integration of intelligent ammonia wastewater treatment with microalgal photobioreactor for enhanced water reutilization and bio-CO ₂ fixation	<u>Yu-Tzu Huang</u>	Chung Yuan University
OC46 15:00-15:20	Superior enhancement of charge separation and reduced recombination in Mo@MoOx-BiVO ₄ /Fe ₂ TiO ₅ photoanode for photoelectrochemical water splitting	<u>Zoherh Masoumi</u> , Byeong- Kyu Lee	University of Ulsan

Program of ICEC2022

August 2nd (Tue) Room C (Japan Standard Time)

Room C August 2nd (Tue) 15:50-18:20			
Chair: Choji Fukuhara (Shizuoka University)			
Juying Lei (East China University of Science and Technology)			
No.	Title of Paper	Authors	Affiliation
KN-15 15:50-16:30	Total oxidation of VOCs over cobalt oxide-based catalysts	Weidong Zhang, Jose Luis Valverde, Claude Descorme, <u>Anne Giroir-Fendler</u>	Université Claude Bernard Lyon
OC47 16:30-16:50	<u>Invited</u> Synthesis of carbon-free ammonia fuel under mild reaction conditions using Co@BaO/MgO catalysts	<u>Katsutoshi Nagaoka</u> , Katsutoshi Sato, Shin-ichiro Miyahara	Nagoya University
OC48 16:50-17:10	Development of catalysts for ReNO _x process using CO-H ₂ O reductant	<u>Chandan Chaudhari</u> , Keisuke Kobayashi, Yuichi Manaka, Tetsuya Nanba	Renewable Energy Research Center National Institute of Advanced Industrial Science and Technology
OC49 17:10-17:30	Boosting electrocatalyst performance of MOF-derived Fe-Co-Oxide/Co@NC electrode for overall (OER and HER) water splitting: a collaborative approach of defect engineering and in situ oxidation	<u>Meysam Tayebi</u> , Jun-Hwan Kim, Eunock Park, Hyeon-Gook Kim	Korea Research Institute of Chemical Technology (KRICT)
OC50 17:30-17:50	Zirconium oxide-supported Pt-Mo catalyst for the selective hydrodeoxygenation of esters to unsymmetrical ethers	<u>Katsumasa Sakoda</u> , Sho Yamaguchi, Takato Mitsudome, Tomoo Mizugaki	Osaka University
OC51 17:50-18:10	Hollow Silica Spheres Encapsulating Multiple Catalytic Species for Selective Hydrogenation Reactions	<u>Yasutaka Kuwahara</u> , Hiroto Kango, Yuki Fujie, Hiromi Yamashita	Osaka University

Program of ICEC2022

August 2nd (Tue) **Room D** (Japan Standard Time)

Room D August 2nd (Tue) 10:20-12:00			
Chair: Masayuki Shirai (Iwate University)			
Jeffrey C. S. Wu (National Taiwan University)			
No.	Title of Paper	Authors	Affiliation
OD23 10:20-10:40	Improving methanol selectivity of Cu/ZnAl ₂ O ₄ catalysts in CO ₂ hydrogenation via enhancement of metal-support interaction	Shuai Wang, Lixin Song, <u>Zhenping Qu</u>	Dalian University of Technology
OD24 10:40-11:00	Influence of zeolite properties on bifunctional catalysts for one-pass lower olefins synthesis via CO ₂ hydrogenation	<u>Kenta Iyoki</u> , Ryusei Oishi, Duanxing Li, Hiroka Kinoshita, Mina Okazaki, Anand Chokkalingam, Peidong Hu, Noriko Yamauchi, Yoshio Kobayashi, Shohei Tada	The University of Tokyo
OD25 11:00-11:20	Low-temperature CO ₂ sorption on eutectic mixture-promoted magnesium oxide via electric field enhancement	<u>Monica Louise T. Triviño</u> , Yasushi Sekine, Jeong Gil Seo	Hanyang University
KN-11 11:20-12:00	Understanding catalytic performance through physicochemical gradients on the reactor scale	<u>Atsushi Urakawa</u>	Delft University of Technology

Program of ICEC2022

August 2nd (Tue) Room D (Japan Standard Time)

Room D August 2nd (Tue) 13:00-15:20			
Chair: Tsunehiro Tanaka (Kyoto University)			
Sungjin Park (Inha University)			
No.	Title of Paper	Authors	Affiliation
OD26 13:00-13:20	Inhibitory effect of trace impurities on the catalytic activity in methanol reforming	<u>Katsutoshi Nomoto</u> , Hiroki Miura, Tetsuya Shishido	Tokyo Metropolitan University
OD27 13:20-13:40	Engineering ZnSn(OH) ₆ with ternary active sites-directed hydroxyl vacancies for robust deep C ₆ H ₆ photo-oxidation	<u>Yuhan Li</u> , Youyu Duan, Kangle Lv	Chongqing Technology and Business University
OD28 13:40-14:00	<u>Invited</u> Photocatalytic water splitting of improved strontium titanate and simultaneous separation of H ₂ in a twin photoreactor	Yu-Yang Tai, <u>Jeffrey C. S. Wu</u> , Wen-Yueh Yu, Marjeta Maček Kržmanc	National Taiwan University
OD29 14:00-14:20	Transition-metal-incorporating polyoxometalates as shuttle redox mediators for Z-scheme water splitting under visible light	<u>Osamu Tomita</u> , Kento Tachizawa, Hajime Suzuki, Ryota Sakamoto, Ryu Abe	Kyoto University
OD30 14:20-14:40	<u>Invited</u> Enhancement of hydrogen production from ethanol solution on Zn@Pt/TiO ₂ photo catalyst	Mari Yotsuya, Osamu Nakagoe, Hikari Tanaka, Zan Win Moh Moh Phoo, Hideaki Sano, Guobin Zheng, <u>Shuji Tanabe</u>	Nagasaki University
KN-14 14:40-15:20	Catalyst development for CO ₂ hydrogenation	<u>Ning Yan</u> , Kyungho Lee, Maxim Park Dickieson	National University of Singapore

Program of ICEC2022

August 2nd (Tue) Room D (Japan Standard Time)

Room D August 2nd (Tue) 15:50-18:20			
Chair: Osamu Tomita (Kyoto University)			
Haibo Yin (Tsinghua University)			
No.	Title of Paper	Authors	Affiliation
OD31 15:50- 16:10	Acceleration of water splitting on Au/TiO ₂ by modification of a hole-transferring cocatalyst	<u>Eri Fudo</u> , Atsuhiko Tanaka, Hiroshi Kominami	Kindai University
OD32 16:10- 16:30	Unblocked intramolecular charge transfer for enhanced CO ₂ photoreduction enabled by an imidazolium-based ionic conjugated microporous polymer	<u>Chengcheng Liu</u>	Shandong University
OD33 16:30- 16:50	Visible light-induced oxidation of alcohols over Cu plasmonic photocatalyst	<u>Atsuhiko Tanaka</u> , Kohki Okabayashi, Hiroshi Kominami	Kindai University
OD34 16:50- 17:10	Carbon nitride materials as efficient visible light active photocatalysts	Dawoon Jang, Suyeon Lee, Hyeju Park, Jinyoung Son, <u>Sungjin Park</u>	Inha University
OD35 17:10- 17:30	Synthesis of photoelectro-active catalytic electrodes for the photo-electrocatalytic treatment of wastewater	<u>Parminder Kaur</u> , Yongdan Li, Mika Sillanpää	Aalto University
OD36 17:30- 17:50	<u>Invited</u> Chlorophyll-modified Au ₂₅ (SR) ₁₈ -functionalized TiO ₂ for photocatalytic degradation of Rhodamine B	Thanaree Phongamwong, Noelia Barrabés, Waleeporn Donpahi, Thongthai Witoon, Günther Rupprechter, <u>Metta Chareonpanich</u>	Kasetsart University
OD37 17:50- 18:10	Vanadium dioxide/carbon nitride composite with enhanced visible-light photocatalytic activity	<u>Milad Jourshabani</u> , Mahdieh Razi Asrami, Byeong-Kyu Lee	University of Ulsan

Program of ICEC2022 (Japan Standard Time)

