



## **10th Asia-Pacific Congress on Catalysis**

4 Aug - 7 Aug 2025 • Singapore

## **ISSAC-4**

4th International Symposium  
on Single-Atom Catalysis

# Conference Programme

*10th Asia-Pacific Congress on Catalysis*

*4th International Symposium on Single-Atom Catalysis*





# Welcome to APCAT 10!

We are delighted to welcome you to Singapore for the 10th Asia-Pacific Congress on Catalysis (APCAT-10), where catalysis experts from across the region and beyond will gather for four days of invigorating discussions and activities. As the innovation and technology hub of Southeast Asia – one of the world's fastest growing economic regions – Singapore is the ideal city for launching impactful scientific solutions. Though this island is tiny, its influence in the scientific community is outsized, and we are excited for you to join this vibrant group during the event.

For 28 years APCAT has been the premier gathering for catalysis practitioners in Asia-Pacific, and we are immensely proud to be the host of the 10th edition of this esteemed congress. To cover the expansive field of catalysis, we are conducting APCAT-10 through (appropriately) 10 symposiums that each cover a critical topic in catalysis. From olefins to enzymes, plastic to AI, electro-, thermal-, or photo-catalysis and any combinations in between, there's a place for everyone in this meeting. And certainly, we hope making connections across fields will inspire new ideas within you.

This modern society we live in, all the good and the bad of it, would not exist if not for the catalytic innovations made in the last couple centuries. But in this congress, our goal is to facilitate the development of the next centuries' defining catalytic processes, those that will sustain our society for generations to come. Each and every one of your contributions is invaluable to bringing us one step closer to this goal, and we hope that this week will be memorable, enjoyable, and enriching for us all.

Warmest regards,

**Ning Yan**

**Paul Liu**

# Welcome to ISSAC-4!

In the dozen or so years since the single-atom catalyst was introduced to the world, these (extremely) small but mighty materials have taken the catalysis community by storm. Single-atom catalysts' maximized atomic utilization and unique electronic properties, among other things, make them unparalleled catalytic materials and the epitome of precision engineering.

Developments of new preparation methods, advanced characterization techniques, and insightful theoretical understandings have come at a rapid-fire pace, thus necessitating an international platform for pioneers in the field to exchange ideas. The first International Symposium on Single-Atom Catalysis (ISSAC) arrived in Dalian, China, and we are excited to bring the 4th edition of the world's most authoritative conference on single-atom catalysis to Singapore. Jointly holding ISSAC-4 with APCAT-10 will be a landmark convergence of catalytic science expertise. With ISSAC-4, we hope to not only share past results, but also collaborate in determining the future of our exciting and ever-growing field.

Warmest regards,

**Ning Yan**

**Tao Zhang**

**Javier Pérez-Ramírez**

## Conference Chairs



**Prof. Ning Yan**

National University of Singapore  
*APCAT-10 Chair - ISSAC-4 Chair*



**Prof. Paul Liu Wen**

Nanyang Technological University  
*APCAT-10 Co-Chair*



**Prof. Tao Zhang**

Dalian Institute of  
Chemical Physics  
*ISSAC-4 Co-Chair*



**Prof. Javier  
Pérez-Ramírez**

ETH Zurich  
*ISSAC-4 Co-Chair*

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# Organising Committee

## Conference Chairs

### *APCAT-10*

**Ning Yan,**

National University of Singapore  
– APCAT-10 Chair

**Paul Liu Wen,**

Nanyang Technological University  
– APCAT-10 Co-Chair

### *ISSAC-4*

**Ning Yan,** National University of Singapore – ISSAC-4 Chair

**Tao Zhang,** Dalian Institute of Chemical Physics - ISSAC-4 Co-Chair

**Javier Perez-Ramirez,** ETH Zurich – ISSAC-4 Co-Chair

## Symposium Chairs

### *Advanced Catalyst Characterisation*

**Qian He,** National University of Singapore

**Jiong Lu,** National University of Singapore

**Shibo Xi,** Institute of Sustainability for Chemicals, Energy and Environment (ISCE2), A\*STAR

### *Artificial Photosynthesis*

**Rong Xu,** Nanyang Technological University

**Yan Liu,** Institute of Sustainability for Chemicals, Energy and Environment (ISCE2), A\*STAR

**Fengtao Fan,** Dalian Institute of Chemical Physics, CAS

### *Biocatalysis*

**Zhi Li,** National University of

Singapore

**Kang Zhou,** Singapore Institute of Technology

**Yee Hwee Lim,** Institute of Sustainability for Chemicals, Energy and Environment (ISCE2), A\*STAR

### *Biomass Conversion and Polymer Degradation*

**Iris Yu,** National University of Singapore

**Jason Lim,** Institute of Materials Research and Engineering (IMRE), A\*STAR

**Yang Cao,** Nanjing Agricultural University

**Chao He,** Tampere University

### *C1 Chemistry and Olefins*

**Luwei Chen,** Institute of Sustainability for Chemicals, Energy and Environment (ISCE2), A\*STAR

**Guowu Zhan,** Huaqiao University

### *Catalysis for Carbon Neutrality*

**Lili Zhang,** Institute Of Sustainability for Chemicals, Energy And Environment (ISCE2), A\*STAR

**Mingwu Tan,** Institute Of Sustainability for Chemicals, Energy And Environment (ISCE2), A\*STAR

**Bin Wang,** University of Oklahoma

### *Computational Catalysis & AI*

**Sergey Kozlov,** National University of Singapore

**Tej Choksi,** Nanyang Technological University

**Jia Zhang,** Institute of High Performance Computing, A\*STAR

**Pengfei Ou,** National University of Singapore

### *Electrocatalysis*

**Zhichuan Xu,** Nanyang Technological University

**Lei Wang,** National University of Singapore

**Yanwei Lum,** National University of Singapore

**Andrew Wong,** National University of Singapore

**Nitish Govindarajan,** Nanyang Technological University

### *Emerging Catalytic Materials*

**Dongshuang Wu,** Nanyang Technological University

**Haobo Li,** Nanyang Technological University

**Yonggang Yao,** Huazhong University of Science and Technology

**Tong Li,** Ruhr-Universität Bochum

### *Environmental Catalysis*

**Fudong Liu,** University of California, Riverside

**Yong Yan,** Ganjiang Innovation Academy, Chinese Academy of Sciences

**Shipeng Ding,** Beijing Forestry University

**Wenpo Shan,** Institute of Urban Environment, CAS

## Event Organising Team

**Keshia Saradima Indriadi,** National University of Singapore – APCAT-10 Secretary

**Jinquan Chang,** National University of Singapore – ISSAC-4 Secretary

**Xianyue Wu,** Nanyang Technological University

**Yilian Dhirayuvati Chen, Xiao Fang, Clemen Goh Jia Gen, Mu Nam Jung, Jianyu Rao, Trinh Mai Hoang Anh**

Programme booklet designed by  
Andre Zheng Hao

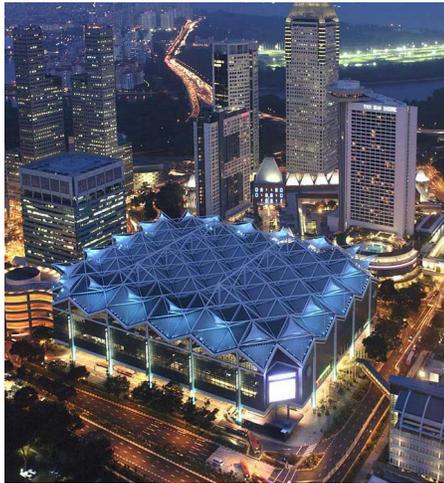


# Venue Overview



**Suntec Singapore Convention & Exhibition Centre**  
Suntec City (Floor 3), 1 Raffles Blvd, Singapore 039593

APCAT-10 will be held at **Suntec Singapore Convention & Exhibition Centre**, which is located in the vibrant **Marina Bay area of Singapore** as a premier destination for large-scale events and conventions. Spanning over 100,000 square meters, it features 42 versatile meeting rooms and an expansive exhibition hall with a total space of approximately 11,000 square meters. This allows for a wide range of events, from intimate meetings to grand exhibitions.



*External View of the Suntec Singapore Convention & Exhibition Centre*



*Internal View of the Suntec Singapore Convention & Exhibition Centre*

## How to Reach



### By MRT

*Nearest Stations:*

- **Promenade MRT Station (CC4/DT15)** – 5-minute walk via Exit C
- **Esplanade MRT Station (CC3)** – 5-minute walk via Exit A
- **City Hall MRT Station (NS25/EW13)** – 10-minute walk via Exit C through City Link Mall



### By Bus

*Nearest Bus stops:*

- **Suntec Convention Centre:** 36, 70M, 97, 106, 111, 133, 162M, 502, 518
- **Suntec Tower Two:** 10, 57, 70, 100, 107, 128, 130, 131, 162



### By Car

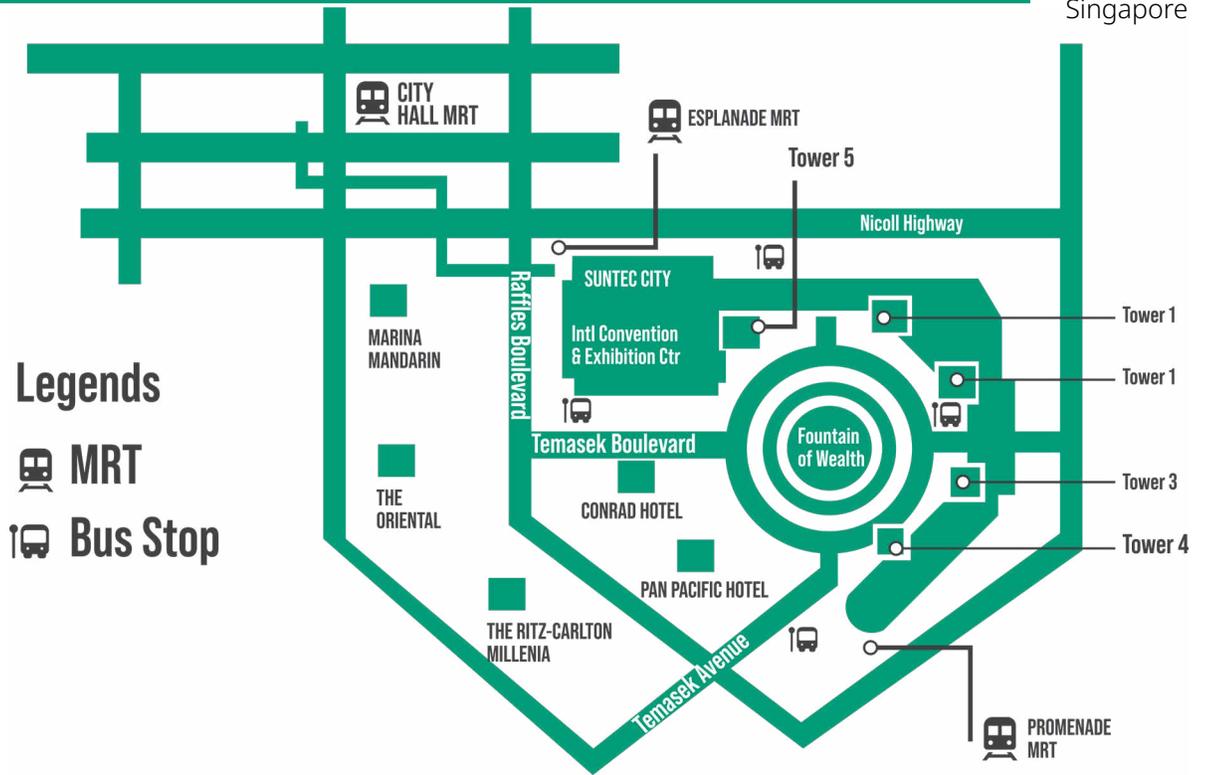
*Nearest Drop-off point:*

- **Drop-off Point:** Level 1, Convention Centre entrance at Suntec City (near The Big Picture)
- **Carpark Access:** Car Park entrances via Nicoll Highway, Raffles Boulevard or Temasek Avenue
- (Recommended to park at **Zone C or D**, nearest to the Convention Centre)

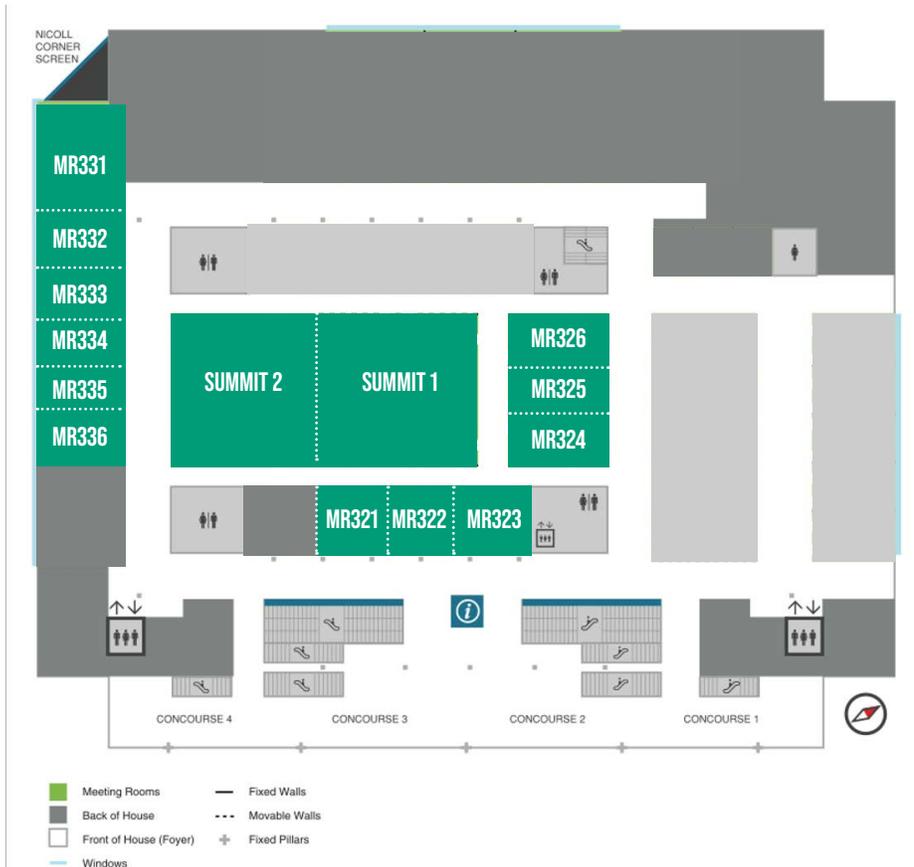
[Suntec City Dining Directory](#)



*External View of the Suntec Singapore Convention & Exhibition Centre*



External Map of the Suntec Singapore Convention & Exhibition Centre



Internal Map of the Suntec Singapore Convention & Exhibition Centre; Rooms in use highlighted in dark green



# Programme Overview

04 - 07  
AUGUST



04 August

MON

## TIME

## ARRANGEMENT

09:30 – 14:30 SGT

Registration

14:30 – 15:15 SGT

Opening Ceremony

15:15 – 15:55 SGT

Awardee Talk

15:55 – 16:35 SGT

Plenary Lecture 2

16:35 – 17:15 SGT

Plenary Lecture 3

17:15 – 18:00 SGT

Roundtable with Nature Portfolio Editors

18:00 – 20:00 SGT

Cocktail Reception



**05 August**

**TUE**

## TIME

## ARRANGEMENT

09:00 – 09:40 SGT

**Plenary Lecture 4**

09:40 – 10:20 SGT

**Plenary Lecture 5**

10:20 – 10:50 SGT

**Coffee Break**

10:50 – 12:20 SGT

**Parallel Sessions 1**

12:20 – 13:40 SGT

**Lunch**

13:40 – 15:40 SGT

**Parallel Sessions 2**

15:40 – 16:00 SGT

**Coffee Break**

16:00 – 17:30 SGT

**Parallel Sessions 3**

17:30 – 18:30 SGT

**Poster Session**

## TIME

## ARRANGEMENT

09:00 – 10:30 SGT

**Parallel Sessions 4**

10:30 – 10:50 SGT

**Coffee Break**

10:50 – 12:20 SGT

**Parallel Sessions 5**

12:20 – 13:40 SGT

**Lunch**

13:40 – 15:40 SGT

**Parallel Sessions 6**

15:40 – 16:00 SGT

**Coffee Break**

16:00 – 17:30 SGT

**Parallel Sessions 7**

17:30 – 18:30 SGT

**Poster Session**

19:00 – 21:00 SGT

**Banquet**

**06 August**

**WED**





# Programme Overview

04 - 07  
AUGUST



07 August

THU

## TIME

## ARRANGEMENT

09:30 – 10:30 SGT

Parallel Sessions 8

10:30 – 10:50 SGT

Coffee Break

10:50 – 12:20 SGT

Parallel Sessions 9

12:20 – 13:40 SGT

Lunch

13:40 – 15:40 SGT

Parallel Sessions 10

15:40 – 16:20 SGT

Plenary Lecture 6

16:20 – 17:00 SGT

Plenary Lecture 7

17:00 – 17:30 SGT

Closing Ceremony

# Opening Ceremony

04 AUG

MON

14:30 - 14:35	Opening by <b>Prof. Yan Ning</b> (APCAT-10 & ISSAC-4 Chair)
14:35 - 14:40	Welcome Address by Guest of Honour <b>Prof. Liu Bin</b> (Deputy President (Research & Technology), National University of Singapore)
14:40-14:45	Introduction to APCAT-10 by <b>Prof. Piyasan Prasertthdam</b> (President of Asia Pacific Association of Catalysis Societies [APACS])
14:45-14:50	Introduction to ISSAC-4 by <b>Prof. Zhang Tao</b> (ISSAC-4 Co-Chair)
14:50-15:15	APACS Award Ceremony, hosted by <b>Prof. Hisao Yoshida</b> and presented by <b>Prof. Piyasan Prasertthdam</b>
15:15 - 15:55	Awardee Talk by <b>Prof. Xiao Feng-Shou</b> , chaired by <b>Prof. Hisao Yoshida</b>
15:55- 16:35	Plenary Talk by <b>Prof. Enrique Iglesia</b> , chaired by <b>Prof. Paul Liu</b>
16:35 - 17:15	Plenary Talk by <b>Prof. Li Can</b> , chaired by <b>Prof. Xu Rong</b>
17:15 - 18:00	Roundtable Discussion with <b>Dr. Benjamin Martindale</b> (Senior Editor, Nature Catalysis), <b>Dr. Zhu Yanfei</b> (Senior Editor, Nature Chemical Engineering), and <b>Dr. Sun Wenjie</b> (Senior Editor, Nature Nanotechnology), moderated by <b>Prof. Yan Ning</b>

# Closing Ceremony

15:40 - 16:20	Plenary Talk by <b>Prof. Sun Shigang</b> , chaired by <b>Prof. Chen Wei</b>
16:20 - 17:00	Plenary Talk by <b>Prof. Kotohiro Nomura</b> , chaired by <b>Dr. Chen Luwei</b>
17:00 - 17:02	Summary of APCAT-10 by <b>Prof. Paul Liu</b>
17:02 - 17:05	Closing Remarks by <b>Prof. Piyasan Prasertthdam</b>
17:05 - 17:10	Introduction to APCAT-11
17:10- 17:15	Closing Remarks by <b>Prof. Li Can</b>
17:15 - 17:20	Summary of ISSAC-4 by <b>Prof. Javier Perez-Ramirez</b>
17:20 - 17:30	Poster Award Ceremony, presented by <b>Prof. Zhang Tao</b> (ISSAC-4) and <b>Prof. Li Can</b> (APCAT-10)
17:30- 17:35	Lucky Draw
17:35 - 17:40	Volunteer Appreciation

07 AUG

THU

# Plenary Lectures

	TIME		Presentation Title	Speaker	Chair
<b>04 AUG</b> MON	15:15 – 15:55	<b>Awardee Talk</b>	Design of efficient heterogeneous catalysts by adjusting adsorbates	<b>Xiao Fengshou</b> <i>Zhejiang University</i>	<b>Hisao Yoshida</b> <i>Kyoto University</i>
	15:55– 16:35	<b>PL2</b>	Common Mechanistic Features and Selectivity Control in CO <sub>2</sub> and CO Activation and Conversion on Dispersed Ru, Co, and Ni Nanoparticles	<b>Enrique Iglesia</b> <i>Purdue University</i>	<b>Paul Liu Wen</b> <i>Nanyang Technological University</i>
	16:35 – 17:15	<b>PL3</b>	Liquid sunshine and beyond	<b>Li Can</b> <i>Dalian Institute of Chemical Physics, CAS</i>	<b>Xu Rong</b> <i>Nanyang Technological University</i>
<b>05 AUG</b> TUE	9:00 – 9:40	<b>PL4</b>	Environmental catalysis for air pollution control	<b>He Hong</b> <i>Research Center for Eco-Environmental Sciences, CAS</i>	<b>Yan Ning</b> <i>National University of Singapore</i>
	9:40 – 10:20	<b>PL5</b>	Electrocatalysis for hydrogen technology	<b>Sung Yung-Eun</b> <i>Seoul National University</i>	<b>Jason Yeo</b> <i>National University of Singapore</i>
<b>07 AUG</b> THU	15:40 – 16:20	<b>PL6</b>	Studies of proton-exchange-membrane fuel cell catalysts	<b>Sun Shigang</b> <i>Xiamen University</i>	<b>Chen Wei</b> <i>National University of Singapore</i>
	16:20 – 17:00	<b>PL7</b>	Chemical recycling, upcycling polyesters by homogeneous, heterogeneous catalysis	<b>Kotohiro Nomura</b> <i>Tokyo Metropolitan University</i>	<b>Chen Luwei</b> <i>ISCE2, A*STAR</i>



# Session Overview

## LEGEND

- AC: Advance Catalyst Characterisation
- AP: Artificial Photosynthesis
- BC: Biocatalysis
- BP: Biomass Conversion & Polymer Degradation
- CO: C1 Chemistry & Olefins
- CN: Catalysis for Carbon Neutrality
- CA: Computational Catalysis & AI
- EL: Electrocatalysis
- EM: Emerging Catalytic Materials
- EN: Environmental Catalysis
- SA: 4<sup>th</sup> International Symposium on Single-Atom Catalysis