		July 31st (Sun)				August 1st (Mon)				August 2nd (Tue)			
July 30th (Sat)		Room A	Room B	Room C	Room D	Room A	Room B	Room C	Room D	Room A	Room B	Room C	Room D
8:00		Registration				Registration				Registration			
9:00		PL-2 Christopher W. Jones				PL-3 Hirohito Hirata				PL-4 Junhua Li			
10:00		Break				Break				Break			
		KN-1 Hong He	OB01	OC01	OD01	OA16	KN-6 Do Heui Kim	OC18	OD18	KN-10 Jingguang Chen	OB33	OC35	OD23
			OB02	OC02	OD02	OA17		OC19	OD19		OB34	OC36	OD24
11:00		OA01	OB03	OC03	OD03	OA18	OB18	OC20	OD20	OA33	OB35	OC37	OD25
		OA02	KN-2 Todd J. Toops	OC04	OD04	OA19	OB19	OC21	OD21	OA34	OB36	OC38	KN-11 Atsushi Urakawa
		OA03		OC05	OD05	OA20	OB20	OC22	OD22	OA35	OB37	OC39	
12:00		Lunch				Lunch				Lunch			
13:00								Special Session					
		KN-3 Michael Stockenhuber	OB04	OC06	OD06	KN-7 Masaru Ogura	OB21	OC23	Opening	OA36	KN-12 Jiaguo Yu	OC40	OD26
			OB05	OC07	OD07		OB22	OC24	SIL-01	OA37		OC41	OD27
		OA04	OB06	OC08	OD08	OA21	OB23	OC25	SIL-02	OA38	OB38	OC42	OD28
14:00	Registration	OA05	OB07	OC09	OD09	OA22	OB24	OC26	SIL-03	KN-13 Wonyong Choi	OB39	OC43	OD29
		OA06	OB08	OC10	OD10	OA23	OB25	OC27	SIL-04		OB40	OC44	OD30
		OA07	OB09	KN-4 Yongdan Li	OD11	OA24	KN-8 Kevin C. W. Wu	OC28	SIL-05	OA39	OB41	OC45	KN-14 Ning Yan
15:00			OA08	OB10	OD12	OA25		OC29		OA40	OB42	OC46	
		Break				Break				Break			
16:00	Opening	OA09	OB11	OC11	OD13	OA26	OB26	OC30	SIL-06	OA41	OB43	KN-15 Anne Giroir- Fendler	OD31
		OA10	OB12	OC12	OD14	OA27	OB27	OC31	SIL-07	OA42	OB44		OD32
	PL-1 Christopher Hardacre	OA11	OB13	OC13	OD15	OA28	OB28	OC32	SIL-08	OA43	OB45	OC47	OD33
17:00		OA12	OB14	OC14	KN-5 Stefan Marx	OA29	OB29	KN-9 Gabriele Centi	SIL-09	KN-16 Jan-Dierk Grunwaldt	OB46	OC48	OD34
		OA13	OB15	OC15	OD16	OA30	OB30	OC33	SIL-10	OA44	OB47	OC49	OD35
		OA14	OB16	OC16	OD17	OA31	OB31	OC34	Closing	OA45	OB48	OC50	OD36
		OA15	OB17	OC17	OD17	OA32	OB32	OC34		OA45	OB49	OC51	OD37
18:00		Break				Break				Break			
19:00		Short Presentation of Poster (Room A) in-person only	Poster P01 - P40 (Room P-1)	Poster P41 - P83 (Room P-2)	Short Presentation of Poster (Room A) in-person only	Poster P84 - P130 (Room P-1)	Poster P131 - P175 (Room P-2)		Closing				

Presentation time including Q&A (min)	
Plenary	60
Keynote	40
Special Invited	25
Invited	20
Oral	20
Poster	90
Short Presentation	5

20:00

Program of ICEC2022

Poster Presentation, July 31st (Sun) 18:30-20:00 (Japan Standard Time) Room P-1

No.	Title of Paper	Authors	Affiliation
P01	Synthesis and adsorption properties of nitroso compounds on metal oxides aiming for evaluation of PEFC oxide catalysts	<u>Masaya Kimura</u> , Kenji Hara	Tokyo University of Technology
P02	Multifunctional starch paste assisted synthesis of manganese-cobalt oxide catalyst with multifarious active regions for toluene catalytic combustion	<u>Jinggang Zhao</u> , Peifen Wang, Abuliti Abudulaa, Guoqing Guan	Hirotsuki University
P03	Selective catalytic oxidation of acetonitrile on SAPO-34 catalysts embedded with nano-bimetal oxides	<u>Xiangwen Zhang</u> , Haijun Chen	Nankai University
P04	Preparation of CeO ₂ @Beta catalyst for selective catalytic reduction of NO _x with NH ₃	<u>Di Mao</u> , Junyan Liu, Jing He, Chengyang Yin	Shenyang Normal University
P05	Room temperature catalytic decomposition of gases ozone over Ag-based catalysts	<u>Xiaotong Li</u> , Jinzhu Ma, Xufei Shao, Hong He	Chinese Academy of Sciences
P06	Insight into sintering resistance of Pd/Sr ₃ Ti ₂ O ₇ under the three-way catalyst atmosphere revealed by machine learning enhanced global optimization	<u>Thanh N. Pham</u> , Beatriz A. C. Tan, Yuji Hamamoto, Kouji Inagaki, Ikutaro Hamada, Yoshitada Morikawa	Osaka University
P07	Doped vanadium oxides in tungsten oxides for controlled vanadyl species in NH ₃ -SCR catalyst	<u>Myeung-Jin Lee</u> , Bora Jeong, Hangyu Im, Su-Jin Kim, Woon Gi Kim, Bora Ye, and Hong-Dae Kim	Korea Institute of Industrial Technology
P08	A novel quasi-MOF-Mn catalyst for the selective catalytic reduction of NO _x with NH ₃	<u>Ruiyang Chen</u> , Zhiming Liu	Beijing University of Chemical Technology
P09	Preparation of monolithic catalyst for the removal of VOCs	<u>Kaixuan Fu</u> , Yun Su, Lizhe Yang, Rui Han, Qingling Liu	Tianjin University
P10	NH ₃ -SCR over iron-exchanged small-pore zeolites with different framework topologies	<u>Xuechao Tan</u> , Suk Bong Hong	POSTECH

Program of ICEC2022

Poster Presentation, July 31st (Sun) 18:30-20:00 (Japan Standard Time) Room P-1

No.	Title of Paper	Authors	Affiliation
P11	Study of Pd-SSZ-13 as low-temperature passive NO _x adsorber material: dispersion of Pd in small-pore CHA zeolites by thermal treatment	<u>Yingjie Wang</u> , Xiaoyan Shi, Hong He	Research Center for Eco-Environmental Sciences
P12	Interface-enhanced oxygen vacancies of CoCuO _x catalysts in situ grown on monolithic Cu foam for VOC catalytic oxidation	<u>Yanfei Zheng</u> , Yun Su, Rui Han, Qingling Liu	Tianjin University
P13	Ab initio thermodynamic background for reoxidation pathways of CuSSZ-13 catalyst for NH ₃ -SCR of NO	B. Mozgawa, F. Zasada, M. Fedyna, K. Góra-Marek, Ch. Yin, Zh. Zhao, <u>P. Pietrzyk</u> , Z. Sojka	Jagiellonian University
P14	Fine tuning the Pt dispersion on Al ₂ O ₃ and understanding the nature of active Pt sites for CO and NH ₃ oxidations	<u>Wei Tan</u> , Shaohua Xie, Xing Zhang, Fei Gao, Lin Dong, Fudong Liu	Nanjing University
P15	NO reduction over Rh-based hybrid clustering catalysts	<u>Shinji Endo</u> , Shun Hayashi, Hiroki Miura, Tetsuya Shishido	Tokyo Metropolitan University
P16	Transition metals functionalised porous silica nanospheres as potential catalysts for conversion of gaseous nitrogen pollutants	<u>Aleksandra Jankowska</u> , Andrzej Kowalczyk, Małgorzata Rutkowska, Marek Michalik, Lucjan Chmielarz	Jagiellonian University
P17	Fe-Mn bimetallic catalyst for simultaneous catalytic elimination of nitrogen oxides and toluene at moderate and low temperature	<u>Beilong Lin</u> , Ziyang Guo, Gaofei Xiao, Minli Fu, Daiqi Ye, Yun Hu	South China University of Technology
P18	Hydrothermally stable zeolite encapsulated metal nanoparticles for cold hydrocarbon emission in gasoline engine after-treatment system	<u>Hidekazu Goto</u> , Ryosuke Abiru, Mayuko Suwa, Shota Urabe, Hiroyasu Fujitsuka, Teruoki Tago	Tokyo Institute of Technology
P19	Facile synthesis of high-stability Pd/MgAl ₂ O ₄ catalyst for methane combustion	<u>Jie Li</u> , Yan Zhang, Wenpo Shan, Hong He	Institute of Urban Environment
P20	Construction of dual active sites on non-vanadium-based oxide catalyst for simultaneous elimination of toluene and nitrogen oxide	<u>Ziyang Guo</u> , Gaofei Xiao, Beilong Lin, Yun Hu, Mingli Fu, Daiqi Ye	South China University of Technology

Program of ICEC2022

Poster Presentation, July 31st (Sun) 18:30-20:00 (Japan Standard Time) Room P-1

No.	Title of Paper	Authors	Affiliation
P21	Low temperature O ₃ assisted NH ₃ -SCR over Cu-CHA	<u>Yucheng Qian</u> , Shunsaku Yasumura, Takashi Toyao, Zen Maeno, Ken-ichi Shimizu	Hokkaido University
P22	Simultaneous abatement of NO and N ₂ O with CH ₄ over Pt,Pd,Rh/TiO ₂ -ZrO ₂ and Pt,Pd,Rh/TiO ₂ -ZrO ₂ -CeO ₂ catalysts	M.C. Campa, G. Fierro, A.M. Doyle, <u>D. Pietrogiacomì</u>	Sapienza University of Rome
P23	Analysis of oxygen storage capacity in oxygen deficient Sr ₃ Fe ₂ O _{7-δ} perovskite by DFT+U	<u>Tadashi Ota</u> , Yoshitada Morikawa	Osaka University
P24	Synergistic effect of Fe and H ₂ SO ₄ in Fe/H ₂ SO ₄ /CeO ₂ catalyst for enhanced alkali-metal tolerance of NH ₃ -SCR: A theoretical investigation	<u>Kai Oshiro</u> , Min Gao, Jun-ya Hasegawa	Hokkaido University
P25	Direct NO decomposition over Rh-based supported metal oxides: Investigation of deactivation mechanism and regeneration strategy	<u>Wo Bin Bae</u> , Do Yeong Kim, Minkyu Kim, Sung Bong Kang	Gwangju Institute of Science and Technology
P26	Bifunctional (Au)-CuO-CeO ₂ and ZSM-5 catalyst combination for flue gas emission control of formaldehyde production units	<u>Maria Smyrnioti</u> , Theophilos Ioannides	Institute of Chemical Engineering Sciences (FORTH/ICE-HT)
P27	Superior N ₂ selectivity of PtVW catalyst in simultaneous NH ₃ and CO emission control	<u>Sang Woo Byun</u> , Hyeonwoo Shin, Seong Jun Lee, Minkyu Kim, Bekelcha Tesfaye, Paul Worn Park, Sung Bong Kang	Gwangju Institute of Science and Technology
P28	The role of oxygen vacancies in reduced molybdenum oxide catalyst for methanol synthesis from CO ₂	<u>Koji Hamahara</u> , Yasutaka Kuwahara, Hisayoshi Kobayashi, Hiromi Yamashita	Osaka University
P29	Cu-impregnated MFI zeolites for hydrocarbon trap during cold-start period: Effects of cation ratios in the zeolite support on the hydrothermal stabilities	<u>Jahee Shim</u> , Jinseng Kim, Jungkyu Choi	Korea University
P30	Surface modification of γ-Al ₂ O ₃ for anti-sintering Pd-based CH ₄ P42_oxidation catalyst	<u>Hyeonwoo Shin</u> , Sang Woo Byun, Jaekyoung Lee, Sung Bong Kang	Gwangju Institute of Science and Technology

Program of ICEC2022

Poster Presentation, July 31st (Sun) 18:30-20:00 (Japan Standard Time) Room P-1

No.	Title of Paper	Authors	Affiliation
P31	In situ Transmission IR spectroscopy of plasma catalytic conversion of CO ₂ hydrogenation over Pd ₂ Ga/SiO ₂ alloy catalyst	<u>Dae-Yeong Kim</u> , Shinya Furukawa, Tomohiro Nozaki	Tokyo Institute of Technology
P32	Effects of Pd-Pt ratio and reaction environment on the performance of methane oxidation catalyst	<u>Jiseok Park</u> , DongJoon Kim, Young Jin Kim, Iljeong Heo, Minkyu Kim, Sung Bong Kang	Gwangju Institute of Science and Technology
P33	Development of efficient soot oxidation catalysts and their application in diesel emission control after-treatment devices	<u>Prajakta Mohan Ramteke</u> , Sunit Kumar Singh and Nitin K. Labhasetwar	CSIR-National Environmental Engineering Research Institute Nagpur
P34	Synthesis of Cu-impregnated MFI zeolite with different cations as hydrocarbon adsorbents	<u>Jinseong Kim</u> , Jungkyu Choi	Korea University
P35	Ultra-high yield coproduction of C ₅₊ hydrocarbons and ethanol from CO ₂ hydrogenation on a rational designed multi-functional catalyst	<u>Heng Zhao</u> , Yingluo He, Guohui Yang, Noritatsu Tsubaki	University of Toyama
P36	High-entropy intermetallics on ceria as a highly efficient catalyst for the oxidative dehydrogenation of propane using CO ₂	<u>Feilong Xing</u> , Ken-ichi Shimizu, Shinya Furukawa	Hokkaido University
P37	Optimum shell thickness on Cu-impregnate core-shell structured zeolites for hydrocarbon trap	<u>Wenhao Zeng</u> , Jinseong Kim, Jungkyu Choi	Korea University
P38	Heterojunction between gallium oxide and calcium titanate for substance-preferential silver photodeposition for enhancement about photocatalytic carbon dioxide reduction with water	<u>Hongxuan Qiu</u> , Akira Yamamoto, Hisao Yoshida	Kyoto University
P39	Enhanced visible-NIR absorption and oxygen vacancy generation of Pt/HxMoWO _y by H-spillover to facilitate photothermal catalytic CO ₂ hydrogenation	<u>Hao Ge</u> , Yasutaka Kuwahara, Kazuki Kusu, Hiromi Yamashita	Osaka University
P40	Development of highly stability ternary alloy catalysts for dry reforming of methane	<u>Ke Liu</u> , Shinya Furukawa	Hokkaido University

Program of ICEC2022

Poster Presentation, July 31st (Sun) 18:30-20:00(Japan Standard Time) Room P-2

No.	Title of Paper	Authors	Affiliation
P41	The elucidation of Cu-Zn surface alloying on Cu(997) by machine-learning molecular dynamics	<u>Harry Handoko Halim</u> , Yoshitada Morikawa	Osaka University
P42	Synergistic integration of doped-Sn with oxygen vacancies on Co ₃ O ₄ for selective photocatalytic CO ₂ reduction to methane	<u>Mingyang Li</u> , Shiqun Wu, Zhiguo Liu, Jinlong Zhang	East China University of Science and Technology
P43	Iron phthalocyanine with axial nitrogen coordination induced electronic localization to boost the electrochemical reduction of carbon dioxide	<u>Jofrey J. Masana</u> , Jiayong Xiao, Ming Qiu, Ying Yu	Central China Normal University
P44	Reverse water gas shift reaction in fluidized-bed nonthermal plasma reactor: an experimental kinetic study	<u>Xiaozhong Chen</u> , Shinya Furukawa, Tomohiro Nozaki	Tokyo Institute of Technology
P45	Investigation of the role of oxygen vacancies and the effect of visible light in CO ₂ hydrogenation using reduced molybdenum oxide catalyst	<u>Shintaro Naito</u> , Yasutaka Kuwahara, Hiromi Yamashita	Osaka University
P46	Effect of morphology on photo-assisted reverse water gas shift reaction using Pt-loaded molybdenum sub-oxide	<u>Taku Kishimura</u> , Yasutaka Kuwahara, Hiromi Yamashita	Osaka University
P47	Synthesis of a CaO-Fe ₂ O ₃ -SiO ₂ composite from dephosphorization slag for CO ₂ adsorption	<u>Zaza Hazrina Hashim</u> , Yasutaka Kuwahara, Aiko Hanaki, Hiromi Yamashita	Osaka University
P48	Bifunctional Fe-HZSM-5 catalysts activated by CO ₂ containing syngas for the selective production of liquid hydrocarbons from syngas	<u>Deviana Deviana</u> , Geun Bae Rhim, Hyeon Song Lee, Gyoung Woo Lee, Min Hye Youn, Jinwon Park, Dong Hyun Chun	Yonsei University and Korea of Institute of Energy Research (KIER)
P49	N-formylation of amines with CO ₂ by using Zr-based metal-organic frameworks: favorable contribution of defect sites of MOF	<u>Dong Kyu Yoo</u> and Sung Hwa Jhung	Kyungpook National University
P50	Improving of polymerization rate and tuning of glass transition temperature by alternating terpolymerization of carbon dioxide, propylene oxide and epoxide with adamantyl group	<u>Ko Okuda</u> , Takuya Ebihara, Tomoya Ohkawa, Masayoshi Honda, Hiroshi Sugimoto	Tokyo University of Science

Program of ICEC2022

Poster Presentation, July 31st (Sun) 18:30-20:00 (Japan Standard Time) Room P-2

No.	Title of Paper	Authors	Affiliation
P51	Development of novel synthesis of high entropy alloy nanoparticles as durable catalysts for CO ₂ hydrogenation	<u>Naoki Hashimoto</u> , Kohsuke Mori, Naoto Kamiuchi, Hideto Yoshida, Hisayoshi Kobayashi, Hiromi Yamashita	Osaka University
P52	Na-modified Pt nanoparticles on Al ₂ O ₃ effective for continuous CO ₂ capture and selective hydrogenation to CO	<u>Shinta Miyazaki</u> , Lingcong Li, Takashi Toyao, Zen Maeno, Ken-ichi Shimizu	Hokkaido University
P53	Decomposition of nitrous oxide over Rh catalysts supported on zirconia-based solid solutions	<u>Ayane Ishima</u> , Ryosuke Aoi and Shinji Iwamoto	Gunma university
P54	Construction of an electrochemical catalytic reaction system and its application to CO ₂ reduction reaction	<u>Keigo Komoguchi</u> , Muneaki Yamamoto, Hideaki Yoneda, Tetsuo Tanabe, Tomoko Yoshida	Osaka Metropolitan University
P55	Theoretical study on the control of CO ₂ capture and separation by applying the electric field	<u>Koki Saegusa</u> , Kenshin Chishima, Hiroshi Sampei, Kazuharu Ito, Kota Murakami, Yasushi Sekine	Waseda University
P56	Bimetallic catalysts for direct CO ₂ hydrogenation to hydrocarbons in a single reactor	<u>Canio Scarfiello</u> , Katerina Soulantica, Philippe Serp, Carole Le Berre, Doan Pham Minh	Université de Toulouse
P57	Synthesis of C ₂ +OH from CO ₂ hydrogenation reaction using physical mixture of Cu- and Fe-based catalysts	Cássia S. Santana, Luiz H. Vieira, Ananda V. P. Lino, Elisabete M. Assaf, José M. Assaf, <u>Janaina F. Gomes</u>	São Carlos Federal University
P58	Electrochemical reduction of CO ₂ at the Sn/ graphene/ C electrode	<u>Kenta Kikuchi</u> , Mai Furukawa, Ikki Tateishi, Hideyuki Katsumata, Satoshi Kaneco	Mie University
P59	Cu, Pd and Zn surfaces for CO ₂ activation and hydrogenation	<u>Igor Kowalec</u> , Lara Kaban, Andrew Logsdail, and Richard Catlow	Cardiff University
P60	CO ₂ fixation with NH ₃ over basic MgO catalyst	<u>Masato Takeuchi</u> , Atsushi Kondo, Masaya Matsuoka	Osaka Metropolitan University