## MEETING ROOM (MR) Schedule

05 August

TUE

Time	Summit 1	MR321	MR322	MR323	MR324	MR325	MR326	MR331	MR332	MR333	MR334	MR335	MR336
09:00 ~ 10:20													
COFFEE BREAK (10:20 - 10:50)													
Session 1 10:50 ~ 12:20	CN	EN	EM	AP	AC	BP	EL	SA	CO	CA	BC	EN	
LUNCH (12:20 - 13:40)													
Session 2 13:40 ~ 15:40	CN	EN	EM	AP	AC	BP	EL	SA	CO	CA	BC	EN	BP
COFFEE BREAK (15:40 - 16:00)													
Session 3 16:00 ~ 17:30	CN	EN	EM	AP	AC	BP	EL	SA	CO	CA	BC	EN	
POSTER SESSION (17:30 - 18:30)													

# Session Overview

## MEETING ROOM (MR) Schedule

06 August

WED

### LEGEND

- AC: Advance Catalyst Characterisation
- AP: Artificial Photosynthesis
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- BP: Biomass Conversion & Polymer Degradation
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- EL: Electrocatalysis
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- EN: Environmental Catalysis
- SA: 4<sup>th</sup> International Symposium on Single-Atom Catalysis

Time	Summit 1	MR321	MR322	MR323	MR324	MR325	MR326	MR331	MR332	MR333	MR334	MR335	MR336
Session 4 09:00 ~ 10:20	CN	EN	EM	AP	AC	BP	EL	SA	CO		BC	EM	EL
COFFEE BREAK (10:20 – 10:50)													
Session 5 10:50 ~ 12:20	CN	EN	EM	AP	AC	BP	EL	SA	CO	CA	BC	EM	EL
LUNCH (12:20 – 13:40)													
Session 6 13:40 ~ 15:40	CN	EN	EM	AP	AC	BP	EL	SA	CO	CA	BC	EM	EL
COFFEE BREAK (15:40 – 16:00)													
Session 7 16:00 ~ 17:30	CN	EN	EM	AP	AC	BP	EL	SA	CO	CA	BC	EM	EL
POSTER SESSION (17:30 – 18:30)													



**LEGEND**

- AC: Advance Catalyst Characterisation
- AP: Artificial Photosynthesis
- BC: Biocatalysis
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- EN: Environmental Catalysis
- SA: 4<sup>th</sup> International Symposium on Single-Atom Catalysis

# Session Overview

**MEETING ROOM (MR) Schedule**

**07 August**

**THU**

Time	Summit 1	MR321	MR322	MR323	MR324	MR325	MR326	MR331	MR332	MR333	MR334	MR335	MR336
<b>Session 8</b> 09:00 ~ 10:20	CN	EN	EM	EM	AC	BP	EL	SA	CO	CA	BC	CN	SA
COFFEE BREAK (10:20 - 10:50)													
<b>Session 9</b> 10:50 ~ 12:20	CN	EN	EM	EM	AC	BP	EL	SA	CO	CA	BC	CN	SA
LUNCH (12:20 - 13:40)													
<b>Session 10</b> 13:40 ~ 15:40	CN	EN	EM		AC	BP	EL	SA	CO	CA		CN	SA

# Environmental Catalysis

# 1.1

**Room: MR321**
**05 August**
**TUE**
**10:50 - 12:20**
**Session Chair:**  
Fudong Liu

TIME	PRESENTATION TITLE	SPEAKER
10:50 – 11:25	Challenges and developments of synergistic catalytic purification of NO <sub>x</sub> and VOCs	Junhua Li <i>Tsinghua University</i>
11:25– 12:00	Precise Design of Metal-Oxide Interfaces for Advanced Catalysis	Junling Lu <i>University of Science and Technology China</i>
12:00-12:20	Engineering Dual Cu Structure Sites in Cu/ZrO <sub>2</sub> Catalysts for Efficient CO Oxidation	Fudong Liu <i>University of California, Riverside</i>



# Environmental Catalysis

1.2

Room: MR335

05 August TUE 10:50 - 12:20

Session Chair:  
Yan Liu

TIME	PRESENTATION TITLE	SPEAKER
10:50 - 11:10	Low-temperature catalysis for environmental applications in an electric field	Yasushi Sekine <i>Waseda University</i>
11:10 - 11:30	Sustainable approach for mineral resources recovery from brine/seawater with CO <sub>2</sub> capture	Yan Liu <i>Institute of Sustainability for Chemicals, Energy and Environment</i>
11:30-11:45	Engineering triple O-Ti-O vacancy associates for efficient water-activation catalysis	Feng Bi <i>Zhejiang University</i>
11:45-12:00	Enhancing the sulfur-resistance of promoted Pt/CeO <sub>2</sub> catalysts for water-gas shift reaction using waste-derived synthesis gas	Ga-Ram Hong <i>Yonsei University</i>
12:00-12:15	Optimizing selectivity via steering dominant reaction mechanisms in steam reforming of methanol for hydrogen production	Mengyuan Zhang -

# Environmental Catalysis

# 2.1

**Room: MR321**
**05 August**
**TUE**
**13:40 - 15:40**
**Session Chair:**  
Zhen Zhao

TIME	PRESENTATION TITLE	SPEAKER
13:40 – 14:00	Study on the Catalysis-Plasma Synergistic Elimination of Soot Particulate from Engine Exhaust Emissions	Zhen Zhao <i>Shenyang Normal University</i>
14:00-14:20	Rational Design of CeO <sub>2</sub> -Based Catalysts for High-Efficiency Automotive Exhaust Purification	Fei Gao <i>Nanjing University of Information Science and Technology</i>
14:20-14:40	Enhancing Methane Oxidation via Support Engineering Over Pd-based catalysts	Yong Yan <i>Ganjiang Innovation Academy, CAS</i>
14:40-14:55	Bimetallic Ag-Cu/CeO <sub>2</sub> -ZrO <sub>2</sub> -MnO <sub>x</sub> (SnO <sub>2</sub> ) catalysts for CO oxidation and soot combustion	Mikhail Salaev -
14:55-15:10	Improving the Low-temperature Light-off of Pt-based Three-way Catalysts by Combining with Ni/CeO <sub>2</sub>	Zannatul Mumtarin Moushmy <i>Kumamoto University</i>
15:10-15:25	New Strategies for VOCs Elimination: “Storage-In Situ Oxidation” Cycling Removal and Electrocatalytic Oxidation	Bingbing Chen -
15:25-15:40	Flattened Pt clusters constructed on CeO <sub>2</sub> for efficient selective oxidation of NH <sub>3</sub>	Qinglong Liu <i>Nanjing University</i>



# Environmental Catalysis

2.2

Room: MR335

05 August TUE 13:40 - 15:40

Session Chair:  
Yuxi Liu

TIME	PRESENTATION TITLE	SPEAKER
13:40 - 14:00	Efficient Cleavage of C-F bond via Bridging Hydroxyl Group for Reducing Freon Emission	Yuxi Liu/Jiguang Deng <i>Beijing University of Technology</i>
14:00 - 14:20	Catalytic Conversion of Methane at Room Temperature	Yang Lou <i>Jiangnan University</i>
14:20 - 14:35	Multiple Active Site Engineering in Manganese Catalysts for Enhanced Catalytic Oxidation of Chlorinated Volatile Organic Compounds	Sujing Li <i>Zhejiang University</i>
14:35 - 14:50	OD/2D catalyst for photocatalytic mercury removal under visible light	Rihong Xiao <i>Huazhong University of Science and Technology</i>
14:50 - 15:05	Mechanistic insights into methanol steam reforming on copper catalysts dynamics of active sites and reaction pathway	Diru Liu -
15:05 - 15:20	Single atomic catalysts in electro-Fenton process for water clean-up	Chengcheng Dong -
15:20 - 15:35	Facilely Synthesized Ni-Based Catalyst for Simultaneous Ammonia Oxidation and Hydrogen Evolution from Landfill Leachate	Eun-Kyeong Byeon <i>Yonsei University</i>

# Environmental Catalysis

# 3.1

**Room: MR321**

**05 August**

**TUE**

**16:00 - 17:30**

**Session Chair:**  
Tatsumi Ishihara

TIME	PRESENTATION TITLE	SPEAKER
16:00 – 16:20	Advanced Catalysts for Ammonia Synthesis and Conversions	Chao Wang <i>Johns Hopkins University</i>
16:20 – 16:40	Simultaneous Removal of NO <sub>x</sub> and Particulate Matter (PM) on Cu-CHA/Ag-ZnAl <sub>2</sub> O <sub>4</sub> Catalysts	Tatsumi Ishihara <i>Kyushu University</i>
16:40 – 16:55	Reductive decomposition of N <sub>2</sub> O with H <sub>2</sub> over supported Ir catalyst at room temperature	Yuichi Kamiya <i>Hokkaido University</i>
16:55 – 17:10	Recent Progress on the Mitigation and Valorization of Nitrous Oxide: Catalytic Strategies and Mechanistic Insights	Yunshuo Wu -



# Environmental Catalysis

3.2

Room: MR335

05 August TUE 16:00-17:30

Session Chair:  
Peirong Chen

TIME	PRESENTATION TITLE	SPEAKER
16:00 - 16:20	Copper Site Motion Promotes Catalytic NO <sub>x</sub> Reduction under Zeolite Confinement	Peirong Chen <i>South China University of Technology</i>
16:20 - 16:35	Swirl-Flow CWPO for Rapid Cyanide Removal with Bimetallic Nanospheres	Chenxing Yao
16:35 - 16:50	High-Temperature Catalytic Wet Peroxide Oxidation of High-Salinity Wastewater	Yusaf Khan
16:50 - 17:05	MCM-22 Zeolites Modified with Titanium or Iron as Effective Catalysts for Organic Sulfide Oxidation	Aleksandra Jankowska <i>Jagiellonian University</i>
21 17:05-17:20	Design and Development of Selective Catalytic Oxidation Catalysts for Ammonia	Caixia Liu <i>Tianjin University</i>

# Environmental Catalysis

4

Room: MR321

06 August

WED

09:00 – 10:30

Session Chair:  
Davide Ferri

TIME	PRESENTATION TITLE	SPEAKER
09:00 – 09:35	Recent Progress on the Mitigation and Valorization of Nitrous Oxide: Catalytic Strategies and Mechanistic Insights	<b>Emiel Hensen</b> <i>Eindhoven University of Technology</i>
09:35 – 09:55	Simultaneous abatement of N <sub>2</sub> O and NO over Fe-exchanged zeolites	<b>Davide Ferri</b> <i>Paul Scherrer Institute</i>
09:55 – 10:15	PGM supported on zeolites for the selective catalytic reduction of NO <sub>x</sub> with H <sub>2</sub>	<b>Do Heui Kim</b> <i>Seoul National University</i>
10:15 – 10:30	The spatial distribution of Brønsted acid sites determines the mobility of reactive Cu ions in Cu-SSZ-13 during NH <sub>3</sub> -SCR	<b>Wenqing Ding</b> <i>Research Center for Eco-Environmental Sciences, Chinese Academy of Sciences</i>



# Environmental Catalysis

5

Room: MR321

06 August

WED

10:50 - 12:20

Session Chair:  
Jun He

TIME	PRESENTATION TITLE	SPEAKER
10:50 - 11:10	Efficient photocatalysts for the degradation of low-concentration NO under visible light	Jun He <i>University of Nottingham Ningbo China (UNNC)</i>
11:10 - 11:30	NO <sub>x</sub> Reconstruction Triggered by Zeolite Reverses Alkali Metal Poisoning in NO Selective Catalytic Reduction	Changjin Tang <i>Nanjing Normal University</i>
11:30 - 11:45	N <sub>2</sub> O Formation Mechanism and Suppression Strategy on Pt-Based Catalysts in the Selective Catalytic Reduction of NO <sub>x</sub> with H <sub>2</sub>	Shaohua Xie
11:45 - 12:00	Towards rational design of Cu-SSZ-13 catalysts with less N <sub>2</sub> O formation in NH <sub>3</sub> -SCR reaction	Jinpeng Du
12:00-12:15	Effect of nitrogen and oxygen surface functionalities on catalytic activity of CMK-3 mesoporous carbon in oxidation of sulfurous acid in aqueous solution	Katarzyna Baraska



# Environmental Catalysis

6

Room: MR321

06 August WED 13:40 - 15:40

Session Chair:  
Tetsuya Shishido

TIME	PRESENTATION TITLE	SPEAKER
13:40 - 14:15	Confinement-induced Oxide Nanolayers on Oxide Support for Enhanced Hydrogenation Catalysis	Qiang Fu <i>DICP, CAS</i>
14:15 - 14:35	Sulfate residuals on Ru catalysts switch CO <sub>2</sub> reduction from methanation to reverse water-gas shift reaction	Changbin Zhang <i>Research Center for Eco-Environmental Sciences, Chinese Academy of Sciences</i>
14:35 - 14:55	Redefining RWGS Catalysis: Phosphorus-Loaded Supported Metal Catalysts for Unprecedented CO Selectivity	Tetsuya Shishido <i>Tokyo Metropolitan University</i>
14:55 - 15:10	Coke-resistant CH <sub>4</sub> -CO <sub>2</sub> dry reforming process on supported high entropy alloy catalysts	Ji Yang <i>Central China Normal University</i>
15:10 - 15:25	Sustainable Valorization of CO <sub>2</sub> : Solvent-Free Cycloaddition to Epoxide Using a Bimetallic Nanocatalyst	H. M. Zaheer Aslam <i>institution pending</i>
15:25 - 15:40	Plasma-catalytic dry reforming of methane in DBD reactor over Ni and Co catalysts	Zhaoze Xia <i>institution pending</i>

# Environmental Catalysis

7

Room: MR321

06 August

WED

16:00 - 17:30

Session Chair:  
Wen-Yueh Yu

TIME	PRESENTATION TITLE	SPEAKER
16:00 – 16:20	Non-Reductive Conversion of CO <sub>2</sub> Mediated by Surface Oxygen Vacancy of CeO <sub>2</sub> Catalysts	Wen-Yueh Yu <i>National Taiwan University</i>
16:20 – 16:40	Fe–N–C Assisted by Graphitic Layers for Efficient Carbamate Decomposition during Amine-based CO <sub>2</sub> Capture	Huazhen Chang <i>Renmin University of China</i>
16:40 – 16:55	Interfacial Synergy between Encapsulated Iron Carbide and Surface Nitrogen Species Enhances Nitrate Electroreduction to Ammonia	Xi Chen <i>Shanghai Jiao Tong University</i>
16:55 – 17:10	Structural Optimization of Sandwiched SiO <sub>2</sub> @Ni@ZrO <sub>2</sub> Core-Shell Catalysts: Effect of Zirconia Shell Thickness on Combined Steam and Dry Reforming of Methane	Hyoseong Woo <i>Korea Institute of Science and Technology</i>
17:10 – 17:25	Ag-supported catalysts for CO oxidation reaction: A structural insight	Anjana P Anatharaman -



# Environmental Catalysis

8

Room: MR321

07 August

THU

09:00 - 10:30

Session Chair:  
Xiaoguang Duan

TIME	PRESENTATION TITLE	SPEAKER
09:00 - 09:35	Developing the Science of Self-Healing Catalysts	Abhaya Datye <i>University of New Mexico</i>
09:35 - 09:55	Catalytic Pollutant Transformation into Polymeric Valuables	Xiaoguang Duan <i>The University of Adelaide</i>
09:55 - 10:15	Development of non-noble metal heterogeneous catalysts for H <sub>2</sub> -driven deoxygenation	Keiichi Tomishige <i>Tohoku University</i>
10:15 - 10:30	Pulsed Electrocatalysis for H <sub>2</sub> O <sub>2</sub> Synthesis: From Material Design to Reactor Engineering	Yani Ding <i>Xi'an Jiaotong University</i>

# Environmental Catalysis

# 9

**Room: MR321**
**07 August**
**THU**
**10:50 - 12:20**
**Session Chair:**  
Huiyuan Zhu

TIME	PRESENTATION TITLE	SPEAKER
10:50 – 11:10	Engineering Cost-Effective Metal Nanoparticle Catalysts for Selective Acetylene Hydrogenation	Huiyuan Zhu <i>University of Virginia</i>
11:10 – 11:30	“Hot” VOCs Capture and In-situ catalytic oxidation over metal-modified zeolite	Wenxiang Tang <i>Sichuan University</i>
11:30 – 11:45	Catalysis in Selective Ethanol Upgradation into Biofuels	Sandeep Gholap
11:45 – 12:00	Modification of Supported Cu-Based Catalysts and Performance on Electro-reduction of Nitrate	Fei Yang <i>Hainan University</i>
12:00 – 12:15	N-Alkylation of Amines with Alcohols over Fe-based Heterogenous Catalysts	Yusuke Kita



# Environmental Catalysis

10

Room: MR321

07 August

THU

13:40 - 15:40

Session Chair:  
Jason Y. C. Lim

TIME	PRESENTATION TITLE	SPEAKER
13:40 - 14:15	Nanometric Metal Overlayer: A Novel Structure for Environmental Catalysts	Masato Machida <i>Kumamoto University</i>
14:15 - 14:35	Organocatalysis for Cradle-to-cradle Upcycling of Polyethylenes	Jason Y. C. Lim <i>Institute of Materials Research and Engineering (IMRE), A*STAR</i>
14:35 - 14:50	Innovative procedure for incorporating nanomaterial into photocatalytic membrane cellulose membranes	Dirk Hollmann <i>University of Rostock</i>
14:50 - 15:10	Photocatalytic Upcycling of Biomass and Non-Biodegradable Plastics	Soo Han Sen <i>Nanyang Technological University</i>
15:10 - 15:25	Linking Zeolite structures to Reactivity in the Carbonylation of Dimethyl Ether	Dong Jae Jeong <i>Seoul National University</i>
15:25 - 15:40	Ru-Catalyzed Transfer Vinylolation of Alcohols	Sergey Tin <i>Leibniz Institute for Catalysis</i>



# Artificial Photosynthesis

1

Room: MR323

05 August TUE 10:50 - 12:20

Session Chair:  
Rong Xu

TIME	PRESENTATION TITLE	SPEAKER
10:50 - 11:25	Nanostructured Metal and Semiconductor for Catalytic CO and CO <sub>2</sub> Conversion	Jin Z. Zhang, <i>University of California, Santa Cruz</i>
11:25 - 11:50	Artificial Photosynthesis over suspended particulate photocatalysts for Z-scheme overall water splitting	Fuxiang Zhang <i>Dalian Institute of Chemical Physics, Chinese Academy of Sciences</i>
11:50 - 12:05	Photocatalytic conversion of carbon dioxide with water to carbon monoxide and hydrogen peroxide	Hsiao Yoshida <i>Kyoto University</i>
12:05 - 12:20	MOP-MXene assemblies with post-functionalized Re(I) sites for photocatalytic CO <sub>2</sub> reduction	Purna K Boruah <i>University of Lille</i>

# Artificial Photosynthesis

# 2

**Room: MR323**
**05 August**
**TUE**
**13:40 - 15:40**
**Session Chair:**  
Jin Zhong Zhang

TIME	PRESENTATION TITLE	SPEAKER
13:40 – 14:15	Photon-phonon co-driven catalysis for CH <sub>4</sub> conversion	<b>Tang Junwang</b> <i>Tsinghua University</i>
14:15 – 14:40	Plasmonic Yolk@Shell Nanocrystals for Solar Hydrogen Production	<b>Yung-Jung Hsu</b> <i>National Yang Ming Chiao Tung University</i>
14:40 – 14:55	Breaking Kinetic Dilemma of Semiconducting Oxides in Photo(electro)catalysis	<b>Hao Wu</b> <i>Macau University of Science and Technology</i>
14:55 – 15:10	Wide Bandgap Semiconductor Nanostructures for Renewable Fuels Production	<b>Yongjie Wang</b> <i>Harbin Institute of Technology (Shenzhen)</i>
15:10 – 15:25	Carbon Nanotube-mediated Z-scheme Overall Water Splitting by Photocatalyst Sheet Using a Long-wavelength Photoresponsive Oxysulfide Photocatalyst	<b>Long Wang</b> <i>Shinshu University</i>
15:25 – 15:40	Dynamic Changes of Single-Atom Photocatalysts in Glycerol Oxidation	<b>Lunqiao Xiong</b> <i>University College London</i>



# Artificial Photosynthesis

3

Room: MR323

05 August

TUE

16:00 - 17:30

Session Chair:  
Liu Yan

## TIME

## PRESENTATION TITLE

## SPEAKER

16:00 - 16:25

Visible-Light-Responsive  $\text{Bi}_2\text{MoO}_6$ -Expanded  $\text{MoS}_2$   
Heterostructures for Efficient Environmental Remediation

Joon Ching Juan  
*Universiti Malaya*

16:25 - 16:50

Customization of Biomimetic Photosynthetic Systems

Yujie Xiong  
*University of Science and  
Technology  
of China*

16:50 - 17:15

III-Nitrides/Si-based Artificial Photosynthesis  
Integrated Device  
and System

Baowen Zhou  
*Shanghai Jiao  
Tong University*

17:15 - 17:30

Core-shell photocatalysts design for selective methane  
conversion to oxygenates

Chenhu Xie  
*Shanghai Tech University*

# Artificial Photosynthesis

4

Room: MR323

06 August

WED

09:00 – 10:30

Session Chair:  
Fengtao Fan

TIME	PRESENTATION TITLE	SPEAKER
09:00 – 09:35	Water splitting and CO <sub>2</sub> reduction using powdered photocatalysts	Akihiko Kudo <i>Tokyo University of Science</i>
09:35 – 10:00	Biomolecule Formation from CO <sub>2</sub> at Inorganic Interfaces	Yuxi Fang <i>Shanghai Jiao Tong University</i>
10:00 – 10:15	Water Oxidation Reaction Kinetics Revealed with Transient Absorption Spectroscopy	Xiuli Wang <i>Dalian Institute of Chemical Physics, Chinese Academy of Sciences</i>
10:15 – 10:30	Anchored Metallic Pt in Reduced Sr <sub>0.95</sub> Ti <sub>0.9</sub> Cr <sub>0.1</sub> O <sub>3-δ</sub> Perovskite for Enhanced Photocatalytic Hydrogen Production	Yuan Liao <i>University of St Andrews</i>