Program of ICEC2022

Poster Presentation, July 31st (Sun) 18:30-20:00 (Japan Standard Time) Room P-2

No.	Title of Paper	Authors	Affiliation
P61	Remarkable durability of Nickel embedded silica catalyst in dry reforming of methane	<u>Haehyun Min</u> , Bogyung Kim, Sung Bong Kang	Gwangju Institute of Science and Technology
P62	Electrochemical reduction of CO ₂ in methanol at Cu/graphene-based carbon plate electrode	<u>Yuji Saka</u> , Mai Furukawa, Ikki Tateishi, Hideyuki Katsumata, Satoshi Kaneco	Mie University
P63	Evaluation of electrochemical carbon dioxide reduction using layered double hydroxide as a cathode solid electrolyte	<u>Fuki Koyama</u> , Muneaki Yamamoto, Tomoko Yoshida	Osaka Metropolitan University
P64	Tri-reforming of methane over Ni-Al ₂ O ₃ catalyst: experiment and microkinetic modelling	<u>Satyam Gupta</u> , A.S.Russel, Goutam Deo	Indian Institute of Technology Kanpur
P65	CO ₂ capture performance in zeolites with respect to frameworks and Si/Al ratios	<u>Do Yeong Kim</u> , Wo Bin Bea, Sungjoon Kweon, Min Bum Park, Sung Bong Kang	Gwangju Institute of Science and Technology
P66	Effects of In ₂ O ₃ promoter on an ordered mesoporous Cu/Al ₂ O ₃ for CO ₂ hydrogenation to methanol	<u>Faisal Zafar</u> , Mansoor Ali, Jong Wook Bae	Sungkyunkwan University
P67	Highly efficient hydrogenolysis of aryl ether using nickel phosphide nanoparticle catalyst for lignin valorization	<u>Shafarifky Muhammad Arief</u> , Min Sheng, Sho Yamaguchi, Takato Mitsudome, Tomoo Mizugaki	Osaka University
P68	Investigating the formation of active PdZn nanoparticles for carbon dioxide hydrogenation to methanol	<u>Naomi Lawes</u> , Nicholas F. Dummer, Michael Bowker, Thomas Slater, Thomas E. Davies, Louise Smith, Nia Richards, Kieran Aggett, James Hayward, Stuart H. Taylor, Graham J. Hutchings	Cardiff University
P69	Support screening of Ni-based supported metal catalysts for CO ₂ hydrogenation to CH ₄	<u>Yanggeun Ju</u> , Haehyun Min, Sung Bong Kang	Gwangju Institute of Science and Technology
P70	Effect of Zn addition on zeolite-catalyzed production of olefins and monoaromatics from hydroxyacetone	<u>Pipat Na Ranong</u> , Keita Taniya, Chiaki Ogino, Yuichi Ichihashi, Satoru Nishiyama	Kobe University

Program of ICEC2022

Poster Presentation, July 31th (Sun) 18:30-20:00 (Japan Standard Time) Room P-2

No.	Title of Paper	Authors	Affiliation
P71	Molecular oxygen activation for eco-friendly methane to methanol transformation over iron-containing zeolite-based catalyst	<u>K. Mlekodaj</u> , A. Kornas, R. Pilar, J.E. Olszowka, H. Jirglova, S. Sklenak, J. Dedecek, E. Tabor	J. Heyrovsky Institute of Physical Chemistry of the CAS
P72	Composites of supported metal nanoparticles modified with polyoxometalates for reduction-base dual functional catalysis	<u>Shoji Fukuda</u> , Soichi Kikkawa, Ryo Takahata, Kosuke Suzuki, Kazuya Yamaguchi, Toshiharu Teranishi, Seiji Yamazoe	Tokyo Metropolitan University
P73	Biomass-derived materials for electrochromic application	<u>De-Chian Chen</u> , Eduardo C. Atayde Jr., Kevin C.-W. Wu	National Taiwan University
P74	Tuning of hydrogenation ability of supported Pt catalysts by metal oxide cluster modification	<u>Yutaro Matsunaga</u> , Shoji Fukuda, Soichi Kikkawa, Seiji Yamazoe	Tokyo Metropolitan University
P75	Modeling the role of water in Sn-BEA zeolite for keto/enol tautomerization of acetone	<u>Aditya Goyal</u> , Vishal Agarwal	Indian Institute of technology Kanpur
P76	A DFT+U study to model reduced MoOx surfaces for hydrodeoxygenation of bio-oil model compounds	<u>Abir Lal Bose</u> , Vishal Agarwal	IIT KANPUR
P77	Activation of allylic alcohol with Al-doped mesoporous silica-supported Pd complex catalyst for the Tsuji-Trost allylation	<u>Siming Ding</u> , Yuichi Manaka, Ken Motokura	Tokyo Institute of Technology
P78	Nickel carbide nanoparticle catalyst for the selective hydrogenation of nitriles to primary amines	<u>Daiki Kiyohira</u> , Sho Yamaguchi, Takato Mitsudome, Tomoo Mizugaki	Osaka University
P79	Efficient conversion of fatty acid esters and depolymerization of aliphatic polyesters by CaO catalyzed transesterification	<u>Swetha Sudhakaran</u> , S. M. A. Hakim Siddiki, Kotohiro Nomura	Tokyo metropolitan University
P80	Dirhodium(II) complex-catalyzed enantioselective carbonyl ylide cycloaddition reactions under continuous flow conditions	Ryo Sato, Kyosuke Kaneda, <u>Koji Takeda</u>	Hokkaido University of Science

Program of ICEC2022

Poster Presentation, July 31st (Sun) 18:30-20:00 (Japan Standard Time) Room P-2

No.	Title of Paper	Authors	Affiliation
P81	Hydrodeoxygenation of lignocellulose-derived vanillin using Ni-La-Ce-Ti perovskite catalysts	<u>Jina Eun</u> , Lien Thi Do, Jonghyun Lee, Jae-Wook Choi, Dong Jin Suh, Chun-Jae Yoo, Kwan Young Lee, Jeong-Myeong Ha	Korea Institute of Science and Technology
P82	Synthesis of green CHA zeolite from rice husk and its applications	Yao Lu, Yong Wang, Kengo Nakamura, Takeshi Matsumoto, Junko N. Kondo, Toshiyuki Yokoi	Tokyo Institute of Technology
P83	Production of formic acid from carbohydrates using hydrogen peroxide in the presence of CaO solid base catalyst	<u>Atsushi Takagaki</u> , Wataru Obata, Ikuto Yoshiki, Tatsumi Ishihara	Kyushu University

Program of ICEC2022

Poster Presentation, Aug. 1st (Mon) 18:30-20:00 (Japan Standard Time) Room P-1

No.	Title of Paper	Authors	Affiliation
P84	Dual function of Pd ensemble site induced by GaOx modification in enhancing CO ₂ hydrogenation into formic acid	<u>Hiroto Hata</u> , Kohsuke Mori, Hiromi Yamashita	Osaka University
P85	Nickel-based high-entropy intermetallic as a highly active and selective catalyst for acetylene semihydrogenation	<u>Jiamin Ma</u> , Feilong Xing, Yuki Nakaya, Ken-ichi Shimizu, Shinya Furukawa	Hokkaido University
P86	Development of PdAgCr ternary nanoparticle catalysts for efficient dehydrogenation from formic acid as a promising H ₂ carrier	<u>Tatsuya Fujita</u> , Kohsuke Mori, Hiromi Yamashita	Osaka University
P87	Effects of the perovskite-A-site composition on ammonia synthesis in an electric field	<u>Sae Doi</u> , Yuta Tanaka, Kota Murakami, Kazuharu Ito, Takuma Higo, Hideaki Tsuneki, Yasushi Sekine	Waseda University
P88	Formic Acid dehydrogenation catalyzed by carbon-supported palladacycles	<u>David Salinas-Torres</u> , Miriam Navlani-García, José Luis Serrano, Emilia Morallón, Diego Cazorla-Amorós	Technical University of Cartagena
P89	Investigation of Cu promotion on the activity of M/Al ₂ O ₃ catalysts (M = Fe, Co, and Ni) for NH ₃ decomposition	<u>Younghwan Im</u> , Hiroki Muroyama, Toshiaki Matsui, Koichi Eguchi	Kyoto University
P90	Ammonia as a hydrogen storage. Cobalt-nickel catalysts for ammonia decomposition	<u>Andrzej Kowalczyk</u> , Natalia Szczepanik, Zofia Piwowska, Lucjan Chmielarz	Jagiellonian University

Program of ICEC2022

Poster Presentation, Aug. 1st (Mon) 18:30-20:00 (Japan Standard Time) Room P-1

No.	Title of Paper	Authors	Affiliation
P91	Efficient Ru catalysts for CO ₂ -free ammonia synthesis	<u>Rahat Javaid</u> , Tetsuya Nanba	National Institute of Advanced Industrial Science and Technology (AIST)
P92	Non-oxidative coupling of methane: N-type doping of niobium single atoms in TiO ₂ -SiO ₂ induces electron localization	<u>Ziyu Chen</u> , Shiqun Wu, Jiayu Ma, Shinya Mine, Takashi Toyao, Masaya Matsuoka, Lingzhi Wang, Jinlong Zhang	East China University of Science and Technology
P93	Development of Pt/TiO _{2-x} nanorods photocatalysts assisted by hydrogen spillover	<u>Tetsuya Toyonaga</u> , Yukari Yamazaki, Kohsuke Mori, Yasutaka Kuwahara, Hiromi Yamashita	Osaka University
P94	TiO ₂ -based S-scheme photocatalyst for enhanced H ₂ O ₂ -production activity	<u>Linxi Wang</u> , Jiaguo Yu	China University of Geosciences
P95	Development of defective Pt/ZrO _{2-x} photocatalysts with different crystal phases	<u>Naoto Doshita</u> , Yukari Yamazaki, Kohsuke Mori, Yasutaka Kuwahara, Hiromi Yamashita	Osaka University
P96	Selective photocatalytic CO ₂ reduction to CH ₄ on tri-s-triazine-based carbon nitride via defects and crystal regulation	<u>Zhiguo Liu</u> , Shiqun Wu, Mingyang Li, Jinlong Zhang	East China University of Science and Technology
P97	Effect of non-metal doping on the photocatalytic performance of g-C ₃ N ₄ -based S-scheme heterojunction: A theoretical study	<u>Bicheng Zhu</u> , Jiaguo Yu	China University of Geosciences
P98	Photo-coupling of halogenated arenes boosted by metal cocatalyst	<u>Yaru Li</u> , Hongwei Xiang, Yongwang Li, Hans Niemantsverdriet, Ren Su	Synfuels China Technology Co. Ltd.
P99	Plasma-modified black Bi ₂ WO ₆ nanosheets for photocatalytic CO ₂ conversion	<u>Kang Zhong</u> , Anqi Zhou, Guli Zhou, Qidi Li, Jinman Yang, Zhaolong Wang, Xingwang Zhu, Junchao Qian, Yingjie Hua, Huaming Li, Hui Xu	JiangSu University
P100	Preparation of high-strength collagen gels using titanium oxides with UV irradiation	Hiroko Hoshi, Kaito Wakabayashi, <u>Hiromi Matsuhashi</u>	Hokkaido University

Program of ICEC2022

Poster Presentation, Aug. 1st (Mon) 18:30-20:00 (Japan Standard Time) Room P-1

No.	Title of Paper	Authors	Affiliation
P101	Hydrogen evolution coupled with pyruvic acid production via photocatalytic α -C(sp ³) H activation over CdS/MoO ₂ /MoS ₂ hollow spheres	<u>Chuanbiao Bie</u> , Bicheng Zhu, Linxi Wang, Chenhui Jiang, Tao Chen, Jiaguo Yu	China University of Geosciences
P102	In situ Pt-loaded porous photocatalyst for dry reforming of methane under mild conditions	<u>Chengxuan He</u> , Shiqun Wu, Jinlong Zhang	East China University of Science and Technology
P103	Investigation of Au supporting method on titanium dioxide for hydrogen production from high concentration methanol	<u>Yuta Takai</u> , Mai Furukawa, Ikki Tateishi, Hideyuki Katsumata, Satoshi Kaneco	Mie University
P104	Electron transfer kinetics of CdS/Pt heterojunction photocatalyst for water splitting	<u>Jianjun Zhang</u> , Guijie Liang, Linxi Wang, Jiaguo Yu	China University of Geosciences
P105	Synthesis of flower-like structured FeSi ₂ and its application to the water purification	<u>Takashi Kamegawa</u> , Tatsuki Minami	Osaka Metropolitan University
P106	Highly dispersed hematite supported on silica as a visible light driven photocatalyst for wastewater treatment	<u>Yoshiumi Kohno</u> , Masaki Ohmura, Rei Sawa, Ryo Watanabe, Choji Fukuhara	Shizuoka University
P107	Size effect in Au NRs-based plasmonic catalyst with Pd-rGO nanocomposite for promoting suzuki-miyaura coupling reaction	<u>Toru Shimojitosh</u> , Kenjirou Tamaki, Priyanka Verma, Kohsuke Mori, Yasutaka Kuwahara, Hiromi Yamashita	Osaka University
P108	The p-n junction CdS/Cu ₇ S ₄ for improved Photocatalytic Hydrogen Production	<u>Takumi Kobayashi</u> , Ikki Tateishi, Mai Furukawa, Hideyuki Katsumata, Satoshi Kaneco	Mie University
P109	TiO ₂ nanofiber-based S-scheme photocatalysts	<u>Feiyan Xu</u> , Jiaguo Yu	China University of Geosciences
P110	Au-induced promotion of the photocatalytic performance of W ₁₈ O ₄₉ towards CO ₂ reduction	<u>Sushu Zhang</u> , Zheng Qi, Qin Li, Kangle Lv	South-Central Minzu University

Program of ICEC2022

Poster Presentation, Aug. 1st (Mon) 18:30-20:00 (Japan Standard Time) Room P-1

No.	Title of Paper	Authors	Affiliation
P111	Fe-MOF derivative with enhanced oxygen reduction for indoor pollutant purification	<u>Junxian Qin</u> , Yun Pei, Yun Hu	South China University of Technology
P112	Plasmonic photocatalyst with enhanced photocatalytic activity and stability under visible-light irradiation	<u>Kenta Yoshiiri</u> , Maya Endo-Kimura, Bunsho Ohtani, Ewa Kowalska	Hokkaido University
P113	Effect of metal-oxide cluster species on hydrogen peroxide production using MOF photocatalysts	<u>Kenta Hino</u> , Yoshifumi Kondo, Yasutaka Kuwahara, Kohsuke Mori, Hiromi Yamashita	Osaka University
P114	Hydrogen production activity by heterojunction g-C ₃ N ₄ photocatalysts with aromatic rings	<u>Motoki Sato</u> , Hideyuki Katsumata, Ikki Tateishi, Mai Furukawa, Satoshi Kaneco	Mie University
P115	Hydrogen peroxide generation from oxygen and water driven by Hf-MOF photocatalyst with structural defects	<u>Kotaro Honda</u> , Yoshifumi Kondo, Yasutaka Kuwahara, Kohsuke Mori, Hiromi Yamashita	Osaka University
P116	Modification of metal organic frameworks and their adsorption and photocatalytic performance for volatile organic compounds	<u>Jun Wang</u> , Junxian Qin, Yun Hu	South China University of Technology
P117	Visible-light-driven CO ₂ reduction system constructed from α -FeOOH/Al ₂ O ₃ catalyst and a Ru(II) sensitizer	<u>Daehyeon An</u> , Shunta Nishioka, Tomoki Kanazawa, Shunsuke Nozawa, Kazuhiko Maeda	Tokyo Institute of Technology
P118	Role of Ag-nano particles on a Ga ₂ O ₃ catalyst in photocatalytic CO ₂ reduction studied with wavelength selected light illumination	<u>Tomoka Yamamoto</u> , Muneaki Yamamoto, Tetsuo Tanabe, Tomoko Yoshida	Osaka Metropolitan University
P119	Role of Al ₂ O ₃ used as support of Ga ₂ O ₃ photocatalyst in photocatalytic CO ₂ reduction	<u>Kyoshiro Ichikawa</u> , Tomomi Aoki, Masato Akatsuka, Muneaki Yamamoto, Tetsuo Tanabe, Tomoko Yoshida	Osaka Metropolitan University
P120	Photocatalytic and electrochemical evolution of H ₂ from alcohol in WO ₃ -Cu ⁿ⁺ -H ₂ O-O ₂ system	<u>Chihiro Shiba</u> , Kazuki Hayami, Atsuhiko Tanaka, Hiroshi Kominami	Kindai University

Program of ICEC2022

Poster Presentation, Aug. 1st (Mon) 18:30-20:00 (Japan Standard Time) Room P-1

No.	Title of Paper	Authors	Affiliation
P121	Dye degradation reaction by TiO ₂ /WO ₃ mixed photocatalyst	<u>Tetsuhito Hoshino</u> , Hideyuki Okumura, Takaya Ogawa, Keiichi N. Ishihara	Kyoto University
P122	Atomically dispersed copper coordinated by carbon nitride enabling efficiently photocatalytic drinking water disinfection	<u>Hang Liu</u> , TianYi Wang, Sixiao Liu, Xiaoyu Zhou, Lei Zhang, Chengyin Wang, Zhengyuan Teng	Yangzhou University
P123	Visible-light-responsive Ir and La-codoped K _{1-x} Na _x TaO ₃ photocatalysts for water splitting	<u>Haruka Misono</u> , Akihide Iwase	Meiji University
P124	Acceleration of visible light induced hydrogenation by introducing Br to organic modifiers fixed on titanium dioxide: A novel method for better photocatalytic material conversion	<u>Hibiki Toda</u> , Yuhei Yamamoto, Atsuhiko Tanaka, Hiroshi Kominami	Kindai University
P125	Degradation performance of TiO ₂ photocatalysts in seawater	<u>Yoshitaka Yamaguchi</u>	National Institute of Maritime, Port and Aviation Technology
P126	Cyano-embedded graphitic carbon nitride structures doped with boron for efficient photocatalytic oxygen reduction	<u>Hossein Fattahimoghaddam</u> , Tahereh Mahvelati-Shamsabadi, Byeong-Kyu Lee	University of Ulsan
P127	Boron-doping MOF-derived hierarchical manganese iron spinel for highly efficient seawater oxidation	<u>Meng Chen</u> , Nutthaphak Kitiphathipiboon, Abuliti Abudula, Guoqing Guan	Hirosaki University
P128	Stable electrolysis of ammonia on platinum enhanced by methanol in non-aqueous electrolyte for an in-situ hydrogen production	<u>Xue Yang</u> , Han Sun, Chuntong Liu, Haijun Chen	Nankai University
P129	Self-source corrosion of three-dimensional nickel foam induced by iron hydrolysis to prepare high-efficiency electrocatalyst for water oxidation	<u>Zhaolong Wang</u> , Jian Bao, Huaming Li, Hui Xu	Jiangsu University
P130	Efficacious CO ₂ photoconversion to C ₂₊ hydrocarbons using K ₂ Fe ₂ O ₄ /rGO heterojunction as catalysts	<u>Hung-Lin Chen</u> , Fu-Yu Liu, Yu-Yun Lin, Chiing-Chang Chen, Dechun Zou	National Taichung University of Education