# Artificial Photosynthesis

5

Room: MR323

06 August WED 10:50 - 12:20

Session Chair:  
Akihiko Kudo

TIME	PRESENTATION TITLE	SPEAKER
10:50 - 11:25	Ferroelectrics and new Z-scheme configurations for photocatalytic overall water splitting	Liu Gang <i>Institute of Metal Research, Chinese Academy of Sciences</i>
11:25 - 11:50	Unraveling Charge Transfer Dynamics in Photocatalysis: From Microscopic Insights to Holistic Mapping	Fengtao Fan <i>Dalian Institute of Chemical Physics, Chinese Academy of Sciences</i>
11:50 - 12:05	Mechanism on Artificial Photosynthesis of H <sub>2</sub> O <sub>2</sub> : a C <sub>3</sub> N <sub>4</sub> Surface Study	Pengxin Liu <i>ShanghaiTech University</i>
12:05 - 12:20	Upcycling of Diverse Waste Plastics and Mixed Plastics into Versatile Chemicals at Ambient Conditions	Xin Ying Kong <i>Nanyang Technological University</i>

# Artificial Photosynthesis

6

Room: MR323

06 August

WED

13:40 - 15:40

Session Chair:  
Liu Gang

TIME	PRESENTATION TITLE	SPEAKER
13:40 - 14:15	Organic Semiconductor Photocatalysts for Water Split and CO <sub>2</sub> Reduction under Solar Irradiation	Zhu Yongfa <i>Tsinghua University</i>
14:15 - 14:40	Highly efficient catalytic conversion of CO <sub>2</sub> to CQDs on dynamic Ag catalysts	Joongjai Panpranot <i>Chulalongkorn University</i>
14:40 - 14:55	Atomic-Level Regulation on Photocatalyst for Energy-Related Reaction	Jingrun Ran <i>University of Adelaide</i>
14:55 - 15:10	Carbon dot doped carbon nitride for efficient photocatalysis of emerging contaminant degradation	Season S. Chen <i>Tsinghua University</i>
15:10 - 15:25	Polaron-Mediated Charge Separation Driven by Reactant Ions for Enhanced Photocatalytic Oxygen Evolution	Qian Li <i>Ocean University of China</i>
15:25 - 15:40	Fabrication of vacancies to enhance photocatalytic activity in Nitrogen reduction to produce ammonia	Zizhen Li <i>Dalian Institute of Chemical Physics, Chinese Academy of Sciences</i>



# Artificial Photosynthesis

7

Room: MR323

06 August

WED

16:00 - 17:30

Session Chair:  
Zhu Yongfa

TIME	PRESENTATION TITLE	SPEAKER
16:00 - 16:25	Design of Metal-Organic Frameworks and Reaction Systems for Efficient Photocatalytic H <sub>2</sub> O <sub>2</sub> Production	Hiromi Yamashita <i>Osaka University</i>
16:25 - 16:50	Ligand Design Strategies in Luminescent Transition Metal Complexes for Photocatalysts with Enhanced Light Harvesting, Selectivity and Recyclability	Chi-Chiu Ko <i>City University of Hong Kong</i>
16:50 - 17:15	Efficient, Selective Production of Solar Fuels and Value-Added Chemicals on Colloidal CdS Nanosheets-Based Photocatalysts	Doh C. Lee <i>Korea Advanced Institute of Science and Technology</i>
17:15 - 17:30	Investigation of non-noble metal BiO-decorated g-C <sub>3</sub> N <sub>4</sub> /SrTiO <sub>3</sub> sheet-liked photocatalyst for boosting solar hydrogen production	Thi Hoang Yen Le <i>National Taiwan University</i>



# ISSAC-4

## 4th International Symposium on Single-Atom Catalysis

1

Room: MR331

05 August

TUE

10:50 - 12:20

Session Chair:  
Ning Yan

TIME	PRESENTATION TITLE	SPEAKER
10:50 - 11:15	The Cooperation of Single-Atom and Frustrated Lewis Pairs for Catalyzing Two-Molecule Reactions	Chun-Ran Chang <i>Xi'an Jiaotong University</i>
11:15 - 11:40	Metal cluster catalysis in the gas phase	Sheng-Gui He <i>Institute of Chemistry, Chinese Academy of Sciences</i>
11:40 - 12:05	Construction and Application of Atomically Dispersed Catalysts	Daojian Cheng <i>Beijing University of Chemical Technology</i>
12:05 - 12:20	Atomically resolved secondary electron imaging for in situ study of atomic structure on nanoparticle surfaces	Xi Liu <i>Ningxia University/ Shanghai Jiaotong University</i>

# ISSAC-4

## 4th International Symposium on Single-Atom Catalysis

2

**Room: MR331****05 August****TUE****13:40 - 15:40****Session Chair:**  
Yuen Wu

TIME	PRESENTATION TITLE	SPEAKER
13:40 – 14:20	Single-Atom Catalysis: A Game of Coordination Environment	<b>Aiqin Wang</b> <i>Dalian Institute of Chemical Physics, Chinese Academy of Sciences</i>
	<b>Plenary Chair:</b> Javier Pérez-Ramírez	
14:20 – 14:45	Integrative Catalytic Pairs – the Smallest Catalytic Units to Drive Complex Chemical Reactions	<b>Bin Liu</b> <i>City University of Hong Kong</i>
14:45 – 15:10	Metal-support frontier orbital interactions in single-atom catalysis	<b>Junling Lu</b> <i>University of Science and Technology of China</i>
15:10 – 15:35	A Short History of Single-Atom Alloy Catalysts; From Birth in a Chilly Vacuum to Application in a Fiery Reactor	<b>E. Charles H. Sykes</b> <i>Tufts University</i>



# ISSAC-4

## 4th International Symposium on Single-Atom Catalysis

3

**Room: MR331**

**05 August**

**TUE**

**16:00 - 17:30**

**Session Chair:**  
Jeong Woo Han

TIME	PRESENTATION TITLE	SPEAKER
16:00 - 16:25	Single-atom catalysts for energy applications	<b>Qiang Xu</b> <i>Southern University of Science and Technology</i>
16:25 - 16:50	Dual-Atom Catalysts for Effective Bond-Formation and Bond-Cleavage Transformations in Artificial Photosynthesis	<b>Ke R. Yang</b> <i>Nankai University</i>
16:50 - 17:15	Catalysis at Interfaces: Atom-Efficient Metal Catalysts Based on Single Atoms, Clusters and Nanoparticles	<b>Emiel J.M. Hensen</b> <i>Eindhoven University of Technology</i>
17:15 - 17:30	Precise Engineering of Atomic Photocatalyst Acceptors for Selective C1 Conversion	<b>Xiyi Li</b> <i>University College London</i>

# ISSAC-4

## 4th International Symposium on Single-Atom Catalysis

4

**Room: MR331**

**06 August**

WED

**09:00 – 10:30**

**Session Chair:**  
Huabin Zhang

### TIME

### PRESENTATION TITLE

### SPEAKER

09:00 – 09:40

Versatile and Robust Single Atom Catalysts

**Abhaya K. Datye**  
*University of New Mexico*

**Plenary Chair:**  
Tao Zhang

09:40 – 10:05

Theory-Guided Design of Metal-Nitrogen Doped  
Carbon Single and Dual Atom Catalysts for Efficient  
Electrocatalytic Reactions

**Jeong Woo Han**  
*Seoul National University*

10:05 – 10:30

The Application of Synchrotron Radiation X-ray  
Spectroscopy in Single Atom Catalysis

**Zheng Jiang**  
*University of Science and  
Technology of China*



# ISSAC-4

## 4th International Symposium on Single-Atom Catalysis

5

**Room: MR331**

**06 August**

WED

**10:50 - 12:20**

**Session Chair:**  
Wei-Xue Li

TIME	PRESENTATION TITLE	SPEAKER
10:50 - 11:15	Small molecules activation by photon-phonon co-driven catalysis	<b>Junwang Tang</b> <i>Tsinghua University</i>
11:15 - 11:40	Controllable Synthesis and Application Exploration of Single-Atom Catalysts	<b>Yuen Wu</b> <i>University of Science and Technology of China</i>
11:40 - 12:05	-	<b>Ding Ma</b> <i>Peking University</i>
12:05 - 12:20	Single-atom catalysts for synthesis and transformation of nitrogen-containing chemicals	<b>Haifeng Qi</b> <i>Cardiff University</i>

# ISSAC-4

## 4th International Symposium on Single-Atom Catalysis

6

**Room: MR331****06 August**

WED

**13:40 - 15:40****Session Chair:**  
Zhi-Jian Zhao

TIME	PRESENTATION TITLE	SPEAKER
13:40 – 14:20	Theoretical Foundations of Single-Atom Catalysis	Jun Li <i>Tsinghua University</i>
	<b>Plenary Chair:</b> Javier Pérez-Ramírez	
14:20 – 14:45	Mechanistic insights into catalytic conversion of methane from DFT computational studies	Qingfeng Ge <i>Southern Illinois University Carbondale</i>
14:45 – 15:10	AI-Driven Theory of Metal Catalyst Stability based on Metal-Support Interaction	Wei-Xue Li <i>University of Science and Technology of China</i>
15:10 – 15:35	Single-Atom Catalysis: Insights from Model Systems	Florian Kraushofer <i>Technical University of Vienna</i>



# ISSAC-4

## 4th International Symposium on Single-Atom Catalysis

7

**Room: MR331**

**06 August** **WED** **16:00 - 17:30**

**Session Chair:**  
Junling Lu

TIME	PRESENTATION TITLE	SPEAKER
16:00 - 16:25	Rational Design of Catalysts Accelerated by AI assisted Computational Chemistry	Zhi-Jian Zhao <i>Tianjin University</i>
16:25 - 16:50	From single atom catalysis to multielement catalysis	Li-Ming Yang <i>Huazhong University of Science and Technology</i>
16:50 - 17:15	Computational Modelling of Single-Atom Surface Sites on Oxide and Bimetallic Catalytic Nanomaterials	Konstantin M. Neyman <i>ICREA &amp; Universitat de Barcelona</i>
17:15 - 17:30	From Single Atoms to Nanoparticles: Atomically Defined Catalyst Design and Mechanistic study	Jingyi Yang <i>Fritz-Haber-Institut der Max-Planck-Gesellschaft</i>

# ISSAC-4

## 4th International Symposium on Single-Atom Catalysis

8.1

**Room: MR331****07 August**

THU

**09:00 – 10:30****Session Chair:**  
Zhen zhao**TIME****PRESENTATION TITLE****SPEAKER***09:00 – 09:40*

Sustainable chemical synthesis: from single-atom to geminal-atom catalysis with tailored dynamics

**Jiong Lu**  
*National University of  
Singapore***Plenary Chair:**  
Ning Yan*09:40 – 10:05*

Beyond Dispersing Dopants: The Critical Role of the Host Atoms in Selective Hydrogenation of Acetylene on Single Pd Atom Alloys

**Xin Xu**  
*Fudan University**10:05 – 10:30*

Challenges and opportunities in understanding local environments in carbon-based single-atom catalysts

**Sharon Mitchell**  
*ETH Zürich*



# ISSAC-4

## 4th International Symposium on Single-Atom Catalysis

8.2

**Room: MR336**

**07 August**

**THU**

**09:00 - 10:30**

**Session Chair:**  
Ying Wan

### TIME

### PRESENTATION TITLE

### SPEAKER

09:40 - 10:05

Interpreting Heterogeneous Catalysis via Trans-scale  
Chemistry

**Huabin Zhang**  
*King Abdullah University of  
Science and Technology*

10:05 - 10:30

Phase Engineering of Nanomaterials (PEN)

**Hua Zhang**  
*City University of Hong Kong*

# ISSAC-4

## 4th International Symposium on Single-Atom Catalysis

9.1

**Room: MR331****07 August****THU****10:50 - 12:20****Session Chair:**  
Xiangting Min

TIME	PRESENTATION TITLE	SPEAKER
10:50 – 11:15	Study on the Selective Oxidation of Methane over Confined Single-atom/Two-atom Catalysts under Mild Conditions	<b>Zhen Zhao</b> <i>Shenyang Normal University &amp; China University of Petroleum, Beijing</i>
11:15 – 11:30	Design and Synthesis of Low-Loading Pt-Based Catalysts and Study of Their Catalytic Performance	<b>Xiucheng Sun</b> <i>Zhejiang University of Technology</i>
11:30 – 11:45	Functionalized Carbon as a Platform for Rational Design of Low-Nuclearity Metal Catalysts	<b>Ronghe Lin</b> <i>Zhejiang Normal University</i>
11:45 – 12:00	Zeolite-Confined Single-Atom Catalysts for Enhanced Performance in Valorization of Biomass-derived Platform molecules	<b>Wenhao Luo</b> <i>Inner Mongolia University</i>
12:00 – 12:15	2D Conductive Ni-HAB as a Catalyst for the Electrochemical Oxygen Reduction Reaction	<b>Zhihua Chen</b> <i>Stanford University</i>



# ISSAC-4

## 4th International Symposium on Single-Atom Catalysis

9.2

Room: MR336

07 August

THU

10:50 - 12:20

Session Chair:  
Qingqing Gu

TIME	PRESENTATION TITLE	SPEAKER
10:50 - 11:15	Conversion of small molecules on single metal cations in zeolites or on cerium dioxide – insights from computational modeling	Georgi N. Vayssilov <i>Sofia University, St. Kliment Ohridski</i>
11:15 - 11:40	Mesoporous carbon confined single-atom catalysts towards precise catalysis	Ying Wan <i>University of Shanghai for Science and Technology &amp; Shanghai Normal University</i>
11:40 - 11:55	Asymmetric Mo-Ni sulfur vacancies drive sustainable methanol heterogeneous carbonylation	Qiao Yuan <i>TU München</i>
11:55 - 12:10	Electrochemical HMF conversion to high-added product on Single-atom catalysts	Song Liu <i>Northeast Forestry University</i>

# ISSAC-4

## 4th International Symposium on Single-Atom Catalysis

# 10.1

**Room: MR331****07 August****THU****13:40 - 15:40****Session Chair:**  
Wenhao Luo

TIME	PRESENTATION TITLE	SPEAKER
13:40 – 13:55	Single-Atom Catalysis: Exerting Site-Selectivity Manipulation in Synthesis Deuterated Compounds	Xiangting Min <i>DICP, CAS<sup>1</sup></i>
13:55 – 14:10	Process Intensification of Surface Reactions in Hydrophobic Single-Atom Catalysts	Wengang Liu <i>QUST<sup>2</sup></i>
14:10 – 14:25	Photo-thermo Catalysis for Propane Dehydrogenation on Single-Atom Catalysts under Mild Conditions	Xiaoyan Liu <i>DICP, CAS</i>
14:25 – 14:40	Electron-Relay Catalysis in Bi-functional Single-Atom Catalysts for Efficient Water Purification	Man Yang <i>Xi'an University of Technology</i>
14:40 – 14:55	Model Catalysis by 2D Metal Oxide-supported Single Atom Catalysts	Pengxin Liu <i>ShanghaiTech University</i>
14:55 – 15:10	Single Pt Atoms in MOFs to Construct Single-site Catalysts with Diversified Coordination Environments	Shaoxiong Liu <i>Tsinghua University</i>
15:10 – 15:25	Single Atom Catalysts-Enabled Catalytic Ammonia Combustion at 1100°C	Yankun Du <i>National University of Singapore</i>



# ISSAC-4

## 4th International Symposium on Single-Atom Catalysis

10.2

Room: MR336

07 August

THU

13:40 - 15:40

Session Chair:  
Song Liu

TIME	PRESENTATION TITLE	SPEAKER
13:40 - 13:55	Design of novel single-atom-modified Ti-MOF catalysts for CO <sub>2</sub> photophotoreduction to value-added chemicals	Xiaowa Nie <i>Dalian University of Technology</i>
13:55 - 14:10	Dynamic coordination environments regulation for single-atom catalysts	Qingqing Gu <i>DICP, CAS</i>
14:10 - 14:25	Elective Oxidation of Ethane and Derivatives over Rhodium Single-Atom Catalysts	Bin Li <i>DICP, CAS</i>
14:25 - 14:40	Correlation between coordination number of Pt single atoms and activity of perhydro-dibenzyltoluene dehydrogenation	Kuo Liu <i>Institute of Process Engineering, CAS</i>
14:40 - 14:55	Modulating the electronic structure of RuO <sub>2</sub> by single/dual atoms for enhanced acidic water oxidation	Zhijian Li <i>City University Of Hong Kong</i>
14:55 - 15:10	Exploring the reactivity of a Ru(III) single-site solid micellar catalyst	Catarina Martins de BritoMendes <i>LCT<sup>2</sup>, Ghent University</i>
15:10 - 15:25	Efficient Photocatalytic Oxidation Removal of PPCPs through Defect Engineered Indium Single-Atom Photocatalysts	Jingjing Zhang <i>National University of Singapore</i>

1. DICP, CAS: Dalian Institute of Chemical Physics, Chinese Academy of Sciences

2. LCT: Laboratory for Chemical Technology



# Biocatalysis

1

Room: MR334

05 August TUE 10:50 - 12:20

Session Chair:  
Li Zhi

TIME	PRESENTATION TITLE	SPEAKER
10:50 - 11:20	Enzyme Catalysis and Engineering for Green Chemistry	<b>Pimchai Chaiyen</b> <i>Vidyasirimedhi Institute of Science and Technology (VISTEC)</i>
11:20 - 11:40	Engineering Heme Enzymes to Navigate New-to-Nature Reaction Space	<b>Runze Mao</b> <i>Tsinghua University</i>
11:40 - 12:00	An efficient catalytic route in haem peroxygenases mediated by O <sub>2</sub> /small-molecule reductant pairs for sustainable applications	<b>Aitao Li</b> <i>Hubei University</i>
12:00 - 12:20	Microbial synthesis of new-to-nature diols	<b>Jifeng Yuan</b> <i>Xiamen University</i>

# Biocatalysis

# 2

**Room: MR334****05 August****TUE****13:40 - 15:40****Session Chair:**  
Zhou Kang

TIME	PRESENTATION TITLE	SPEAKER
13:40 – 14:10	Biocatalytic Cascade Reactions for the Synthesis of High Value-Added Chemicals from Formaldehyde and Aldehydes	<b>Dunming Zhu</b> <i>Tianjin Institute of Industrial Biotechnology, CAS</i>
14:10 – 14:30	Bioproduction of Commodity Aromatics by Engineering of Photodecarboxylase and Enzyme Cascades	<b>Shuke Wu</b> <i>Huazhong Agricultural University (HZAU)</i>
14:30 – 14:50	Engineering microbial factories for production of high-value natural products	<b>Zhang Congqiang</b> <i>A*STAR SIFBI</i>
14:50 – 15:10	Synthetic Biology Approach to Convert C1/C2 Feedstocks into High-valued PUFA in <i>Rhodospiridium toruloides</i>	<b>Ji Liang Hui</b> <i>Temasek Life Sciences Laboratory</i>
15:10 – 15:25	Enhancing Thermal Stability and Transglycosylation Activity of Sucrose Phosphorylase for Efficient Enzymatic Synthesis of L-Ascorbic Acid 2-Glucoside	<b>Xia Yuanyuan</b> <i>Jiangnan University</i>
15:25 – 15:45	Methanol-driven, one-pot chemoenzymatic S-adenosylmethionine regeneration for ambient cobalamin-dependent methyltransferase reactions	<b>Tommy Wang</b> <i>A*STAR SIFBI</i>



# Biocatalysis

3

Room: MR334

05 August TUE 16:00 - 17:30

Session Chair:  
Lim Yee Hwee

TIME	PRESENTATION TITLE	SPEAKER
16:00 - 16:20	Insights Into the Late-Stage Biosynthesis of Anthraquinone-Fused Eneidyne	Liang Zhao-Xun <i>Nanyang Technological University</i>
16:20 - 16:40	Microbial biosynthesis of poly(3-hydroxybutyrate-co-lactate) with different lactate fraction	Wu Hui <i>Dalian University of Technology</i>
16:40 - 17:00	Protein Electrostatics in Enzyme Catalysis and Covalent Inhibition	Ji Zhe <i>Peking University</i>
17:00 - 17:20	Discovering Functional Enzymes with Structure-Aware Protein Embeddings	Wong Fang Tian <i>A*STAR</i>
17:20 - 17:35	Biodegradation of Toxic Organophosphates: Insight into Mechanism and Activity Regulation from Multiscale Simulations	Cao Zexing <i>Xiamen University</i>

# Biocatalysis

4

**Room: MR334**

**06 August** **WED** **09:00 – 10:30**

**Session Chair:**  
Lim Yee Hwee

TIME	PRESENTATION TITLE	SPEAKER
09:00 – 09:30	Multi-enzyme cascade reactions for a renewable biotechnology – from biobased polymers to photobiocatalysis	<b>Robert Kourist</b> <i>Graz University of Technology</i>
09:30 – 09:50	Repurposing Biology through Synthetic Enzymology – For Human and Planetary Health	<b>Wen Shan Yew</b> <i>National University of Singapore</i>
09:50 – 10:10	Protein engineering for improved biocatalysis and biosynthesis	<b>Lidan Ye</b> <i>Zhejiang University</i>
10:10 – 10:30	Computation-driven Design of Carboxylic Acid Reductase for Nylon Precursors Biosynthesis	<b>Yu Huilei</b> <i>East China University of Science and Technology</i>



# Biocatalysis

5

Room: MR334

06 August

WED

10:50 - 12:20

Session Chair:  
Wong Fang Tian

TIME	PRESENTATION TITLE	SPEAKER
10:50 - 11:10	Engineering of Ene-Reductases and Expansion of Catalytic Functions: From Library Development to Promiscuity-Enabled New-to-Nature Reactions	Liu Liming <i>Jiangnan University</i>
11:10 - 11:30	Enzyme Design and Evolution for Biocatalysis	Zhoutong Sun <i>Tianjin Institute of Industrial Biotechnology, CAS</i>
11:30 - 11:50	New catalytic reactions by enzyme engineering	Stephen C Hammer <i>University of Bielefeld</i>
11:50 - 12:10	FRISM-A powerful method for protein engineering	Qi Wu <i>Zhejiang University</i>