Program of ICEC2022

Poster Presentation, Aug. 1st (Mon) 18:30-20:00 (Japan Standard Time) Room P-2

No.	Title of Paper	Authors	Affiliation
P131	Developing a dual-functional electrocatalyst for sustained seawater electrolysis	<u>Nutthaphak Kitiphatpiboon</u> , Meng Chen, Abuliti Abudula, Guoqing Guan	Hirosaki University
P132	Catalytic desulfurization of liquid fuel via oxidation over ZrO ₂ @nitrogen-doped porous carbon, derived from zirconium chloride-loaded metal-azolate framework-6	<u>Md. Mahmudul Hassan Mondol</u> , Sung Hwa Jung	Kyungpook National University
P133	Acid property of SiO ₂ -Al ₂ O ₃ supported tungsten sulfide catalysts	<u>Takeyuki Nogami</u> , Hiroki Miura, Tetsuya Shishido	Tokyo Metropolitan University
P134	Low-temperature selective EDH over YCrO ₃ perovskite	<u>Kosuke Watanabe</u> , Takuma Higo, Shun Maeda, Hideaki Tsuneki, Kunihide Hashimoto, Yasushi Sekine	Waseda University
P135	Alkaline earth metal cation doping on LaAlO ₃ perovskite catalysts for low-temperature oxidative coupling of methane in an electric field	<u>Harunobu Tedzuka</u> , Yuna Takeno, Shuhei Ogo, Kota Murakami, Takuma Higo, Hideaki Tsuneki, Jeong Gil Seo, Yasushi Sekine	Waseda University
P136	Hydrogen production by steam reforming of liquefied natural gas (LNG) over mesoporous nickel-based catalysts promoted with nonmetal boron	<u>ChangJin Han</u> , Seungwon Park, Do Heui Kim	Seoul National University
P137	Reverse water-gas shift reaction via chemical looping on Co-In ₂ O ₃	<u>Sota Kakihara</u> , Jun-Ichiro Makiura, Takuma Higo, Naoki Ito, Yuichiro Hirano, Yasushi Sekine	Waseda University
P138	Plastic upcycling to liquid fuels and wax at mild conditions	<u>Achmad Buhori</u> , Chun-Jae Yoo ¹	Korea Institute of Science and Technology
P139	Development of Ni nanoparticle encapsulated with Silicalite-1 catalyst for high activity steam reforming of bio-ethanol with coke suppression ability	<u>Sirintra Arayawate</u> , Tsuki Yokosawa, Hiroyasu Fujitsuka, Teruoki Tago	Tokyo Institute of Technology
P140	Catalytic-pyrolysis of plastic wastes in high efficient hydrogen production by MOF-derived NiO/CeO ₂ catalyst	<u>Chang-Yen Hsu</u> , Wei-Ting Chung, Ren-Xuan Yang, Kevin C.-W. Wu	National Taiwan University

Program of ICEC2022

Poster Presentation, Aug. 1st (Mon) 18:30-20:00 (Japan Standard Time) Room P-2

No.	Title of Paper	Authors	Affiliation
P141	Plasmonic nanoparticle loaded Al-SrTiO ₃ supported with Rh/Cr ₂ O ₃ and CoOOH cocatalysts for hydrogen production	<u>M. Abd Elkodous</u> , Aziz Aatiqah, Go Kawamura, Wai Kian Tan, Atsunori Matsuda	Toyohashi University of Technology
P142	Practical method for glycolysis of polyethylene terephthalate (PET) over zero-valent zinc (ZVZ)	<u>Yu-Wen Chiao</u> , Weisheng Liao, Kevin C.-W. Wu	National Taiwan University
P143	Development of facile methods for Pt nanosheet preparation by using stacked graphene oxides	<u>Yuki Mido</u> , Tatsuki Nakamae, Sakae Takenaka	Doshisha University
P144	Removal of Cs ⁺ with Zincosilicate zeolites	<u>Yudai Shimizu</u> , Makoto Sano, Takanori Miyake	Kansai University
P145	ZnO nanopagoda arrays as a novel photoanode for photoelectrochemical water splitting	<u>M. M. Abouelela</u> , Go Kawamura, Wai Kian Tan, Atsunori Matsuda	Toyohashi University of Technology
P146	Development of an efficient desulfurization method for aromatic organic sulfur compounds in fuel using ultraviolet light	<u>Taka-Aki Shinozaki</u> , Masahiko Suenaga, Yohan Ko, Eiji Yamamoto, Haruno Murayama, Makoto Tokunaga	Kyushu University
P147	Direct oxidation of methane to methanol by metal-organic framework: influence of the catalyst copper content on methanol productivity	<u>Thielle Nayara Vieira de Souza Ferreira</u> , Janaina Fernandes Gomes, Jose Mansur Assaf	Federal University of São Carlos
P148	Direct methane reforming –Effect of coexisting H ₂ O and CO ₂ –	<u>Rei Satoh</u> , Koichiro Iwama, Noriyasu Okazaki	Kitami Institute of Technology
P149	Steam reforming of methanol using metal-introduced NiCuAl-LDH with chelating agent	<u>Taisei Akagi</u> , Naoki Ikenaga	Kansai University
P150	Direct Methane reforming reaction using biomethane	<u>Sho Fukushima</u> , Koichiro Iwama, Noriyasu Okazaki	Kitami Institute of Technology

Program of ICEC2022

Poster Presentation, Aug. 1st (Mon) 18:30-20:00 (Japan Standard Time) Room P-2

No.	Title of Paper	Authors	Affiliation
P151	Direct methane reforming reaction - Alumina addition effect in iron oxide catalyst	<u>Yohei Sakurai</u> , Noriyasu Okazak	Kitami Institute of Technology
P152	A comparative analysis of energy performance and process simulation of different hydrogen production methods	<u>Rohit Dalal</u> , Sunit Kumar Singh, Roshan Wathore, Nitin Labhasetwar	CSIR-National Environmental Engineering Research Institute, India
P153	Direct methane reforming -preparation of Fe ₂ O ₃ /Al ₂ O ₃ catalysts-	<u>Koichiro Iwama</u> , Noriyasu Okazaki	Kitami Institute of Technology
P154	Unravelling the structure-activity relationship of Cu-ZnO-Al ₂ O ₃ catalysts relevant to clean hydrogen production via water-gas shift reaction	<u>Seon-Yong Ahn</u> , Won-Jun Jang, Hyun-Seog Roh	Yonsei University
P155	Hydrogen formation from natural methane hydrates collected off tokachi, the pacific ocean	<u>Masaya Arai</u> , Hirotoshi Sakagami, Noriyasu Okazaki, Satoshi Yamashita, Akihiro Hachikubo, Masaaki Konishi, Kazutaka Tateyama, Masato Kida, Hirotosugu Minami	Kitami Institute of Technology
P156	Screening of active metal supported on SiO ₂ for dry reforming of methane (DRM)	Bogyung Kim, Haehyun Min, Sung Bong Kang	Gwangju Institute of Science and Technology
P157	Modulating the metal-support interactions of ceria-supported catalysts for hydrogen production from waste	<u>Kyoung-Jin Kim</u> , Yeol-Lim Lee, Ga-Ram Hong, Hyun-Seog Roh	Yonsei University
P158	Direct conversion of dimethyl ether (DME) to gasoline range hydrocarbons over ZSM-5: Effect of zeolite morphology to product distribution	<u>Mansoor Ali</u> , Faisal Zafar, Jong Wook Bae	Sungkyunkwan University
P159	Colorimetric determination of glucose by SAT-3 using modified CoFe ₂ O ₄ magnetic catalyst	<u>Kurumi Matsui</u> , Hideyuki Katsumata, Mai Furukawa, Ikki Tateishi, Satoshi Kaneco	Mie University
P160	Dynamically shrinkable nanocarrier for Significantly improving the activity of the cocatalysts in Fenton-like reaction	<u>Chun He</u> , Lingzhi Wang, Jinlong Zhang	East China University of Science and Technology

Program of ICEC2022

Poster Presentation, Aug. 1st (Mon) 18:30-20:00 (Japan Standard Time) Room P-2

No.	Title of Paper	Authors	Affiliation
P161	Transition metal phosphides with dual active sites in Fenton-like system for water treatment	Xiuying Li, <u>Zhu Wang</u> , Zhao-Qing Liu	Guangzhou University
P162	Hydrangea-like NiCo ₂ S ₄ activated peroxymonosulfate for efficient PPCPs degradation: kinetics, intermediates and reaction mechanism	<u>Ziling Zhu</u> , Feng Li, Haidong Yu, Ling Wu	Wuhan University of Science and Technology
P163	Determination of H ₂ O ₂ with PPD oxidation using Ni-CoFe ₂ O ₄	<u>Maiko Shibata</u> , Hideyuki Katsumata, Mai Furukawa, Ikki Tteishi, Satoshi Kaneco	Mie University
P164	Realization of subnano-in-meso architecture with rectification and monovalent ion selectivity for enhanced blue energy conversion	<u>Hoong-Uei Koh</u> , Pei-Ching Tsai, Li-Hsien Yeh, Kevin C.-W. Wu	National Taiwan University
P165	Degradation of antibiotic by accelerated oxidation method using CoFe ₂ O ₄	<u>Shotarou Kawakami</u> , Hideyuki Katsumata, Mai Furukawa, Ikki Tateishi, Satoshi Kaneco	Mie University
P166	Amorphous aluminosilicates as efficient ion exchangers for ammonium cations from aqueous solutions	<u>M. Takemura</u> , R. Simancas, K. Iyoki, T. Okubo, T. Wakihar	The University of Tokyo
P167	Heterogeneous Cu(III) mediated PMS activation over CuO nanosheets for highly efficient degradation of phenols	<u>Yan Wei</u> , Mingce Long	Shanghai Jiao Tong University
P168	Photocatalytic decolorization of rhodamine B in aqueous solution with CuO/Sn ₃ O ₄ nanocomposite	<u>Ayata Ohnishi</u> , Mai Furukawa, Ikki Tateishi, Hideyuki Katsumata, Satoshi Kaneco	Mie University
P169	Elucidating mechanism of piezoelectrocatalytic degradation of the organic pollutants from aqueous solution	<u>Onkar Sudhir Ekande</u> , Mathava Kumar	Indian Institute of Technology Madras
P170	High-performance capacitive deionization using multi-metal ZIF-derived, N-doped porous carbon with embedded carbon nanotube	<u>Hsi-Yen Wu</u> , Chih-Yu Ma, Chia-Hung Hou, Kevin C.-W. Wu	National Taiwan University