# Biocatalysis

6

**Room: MR334****06 August**

WED

**13:40 - 15:40****Session Chair:**  
Zhou Kang

TIME	PRESENTATION TITLE	SPEAKER
13:40 - 14:00	Non-natural cofactor-mediated biocatalysis for synthetic biology	<b>Zhao Zongbao</b> <i>Dalian University of Technology</i>
14:00 - 14:20	Efficient recombinant enzyme production in <i>B. subtilis</i> via a novel dynamic regulation system	<b>Yang Haiquan</b> <i>Jiangnan University</i>
14:20 - 14:40	Engineering of Bio-hybrid Catalysts	<b>Lv Yongqin</b> <i>Beijing University of Chemical Technology</i>
14:40 - 15:00	Probing Product Selectivity in Clavine Oxidases and Its Implications for Ergoline Biocatalysis	<b>Garrett Wong</b> <i>National University of Singapore</i>
15:00 - 15:15	Enzymatic Valorization of Animal Rendering Waste Oil into Biodiesel Using Hyperactive and Reusable Immobilized Lipase Systems	<b>Hwang Ee Taek</b> <i>Dong-A University</i>



# Biocatalysis

7

**Room: MR334**

**06 August** **WED** **16:00 - 17:30**

**Session Chair:**  
Ang Ee Lui

TIME	PRESENTATION TITLE	SPEAKER
16:00 - 16:20	Purine Catabolism by Anaerobic Gut Bacteria: Implications for Gout	Wei Yifeng <i>A*STAR</i>
16:20 - 16:40	-	Brandon Morinaka <i>National University of Singapore</i>
16:40 - 17:00	Sustainable Enzymatic Amination: A Mechanistic Discovery Guided by Spectroscopy	Anuvab Das <i>Nanyang Technological University</i>
17:00 - 17:20	Computation-Guided Enzyme Engineering: Machine Learning and Molecular Dynamics for Enhanced Biocatalysis	Hao Fan <i>A*STAR</i>
17:15 - 17:30	Metalloenzyme design via the dialogue between DNA and iron	Jia Guoqing <i>Dalian Institute of Chemical Physics, CAS</i>

# Biocatalysis

8

**Room: MR334****07 August**

THU

**09:00 – 10:30****Session Chair:**  
Li Zhi

TIME	PRESENTATION TITLE	SPEAKER
09:00 - 09:30	Photoenzymatic Catalysis for New Enzyme Functions	Todd Hyster <i>Princeton University</i>
09:30 - 09:50	Repurposing Thiamine-Dependent Enzymes Using Radicals	Xiaoqiang Huang <i>Nanjing University</i>
09:50 - 10:10	Versatile Cell Coating Strategies for Whole-Cell Cascade Biocatalysis	Changzhu Wu <i>University of Southern Denmark</i>
10:10 - 10:25	Visible light driven fumarate production from CO <sub>2</sub> using FeOOH/BiVO <sub>4</sub> /CuInS <sub>2</sub> tandem system with multi-biocatalyst	Amao Yutaka <i>Osaka Metropolitan University</i>



# Biocatalysis

9

Room: MR334

07 August

THU

10:50 - 12:20

Session Chair:  
Lim Yee Hwee

TIME	PRESENTATION TITLE	SPEAKER
10:50 - 11:10	Unified Genomic and Chemical Representations Enable Bidirectional Bio-synthetic Gene Cluster and Natural Product Retrieval	Winston Koh <i>A*STAR</i>
11:10 - 11:30	Expanding The Repertoires of Biocatalysis by AI-BT-Chem	Wang Yajie <i>Westlake University</i>
11:30 - 11:50	A Multi-Modal Computational Strategy for Accelerated Discovery of Galactose Oxidase Mutants and their Substrate Scopes	Ee Lui Ang <i>A*STAR</i>
11:50 - 12:10	The Biocatalytic Synthesis of Silicone Polymers	Lu Shin Wong <i>University of Manchester</i>
12:10 - 12:30	Biocatalytic chiral amine synthesis coupled with in-situ chemo-catalytic substrate production	Damien P. Debecker <i>UCLouvain</i>



# Electrocatalysis

1

**Room: MR326**

**05 August** **TUE** **10:50 - 12:20**

**Session Chair:**  
Lei Wang

TIME	PRESENTATION TITLE	SPEAKER
10:50 - 11:20	Electrochemical synthesis of fuels and chemicals	Wang Guoxiong DICP
11:20 - 11:40	Probing *CO in Concentrated Cation Electrolytes during Electrochemical CO <sub>2</sub> Reduction Reaction	Yun Jeong Hwang Seoul National University
11:40 - 12:00	Cheminformatic methodologies toward sustainable electro-catalytic synthesis of chemicals and fuels	Mengning Ding Nanjing University
12:00 - 12:20	Fueling the Future: Advanced GC Solutions for Alternative Energy Applications	Agilent

# Electrocatalysis

# 2

**Room: MR326****05 August****TUE****13:40 - 15:40****Session Chair:**  
Yanwei Lum**TIME****PRESENTATION TITLE****SPEAKER***13:40 – 14:10*

A universal molecular design strategy to enhance hydrogen evolution on Pt catalysts

**Bingjun Xu**  
Peking University*14:10 – 14:30*

Fundamental and scale-up research of electrochemical hydrogen-evolution coupled with alternative oxidation

**Mingfei Shao**  
*Beijing University of  
Chemical Technology**14:30 – 14:50*Urea Synthesis Via Electrocatalytic Oxidative Coupling of CO with NH<sub>3</sub>**Lu Qi**  
*Tsinghua University**14:50 – 15:10*Molecular CO<sub>2</sub> Reduction: Selectivity and Carbon Efficiency**Ye Ruquan**  
*City University of Hong  
Kong**15:10 – 15:35*

Green Transformation (GX) Solutions to Sustainable Chemical Processes

**Jackie**  
*Shimadzu*



# Electrocatalysis

# 3

**Room: MR326**

**05 August** **TUE** **16:00 - 17:30**

**Session Chair:**  
Lele Duan

TIME	PRESENTATION TITLE	SPEAKER
16:00 - 16:30	Powering Hydrogen: Electrolyte Engineering Breakthroughs	<b>Kazuhiro Takanabe</b> <i>The University of Tokyo</i>
16:30 - 16:50	Total Synthesis of Metallic Molecules for Electrocatalytic Applications	<b>Xie Jianping</b> <i>National University of Singapore</i>
16:50 - 17:10	Decoding Electrocatalysis with Simulations, Designing Electrocatalysts with AI	<b>Seoin Back</b> <i>Sogang University</i>
17:10 - 17:30	A study of electrochemical olefin epoxidation	<b>Kyuongsuk Jin</b> <i>Korea University</i>

# Electrocatalysis

# 4.1

**Room: MR326****06 August****WED****09:00 – 10:30****Session Chair:**  
Lei Wang

TIME	PRESENTATION TITLE	SPEAKER
09:00 – 09:30	Single-Atom Catalysts as Model Systems for Elucidating Surface Oxygen Transfer on Reducible Metal Oxides	Hyunjoo Lee <i>Korea Advanced Institute of Science and Technology</i>
09:30 – 09:50	Surface Coordination Chemistry on Graphdiyne for Electrocatalysis	Lele Duan <i>Westlake University</i>
09:50 – 10:10	Scale-up science of mass transfer limitation in electrolytic cells	Jaeyoung Lee <i>Gwangju Institute of Science and Technology</i>
10:10 – 10:25	Dual Annealing Strategy to Activate Inert Tungsten Metal: Synergistic Optimization of Mass Transfer and Activity in CTF-Derived ORR Catalysts	Huan Ye



# Electrocatalysis

4.2

Room: MR336

06 August

WED

09:00 - 10:30

Session Chair:  
Lum Yanwei

TIME	PRESENTATION TITLE	SPEAKER
9:30 - 9:50	Innovative design of dual-structure-breaking electrolyte for cadmium-metal batteries	Yang Huiying <i>Singapore University of Technology and Design</i>
9:50 - 10:10	Electrochemically Formed Single-Atom Centers of MXenes as a New Class of Electrocatalysts for Energy Conversion and Storage	Kai S. Exner <i>University of Duisburg-Essen</i>
10:10 - 10:25	Zeolitic nanoenzymes for detecting glucose in blood environment and lowering blood sugar with non pharmacological methods	Kun Qian <i>Jinzhou Medical University</i>



# Electrocatalysis

5.1

Room: MR326

06 August

WED

10:50 - 12:20

Session Chair:  
Yanwei Lum

TIME	PRESENTATION TITLE	SPEAKER
10:50 - 11:20	Challenges and Opportunities for Earth-Abundant Electrocatalysts in Water Electrolysers and Fuel Cells	Zhao Chuan <i>University of New South Wales</i>
11:20 - 11:40	Electrochemical reduction of CO <sub>2</sub> into long-chain hydrocarbons	Boon Siang Yeo <i>National University of Singapore</i>
11:40 - 12:00	Designing Interfaces for CO <sub>2</sub> Electrolysis	Youngkook Kwon <i>Ulsan National Institute of Science &amp; Technology</i>
12:00 - 12:15	Correlation between CO Adsorption and CO <sub>2</sub> /CO Electroreduction	Xu Yifei <i>Peking University</i>



# Electrocatalysis

5.2

Room: MR336

06 August

WED

10:50 - 12:20

Session Chair:  
Lei Wang

TIME	PRESENTATION TITLE	SPEAKER
11:20 - 11:40	Electrosynthesis of Ethanol and Acetal from CO <sub>2</sub>	Sheng Zhang <i>Tianjin University</i>
11:40 - 12:00	Toward Stability Design: Catalyst and Operation of Electrochemical Water Splitting	Dong Young Chung <i>Korea Advanced Institute of Science and Technology</i>
12:00 - 12:15	Active sites regulation for high-performance electrocatalysts in Li-S batteries	Yu Zhang <i>Stockholm University</i>

# Electrocatalysis

# 6.1

**Room: MR326****06 August****WED****13:40 - 15:40****Session Chair:**  
Fu Xianbiao

TIME	PRESENTATION TITLE	SPEAKER
13:40 - 14:10	A new symmetrical PEMEC concept for efficient and efficient water electrolysis	Shao Zongping <i>Curtin University</i>
14:10 - 14:30	Microscale design and preparation of highly efficient electrocatalysts	Shenlong Zhao <i>National Center for Nanoscience and Technology</i>
14:30 - 14:50	Revitalizing the Chlorine Evolution Reaction with Atomically Dispersed Metal Catalysts	Sang Hoon Joo <i>Seoul National University</i>
14:50 - 15:10	CO <sub>2</sub> electrolysis to high-value-added chemicals and fuels	Wang Xue <i>City University of Hong Kong</i>
15:10 - 15:25	Fully exposed Fe single atom sites on hierarchical porous hollow carbon fiber for high-performance flexible/wearable Zn-air batteries	Jingwen Ma
15:25- 15:40	Operando studies redirect spatiotemporal restructuring of model coordinated oxides in electrochemical oxidation	Daqin Guan <i>Curtin University</i>



# Electrocatalysis

6.2

Room: MR336

06 August

WED

13:40 - 15:40

Session Chair:  
Andrew Wong

TIME	PRESENTATION TITLE	SPEAKER
14:10 - 14:30	Electrocatalytic challenges of the low-Pt process of PEMFCs	Lin Rui <i>Tongji University</i>
14:30 - 14:50	Impacts of Engineering Microenvironment near Electrocatalyst for Sustainable Chemical Production	Chanyeon Kim <i>Daegu Gyeongbuk Institute of Science and Technology</i>
14:50 - 15:05	Inducing Microstrain in Electrodeposited Pt through Polymer Addition for Highly Active Oxygen Reduction Catalysis	Qi Hua <i>China University of Petroleum (East China)</i>
15:05 - 15:20	Activated carbon based SAC electrodes and environmental catalysis	Lifen Liu <i>Dalian University of Technology</i>
15:20 - 15:35	Low-Temperature Pyrolysis for Synthesizing High-Loading Single-Atom Catalysts for Fuel Cells	Yan-Xia Jiang <i>Xiamen University</i>



# Electrocatalysis

7.1

Room: MR326

06 August

WED

16:00 - 17:30

Session Chair:  
Wang Ziyun

TIME	PRESENTATION TITLE	SPEAKER
16:00 - 16:20	Clarifying the pH Effect on Volmer Step in Hydrogen Oxidation	Yao Zhou <i>Xiamen University</i>
16:20 - 16:40	Electrolyte effects on oxygen reduction kinetics on Pt(111) inform rational engineering of cathode catalyst layer in PEMFC	Mingchuan Luo <i>Peking University</i>
16:40 - 17:00	Spectroelectrochemical Titration of the Local Coordination Structure of Single-Atom Catalyst	Jiang Kun <i>Shanghai Jiao Tong University</i>
17:00 - 17:15	Regulating the redox cycle of nickel species for efficient seawater electrolysis	Menghui Qi <i>Zhejiang University</i>
17:15 - 17:30	Harnessing MnO <sub>2</sub> Polymorphs for Electrocatalytic Hydrogen Production via Selective Seawater Electrolysis	Prashant Kumar Gupta



# Electrocatalysis

7.2

Room: MR336

06 August WED 16:00 - 17:30

Session Chair:  
Sung-Fu Hung

TIME	PRESENTATION TITLE	SPEAKER
16:00 - 16:20	Ion Exchange Membranes and Ionomers for Advancing Electrocatalysis: From Polymer Design to Device Performance	Qilei Song <i>Imperial College London</i>
16:20 - 16:40	Electrochemical Nitrogen Activation for Ammonia Synthesis	Xianbiao Fu <i>National University of Singapore</i>
16:40 - 17:00	Powering selective oxidations of organic molecules with renewable energy	Wan Ru Leow <i>A*STAR/Nanyang Technological University</i>
17:00 - 17:15	Suppressing product crossover and C-C bond cleavage in a glycerol membrane electrode assembly reformer	Dai Chencheng <i>Nanyang Technological University</i>
17:15 - 17:30	Bio-MOF-1 Derived Asymmetric Ni Single-Atom Catalyst for Superior Selectivity in CO <sub>2</sub> Electroreduction	Yechan Lee <i>Pohang University of Science and Technology</i>

# Electrocatalysis

8

**Room: MR326****07 August****THU****09:00 – 10:30****Session Chair:**  
Yanwei Lum

TIME	PRESENTATION TITLE	SPEAKER
09:00 - 09:20	Rational Catalyst Design for CO <sub>2</sub> Electrochemical Reduction Reaction	Ziyun Wang <i>University of Auckland</i>
09:20 - 09:40	Ionomers and membranes for electrochemical CO <sub>2</sub> capture and conversion	Yuhang Wang <i>Soochow University</i>
09:40 - 10:00	Unveiling the Synergies of Sulfur-Containing Single-Atom Catalysts via Model Thiophene-Decorated Nickel Porphyrins for Tandem CO <sub>2</sub> Reduction Reaction	Sung-Fu Hung <i>National Yang Ming Chiao Tung University</i>
10:00 - 10:20	Electrocatalytic Cascade Conversion of CO <sub>2</sub> to Epoxide: From Catalyst to Device	Yuhang Li <i>East China University of Science &amp; Technology</i>



# Electrocatalysis

# 9

**Room: MR326**

**07 August**

**THU**

**10:50 - 12:20**

**Session Chair:**  
Wang Yuhang

TIME	PRESENTATION TITLE	SPEAKER
10:50 - 11:10	Active Site Evolution during Electrochemical CO <sub>2</sub> Reduction in Cu Binary Alloy Catalysts	Dae-Hyun Nam <i>Korea University</i>
11:10 - 11:30	GaN Nanowire Photoelectrodes for Efficient Solar Hydrogen and Ammonia Production	Wan Jae Dong <i>Korea University</i>
11:30 - 11:50	Material Transportation in CO <sub>2</sub> Electrochemical Zero-Gap Reactor Considered with Voltage Oscillation under Constant Current	Katsushi Fuji <i>Institute of Physical and Chemical Research (Riken)</i>
11:50 - 12:10	Artificial Leaf for Hydrogen Generation under Indoor Lighting: A Step Toward Energy Recycling	Ji-hyun Jang <i>Ulsan National Institute of Science &amp; Technology</i>

# Electrocatalysis

10

Room: MR326

07 August

THU

13:40 - 15:10

Session Chair:  
Wan Ru Leow

TIME	PRESENTATION TITLE	SPEAKER
13:40 - 14:00	Carbon-Negative Generation of Green Hydrogen via Electrolysis of Biomass Waste	Hong Li Nanyang Technological University
14:00 - 14:15	Ruthenium-tuned trivalent cobalt sites for efficient ammonia electrosynthesis from nitrate	Longcheng Zhang Nanyang Technological University
14:15 - 14:30	Metal-Oxide Interaction Modulation for Achieving Stable Acidic Oxygen Evolution and Overall Water Splitting	Yongjie Wang
14:30 - 14:45	Key role of oxidising species on iridium oxides for Electrocatalytic Water Oxidation	Caiwu Liang Imperial College London
14:45 - 15:00	Towards Energy efficient CO <sub>2</sub> electrolysis	Yang Qin National University of Singapore
15:00 - 15:20	The Microenvironment Frontier for Electrochemical CO <sub>2</sub> Conversion	Andrew Wong National University of Singapore
15:20 - 15:40	Towards new insights into electrocatalytic CO <sub>2</sub> reduction	Yanwei Lum National University of Singapore



# Advanced Catalyst Characterisation

1

Room: MR324

05 August

TUE

10:50 - 12:20

Session Chair:

XI Shibo, WANG (Ryan) Feng

TIME	PRESENTATION TITLE	SPEAKER
10:50 - 11:20	In Situ Simultaneous or Sequential Multimodal Synchrotron (SR) and Muon ( $\mu$ -)-Based X-ray Analysis Techniques for Atomic- to Nanoscale Insights into Catalyst Activity and Durability	Yasuhiro Iwasawa <i>The University of Electro-Communications</i>
11:20 - 11:40	Visualisation of Chemical Reactions with X-ray Spectroscopy	Wang (Ryan) Feng <i>University College London</i>
11:40 - 12:00	A Design Strategy Towards Oxygen Electrocatalysts	Liu Bin <i>City University of Hong Kong</i>
12:00 - 12:10	Elucidation of the RhAlO <sub>x</sub> Structure in Deactivated Rh/ $\gamma$ -Al <sub>2</sub> O <sub>3</sub> Catalyst Using Rh K-edge HERFD XANES Spectroscopy	Junya Ohyama <i>Kumamoto University</i>
12:10 - 12:20	Probing the structural evolution of electrocatalyst via operando X-ray absorption spectroscopy	Liu Longxiang <i>The University of Oxford</i>
12:20 - 12:50 <i>Lunch Session</i>	Latest catalyst applications toward the carbon neutrality using Hitachi HF5000 Cs-corrected TEM/STEM with in-situ holders and gas injection function	Hiroaki Matsumoto <i>Hitachi</i>
12:50 - 13:20 <i>Lunch Session</i>	Integrated, Controlled Photoillumination for Operando High-Pressure Environmental Transmission Electron Microscopy of Photocatalytic Materials	Yaofeng Guo <i>Shanghai Winner</i>

# Advanced Catalyst Characterisation

2

Room: MR324

05 August

TUE

13:40 - 15:40

**Session Chair:**  
 Hai Xiao, Guo Jing

TIME	PRESENTATION TITLE	SPEAKER
13:40 – 14:00	Precise engineering of the microenvironment around active sites	Yan Huan <i>University of Science and Technology of China</i>
14:00 – 14:20	Advancing Atomic Precision Catalysis for Sustainable Chemical Manufacturing	Hai Xiao <i>Peking University</i>
14:20 – 14:40	Advanced X-ray Spectroscopy for Electronic and Atomic Structure Investigation of Energy Materials	Chung-Li Dong <i>Tamkang University</i>
14:40 – 15:00	Probing the surface chemistry of water and carbon dioxide with qPlus based nc-AFM	Guo Jing <i>Beijing Normal University</i>
15:00-15:10	Direct in situ observation and characterization of surface reaction on Ruthenium-based alloy nanoparticles during CO oxidation	Tang Jiayi -
15:10-15:20	XPS Data Analysis Tool: A Robust Framework for Spectral Deconvolution and Surface Characterization	Seyed Pouya Hosseini Yazdeli <i>Ruhr University Bochum</i>



# Advanced Catalyst Characterisation

3

Room: MR324

05 August

TUE

16:00 - 17:30

Session Chair:

Jan Balajka, Yan Binhang

TIME	PRESENTATION TITLE	SPEAKER
16:00 - 16:20	Revealing the Nature of Active Sites with Operando Surface Probes	Jeong Young Park <i>Korea Advanced Institute of Science &amp; Technology</i>
16:20 - 16:40	Atmospheric Pressure Chemical Looping Ammonia Synthesis Promoted by CO <sub>2</sub> Hydrogenation over Co <sub>3</sub> Mo <sub>3</sub> N	Yan Binhang <i>Tsinghua University</i>
16:40 - 17:00	The surface structure of Al <sub>2</sub> O <sub>3</sub> (0001)	Jan Balajka <i>TU Wien</i>
17:00 - 17:20	Enhanced Hydrogen Adsorption on In <sub>2</sub> O <sub>3</sub> (111) via Oxygen Vacancy Engineering	Zhong Jianqiang <i>Hangzhou Normal University</i>

# Advanced Catalyst Characterisation

4

Room: MR324

06 August

WED

09:00 – 10:30

Session Chair:  
LU Jiong, WANG Dong

TIME	PRESENTATION TITLE	SPEAKER
09:00 – 09:30	Designing and Exploring Model Catalytic Systems	WU Kai <i>Peking University</i>
09:30 – 09:50	In-situ Scanning Tunneling Microscopy Investigation of Molecular Electrocatalytic Reactions at the Electrode/Electrolyte Interface	WANG Dong <i>IOC, CAS</i>
9:50 – 10:10	CeO <sub>2</sub> -supported Cu-based bimetallic model catalysts	ZHU Junfa <i>University of Science and Technology of China</i>
10:10 – 10:20	Operando and in-situ spectroscopy for elucidating the behavior of V-based catalysts during low-temperature NH <sub>3</sub> -SCR of NO	Vuong, Thanh Huyen <i>Leibniz Institute for Catalysis (LIKAT Rostock)</i>