Program of ICEC2022

Poster Presentation, Aug. 1st (Mon) 18:30-20:00 (Japan Standard Time) Room P-2

No.	Title of Paper	Authors	Affiliation
P171	Preconcentration of trace heavy metals for determination by graphite furnace atomic absorption spectrometer	<u>Takayuki Fujihara</u> , Mai Furukawa, Hideyuki Katsumata, Ikki Tateishi, Satoshi Kaneko	Mie University
P172	Band gap tuning of g-C ₃ N ₄ /TiO ₂ by vapor phase deposition for enhanced solar photocatalytic degradation of metformin	Sandeep S. Haral, <u>Farhan F. Shaikh</u> , Lekharaj C. Mahajan, Parag Nemade	Institute of Chemical Technology Mumbai
P173	Enhanced photocatalytic NO oxidation performance of TiO ₂ hollow microspheres via introduction of oxygen vacancy	Zhao Hu, <u>Kaining Li</u> , Kangle Lv, Hiromi Yamashita	South-Central Minzu University
P174	Effects of central metals on photochemical water oxidation activities of doubly N-confused hexaphyrin Complexes	<u>Daichi Sugawara</u> , Takashi Nakazono, Tohru Wada	Rikkyo University
P175	Design of plasmonic catalysts using nanostructured materials for hydrogen and carbon cycling	<u>Hiromi Yamashita</u> , Kohsuke Mori, Yasutaka Kuwahara, Tetsutaro Ohmichi	Osaka University

Abstracts

Plenary Lecture: PL-1 ~ PL-4

Keynote Lecture: KN-1 ~ KN-16

Special Invited Lecture: SIL-1 ~ SIL-10

Oral Presentation: OA01 ~ OA45

OB01 ~ OB49

OC01 ~ OC51

OD01 ~ OD37

Poster Presentation: P01 ~ P175

Presentation time including question:

Plenary Lecture	(PL)	60 min
Keynote Lecture	(KN)	40 min
Special Invited Lecture	(SIL)	25min
Oral Presentation	(O)	20 min
Poster Presentation	(P)	90 min
Short Presentaion	(SP)	5min

For security, information to get Abstracts was already sent to all registered attendants from ICEC2022 office using e-mail.

If you did not get the information, please contact ICEC2022 office to get Abstracts:

ICEC2022 office (E-mail): ICEC2022@mat.eng.osaka-u.ac.jp



ACS ES&T | Engineering

Cutting-edge knowledge and engineering solutions for environmental issues of today and tomorrow

EDITOR-IN-CHIEF

Professor Wonyong Choi, POSTECH, South Korea



NOW OPEN FOR
SUBMISSIONS

SUBMIT YOUR RESEARCH
pubs.acs.org/estengg



ACS Publications
Most Trusted. Most Cited. Most Read.

Catalysis Science & Technology

Strengthening connections
across the catalysis community

Cutting-edge. High quality.
Multidisciplinary

rsc.li/catalysis

Fundamental questions
Elemental answers

GOLD
OPEN
ACCESS

Energy Advances

Embracing research at the nexus of energy science and sustainability

Your ideas could help tackle
global energy problems.
Open for submissions now.

rsc.li/energy-advances

 @ees_journal

Fundamental questions
Elemental answers

For characterization of solid catalysts!

Catalyst evaluation

BELCAT II

CO-pulse, TPD, TPR, TPO, BET

Break through curve measurement, Various catalytic reaction

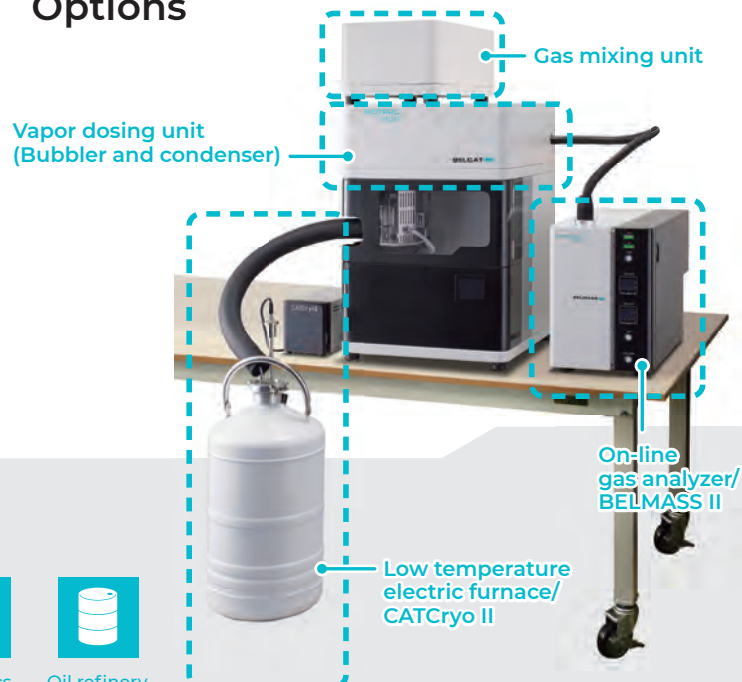
- | A variety of measurements are possible; Acid/base by TPD measurement, metal dispersion by pulse measurement, BET specific surface area, CO₂ single/multi-component breakthrough curve evaluation (CCU/CCSU), and various catalytic reactions.
- | Standardized gas mixing function enables adjustment of gas mixtures in any desired ratio.
- | Low cost and optional vapor dosing unit.
- | Temperature range: room temperature to 1100°C (option -120 to 1100°C)
- | Available gases: H₂, H₂O, O₂, N₂, NO, NH₃, etc.



Software



Options



Typical Applications



Catalyst



Fuel cell



Battery materials



Petro chemistry



Gas separation



Ceramics



Oil refinery

MicrotracBEL Corp.

8-2-52 Nanko-Higashi, Suminoe-ku, Osaka 559-0031, Japan
TEL: +81-6-6655-0362, Fax: +81-6-4703-8901

<https://www.microtrac.com/>

E-mail international@microtrac-bel.com

High performance, compact, and low-cost evaluation from micropores!

High precision gas adsorption

BELSORP MAX G

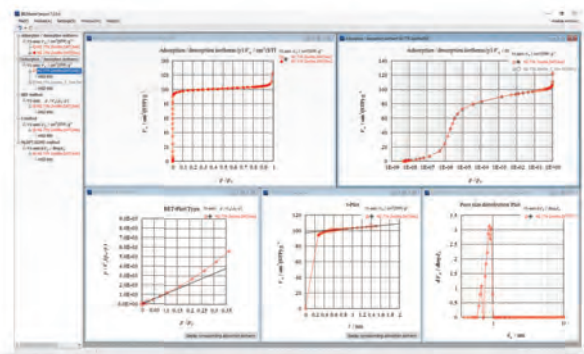
Specific surface area : 0.01m²/g~ (N₂), 0.0005m²/g~ (Kr)

Pore size distribution : 0.35~500nm in diameter

- | BET and PSD from micro to meso and macropores by gas adsorption measurement of N₂, Ar, CO₂
- | Low BET specific surface area by Kr gas measurement
- | High performance PSD analysis by GCMC / NLDFT in BELMASTER and BELSim
- | Actual and short time evaluation for each adsorption point by gas dosing optimization function (GDO)
- | Gas adsorption isotherm & NET adsorption measurement through AFM2™ without the need of He-gas



Software



Typical Applications



Catalyst



Battery



Carbon



Pharmacy



Cosmetics



Cement



Toner



Pigments



Ceramic



Metal oxide

MicrotracBEL Corp.

8-2-52 Nanko-Higashi, Suminoe-ku, Osaka 559-0031, Japan
TEL: +81-6-6655-0362, Fax: +81-6-4703-8901

<https://www.microtrac.com/>

E-mail international@microtrac-bel.com

Meeting ID & PW:

For security, information on Zoom (URL, ID, PW) was already sent to all registered attendants from ICEC2022 office using e-mail.

If you did not get the information, please contact ICEC2022 office:

ICEC2022 office (E-mail): ICEC2022@mat.eng.osaka-u.ac.jp

July 30th (Sat)

Room:	URL	ID:	PW:
Room A Opening PL-1	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX	XXXX

July 31st (Sun)

Room:	URL	ID:	PW:
Room A PL-2 Oral session	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX	XXXX
Room B Oral session	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX	
Room C Oral session	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX	
Room D Oral session	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX	
Poster Room P-1 (P01-P40)	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX	
Poster Room P-2 (P41-P83)	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX	

Aug. 1st (Mon)

Room:	URL	ID:	PW:
Room A PL-3 Oral session	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX	XXXX
Room B Oral session	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX	
Room C Oral session	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX	
Room D Oral session Special Session	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX	
Poster Room P-1 (P84-P130)	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX	
Poster Room P-2 (P131-P175)	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX	

Aug. 2nd (Tue)

Room:	URL	ID:	PW:
Room A PL-4 Oral session	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX	XXXX
Room B Oral session	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX	
Room C Oral session	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX	
Room D Oral session	XXXXXXXXXXXXXXXXXXXXXXXXXXXX	XXXXXXXXXX	

For security, information on Zoom (URL, ID, PW) was already sent to all registered attendants from ICEC2022 office using e-mail.