# Advanced Catalyst Characterisation

5

Room: MR324

06 August

WED

10:50 - 11:20

Session Chair:  
HE Qian, XU Jun

TIME	PRESENTATION TITLE	SPEAKER
10:50 - 11:20	Solving Structure and Predicting Reactivity from Magnetic Resonance	Christophe Copéret <i>ETH Zurich</i>
11:20 - 11:40	Solid-State NMR Insights into Active Sites and Molecular Interactions in Zeolite	XU Jun <i>Innovation Academy for Precision Measurement Science and Technology, CAS</i>
11:40 - 12:00	Visualization of Model Catalysis on Surface	Zhou Xiong <i>Peking University</i>
12:00 - 12:10	Disentangling the Effects of Alloying and Interfacial Sites in PtCr Reverse Water Gas Shift Catalysts	YAO Chengbo <i>ETH Zurich</i>
12:20 - 12:50 <i>Lunch Session</i>	Enabling In-Situ TEM for Catalysis: A Modular Platform for Dynamic Environmental Studies	Luca Carnevale <i>DENSsolution</i>
12:50 - 13:20 <i>Lunch Session</i>	Shanghai Winner In-situ 4D-STEM Solution Introduction	Michael Heng <i>Shanghai Winner</i>

# Advanced Catalyst Characterisation

6

Room: MR324

06 August

WED

13:40 - 15:40

Session Chair:

LI Xuning, Yohei Uemura

TIME	PRESENTATION TITLE	SPEAKER
13:40 – 14:00	In-Situ Raman Probing Electrochemical Reactions	LI Jianfeng <i>Xiamen University</i>
14:00 – 14:20	IR-CO Titration of Rh Single-Atom Catalysts: A Surface-Science Approach	Jiri Pavelec <i>Vienna University of Technology</i>
14:20 – 14:40	Probing the dynamic mechanism of Single-Atom Catalysis via in-situ/operando Mössbauer Spectroscopy	Li Xuning <i>DICP<sup>1</sup></i>
14:40 – 15:00	Electronic and structural dynamics in photocatalysts studied by femtosecond X-ray spectroscopies	Yohei Uemura <i>European XFEL<sup>2</sup></i>
15:00 – 15:10	Spatiotemporal Alignment of Hole Transfer and Water Oxidation for Highly Efficient Photocatalytic Water Splitting	LUO Yaling <i>DICP</i>
15:10 – 15:20	Structural Pair Sites for Highly Active Hydrogenation of Nitriles	LAN Xiaocheng <i>USTC</i>
15:20 – 15:30	Dihydride Adsorption on a Heterogeneous Rh <sub>1</sub> /Fe <sub>3</sub> O <sub>4</sub> (001) Catalyst	WANG Chunlei <i>TU Wien University</i>

1. DICP, CAS: Dalian Institute of Chemical Physics, Chinese Academy of Sciences

2. European X-ray Free Electron Laser Facility GmbH



# Advanced Catalyst Characterisation

7

Room: MR324

06 August

WED

16:00 - 17:30

Session Chair:  
LIU Xi, LIU Wei

TIME	PRESENTATION TITLE	SPEAKER
16:00 - 16:20	Visualizing surface atomic evolution of noble metal nanoparticles using Atomically resolved secondary electron	LIU Xi <i>Shanghai Jiaotong University</i>
16:20 - 16:40	Visualizing catalytic reactions via environmental TEM	WANG Yong <i>Zhejiang University</i>
16:40 - 17:00	Highly Active Migrating Nanoparticle Discerned from Its Quantified Restructuring in Catalytic Redox Reactions	LIU Wei <i>DICP</i>
17:00 - 17:10	Advanced electron diffraction techniques accelerate zeolite catalysts development	LUO Yi <i>Sinopec<sup>1</sup></i>
17:10 - 17:20	Structure elucidation of Metal-organic Framework-Based Electrochemical Catalysts via Three-dimensional Electron Diffraction	ZHOU Guojun <i>Sinopec</i>
17:10 - 17:20	Simultaneously in-situ Atomic STEM/SE Imaging at 10 kPa	Chaobin Zeng <i>Hitachi<sup>2</sup></i>

# Advanced Catalyst Characterisation

8

Room: MR324

07 August

THU

09:00 – 10:30

Session Chair:  
CHI Miaofang; CHEN Xiao

TIME	PRESENTATION TITLE	SPEAKER
09:00 – 09:30	Designing and Exploring Model Catalytic Systems	PAN Xiaoqing <i>UC Irvine</i>
09:30 – 09:50	Structure-function relationship of materials in real space	GU Lin <i>Tsinghua University</i>
09:50 – 10:10	Probing Catalyst-Support Interactions via In Situ and Emerging STEM	CHI Miaofang <i>Duke University/ Oak Ridge National Laboratory</i>
10:10 – 10:20	Regenerable Ni-Co Spinel Catalysts for DRM: Direct Insight from In-situ STXM and Ptychography	Dong-Hyun Kim <i>Chungnam National University</i>



# Advanced Catalyst Characterisation

9

Room: MR324

07 August

THU

10:50 - 12:20

Session Chair:  
Zhou Wu, Dai Sheng

TIME	PRESENTATION TITLE	SPEAKER
10:50 - 11:10	Characterization of Iron Redox with Environmental Transmission Electron Microscopy	SU Dong <i>Institute of Physics, CAS</i>
11:10 - 11:30	Solid liquid interface reaction dynamics revealed by in situ TEM	LIAO Honggang <i>Xiamen University</i>
11:30 - 11:50	In situ microscopy and spectroscopy investigation of nanocatalysts for CO <sub>2</sub> upcycling	Huang Jun <i>University of Sydney</i>
11:50 - 12:10	Unveiling Metal-Support Interface Dynamics in CO <sub>2</sub> Hydrogenation Through Operando TEM	Luca Carnevale <i>DENSSolution</i>

# Advanced Catalyst Characterisation

# 10

**Room: MR324**
**07 August**
**THU**
**13:40 - 15:40**
**Session Chair:**  
 SU Dong, Liao Honggang

TIME	PRESENTATION TITLE	SPEAKER
13:40 – 14:00	Design of highly efficient hydrogen production catalysts based on microscopy insights	ZHOU Wu <i>UCAS</i>
14:00 – 14:20	Structure-function relationship of materials in real space	CHEN Xiao <i>Tsinghua University</i>
14:20 – 14:40	Low Damage HAADF-STEM Imaging for Heterogeneous Catalysts	DAI Sheng <i>ECUST</i>
14:40 – 14:50	Investigating Roles of Electrolyte Alkaline Cations in the Fe Deposition on Ni (oxy) hydroxides during the Oxygen Evolution	BAI Fan <i>Ruhr University Bochum</i>
14:50 – 15:10	Sample Integrity Strategy for Electron Microscopy Characterization of Beam Sensitive Catalytic Materials	Chen Bin <i>ThermoFisher Scientific</i>
15:10 – 15:30	Symposium Poster Awards Session	



# Biomass Conversion & Polymer Degradation

1

Room: MR325

05 August

TUE

10:50 - 12:20

Session Chair:

Yue LIU, Chanatip Samart

TIME	PRESENTATION TITLE	SPEAKER
10:50 - 11:10	Understanding of the zeolite acidity in water for the conversion of biomass	Yue LIU <i>East China Normal University</i>
11:10 - 11:30	High efficient Co-Cu catalysts on Al-modified Zeolite HY support for one-pot oxidative lignin fractionation and depolymerization of palm kernel shell waste biomass	Chanatip Samart <i>Thammasat University</i>
11:30 - 11:45	Bio-based phenol production from cashew nutshell-derived hydrocardanol via zeolite-catalyzed trans-alkylation	Jan Wiesfeld <i>Hokkaido University</i>
11:45 - 12:00	Green glycerol ester production via acidic zeolites	Rawipa Intakul <i>Chalmers University of Technology</i>
12:00 - 12:15	Boosting 3-Acetamido-5-acetylfuran Production from N-Acetyl-D-glucosamine in $\gamma$ -Valerolactone by a Dissolution-dehydration Effect	Xinlei Ji <i>Shanghai Jiao Tong University</i>

# Biomass Conversion & Polymer Degradation

2.1

Room: MR325

05 August

TUE

13:40 - 15:40

Session Chair:

Atthapon Srifa, Chao Liu

TIME	PRESENTATION TITLE	SPEAKER
13:40 – 14:00	Utilization of bimetallic Ni-Re catalysts for Transforming Biomass Derivatives into Chemical and Fuel	Atthapon Srifa <i>Mahidol University</i>
14:00 – 14:20	Heterogeneous catalyst-microbiome hybrids for efficient CO-driven C6 carboxylic acid synthesis via metabolic pathway manipulation	Chao Liu <i>Hainan University</i>
14:20 – 14:40	Molecular mechanisms of bisphenol S-induced oxidative stress and extracellular polymeric substance remodeling: A threat to cyanobacterial toxin release	Meng YANG <i>Jiangsu University</i>
14:40 – 14:55	Development of biobased formylating reagents for sustainable synthesis of formamides	Xingchao Dai <i>Lanzhou Institute of Chemical Physics, CAS</i>
14:55 – 15:10	Coupling iron sludge addition and intermittent aeration for achieving simultaneous methanogenesis, Feammox and denitrification in a single reactor treating fish sludge	Weiwei Huang <i>Hainan University</i>
15:10 – 15:25	Catalytic Pyrolysis of Glycerol to bio-BTX: Product Recycling, Aspen Modeling, TEA, and LCA	Wenjing Sun <i>Dalian Institute of Chemical Physics, CAS</i>
15:25 – 15:40	Tackling the challenges in biorefinery: energy footprint and product selectivity	Iris Yu <i>National University of Singapore</i>



# Biomass Conversion & Polymer Degradation

2.2

Room: MR336

05 August

TUE

13:40 - 15:40

Session Chair:  
Albert Ong, Wei ZHANG

TIME	PRESENTATION TITLE	SPEAKER
13:40 - 14:00	Organocatalytic Degradation of Polystyrene into Aromatic Acids	Albert Ong <i>IMRE, A*STAR</i>
14:00 - 14:20	Room-temperature co-upcycling of polyvinyl chloride and polypropylene to chlorine-free liquid hydrocarbons	Wei ZHANG <i>University of Shanghai for Science and Technology</i>
14:20 - 14:35	Upcycling Poly( $\epsilon$ -caprolactone) to Azepane via Reductive Ammonolysis over Supported Platinum Nanoparticles Catalysts	Daratu Eviana Kusuma Putri <i>The University of Osaka</i>
14:35 - 14:50	Sustainable and selective upcycling of poly(ethylene terephthalate) waste plastics to terephthalonitrile	Phuc Nguyen <i>National University of Singapore</i>
14:50 - 15:05	Catalyst for the reductive depolymerization of nylon-6 to $\epsilon$ -caprolactam	Prabin Dhakal <i>Chalmers University of Technology</i>
15:05 - 15:20	Different Product Distribution during Polyethylene Degradation on Ru Single Atoms and Nanoparticles	Quan Zhang <i>University of Chinese Academy of Sciences</i>
15:20 - 15:35	Valorization of PET plastic waste using earth-abundant metal oxide nanocatalysts toward the circular plastic economy	Bhattu Swapna <i>IIT Hyderabad</i>

# Biomass Conversion & Polymer Degradation

3

Room: MR325

05 August

TUE

16:00 - 17:30

Session Chair:

Charles Xu, Young-Woong Suh

TIME	PRESENTATION TITLE	SPEAKER
16:00 – 16:25	Development of Advanced Catalytic Technologies for Sustainable Aviation Fuel (SAF) Production	Charles Chunbao Xu <i>City University of Hong Kong</i>
16:25 – 16:45	Catalytic Challenges and Advances in Converting HEFA Feedstocks into Saturated Hydrocarbons	Young-Woong Suh <i>Hanyang University</i>
16:45 – 17:00	Biofuel production using co-hydroprocessing of lignin	Louise Olsson <i>Chalmers University</i>
17:00 – 17:15	Robust coupling between palladium and polyoxometalate in layered ZIF-67 heterostructure for high-performance aldol condensation	Haichuan Zhang <i>Hangzhou Normal University</i>
17:15 – 17:30	Efficient and Stable Production of Phenol from Birch Wood Lignin	Song Song <i>Tianjin University</i>



# Biomass Conversion & Polymer Degradation

4

Room: MR325

06 August

WED

09:00 - 10:30

Session Chair:  
Taufiq Yap, Hwei Voon Lee

TIME	PRESENTATION TITLE	SPEAKER
09:00 - 09:25	Catalytic Valorization of Oil Palm Biomass for Sustainable Bioenergy Production	Taufiq Yap Yun Hin <i>Universiti Putra Malaya</i>
09:25 - 09:45	Biomass o Nano: Catalytic Conversion and Surface Tailoring of Lignocellulosic Nanocellulose for Green Applications	Hwei Voon Lee <i>Universiti Malaya</i>
09:45 - 10:00	Sustainable Production of C6 Phenols from Lignin via Sequential C-O and C-C Bond Cleavage over Ni-MgO/Hydroxyapatite Catalyst	Zhicheng Luo <i>Southeast University</i>
10:00 - 10:15	Sustainable production of N-containing aromatics from lignin	Bo Zhang <i>DICP, CAS</i>
10:15 - 10:30	Precision C-C Bond Activation for Directed Catalytic Valorization of Lignin into High-Value Chemicals	Lin Dong <i>Nanjing Forestry University</i>

# Biomass Conversion & Polymer Degradation

5

Room: MR325

06 August

WED

10:50 - 12:20

Session Chair:  
Shicheng Zhang, Jason Lim

TIME	PRESENTATION TITLE	SPEAKER
10:50 – 11:15	Porous graphene-assisted dynamic Pd catalysis for superior hydrogenation of lignin-derived vanillin and raw bio-oil	Shicheng Zhang <i>Fudan University</i>
11:15 – 11:30	Catalytic Pyrolysis of Castor oil to Bio-BTX	Weiling Piao <i>Dalian Institute of Chemical Physics, CAS</i>
11:30 – 11:45	Efficient C–C bond cleavage in the depolymerization of dealkaline lignin to aromatic monomers via trimetallic synergistic catalysis over Pt@NiCo-MOF-derived catalyst.	Yanyuan Bai <i>Xi'an Jiaotong University</i>
11:45 – 12:00	Mechanistic study of glucose catalytic transfer hydrogenation in isopropanol	Qiaozhi ZHANG <i>National University of Singapore</i>
12:00 – 12:15	Investigation of ruthenium loaded beta zeolite catalyst performance in vanillin hydrodeoxygenation yielding both monomeric and dimeric cycloalkanes	Jae Hyun Park <i>Seoul National University</i>



# Biomass Conversion & Polymer Degradation

6

Room: MR325

06 August

WED

13:40 - 15:40

Session Chair:  
Zhang Lian, Hui Zhou

TIME	PRESENTATION TITLE	SPEAKER
13:40 - 14:05	Fly ash waste derived multi metal oxide catalysts: rational design and versatile applications for bio-fuel and green hydrogen production	Zhang Lian <i>Monash University</i>
14:05 - 14:25	High-value utilization of renewable carbon resources via thermochemical conversion	Hui ZHOU <i>Tsinghua University</i>
14:25 - 14:40	Mechanochemical methanolysis of polyethylene terephthalate	Christopher K. Wijaya <i>ISCE2, A*STAR</i>
14:40 - 14:55	Mechanochemical top-down production of oligosaccharide-based surfactants from cellulosic biomass	Junyu Mi <i>National University of Singapore</i>
14:55 - 15:10	The scale up of heterogeneously catalysed dipentaerythritol production	Katherine L. Barber <i>Chalmers University</i>
15:10 - 15:25	Sorbitol Production from Starch via Hydrolysis and Catalytic Transfer Hydrogenation	Zhuoyue Liu <i>National University of Singapore</i>
15:25 - 15:40	One pot glycidol synthesis via glycerol transesterification with DMC over Sr-Cu-Al mixed metal oxide	Sharda Kondawar <i>JSPM University Pune</i>

# Biomass Conversion & Polymer Degradation

# 7

**Room: MR325**

**06 August** **WED** **16:00 - 17:30**

**Session Chair:**  
Haichao Liu, Leilei Dai

TIME	PRESENTATION TITLE	SPEAKER
16:00 – 16:25	Catalytic Conversion of Cellulosic Biomass to Chemicals	Haichao Liu <i>Peking University</i>
16:25 – 16:45	Catalytic microwave-assisted pyrolysis of waste plastics for fuels and chemicals	Leilei Dai <i>Southeast University</i>
16:45 – 17:00	Aromatic Upcycling of PET Plastics	Jason Lim <i>IMRE, A*STAR</i>
17:00 – 17:15	Bio-based Adipic Acid Preparation via Carbonylation Strategy	Weiran Yang <i>Nanchang University</i>
17:15 – 17:30	Improved Polyolefin Upcycling by Suppressing Metal Migration and Branched Isomer Influence in Tandem Alkane Cross-Metathesis (TACM)	Jong Hun Kang <i>Seoul National University</i>



# Biomass Conversion & Polymer Degradation

8

Room: MR325

07 August

THU

09:00 - 10:30

Session Chair:  
Oxana Taran, Haibin Chu

TIME	PRESENTATION TITLE	SPEAKER
09:00 - 09:20	Reductive catalytic fractionation of lignocellulosic biomass: a new promising method for complex processing of plant raw materials	Oxana Taran <i>Institute of Chemistry &amp; Chemical Technology SB RAS</i>
09:20 - 09:40	Selective oxidation of glycerol on heterogeneous metal catalysts	Haibin Chu <i>Inner Mongolia University</i>
09:40 - 10:00	Selective Oxidation of Lignin-Derived Substrates Using Metal-Functionalized Porphyrin-Based Porous Organic Polymers	Selwyn Mapolie <i>Stellenbosch University</i>
10:00 - 10:15	Glucose oxidation over active CuO-Cu <sup>+</sup> sites stabilized by lignin-derived mesoporous carbon	Yang Cao <i>Nanjing Agricultural University</i>
10:15 - 10:30	Electrocatalytic oxidation of biomass based derivatives to value-added chemicals	Qiyang Liu <i>Nanjing Forestry University</i>

# Biomass Conversion & Polymer Degradation

9

Room: MR325

07 August

THU

10:50 - 12:20

Session Chair:

Yang Cao, Xingshuang Liu

TIME	PRESENTATION TITLE	SPEAKER
10:50 – 11:10	Low-temperature and isomerization decomposition mechanism of chlorobenzene on Ni single-atom catalyst	Xingshuang Liu <i>Hainan University</i>
11:10-11:30	Fractionation of birch wood biomass to produce xylan, xylose, methoxyphenols, microcrystalline, microfibrillated and nanofibrillated celluloses	Boris Kuznetsov -
11:30-11:45	Zirconium Oxide Catalyst Promoting Nylon 6 Depolymerization to $\epsilon$ -Caprolactam under Mild Conditions	Nanaka Ishiura <i>The University of Osaka</i>
11:45-12:00	One-pot Production of Succinic Acid from Tartaric Acid in Water by Supported Rhenium Catalyst	Daniele Padovan <i>Hokkaido University</i>
12:00-12:15	Hydrodenitrogenation of 1-cyclohexylethylamine over supported Ru-based catalysts	Momoka Hikime <i>Tohoku university</i>



# Biomass Conversion & Polymer Degradation

10

Room: MR325

07 August

THU

13:40 - 15:40

Session Chair:  
Dan Kai, Yaxuan Jing

TIME	PRESENTATION TITLE	SPEAKER
13:40 - 14:05	Preserving and building on natural structures to make high -performance biobased chemicals	Jeremy Luterbacher <i>EPFL</i>
14:05 - 14:25	Tropical lignocellulosic biomass valorisation towards sustainable materials	Dan Kai <i>A*STAR</i>
14:25 - 14:45	Catalytic Upcycling of Waste Plastics via Precise C-O and C-C Bond Activation	Yaxuan Jing <i>Nanjing University</i>
14:45 - 15:00	Overcoming Diffusion Limitations in Hydrocracking Polyolefins over Metal-Solid Acid Catalysts	Zhenchen Tang <i>Nanjing Tech University</i>
15:00 - 15:15	Comprehensive insights into 5-hydroxymethylfurfural oxidation over Au, Pd and AuPd catalysts	Tamara Kharlamova <i>National Research Tomsk State University</i>
15:15 - 15:30	Efficient Synthesis of Diols from Biomass	Zhiwei Huang <i>Lanzhou Institute of Chemical Physics, CAS</i>



# C1 Chemistry & Olefins

1

**Room: MR332**

**05 August** **TUE** **10:50 - 11:50**

**Session Chair:**  
Luwei Chen

TIME	PRESENTATION TITLE	SPEAKER
10:50 - 11:20	Precision Catalysis for Propane Dehydrogenation to Propylene and Syngas conversion to Acetic Acid or Ethanol	Wang Ye <i>Xiamen University</i>
11:20 - 11:50	Catalytic pyrolysis of methane to H <sub>2</sub> and carbon	David Farusseng <i>IRCE Lyon, French National Centre for Scientific Research</i>

# C1 Chemistry & Olefins

2

Room: MR332

05 August

TUE

14:00 - 15:30

Session Chair:  
Amol Amrute

TIME	PRESENTATION TITLE	SPEAKER
14:00 - 14:30	The Conversion of CO <sub>2</sub> into value-added Chemicals	Xinwen Guo <i>Dalian University of Technology</i>
14:30 - 14:50	Next-Generation WGS Reactions: Target-Oriented Approach with Diverse Resource Utilization	Hyun-Seog Roh <i>Yonsei University</i>
14:50 - 15:10	Application of Non-thermal Plasma for C1 Conversion	Shaojun Xu <i>University of Manchester</i>
15:10 - 15:30	Zeolite synthesis in a unique acid co-hydrolysis route	Yu Zhou <i>Nanjing Tech University</i>



# C1 Chemistry & Olefins

3

Room: MR332

05 August TUE 16:00 - 17:55

Session Chair:  
Yu Zhou

TIME	PRESENTATION TITLE	SPEAKER
16:00- 16:20	Catalyst and process design towards sustainable propylene synthesis	Sai Chen <i>Tianjin University</i>
16:20 - 16:40	Selective hydrogenation of carbon dioxide to target hydrocarbon	Sen Wang <i>ICC, CAS<sup>1</sup></i>
16:40- 16:55	Effect of Carbon Dioxide on the Activity of Pd-Pt Bimetallic Catalysts during Partial Oxidation of Methane Towards Enriched Hydrogen Production	Udaya B. R. Ragula <i>Amrita Vishwa Vidyapeetham</i>
16:55 - 17:10	Aluminum distribution in Ferrierite zeolites influences the performance of methane oxidation	Toshiyuki Yokoi <i>Institute of Science Tokyo</i>
17:10 - 17:25	Silica-encapsulated Cu-ZnO nanoparticles for CO <sub>2</sub> hydrogenation to methanol	Hwi Yeon WOO <i>Sungkyunkwan University</i>
17:25 - 17:40	Improved CO selectivity in CO <sub>2</sub> hydrogenation: Exsolved Cu and Ni catalysts encapsulated in silicalite-1	Jedy Prameswari <i>National Cheng Kung University</i>
17:40- 17:55	Spatially Decoupled Activation and Selectivity Control for Methane Upgrading in a Non-Isothermal Filament-Catalyst System	Jiyang Tan <i>National University of Singapore</i>

# C1 Chemistry & Olefins

4

**Room: MR332**

**06 August**

WED

**09:00 - 10:20**

**Session Chair:**  
Chee Kok Poh

TIME	PRESENTATION TITLE	SPEAKER
9:00 - 9:30	Plasma Catalysis for C1 Chemistry	Xin Tu <i>University of Liverpool</i>
9:30 - 10:00	CO <sub>2</sub> and CH <sub>4</sub> activation by microwave and unsteady-state operation	Atsushi Urakawa <i>TU Delft</i>
10:00 - 10:20	Efficient Epoxidation of Propylene with H <sub>2</sub> O <sub>2</sub> over ZnO/ZnO <sub>2</sub> Catalysts	Chia-Min Yang <i>National Tsinghua University</i>



# C1 Chemistry & Olefins

5

Room: MR332

06 August

WED

10:50 - 12:00

Session Chair:  
Chia-Min Yang

TIME	PRESENTATION TITLE	SPEAKER
10:50 - 11:20	MoO <sub>x</sub> /Mo <sub>2</sub> N-Based Heterostructures for C1 Molecules Catalysis	Chunjiang Jia <i>Shandong University</i>
11:20 - 11:40	Towards Sustainable Aromatics: Advancing Catalytic Pyrolysis for BTX Production from Biomass	H.J. (Erik) Heeres <i>University of Groningen</i>
11:40 - 12:00	CO <sub>2</sub> hydrogenation to liquid hydrocarbons with high selectivity	Peng Gao <i>Shanghai Advanced Research Institute, CAS</i>

# C1 Chemistry & Olefins

6

Room: MR332

06 August

WED

14:00 - 15:40

Session Chair:  
Peng Gao

TIME	PRESENTATION TITLE	SPEAKER
14:00 - 14:20	Development of Fe and Co Carbide Catalysts for CO <sub>2</sub> Hydrogenation	Guanghai Zhang <i>Dalian University of Technology</i>
14:20 - 14:40	Design of Bifunctional Catalysts Using Biomass Template	Guowu Zhan <i>Huaqiao University</i>
14:40 - 14:55	Cobalt Oxide in Ethane Dehydroaromatization: A New Perspective on Activity and Stability	Sang Yun Kim <i>Korea Institute of Science and Technology</i>
14:55 - 15:10	Vanadium-Doped TiO <sub>2</sub> for Enhanced Plasma-Driven Methane Coupling	Hyeonae Im <i>Pohang University of Science and Technology</i>
15:10 - 15:25	Design of Catalysts, Catalytic Membrane Reactor and Process Control for Low-Temperature Methane Cracking	Bella - <i>ISCE2 A*STAR</i>
15:25 - 15:40	Utilization of bio-derived C4-C6 aldehydes for the synthesis of C8-C12 alcohols for sustainable aviation fuel precursor	Li Hua <i>Hanyang University</i>



# C1 Chemistry & Olefins

7

Room: MR332

06 August WED 16:00 - 17:40

Session Chair:  
Guanghui Zhang

TIME	PRESENTATION TITLE	SPEAKER
16:00 - 16:20	Sustainable Synthesis of Lower Olefins via CO <sub>2</sub> Utilization	Hiroyuki Kamata <i>IHI Corp</i>
16:20 - 16:40	High active and stable carbon catalysts for thermal catalytic reaction-acetylene hydrochlorination, active sites beyond heteroatom doping	Ying Li <i>Zhejiang University of Technology</i>
16:40 - 16:55	Potassium-Driven Pathway Modulation in CO <sub>2</sub> Hydrogenation: Tuning Ethanol and Liquid fuels Synthesis over FeCuAl Catalyst	Wenjie Xiang <i>University of Toyama</i>
16:55 - 17:10	Carbon footprint evaluation of liquid sunshine methanol synthesis with life cycle assessment	Shuqi Wang <i>DICP, CAS</i>
17:10 - 17:25	Descriptors of InZrO <sub>x</sub> vs ZnZrO <sub>x</sub> Catalysts for CO <sub>2</sub> Hydrogenation to Methanol	Tangsheng Zou <i>ISCE2, A*STAR</i>
17:25 - 17:40	Enhancing the catalytic performance of indium oxide-based catalysts in CO <sub>2</sub> hydrogenation through templating and atomic layer deposition methods	Kok Bing Tan <i>Huaqiao University</i>

# C1 Chemistry & Olefins

8

Room: MR332

07 August

THU

09:00 – 10:20

Session Chair:  
Hiroyuki Kamata

TIME	PRESENTATION TITLE	SPEAKER
9:00 - 9:30	New C1 Chemistry Realised by Powerful Catalyst	Tsubaki Noritatsu <i>University of Toyama</i>
9:30 - 9:50	Reactive Carbon Capture and Conversion under Electric Field	Jeong Gil Seo <i>Hanyang University</i>
9:50 - 10:10	Low temperature dry reforming over NiCo alloy at heterointerfaces	Oz M. Gazit <i>Technion - Israel Institute of Technology</i>
10:10 - 10:30	Dual Catalyst Synergy for Aromatization	Tingjun Fu <i>Taiyuan University of Technology</i>



# C1 Chemistry & Olefins

9

Room: MR332

07 August

THU

10:50 - 12:20

Session Chair:  
Jeong Gil Seo

TIME	PRESENTATION TITLE	SPEAKER
10:50 - 11:10	Heterogeneous hydrogenation of CO <sub>2</sub> to methanol by dinuclear iridium complex under gas-solid phase	Yuichiro Himeda <i>National Institute of Advanced Industrial Science and Technology, Japan</i>
11:10 - 11:30	The impact of initial particle size on the dynamically structural evolution of Fe-based active site in CO <sub>2</sub> hydrogenation and the structure-function relationship of C <sub>2</sub> + products synthesis	Yang Wang <i>China University of Petroleum (East China)</i>
11:30 - 11:45	The Role of Novel Carbonate Double Salts on Electrophoretic CO <sub>2</sub> Capture over Nitrate Eutectic Mixture-Promoted Magnesium Oxide	You Seok Kang <i>Hanyang University</i>
11:45 - 12:00	Selective Hydrogenation of CO <sub>2</sub> to Light Olefins over ZnZrO <sub>x</sub> /zeolites	Siyu Chen <i>DICP, CAS</i>

# C1 Chemistry & Olefins

10

Room: MR332

07 August

THU

14:00 – 15:40

Session Chair:  
Yang Wang

TIME	PRESENTATION TITLE	SPEAKER
14:00 - 14:20	Green Selective Catalytic Oxidation of Methane	Wu Wenting <i>China University of Petroleum (East China)</i>
14:20 - 14:35	The interaction mechanism of the support and barium promoter in carbon-supported ruthenium-based ammonia synthesis catalysts	Guojun Lan <i>Zhejiang University of Technology</i>
14:35 - 14:50	Surface restricted combustion synthesis of NiCo/SiO <sub>2</sub> catalysts for dry reforming of methane	Anand Kumar <i>Qatar University</i>
14:50 - 15:05	Coke-free Methane Dry-Reforming over Cationic Nickel Tailored by Boron Species	Lei He <i>Dalian University of Technology</i>
15:05 - 15:20	Effect of Li/MgO calcination temperature on the activity and C <sub>2</sub> selectivity for oxidative coupling of methane reaction	Sanjay Katheria <i>Indian Institute of Technology (IIT) Varanasi</i>
15:20 - 15:35	Designing Methanation-Resistant Nickel Catalysts for Reverse Water-Gas Shift via the Molten Salt Method	Pei-Tung Chou <i>National Cheng Kung University</i>



# Catalysis for Carbon Neutrality

1

Summit One

05 August

TUE

10:50 - 12:20

Session Chair:  
Shuai Wang

TIME	PRESENTATION TITLE	SPEAKER
10:50 - 11:15	Development of metal-free catalysts for hydrochlorination of acetylene	Pan Xiulian <i>DICP, CAS</i>
11:15 - 11:35	Enabling Ethylamine as an Electrochemical Liquid Organic Hydrogen Carrier	Zhenmeng Peng <i>University of South Carolina</i>
11:35 - 11:50	Crystal Phase Modification of Iron-Based Oxygen Carriers for Chemical Looping Hydrogen Production from Biomass	Tingting Xu <i>Nanjing University of Science and Technology</i>
11:50 - 12:05	Catalytic Conversion and Utilization of Industrial Lignin	Jianghao Zhang <i>RCEES, CAS</i>
12:05 - 12:20	-	Pang Jifeng <i>DICP, CAS</i>

# Catalysis for Carbon Neutrality

2

Summit One

05 August

TUE

13:40 - 15:45

Session Chair:  
Gary L. Haller

TIME	PRESENTATION TITLE	SPEAKER
13:40 – 14:05	Plasmon Enhanced Semiconductor Photochemical Conversion Materials and their New Energy Applications	Zhang Jia-Tao <i>Beijing Institute of Technology</i>
14:05 – 14:25	Interface tailoring and photo-thermo coupling of catalysts for greenhouse gas conversion	Wang Zhoujun <i>Beijing University of Chemical Technology</i>
14:25 – 14:40	Immobilizing Ionomers by Hydrogen Bond Networks for Highly Stable Water Industrial Electrolysis at 3.0 A/cm <sup>2</sup>	Tao Huabing <i>Xiamen University</i>
14:40 – 14:55	Nano-confined catalysts for efficient low-carbon catalysis	Liu Qiang <i>Lanzhou Institute of Physical and Chemistry, CAS</i>
14:55 – 15:10	Highly selective synthesis of light hydrocarbons from CO <sub>2</sub> hydrogenation via Fischer-Tropsch technology	Yingluo He <i>University Of Toyama</i>
15:10 – 15:25	Heteroatom-Containing Zeolite-Confined Precious Metal Catalysts	Hao Xu <i>East China Normal University</i>
15:25 – 15:35	Multi-Interface Engineering of Plasmon-Enhanced BiVO <sub>4</sub> Photoanodes Promotes Charge Transfer for Highly Efficient Photoelectrochemical Water Splitting Performance	Akang Chen <i>Beijing Institute of Technology</i>
15:35 – 15:45	Synergy effect of acid radical anchors and active sites protection in Co-based spinel catalyst for efficient amine solution regeneration during CO <sub>2</sub> capture	Xinling Zhong <i>Zhejiang University</i>



# Catalysis for Carbon Neutrality

3

Summit One

05 August

TUE

16:00 - 17:30

Session Chair:  
Cathy Chin

TIME	PRESENTATION TITLE	SPEAKER
16:00 - 16:25	Catalytic processes for carbon recycling	Wang Shaobin <i>University of Adelaide</i>
16:25 - 16:45	Sustainable technologies in development: the case of circular plastics and beyond...	Shiju. N. Raveendran <i>University of Amsterdam</i>
16:45 - 17:00	Two-dimensional MoS <sub>2</sub> catalyze highly efficient CO <sub>2</sub> conversion	Hu Jingting <i>DICP, CAS</i>
17:00 - 17:15	Breakthroughs in TS-1 Catalyst Stability for High-Efficiency HPPO Technology	Haitao Liu <i>China Catalyst Holding Co</i>
17:15 - 17:25	Hidden Acidification Challenges in Electrochemical Ocean Decarbonization	Wei Zhang <i>The University of Sydney</i>
17:25 - 17:35	Controllable active intermediate in CO <sub>2</sub> hydrogenation enabling highly selective DMF synthesis via N-formylation	Jieyun Zhang <i>Lanzhou University</i>

# Catalysis for Carbon Neutrality

4

Summit One

06 August

WED

09:00 – 10:30

 Session Chair:  
Wang Zhoujun

TIME	PRESENTATION TITLE	SPEAKER
09:00 – 09:25	Novel External-Hydrogen Free CO <sub>2</sub> Thermal Catalytic Conversion to Clean Fuels and Chemical	Piyasan Praserttham <i>Chulalongkorn University</i>
09:25 – 09:45	Renewable Hydrogenation Production with Bimetallic Catalyst	Weijian Diao <i>Villanova University</i>
09:45 – 10:00	Carbon Surface Chemistry: Benchmark for the Analysis of Oxygen Functionalities on Carbon Materials	Yuying Dang <i>LICP, CAS</i>
10:00 – 10:15	Benzothiophene-based covalent organic frameworks for H <sub>2</sub> O <sub>2</sub> electrosynthesis: The critical role of conjugated structure	Wan Yan <i>FIRSM, CAS<sup>1</sup></i>
10:15 – 10:25	Prepared Cu <sub>2</sub> O/Bi <sub>2</sub> WO <sub>6</sub> Catalyst for the photoreduction of CO <sub>2</sub> to Fuel	Ren-Jang Wu <i>Providence University</i>



# Catalysis for Carbon Neutrality

5

Summit One

06 August

WED

10:50 - 12:20

Session Chair:  
Sen Zhang

TIME	PRESENTATION TITLE	SPEAKER
10:50 - 11:15	Net-Negative Goals and Clean Energy Transition: The Role of Green Hydrogen in CO <sub>2</sub> Refineries, Waste Plastic and Biomass Valorization	Ganapati Yadav <i>ICT Mumbai</i>
11:15 - 11:35	High-Value Hydrocarbon Fuels from Pyrolysis- Hydrodeoxygenation of Waste Straw	Xia Jiang <i>Sichuan University</i>
11:35 - 11:50	Continuous In-Situ and Ex-Situ Catalytic Plastic Pyrolysis for Enhanced Liquid Yield	Shaolong Wan <i>Xiamen University</i>
11:50 - 12:05	Mechanism of selective hydrodeoxygenation over Novel Heusler Alloy Catalysts	Shenggui Ma <i>Tianfu Yongxing Laboratory</i>
12:05 - 12:15	$\beta$ -Cyclodextrin derived carbon mediated hydrogen spillover on Cu-ZnO-ZrO <sub>2</sub> catalyst for enhancing methanol selectivity in CO <sub>2</sub> hydrogenation	Sun Xiucheng <i>Zhejiang University of Technology</i>

# Catalysis for Carbon Neutrality

6

Summit One

06 August

WED

13:40 - 15:40

Session Chair:  
Weijian Diao

TIME	PRESENTATION TITLE	SPEAKER
13:40 - 14:00	Proximity Tuning in Bifunctional Catalysts for Enhanced Toluene Methylation Using Active Intermediates from CO <sub>2</sub> Hydrogenation	Yuan Youzhu <i>Xiamen University</i>
14:00 - 14:20	In Situ-Generated Bifunctional Cu-MgO Active Sites for Highly Efficient CO <sub>2</sub> Hydrogenation	Fudong Liu <i>UC Riverside</i>
14:20 - 14:35	Construction of Straw Residue-based Catalysts and the Research on Their Directional Conversion Bio-oil to Biodiesel	Ziheng Jin <i>Sichuan University</i>
14:35 - 14:50	Production of modified activated carbon from the pyrolysis of agricultural waste for CO <sub>2</sub> capture	Le Minh Thang <i>Hanoi University of Science and Technology</i>
14:50 - 15:05	Mechanism understanding of metal-free carbon-based electrocatalysis with model catalysts	Lin Yangming <i>Fujian Institute of Research on the Structure of Matter, CAS</i>
15:05 - 15:15	Spatially Isolated Ni-Mo <sub>2</sub> C Bifunctional Catalysts for Efficient Dry Reforming of Methane	Ronghe Lin <i>Zhejiang Normal University</i>
15:15 - 15:25	Encapsulation of TBAB in ZIF-8 for Enhanced CO <sub>2</sub> Cycloaddition	Decun Luo <i>Xi'an Jiaotong University</i>
15:25 - 15:35	Fine-tuning of Pt-promoters interfaces to enhance selective oxidation of glycerol to dihydroxyacetone	Gang Qian <i>East China University of Science and Technology</i>
15:35 - 15:45	Borylation of C-O Bonds by Gold-Metal Oxide Cooperative Catalysis	Hiroki Miura <i>Tokyo Metropolitan University</i>



# Catalysis for Carbon Neutrality

7

Summit One

06 August WED 16:00 - 17:30

Session Chair:  
Xia Jiang

TIME	PRESENTATION TITLE	SPEAKER
16:00 - 16:20	Modulating Active Sites for the Oxygen Evolution Reaction	Sen Zhang <i>University of Virginia</i>
16:20 - 16:35	Vacancies Unlock Nitrogen Activation for Ammonia Synthesis	Tian-Nan Ye <i>Shanghai Jiao Tong University</i>
16:35 - 16:50	Al for Complex Catalytic Systems: High-Entropy Alloys in Electrocatalytic Acetylene Semi-Hydrogenation	Haobo Li <i>Nanyang Technological University</i>
16:50 - 17:00	Iso-Butanol production from methanol/ethanol mixture via Guebert route using Ni/Cu-Al hydrotalcite-derived catalyst	Quoc Khanh Tran <i>Julich Research Center</i>
17:00 - 17:10	Lewis Base Catalysis Enables Efficient Nucleophilic Substitutions: Application towards Bioactive Compounds	Peter Huy <i>Rostock University</i>
17:10 - 17:20	Catalysis of CeO <sub>2</sub> with Different Morphology for Non-Reductive Conversion of CO <sub>2</sub>	Shogen Mihara <i>Tohoku University</i>
17:20 - 17:30	The Role of Reducibility on Active Site Evolution in Ni-Co/Alumina for Combined Dry & Oxidative Reforming of Methane	Udaya B. R. Ragula <i>Amrita Vishwa Vidyapeetham</i>

# Catalysis for Carbon Neutrality

# 8.1

**Summit One**
**07 August**
**THU**
**09:00 – 10:30**
**Session Chair:**  
Yuan Youzhu

TIME	PRESENTATION TITLE	SPEAKER
09:00 – 09:25	Diverse Active Sites on CuO <sub>x</sub> Nanoparticles and their Kinetic Consequences in Oxidation Catalysis	Cathy Chin <i>University of Toronto</i>
09:25 – 09:45	Multifunctional Catalysts for Cascading Reactions in the Synthesis of Sustainable Aviation Fuels	Zhengdong Li <i>Zhejiang University</i>
09:45 – 10:00	Low-temperature upcycling of mixed polyolefins via tandem catalysis	Zhang Wei <i>East China Normal University</i>
10:00 – 10:15	Multi-scale designed Ni-Co spinels: Smart pre-catalysts towards high-efficiency pyrolysis-catalysis recycling of waste plastics	Dan Xu -
10:15 – 10:25	Proximity-independent Acid-base Synergy in a Solid ZrO <sub>x</sub> H <sub>y</sub> Catalyst for Amine Regeneration in Post-Combustion CO <sub>2</sub> Capture Process	Cheng Zhou <i>KU Leuven</i>



# Catalysis for Carbon Neutrality

8.2

Room: MR335

07 August

THU

09:00 - 10:30

Session Chair:  
Shaolong Wan

TIME

PRESENTATION TITLE

SPEAKER

09:45 - 10:00

-

Amol Hengne  
*ISCE2, A\*STAR*

10:00 - 10:15

Building New Catalytic Systems via Metal 3D  
Printing Technology

Peng Xiaobo  
*Fuzhou University*

10:15 - 10:30

Metal (or SiC) Fiber/Foam Structured Catalysts  
for Process Intensification in Chemical Reactions

Longgang Tao  
*A\*STAR, ISCE2*



# Catalysis for Carbon Neutrality

9.1

Summit One

07 August

THU

10:50 - 12:20

Session Chair:  
Fudong Liu

TIME	PRESENTATION TITLE	SPEAKER
10:50 - 11:15	The Past, The Present, and The Future of Hydrotreating Catalysis	Elkia Qian <i>Tokyo University of Agriculture and Technology</i>
11:15 - 11:35	Ammonia synthesis mechanism over ruthenium-based catalysts under high-pressure reaction conditions	Shuai Wang <i>Xiamen University</i>
11:35 - 11:50	Development of ultra-low content noble metal catalysts for the production of vinyl chloride	Chuan Wang -
11:50 - 12:00	Quadruple N-Methylation of Aliphatic Diamines with CO <sub>2</sub> and H <sub>2</sub> over Sulfurized Re-Ir Catalysts in Water Solvent	Mizuho Yabushita <i>Tohoku University</i>
12:00 - 12:10	Investigator of simultaneous production of H <sub>2</sub> and separable carbon from CH <sub>4</sub> in a fluidized bed of NiO/Ca <sub>2</sub> Fe <sub>2</sub> O <sub>5</sub> /CaO particles	Yaoyao Zheng <i>University of Nottingham</i>
12:10 - 12:20	CaO modified CeO <sub>2</sub> composite supported Ni catalyst for greenhouse gas conversion via reforming reaction	Waleeporn DONPHAI -



# Catalysis for Carbon Neutrality

9.2

Room: MR335

07 August

THU

10:50 - 12:20

Session Chair:  
Jianghao Zhang

TIME	PRESENTATION TITLE	SPEAKER
11:35 - 11:50	Sustainable Catalysis for the Valorization of Feedstock into High Value Chemicals	Shashi Dighe <i>ISCE2, A*STAR</i>
11:50 - 12:00	Engineering Catalyst Performance through Tailored Activation: Selective CO <sub>2</sub> Hydrogenation to C <sub>5</sub> <sup>+</sup> Hydrocarbons over FeCoMo Catalysts	Rohit Shetty <i>ISCE2, A*STAR</i>
12:00 - 12:10	CO Production from CO <sub>2</sub> by Reverse Water-Gas Shift Chemical Looping Using Cobalt-Modified Indium Oxide	Takuma Higo <i>Waseda University Research Institute for Science and Engineering</i>
12:10 - 12:20	Enhancing alkyl levulinate valorization via gas-phase CTH: from in situ spectroscopy to catalyst and process optimization	Luca Visentin -