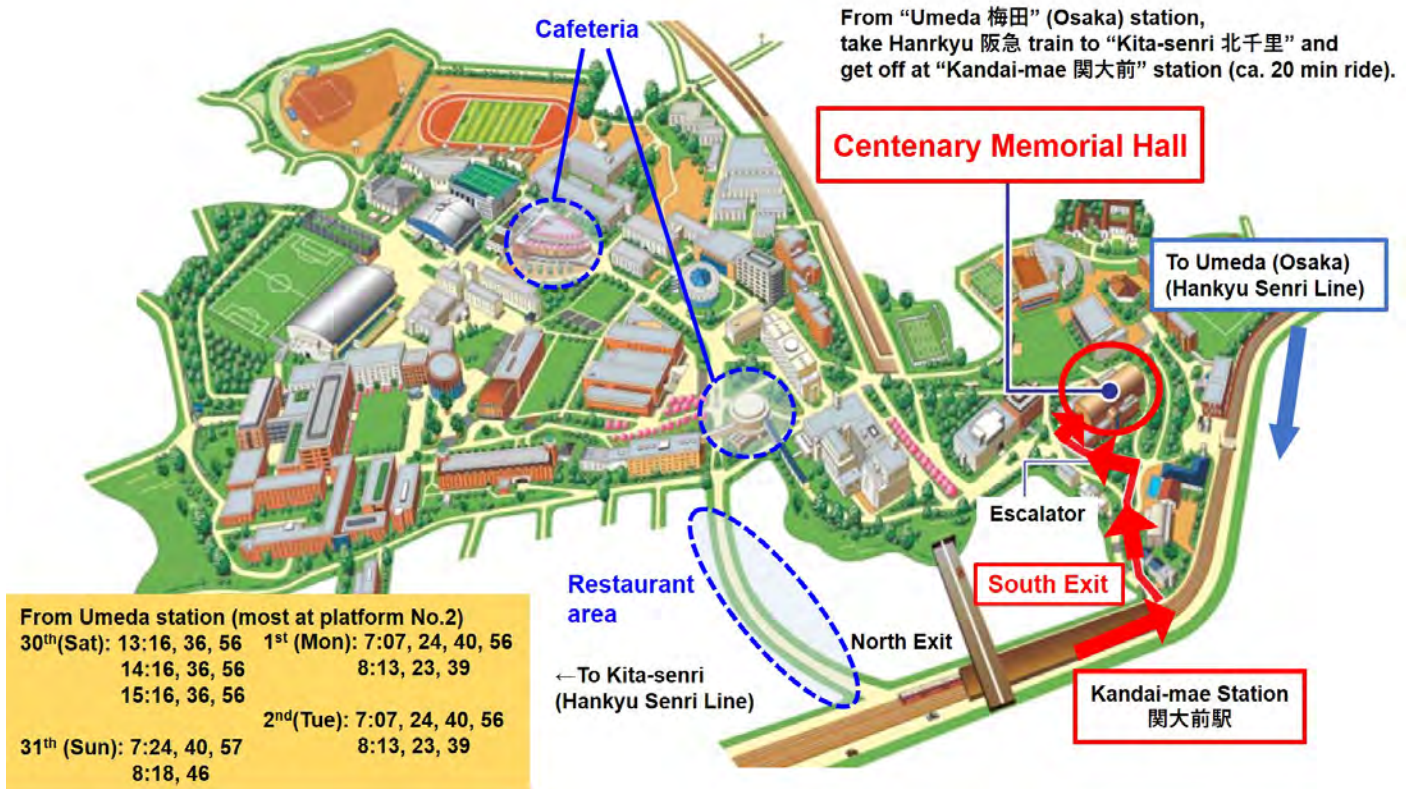
If you did not get the information, please contact ICEC2022 office:

ICEC2022 office (E-mail): ICEC2022@mat.eng.osaka-u.ac.jp

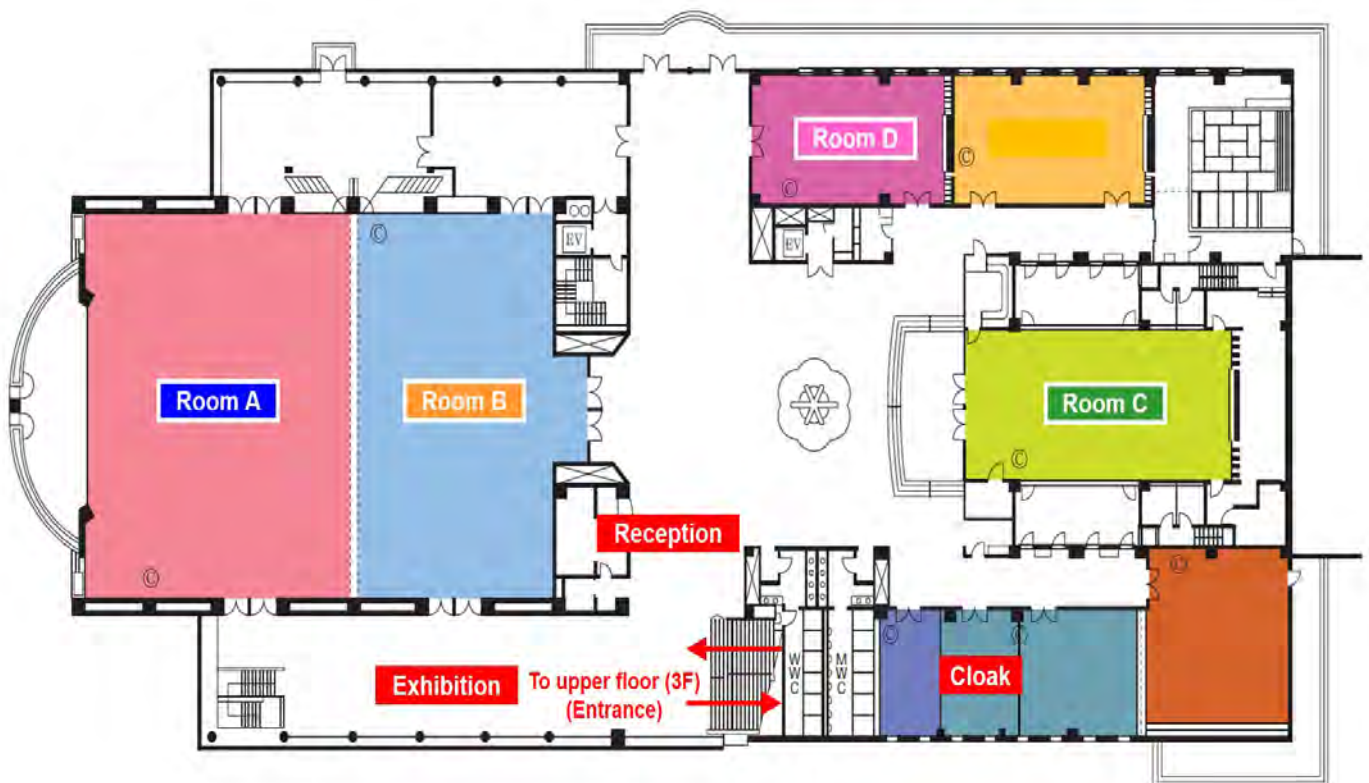
Conference Venue

"Centenary Memorial Hall" at Kansai University (Senriyama campus)

Address: 3-3-35 Yamate-cho, Suita-shi, Osaka 564-8680



Floor Map



Program of ICEC2022 (Japan Standard Time)

		July 31st (Sun)				August 1st (Mon)				August 2nd (Tue)			
July 30th (Sat)		Room A	Room B	Room C	Room D	Room A	Room B	Room C	Room D	Room A	Room B	Room C	Room D
8:00		Registration				Registration				Registration			
9:00		PL-2 Christopher W. Jones				PL-3 Hirohito Hirata				PL-4 Junhua Li			
10:00		Break				Break				Break			
		KN-1 Hong He	OB01	OC01	OD01	OA16	KN-6 Do Heui Kim	OC18	OD18	KN-10 Jingguang Chen	OB33	OC35	OD23
			OB02	OC02	OD02	OA17		OC19	OD19		OB34	OC36	OD24
11:00		OA01	OB03	OC03	OD03	OA18	OB18	OC20	OD20	OA33	OB35	OC37	OD25
		OA02	KN-2 Todd J. Toops	OC04	OD04	OA19	OB19	OC21	OD21	OA34	OB36	OC38	KN-11 Atsushi Urakawa
		OA03		OC05	OD05	OA20	OB20	OC22	OD22	OA35	OB37	OC39	
12:00		Lunch				Lunch				Lunch			
13:00		KN-3 Michael Stockenhuber	OB04	OC06	OD06	KN-7 Masaru Ogura	OB21	OC23	Special Session Opening	OA36	KN-12 Jiaguo Yu	OC40	OD26
			OB05	OC07	OD07		OB22	OC24	SIL-01	OA37		OC41	OD27
		OA04	OB06	OC08	OD08	OA21	OB23	OC25	SIL-02	OA38	OB38	OC42	OD28
14:00	Registration	OA05	OB07	OC09	OD09	OA22	OB24	OC26	SIL-03	KN-13 Wonyong Choi	OB39	OC43	OD29
		OA06	OB08	OC10	OD10	OA23	OB25	OC27	SIL-04		OB40	OC44	OD30
		OA07	OB09	KN-4 Yongdan Li	OD11	OA24	KN-8 Kevin C. W. Wu	OC28	SIL-05	OA39	OB41	OC45	KN-14 Ning Yan
		OA08	OB10		OD12	OA25		OC29		OA40	OB42	OC46	
15:00		Break				Break				Break			
16:00	Opening	OA09	OB11	OC11	OD13	OA26	OB26	OC30	SIL-06	OA41	OB43	KN-15 Anne Giroir- Fendler	OD31
		OA10	OB12	OC12	OD14	OA27	OB27	OC31	SIL-07	OA42	OB44		OD32
	PL-1 Christopher Hardacre	OA11	OB13	OC13	OD15	OA28	OB28	OC32	SIL-08	OA43	OB45	OC47	OD33
17:00		OA12	OB14	OC14	KN-5 Stefan Marx	OA29	OB29	KN-9 Gabriele Centi	SIL-09	KN-16 Jan-Dierk Grunwaldt	OB46	OC48	OD34
		OA13	OB15	OC15		OA30	OB30		SIL-10		OB47	OC49	OD35
		OA14	OB16	OC16	OD16	OA31	OB31	OC33	Closing	OA44	OB48	OC50	OD36
		OA15	OB17	OC17	OD17	OA32	OB32	OC34		OA45	OB49	OC51	OD37
18:00		Break				Break				Break			
19:00		Short Presentation of Poster (Room A) in-person only	Poster P01 - P40 (Room P-1)	Poster P41 - P83 (Room P-2)		Short Presentation of Poster (Room A) in-person only	Poster P84 - P130 (Room P-1)	Poster P131 - P175 (Room P-2)		Closing			
20:00													

Presentation time including Q&A (min)	
Plenary	60
Keynote	40
Special Invited	25
Invited	20
Oral	20
Poster	90
Short Presentation	5