# Catalysis for Carbon Neutrality

10.1

Summit One

07 August

THU

13:40 - 15:40

Session Chair:  
Zhang Wei

TIME	PRESENTATION TITLE	SPEAKER
13:40 - 13:55	-	Li Xinyong <i>Dalian University of Technology</i>
13:55 - 14:10	-	Ram Karan <i>University of Delhi</i>
14:10 - 14:20	Chemical looping oxidative dehydrogenation of ethane combined with CO <sub>2</sub> splitting on promoted In <sub>2</sub> O <sub>3</sub> oxygen carrier	Kosuke Watanabe <i>Waseda University</i>
14:20 - 14:30	CO <sub>2</sub> to Bioproducts Enabled by Chem-Bio Integration	Peng Zhang
14:30 - 14:40	A new strategy for oxygen vacancy regulation to construct CO <sub>2</sub> hydrogenation catalysts	Wenhong Wang
14:40 - 14:50	Dynamic Exsolution and CO <sub>2</sub> Activation over Yttria-stabilized NiCo Catalysts for Stable Dry Reforming of Methane via Coke and sintering Suppression	Agni Koirala <i>Korea Advanced Institute of Science and Technology (KAIST)</i>
14:50 - 15:00	Insight into the Ru-Ni synergy for the hydrogenation of CO <sub>2</sub> to formic acid	Jyotishman Kaishyop <i>RMIT</i>
15:00 - 15:10	Facilitating the dry reforming of methane with interfacial synergistic catalysis	Hui Wang
15:10 - 15:20	Mechanistic Insights into Low-Temperature Alcohol-Assisted CO <sub>2</sub> -to-Methanol over CuZnCeO <sub>x</sub> Catalysts Using Infrared Spectroscopy	Zhi Pin Law
15:20 - 15:30	Influence of Cu Incorporation on Ni/La <sub>2</sub> O <sub>3</sub> Catalysts for Methane Reforming	Parisa Ebrahimi



# Catalysis for Carbon Neutrality

10.2

Room: MR335

07 August

THU

13:40 - 15:40

Session Chair:  
Zhenglong Li

TIME	PRESENTATION TITLE	SPEAKER
13:40 - 13:55	Electrocatalyst design for water electrolysis: spin fundamentals and catalytic surface dynamics	Tianze Wu <i>Nanyang Technological University</i>
13:55 - 14:10	Oxygen-related Electrocatalysis: Understanding for Designing	Jiajian Gao <i>ISCE2, A*STAR</i>
14:10 - 14:20	Ammonia cracking catalysts for clean hydrogen production: KIER's recent advances	Kee Young Koo <i>Korea Institute of Energy Research</i>
14:20 - 14:30	Confined Nickel with Ultrathin Zeolite Nanosheets enables Efficient Hydrodeoxygenation of bio-oil derivatives	Fengli Gan <i>A*STAR/Sichuan University</i>
14:30 - 14:40	Continuous-Flow Synthesis of Organic Urea Derivatives from Alkanolamine-Derived Alkylcarbamic Acids over CeO <sub>2</sub> Catalyst	Natsuki Mizutani <i>Tohoku University</i>
14:40 - 14:50	Efficient conversion of CO <sub>2</sub> to Sustainable Aviation Fuel via Bi-Functional Catalysts and Relay Catalysis	Selvi Mushina <i>A*STAR, ISCE2</i>
14:50 - 15:00	Hydrogen production by NH <sub>3</sub> decomposition at low temperatures assisted by surface protonics	Mio Hayashi <i>Waseda University</i>
15:00 - 15:10	Reforming of non-stoichiometric CH <sub>4</sub> /CO <sub>2</sub> gas on low-Ni catalysts	Quan Ha <i>ISCE2, A*STAR</i>
15:10 - 15:20	Identifying active sites within fully exposed clusters for efficient cyclohexane dehydrogenation	Mi Peng
15:20 - 15:30	Electron catalysis for catalyst design	Wong Roong Jien <i>ISCE2, A*STAR</i>



# Computational Catalysis & AI

1

Room: MR333

05 August THU 10:50 - 12:20

Session Chair:  
Jia Zhang

TIME	PRESENTATION TITLE	SPEAKER
10:50 - 11:15	Generalised global neural network potential and the LASP AI platform for catalyst design	Liu Zhipan <i>Fudan University</i>
11:15 - 11:35	Interpreting Chemisorption Strength with AutoML-based Feature Deletion Experiments	Yulian He <i>UM-SJTU Joint Institute</i>
11:35 - 11:50	Machine Learning Accelerated Structural Elucidation and Rational Design of Metal@Zeolite Catalysts	Sicong Ma <i>Shanghai Institute of Organic Chemistry, Chinese Academy of Sciences</i>
11:50 - 12:05	Elucidating Catalyst Optimization in a Machine Learning framework for Sustainable H <sub>2</sub> -Rich Syngas Production: Experimental Validation	Kaushik Kundu <i>IIT Delhi</i>
12:05 - 12:20	Language Model-based Catalyst Generative Foundation Model	Dong Hyeon Mok <i>Sogang University</i>

# Computational Catalysis & AI

2

Room: MR333

05 August

TUE

13:40 - 15:40

Session Chair:  
Tej Choksi

TIME	PRESENTATION TITLE	SPEAKER
13:40 – 14:00	AI-empowered Mechanistic Study on Dynamic Catalysis of Zeolite-Confined Metal Nanoparticles	<b>Cao Xiaoming</b> <i>Shanghai Jiao Tong University</i>
14:00 – 14:15	A general framework for accelerating Kinetic Monte Carlo simulations of catalytic processes	<b>Hector Prats Garcia</b> <i>Technische Universität Wien</i>
14:15 – 14:30	Fast search of stable molecular arrangement by the annealing technique	<b>Hiroshi Sampei</b> <i>Waseda University</i>
14:30 – 14:45	Online Optimization of Integrated Carbon Capture and Conversion Process via the Ratings Concept: A Combined DFT and Microkinetic Modeling Approach	<b>Jakapob Noppakhun</b> <i>Chulalongkorn University</i>
14:45 – 15:00	Effect of Monolith Material on Temperature Distribution in Catalytic VAM Oxidation: Experimental and CFD Investigation	<b>Rahim Karami</b> <i>University of Newcastle</i>
15:00 – 15:20	First-Principles Microkinetic Modeling of Electrocatalytic CO <sub>2</sub> Reduction: From Transient Currents to Product Selectivity	<b>Ananth Govind Rajan</b> <i>Indian Institute of Science</i>
15:20 – 15:40	Inverse and supported metal oxide catalyst for methanol synthesis: Learnings from DFT-Microkinetic Analysis	<b>Jithin Varghese</b> <i>Indian Institute of Technology, Madras</i>



# Computational Catalysis & AI

3

Room: MR333

05 August THU 16:00 - 17:30

Session Chair:  
Pengfei Ou

TIME	PRESENTATION TITLE	SPEAKER
16:00 - 16:20	Discovery of ketene/acetyl as a potential receptor for hydrogen-transfer reactions in zeolites	Yang Bo <i>ShanghaiTech University</i>
16:20 - 16:35	A Mechanism-Guided Descriptor for Hydrogen Evolution Reaction in 2D Ordered Double Transition-Metal Carbide MXenes	Junmei Du <i>Southwest Jiaotong University</i>
16:35 - 16:50	Role of heterolytic H <sub>2</sub> splitting in CO <sub>2</sub> hydrogenation on oxides	Wenrui Ma <i>National University of Singapore</i>
16:50 - 17:05	Rational design improvements in biomimetic carbon dioxide hydration catalysts	Parag Arvind Deshpande <i>IIT Jodhpur</i>
17:05 - 17:20	Bimetallic catalysts for the hydrogenation of amides: from experimental to data-driven insights	Jorge Alonso Delgado Delgado <i>E2P2L</i>

# Computational Catalysis & AI

5

Room: MR333

06 August

WED

10:50 – 12:20

Session Chair:  
Tej Choksi

TIME	PRESENTATION TITLE	SPEAKER
10:50 – 11:05	CO <sub>2</sub> electroreduction to CO on ultrasmall Ag nanoparticles supported on polymeric carbon nitride (PCN).	Mohammed Aliasgar <i>National University of Singapore</i>
11:05 – 11:20	Atomic-Scale Modeling of photochemical reactions and catalysis near heterointerfaces and grain boundaries of semiconductor	Heechae Choi <i>Xi'an Jiaotong-Liverpool University</i>
11:20 – 11:35	Uncertainties in Estimating Metrics of Stability for Nanoparticle Catalysts using First Principles Methods	Arravind Subramanian <i>Nanyang Technological University</i>
11:35 – 11:50	Probabilistic Estimation of Kinetic Coefficients in Biomass Pyrolysis via Bayesian Inference	Muxina Konarova <i>The University of Queensland</i>
11:50 – 12:05	Influence of nano-structuring and ZnO support on noble metal catalytic activity: findings from Sabatier principle	Fernando Buendia Zamudio <i>National University of Singapore</i>
12:05 – 12:20	Mechanistic investigation of hydrogen spillover on various supported transition metals via DFT calculations	Cheng-Hsi Yeh <i>National Tsing Hua University</i>



# Computational Catalysis & AI

6

Room: MR333

06 August

WED

13:40 - 15:40

Session Chair:  
Sergey Kozlov

TIME	PRESENTATION TITLE	SPEAKER
13:40 - 14:05	Reaction-driven formation of novel active sites on catalytic surfaces	Manos Mavrikakis <i>University of Wisconsin-Madison</i>
14:05 - 14:25	Catalyst dynamics modelling of metal nanoparticles	Beien Zhu <i>Shanghai Advanced Research Institute, CAS</i>
14:25 - 14:40	Theoretical Study on the Generation Mechanism and Applications of Hydrides on Ce-Based Catalysts Surfaces	Zhiqiang Wang <i>East China University of Science and Technology</i>
14:40 - 14:55	Unraveling the Dynamic Evolution of Cu-N-C during CO <sub>2</sub> RR	Hyun Dong Jung <i>Sogang University</i>
14:55 - 15:10	Determining the surface structure of oxycarbides and understanding their stability for oxidative reactions	Nurul Farhana Binti Abd Ghaffar <i>Nanyang Technological University</i>
15:10 - 15:25	Understanding the dynamic dissolution process on RuO <sub>x</sub> catalysts during the oxygen evolution reaction	Chao Yang <i>National University of Singapore</i>
15:25 - 15:40	Active phase of Cu-ZnO Catalysts in CO <sub>2</sub> Conversion to Methanol	Jie Zhao <i>National University of Singapore</i>

# Computational Catalysis & AI

7

Room: MR333

06 August

WED

16:00 – 17:30

Session Chair:  
Pengfei Ou

TIME	PRESENTATION TITLE	SPEAKER
16:00 – 16:15	Mechanistic Study of Thioester Hydrolysis Catalyzed by Boric Acid and Its Derivatives	Manussada Ratanasak <i>Center for Computational Sciences, University of Tsukuba</i>
16:15 – 16:30	Identifying Natural Surface Frustrated Lewis Pairs on Wurtzite Crystals for Synergistic Small-Molecule Activation	Xi-Yang Yu <i>Xi'an Jiaotong University</i>
16:30 – 16:45	Integrating GVP-GNN with Meta-learning Enables Discovery of Compatible Substitutions for Enhancing PET Hydrolase Activity at Elevated Temperatures	Jian Yu -
16:45 – 17:00	Thermochemistry of biomass conversion reactions	Karam Hashem <i>Nanyang Technological University</i>
17:00 – 17:15	Impact of the adsorption configuration of p-chloronitrobenzene on its hydrogenation to chloroaniline over Pd catalyst	Pranjali Priyadarshini <i>Nanyang Technological University</i>
17:15 – 17:30	Highly Selective On-Surface Ring-Opening of Aromatic Azulene Moiety	Lulu Wang <i>National University of Singapore</i>



# Computational Catalysis & AI

8

Room: MR333

07 August

THU

09:00 - 10:30

Session Chair:  
Sergey Kozlov

TIME	PRESENTATION TITLE	SPEAKER
09:10 - 09:30	Theoretical Understanding of Dynamic Single-Atom Catalysis	Li Jun <i>Tsinghua University</i>
09:30 - 09:45	A robust descriptor for CO oxidation on single metal cation-decorated TiO <sub>2</sub> catalysts	Hai-Yan Su <i>Dongguan University of Technology</i>
09:45 - 10:00	Two Distinct Oxidation Dispersion Mechanisms in Pd-CeO <sub>2</sub> Mediated by Thermodynamic and Kinetic Behaviors of Highly Dispersed Pd Species	Wen Liu <i>Zhejiang University</i>
10:00 - 10:15	Role of Delocalized Electrons on the Doping Effect in Vanadia	Ran Luo <i>Tianjin University</i>
10:15 - 10:30	Computational Approach to Tuning Exsolution Trends through Structural Distortion in Perovskite Oxides	UChan Jeon <i>Seoul National University</i>

# Computational Catalysis & AI

9

Room: MR333

07 August

THU

10:50 - 12:20

Session Chair:  
Jia Zhang

TIME	PRESENTATION TITLE	SPEAKER
10:50 – 11:15	Can First-Principles Calculations Identify Active Sites in Heterogeneous Catalysis?	Hu Peijun (Online) <i>ShanghaiTech University</i>
11:15 – 11:35	A theoretical study of Rh-modified CeO <sub>2</sub> (111) catalysts for CO <sub>2</sub> hydrogenation	Gong Xueqing <i>Shanghai Jiao Tong University</i>
11:35 – 11:50	Unveiling the Origin of Superior Hydroformylation Activity of Rhodium Clusters on Gamma Alumina	Miyeon Kim <i>Seoul National University</i>
11:50 – 12:10	Design of Electrochemical Catalysts for H <sub>2</sub> and NH <sub>3</sub>	Yong Xue <i>University of Liverpool</i>



# Computational Catalysis & AI

10

Room: MR333

07 August

THU

13:40 - 15:40

Session Chair:  
Pengfei Ou

TIME	PRESENTATION TITLE	SPEAKER
13:40 - 14:00	Predicting Structure-Property Relationships of Multi-component Alloys Nanostructures via Machine Learning	Tan Teck Leong <i>Institute of High Performance Computing, A*STAR</i>
14:00 - 14:15	ML-Accelerated Computational Design of Novel HEA Catalysts for NH <sub>3</sub> Cracking	Benjamin Wei Jie Chen <i>Institute for High Performance Computing, A*STAR</i>
14:15 - 14:30	Combining Density Functional Theory and Machine Learning to Understand Catalytic Activity	Jinxing Gu <i>Monash University</i>
14:30 - 14:45	Machine-Learning Accelerated DFT Uncovers Scaling-Breaking Active Sites in Nanoscale AgAuCuPdPt High-Entropy Alloys	Juan Manuel Arce Ramos <i>Institute for High Performance Computing, A*STAR</i>



# Emerging Catalytic Materials

1

Room: MR322

05 August TUE 10:50 - 12:20

Session Chair:  
Haobo Li

TIME	PRESENTATION TITLE	SPEAKER
10:50 - 11:20	Chainmail Catalysis: From Fundamentals to Applications	Dehui Deng <i>Dalian Institute of Chemical Physics, Chinese Academy of Sciences</i>
11:20 - 11:35	Data-Driven Functional Materials Innovations	Zongyou Yin <i>The Australian National University, Canberra</i>
11:35 - 11:50	Ceria Nanoarchitectures with Enhanced Oxygen Mobility for Redox Reactions	Seokhyun Choung <i>Seoul National University</i>
11:50 - 12:05	Elucidating (photo)(electro)catalytic energy conversion by single-entity functional imaging	Xianwen Mao <i>National University of Singapore</i>
12:05 - 12:20	Low-Temperature Pt Exsolution for Structurally Stable and Reactive Catalyst	Yunkyung Kim <i>Seoul National University</i>

# Emerging Catalytic Materials

2

Room: MR322

05 August

TUE

13:40 - 15:40

Session Chair:  
Dongshuang Wu

TIME	PRESENTATION TITLE	SPEAKER
13:40 – 14:10	Atomic Intelligence of Liquid Metals for Catalysis	<b>Kourosh Kalantar-Zadeh</b> <i>University of Sydney</i>
14:10 – 14:25	In-situ observation of surface phenomena during electrochemical/thermal hydrogenation reactions	<b>Miho Yamauchi</b> <i>Kyushu University</i>
14:25 – 14:40	Measuring Nanoscale Transport Diffusion in Silica Nanoparticles	<b>Hongyu Chen</b> <i>Westlake University</i>
14:40 – 14:55	Thermocatalytic NO reduction and NO-to-NH <sub>3</sub> synthesis	<b>Bo Huang</b> <i>Xi'an Jiaotong Univeristy</i>
14:55 – 15:10	Noble-metal High-entropy-alloy and Medium-entropy-alloy Nanoparticles: Fabrication, Properties and Applications	<b>Yujun Shi</b> <i>University of Calgary</i>
15:10 – 15:25	Defect States-Related Photothermal Conversion of UV Photons in TiO <sub>2</sub> -Based Materials	<b>Xin Hu</b> <i>Dalian Institute of Chemical Physics, Chinese Academy of Sciences</i>
15:25 – 15:40	Wet-chemical lattice engineering of metal nanocrystals towards enhanced catalytic properties	<b>Ye Chen</b> <i>The Chinese University of Hong Kong</i>



# Emerging Catalytic Materials

3

Room: MR322

05 August TUE 16:00 - 17:30

Session Chair:  
Kohei Kusada

TIME	PRESENTATION TITLE	SPEAKER
16:00 - 16:15	Construction of multi-site catalysts for selective hydrogenation	Qihua Yang <i>Zhejiang Normal University</i>
16:15 - 16:30	High Entropy Alloy Catalysts	Yonggang Yao <i>Huazhong University of Science and Technology</i>
16:30 - 16:45	Liquid metal catalysts for the production of ammonia	Torben Daeneke <i>RMIT</i>
16:45 - 17:00	Chemical Modification, Assembly and Applications of Carbon-based SACs	Yang Li <i>Tianjin University</i>
17:00 - 17:15	Influence of yttrium content in yttrium zirconate catalyst in the vapor-phase dehydration of various alkane diols	Enggah Kurniawan <i>Chiba University</i>
17:15 - 17:30	Flow Synthesis of High-Entropy Alloy and Oxide Nanoparticles and their Catalytic Properties	Kohei Kusada <i>Kyushu University</i>
17:30 - 17:45	Plasmonics, Chirality and Electrocatalysis Converge: Antenna-Reactor Catalysts for Energy Conversion and Cancer Therapy	Dong Ha Kim <i>Ewha Womans University</i>

# Emerging Catalytic Materials

# 4.1

**Room: MR322**

**06 August** **THU** **09:00 – 10:30**

**Session Chair:**  
Yonggang Yao

TIME	PRESENTATION TITLE	SPEAKER
09:00 – 09:30	Materials Innovation for Energy Conversion	<b>Shi-Zhang Qiao</b> <i>University of Adelaide</i>
09:30 – 09:45	Efficient Photoreforming of Plastic Waste via Heterostructured Chiral Ferroelectric Perovskites	<b>Zhiqun Lin</b> <i>National University of Singapore</i>
09:45 – 10:00	Ni Single Atom Catalysts for CO <sub>2</sub> Capture and Utilization (CCU)	<b>Jihun Oh</b> <i>Korea Advanced Institute of Science and Technology</i>
10:00 – 10:15	Ammonia electrosynthesis from nitrogen and hydrogen	<b>Shaofeng Li</b> <i>University of Science and Technology of China</i>
10:15 – 10:30	Green energy driven methane conversion	<b>Zhiliang Wang</b> <i>University of Queensland</i>



# Emerging Catalytic Materials

4.2

Room: MR335

06 August

WED

09:00 - 10:30

Session Chair:  
Tong Li

TIME	PRESENTATION TITLE	SPEAKER
9:00-9:15	Catalyst and Reactor Design for a Lignin Based Biorefinery	Carsten Sievers <i>Georgia Institute of Technology</i>
09:15 - 09:30	Observation of catalytic reaction process of 2 dimensional $\text{Mo}_2\text{S}_3$ catalysts during water splitting measured by AP-HAXPES	Okkyun Seo <i>SPRING-8, Japan</i>
09:30 - 09:45	Diversity and Dynamics of Single-atom Catalysis	Bing Yang <i>Dalian Institute of Chemical Physics</i>
09:45 - 10:00	Copper Binding Induced Self-Assembly of Oligopeptides and Their Catalytic Mechanism	Xinxin Zhang <i>Dalian University of Technology</i>
10:00 - 10:15	Model electrocatalysis for water splitting	Yi Cui <i>Suzhou Institute of Nano-tech and Nano-bionics, CAS</i>
10:15 - 10:30	XPS contribution to research electric catalyst activity was undervalued?	Zhuxin Li <i>Dalian Jiaotong University</i>

# Emerging Catalytic Materials

# 5.1

**Room: MR322**
**06 August**
**WED**
**10:50 - 12:20**
**Session Chair:**  
 Jihun Oh

TIME	PRESENTATION TITLE	SPEAKER
10:50 – 11:05	Electrochemical Synthesis of High-Value Chemicals Using Membrane Electrode Assemblies	<b>Dunfeng Gao</b> <i>Dalian Institute of Chemical Physics</i>
11:05 – 11:20	Surface-Plasmon-Assisted Electrochemical Reduction of H <sub>2</sub> O <sub>2</sub> over Non-noble Metal Bismuth Nanoparticles Electrocatalyst	<b>Qing Wang</b> <i>National University of Singapore</i>
11:20 – 11:35	Constructing Single-Phase Multi-Anion Electrocatalysts through Anion-Contributed Entropy	<b>Hao-Fan Wang</b> <i>South China University of Technology</i>
11:35 – 11:50	High-temperature Electrocatalysis in Solid Oxide Electrolysis Cells	<b>Yuefeng Song</b> <i>Dalian Institute of Chemical Physics, Chinese Academy of Sciences</i>
11:50 – 12:05	A Priori designed NiAg Single-Atom Alloys for Selective Epoxidation Reactions	<b>Charles Sykes</b> <i>Tufts University</i>
12:05 – 12:20	Crystal structure control of Ru-based alloy nanoparticles for electrocatalytic hydrogen production	<b>Quan Zhang</b> <i>Donghua University</i>



# Emerging Catalytic Materials

5.2

Room: MR335

06 August WED 10:50 - 12:20

Session Chair:  
Shaofeng Li

TIME	PRESENTATION TITLE	SPEAKER
10:50 - 11:20	Design of functional alloy catalysts to accelerate electric field- and plasma-assisted catalysis	Shinya Furukawa <i>The University of Osaka</i>
<b>Awardee Talk</b>		
11:20 - 11:35	Development of Single Atom Catalyst for Organic Photochemical Synthesis	Jie Wu <i>National University of Singapore</i>
11:35 - 11:50	Nanoscale synergistic enhancement of CO <sub>2</sub> activation through coupling cold plasma with molybdenum carbide catalysts	Chuan Shi <i>Dalian University of Technology</i>
11:50 - 12:05	XPS contribution to research electric catalyst activity was undervalued?	Bijiao Liu <i>Dalian Jiaotong University</i>
12:05 - 12:20	Photothermal catalytic technology for solar fuels production	Jinqiang Zhang <i>The University of Western Australia</i>

# Emerging Catalytic Materials

# 6.1

**Room: MR322**
**06 August**
**WED**
**13:40 - 15:40**
**Session Chair:**  
 Jodie Yuwono

TIME	PRESENTATION TITLE	SPEAKER
13:40 – 14:10	Porous Metal-Organic Materials for Electrochemical CO <sub>2</sub> Reduction	Xiao-Ming Chen <i>Sun Yat-Sen University</i>
14:10 – 14:25	C1 Chemistry: Catalytic Carbonylation and Cyanidation	Lin He <i>Lanzhou Institute of Chemical Physics</i>
14:25 – 14:40	Total Synthesis of Metallic Molecules for Electrocatalytic Applications	Jianping Xie <i>National University of Singapore</i>
14:40 – 14:55	MOF-based nanomaterials for electrochemical CO <sub>2</sub> reduction	Liyu Chen <i>South China University of Technology</i>
14:55 – 15:10	Physics-Guided Conditional Generative Modeling of Amorphous Multi-Element Catalytic Materials	Wanlu Li <i>University of California San Diego</i>
15:10 – 15:25	Microwave Shock Engineering of Metastable 2D Catalysts	Jun Wan <i>Wuhan Textile University</i>
15:25 – 15:40	Nanofiltration for Catalyst Separation and Downstream Processing	Udo Kragi <i>University of Rostock</i>



# Emerging Catalytic Materials

6.2

Room: MR335

06 August

WED

13:40 - 15:40

Session Chair:  
Aoni Xu

TIME	PRESENTATION TITLE	SPEAKER
13:40 - 13:55	Synthetic Fuels from CO <sub>2</sub> -rich syngas via Fischer-Tropsch process	Jingxiu Xie <i>University of Groningen</i>
13:55 - 14:10	Upcycling polyolefin and CO <sub>2</sub> to aromatics over oxide-zeolite bifunctional catalysts	Fan Zhang <i>Sichuan University</i>
14:10 - 14:25	Atomic-scale insights into surface transformation of Co-based spinel oxide nanoparticles for the oxygen evolution reaction	Tong Li <i>Ruhr-Universität Bochum</i>
14:25 - 14:40	MoS <sub>2</sub> edge-confined CUS sites for the conversion of CH <sub>4</sub> with O <sub>2</sub>	Liang Yu <i>Dalian Institute of Chemical Physics</i>
14:40 - 14:55	Electronically Modulated Pt Single-Atoms at CeO <sub>x</sub> -TiO <sub>2</sub> Interfaces for Preferential CO Oxidation at Low Temperatures	Hyun You Kim <i>Chungnam National University</i>
14:55 - 15:10	eCO <sub>2</sub> RR confined within octahedral molecule sieves	Yifei Yuan <i>Wenzhou University</i>
15:10 - 15:25	Facet-sensitive Mn dissolution of MnO <sub>2</sub> crystal	Kun He <i>Wenzhou University</i>

# Emerging Catalytic Materials

7.1

Room: MR322

06 August **WED** 16:00 - 17:30

Session Chair:  
Esteban Mejia

TIME	PRESENTATION TITLE	SPEAKER
16:00 – 16:15	Nanocatalysts: high-entropy alloy and single-atoms array	Hongjin Fan <i>Nanyang Technological University</i>
16:15 – 16:30	Stable and Efficient PEMWE Operation Enabled by Hierarchical Cr and Si Co-Doped Ru Oxide	Jiayi Tang <i>Curtin University</i>
16:30 – 16:45	Local electronic state engineering of metal catalytic sites	Zhengfei Dai <i>Xi'an Jiaotong University</i>
16:45 – 17:00	Structurally Heterogeneous Electrocatalysts for Hydrogen Energy Applications	Ziqian Xue <i>Sun Yet-Sen University</i>
17:00 – 17:15	Fabrication of flexible porous N-doped carbon nanofiber catalytic membranes for efficient phenol hydrogenation	Jiuxuan Zhang <i>Nanjing Tech University</i>
17:15 – 17:30	Microstructural Regulation of MOF-Based Catalysts for Advanced Oxidation Processes: Towards Efficient and Sustainable Wastewater Treatment	Chen Zhao <i>Beijing University of Civil Engineering and Architecture</i>

# Emerging Catalytic Materials

7.2

Room: MR335

06 August

WED

16:00 – 17:30

Session Chair:  
Wanlu Li

TIME	PRESENTATION TITLE	SPEAKER
16:00 – 16:15	Covalent Organic Framework for Overall Water Splitting Under Visible Light	Xiaojun Wu <i>University of Science and Technology of China</i>
16:15 – 16:30	pH-independent redox chemistry for electrochemical CO <sub>2</sub> capture and conversion	Sang Cheol Kim <i>National University of Singapore</i>
16:30 – 16:45	Surface Phase Separation in CuAg alloy from ML-accelerated molecular dynamics	Aoni Xu <i>University of Sydney</i>
16:45 – 17:00	Crystal Structure-Driven OER Performance in FSP-Derived High-Entropy Oxides	Qi Wang <i>University of Sydney</i>
17:00 – 17:15	Computational Design of High-Entropy Alloy for Energy Conversion and Storage	Jodie Yuwono <i>The University of Adelaide</i>
17:15 – 17:30	Research on catalytic materials based on 5f-region Actinide elements	Yanze Wu <i>Institute of High Energy Physics, CAS</i>



# Emerging Catalytic Materials

8.1

Room: MR322

07 August

THU

09:00 - 10:30

Session Chair:  
Ye Chen

TIME	PRESENTATION TITLE	SPEAKER
09:00 - 09:30	Design of catalysts and process conditions for mechanocatalytic processes	Carsten Sievers <i>Georgia Tech</i>
09:30 - 09:45	Multifunctional, Porous, and Hybrid Catalysts Made through MildConditions Spray Processing	Damien Debecker <i>University of Louvain</i>
09:45 - 10:00	Highly efficient CO <sub>2</sub> reduction under hydrothermal conditions via Co based catalysts	Yang Yang <i>Shanghai Jiaotong University</i>
10:00 - 10:15	Electrocatalysis for valuable chemicals synthesis	Haohong Duan <i>Tsinghua University</i>
10:15 - 10:30	Ru-based Nanocomposites for Photo-thermal Catalytic CO <sub>2</sub> Hydrogenation to Methane under Ambient Pressure Condition	Fenglong Wang <i>Shandong University</i>



# Emerging Catalytic Materials

8.2

Room: MR323

07 August

THU

09:00 - 10:30

Session Chair:  
Tristan Tan Tsai Yuan

TIME	PRESENTATION TITLE	SPEAKER
9:00 - 9:15	Design and Synthesis of Nanocatalysts for Selective Hydrogenation of Aromatic Nitro Compounds	Yuan Tan <i>Zhejiang Normal University</i>
9:15 - 9:30	Sputtered Advanced Ni-based Catalysts for Hydrogen Production	Doudou Zhang <i>Macquarie University</i>
9:30 - 9:45	Enhanced Oxidation of 3,5,5-Trimethylhexanol over Ru Catalysts Supported on V-Doped Zirconia: Synergistic Effects of Oxygen Vacancies and Cationic Ru	Zhen Li <i>Lanzhou Institute of Chemical Physics, CAS</i>
9:45 - 10:00	Pt Single-Atom Catalyst with Precise Local Structure and Ultra-High Pt Density for Hydrogen Production	Fudong Liu <i>University of California, Riverside</i>

# Emerging Catalytic Materials

9

Room: MR322

07 August

THU

10:50 - 12:20

Session Chair:  
Ming Zhao

TIME	PRESENTATION TITLE	SPEAKER
10:50 – 11:05	Defect-Engineered Zirconium MOFs as Catalysts for Polyolefin Pyrolysis	Tristan Tan Tsai Yuan <i>A*STAR</i>
11:05 – 11:20	Comparison of Supported Double Metal Cyanide Catalysts for ring-opening polymerization of propylene oxide	Tabea Angela Thiel <i>Leibniz-Institut für Katalyse e. V</i>
11:20 – 11:35	Design of OXZEO Bifunctional Catalyst for Direct Syngas Conversion	Feng Jiao <i>Dalian Institute of Chemical Physics</i>
11:35 – 11:50	Magnetic Induction Heating: Creating Hot Microenvironment for Enhancing Catalytic Reaction Kinetics	Rui-Ping Zhang <i>Dalian University of Technology</i>
11:50 – 12:05	Development and Applications of Phenazine-Based Homogeneous and Heterogeneous Organic Photoredox Catalyst	Eesteban Meija <i>Leibniz Institute for Catalysis (LIKAT)</i>
12:05 – 12:20	Enhancing Low-Temperature CO Oxidation via Exsolved Ru Nanoparticles Socketed in LaAlO <sub>3</sub> -Based Perovskites	Bo Yu <i>University of St Andrews</i>



# Emerging Catalytic Materials

10

Room: MR322

07 August

THU

13:40 - 15:40

Session Chair:  
Damien Debecker

TIME	PRESENTATION TITLE	SPEAKER
13:40 - 13:55	Design principle of novel photothermal catalysts for decarbonisation	Hongqi Sun <i>The University of Western Australia</i>
13:55 - 14:10	Phase-regulatable nanocages for highly efficient water electrolysis	Ming Zhao <i>National University of Singapore</i>
14:10 - 14:25	Engineering Pd-Based Nanocatalysts for High-Efficiency Electrocatalytic Oxygen Reduction Reaction	Shaoda Huang <i>Wenzhou University</i>
14:25 - 14:40	Shedding Light on the Enigmatic Photothermal Bump and the Influence of Surface Acidity-Basicity in Ni/La-CeO <sub>2</sub> Catalysts for Ammonia Decomposition	Karen Menon <i>University of New South Wales</i>
14:40 - 14:55	Highly Active Iron-based Catalysts for Liquid-phase Hydrogenation Reaction	Takato Mitsudome <i>The University of Osaka</i>
14:55 - 15:10	Long-term CO <sub>2</sub> hydrogenation into liquid fuels with a record-high single-pass yield of 31.7% over interfacial Fe-Zn sites	Yitong Han <i>University of Toyama</i>
15:10 - 15:25	Unique Support Effect of Ti <sub>2</sub> O <sub>3</sub> to Reduce Cobalt Species for Selective Hydrodeoxygenation of Anisole to Benzene	Ryoichi Otomo <i>Hokkaido University</i>
15:25 - 15:40	Design of Multifunctional Piezoelectric Catalysts	Kai Wang <i>The University of Queensland</i>



# Poster Session

ISSAC-4

05 August

TUE

NO.	POSTER TITLE	AUTHOR
SA-P-115	To be confirmed	Qi Yu
SA-P-116	Reductive Deuteration of Cinnamic Acid Catalyzed by Heterogeneous Atomically Dispersed Rhodium	Fatima Asif
SA-P-117	Ce-Doped HAP Stabilized Single-Atom Nickel Catalyst for Active and Durable Partial Oxidation of Methane to Syngas	Yunxia Liu
SA-P-118	Size-dependent strong metal-support interaction modulation of Pt/CoFe <sub>2</sub> O <sub>4</sub> catalysts	Yangyang Li
SA-P-119	Influence of Na Promoter in Tuning Catalytic Properties of Rh/TiO <sub>2</sub> in Hydrogenation Reactions	Mu Nam Jung
SA-P-120	Density effect of rhenium single-atom catalysts for aldehyde hydrogenation	Xunzhu Jiang
SA-P-121	Electrothermal Water-Gas Shift Reaction with a Silicomolybdate-Based Palladium Single-Atom Catalyst	Chen Chen
SA-P-122	Suspended Single Rhenium Atoms on Nickel Oxide for Efficient Electrochemical Oxidation of Glucose	Bo Zhang

# Poster Session

ISSAC-4

05 August

TUE

NO.	POSTER TITLE	AUTHOR
SA-P-123	Sulfite-Enforced, Reduced Phosphomolybdate Catalyzed Aerobic Methane Oxidation to Methanol	Tie Wang
SA-P-124	Cage-siloxane based porous supports functionalized with metal-reducing groups into the entire framework	Takumi Masuda
SA-P-125	Defying the oxidative-addition prerequisite in cross-coupling through artful single-atom catalysts	Xingjie Fu
SA-P-126	De-Saturation of Single-Atom Copper Catalysts for Accelerating Propargylic Substitution Reactions	Qilong Cai
SA-P-127	Partially reduced Ga-Modified Pd/Al <sub>2</sub> O <sub>3</sub> : Boosting Selectivity in Acetylene Semi-Hydrogenation at High Conversion	Rizheng Jing
SA-P-128	Water-mediated tuning of the selectivity in nitroarenes hydrogenation over a Pt/Fe <sub>2</sub> O <sub>3</sub> catalyst	Anqi Li
SA-P-129	Palladium single-atom catalysts prepared via strong metal-support interaction for selective 1,3-butadiene hydrogenation	Yuan Gao
SA-P-130	Mono-site selective deuteration of quinoline derivatives enabled by EMSI-tuned Rhodium single-atom catalysts	Wenting Zhang



# Poster Session

ISSAC-4

05 August

TUE

NO.	POSTER TITLE	AUTHOR
SA-P-131	H <sub>2</sub> -reduced phosphomolybdate promotes room-temperature aerobic oxidation of methane to methanol	Jiyang Tan
SA-P-132	Electrothermal Conversion of Methane to Methanol at Room Temperature with Phosphotungstic Acid	Yilian D. Chen
SA-P-133	Highly dispersed Pt boosts active Fe <sub>x</sub> N formation in ammonia decomposition	Keshia Indriadi
SA-P-134	Boosting C-O Bond Cleavage and Reverse Water-Gas Shift Activity via Enriched in-plane Sulfur Vacancies in Single-Layer Molybdenum Disulfide	Zhiyuan Zheng
SA-P-135	Three-Electron Uric Acid Oxidation via Interdistance-Dependent Switching Pathways in Correlated Single-Atom Catalysts for Boosting Sensing Signals	Bowen Jiang
SA-P-136	DFT modeling of ceria-supported single-atom and few-atom gold species	Elena Shor
SA-P-137	Single atom electrocatalyst on 1T'-MoS <sub>2</sub> for highly efficient hydrogen evolution breaking mass transport limitation	Zhenyu Shi
SA-P-138	Selective Production of Acetylene from the C-C Coupling Reaction of CH <sub>4</sub> with CO <sub>2</sub> Mediated by Ta <sub>2</sub> O <sub>2</sub> <sup>+</sup> Cluster Cations	An Zhao

# Poster Session

ISSAC-4

05 August

TUE

NO.	POSTER TITLE	AUTHOR
SA-P-139	Generation of Cyanonitrene Radicals from the Co-conversion of N <sub>2</sub> and CO <sub>2</sub> Mediated by Niobium Oxide Cluster Anions	Xiaoxiao Liu
SA-P-140	Biphenylene Network as Probe: Coordination-Activity Correlations in Non-Benzenoid Carbon-Supported SACs for CO <sub>2</sub> RR	Yang Xu
SA-P-141	Uranium(IV) Photocatalysts for Efficient C(sp <sup>3</sup> )-C(sp <sup>3</sup> ) Bond Cleavage and Formation	Lian-Wei Ye
SA-P-142	Computational Screening of Pt <sub>1</sub> @Ti <sub>3</sub> C <sub>2</sub> T <sub>2</sub> (T = O, S) MXene Catalysts for Water-Gas Shift Reaction	Yang Meng
SA-P-143	Porphyrin-triazine frameworks hosting palladium single atom for selective nitroarene reduction in aqueous media	Jiachengjun Luo
SA-P-144	Investigation of the Synergistic Mechanism of Cu-Co Dual-Atom Catalysts	Chuanbin Wang
SA-P-145	Fabrication of Ultrahigh-Density Metal Single Atoms Materials for High-Capacity Energy Storage	Xuzehn Wang
SA-P-146	Spectroscopic simulations and mechanistic study of dual-atom catalysts for water oxidation	Hengxin Cui



# Poster Session

ISSAC-4

05 August

TUE

NO.	POSTER TITLE	AUTHOR
SA-P-147	Atomic-Scale Engineering of Platinum-Based Electrocatalysts for Enhanced Hydrogen Evolution Activity	Mi Luo
SA-P-148	The Auto-Catalysis in Ozone Decomposition over Ag/Al <sub>2</sub> O <sub>3</sub>	Ziqiao Zhou
SA-P-149	Synergy in Fe-SAC/Ni-NP@NC for Electrochemical NH <sub>3</sub> Production via Nitrate Reduction	Gaojun Jiang
SA-P-150	Crystal Phase Engineering of Molybdenum Carbide to Tailor Ni Active Sites for Selective Hydrodeoxygenation	Dan Li

# Poster Session

**Environmental Catalysis**
**05 August**
**TUE**

NO.	POSTER TITLE	AUTHOR
EN-P-89	Coiled Flow Inverter-Assisted Photo-Biocatalytic Denitrification Using FexOy/g-CN_Biofilm	Shivam Singh Tomar
EN-P-90	CTAB-Modified TiO <sub>2</sub> @Fe <sub>3</sub> S <sub>4</sub> /α-Fe <sub>2</sub> O <sub>3</sub> Heterojunction Photocatalysts for Enhanced Degradation of Organic Pollutants	Xuesonga Yi
EN-P-91	Development of De-NO <sub>x</sub> catalyst for H <sub>2</sub> combustion engines and the study of water effect	Jieling Shao
EN-P-92	Effect of interaction between cobalt oxide catalysts and supports on CO <sub>2</sub> hydrogenation	Dong Cui
EN-P-93	Enhanced Persulfate Activation through Nanoconfinement of Hollow Nitrogen-Doped Carbon Nanorings for Phenol Degradation	Xuzhen Wang
EN-P-94	Facilely Synthesized Ni-Based Catalyst for Simultaneous Ammonia Oxidation and Hydrogen Evolution from Landfill Leachate	Eunkyeong Byeon
EN-P-95	F-Al-OH structural support and Lewis acidic site modulation of aluminium fluoride for durable dehydrofluorination	Haodong Tang
EN-P-96	Fe clusters anchored on defective MoS <sub>2</sub> for CO <sub>2</sub> hydrogenation to methanol	Jiankun Yang



# Poster Session

Environmental Catalysis

05 August

TUE

NO.	POSTER TITLE	AUTHOR
EN-P-97	Inhibition of CO <sub>2</sub> carbonation promotes efficacy of bicarbonate electrolysis to CO	Fu Yingxue
EN-P-98	Integrated Characterization and Performance Study of Dip-Coated Pt-Zr-Pr Oxide Catalysts supported on FeCrAl for H <sub>2</sub> O <sub>2</sub> Dissociation	Amala J
EN-P-99	Interfacial Effects Boost the Selective Catalytic Reduction of NO <sub>x</sub> with over Fe <sub>2</sub> (MoO <sub>4</sub> ) <sub>3</sub> -Fe <sub>2</sub> O <sub>3</sub> Composite Oxide Catalysts	Hui Wang
EN-P-100	Lean and humid methane combustion at low temperatures using Pd/CZO catalysts in an electric field	Keisuke Kuroki
EN-P-101	Modulation of Active Sites on Pt Nanoclusters by Single Atoms in Pt/CeO <sub>2</sub> Composite Catalysts	Juntai Tian
EN-P-102	Modulation of Ni-Co dual-sites synergism in oxides for enhancing CO <sub>2</sub> hydrogenation to methane	Zhenping Qu
EN-P-103	Nanoporous Carbon Catalytic Support from Banana Trunk	Apiluck Eiad-Ua
EN-P-104	One Treatment, Two Divergent Catalytic Behaviors: Surface Engineering of LaCoO <sub>3</sub> and LaMnO <sub>3</sub> Perovskites	Jeonghyun Cho

# Poster Session

**Environmental Catalysis**
**05 August**
**TUE**

NO.	POSTER TITLE	AUTHOR
EN-P-105	Rational Design of Porous N-Doped Carbon Nanosheet Coupled with Co/CoO Nanoparticles for Enhanced Peroxymonosulfate Activation	Jinglin Wen
EN-P-106	Relationship between crystal structure and CO oxidation activity of Co-doped perovskite catalyst	Ryosuke Sugimoto
EN-P-107	Revealing the active Cu species in Cu/ZSM-5 catalysts for the selective catalytic oxidation of ammonia	Sein Hwang
EN-P-108	Selective oxidation of methane to methanol over a pair of $\alpha$ -oxygens formed by dioxygen splitting	Radim Pilar
EN-P-109	SO <sub>2</sub> Poisoning, Regeneration, and Impact on Dimer-Cu Intermediates in the NH <sub>3</sub> -SCR Reaction over Cu-Zeolites	Yulong Shan
EN-P-110	Solar-driven Sustainable Polyolefin Upcycling Using Copper Encapsulated in Silicon Nanosheets and Chloroaluminate Ionic Liquid	Chuanwang Xing
EN-P-111	Streamlined continuous co-precipitation process facilitated by 3D-printed micromixers	Ethan Chang
EN-P-112	Tailored SiO <sub>2</sub> @CeO <sub>2</sub> core-shell catalysts modified with CuO and Co <sub>3</sub> O <sub>4</sub> for efficient total oxidation of toluene	Magdalena Zurowska



# Poster Session

Environmental Catalysis

05 August

TUE

NO.	POSTER TITLE	AUTHOR
EN-P-113	Tailoring the Local Chemical Environment of Single-Atom Copper for Enhanced CO <sub>2</sub> Hydrogenation to Methanol	Tiancheng Fang
EN-P-114	The investigation of metal-support interaction on catalytic reactions for composite oxides catalysts	Xingchi Li
EN-P-115	Entropy Stabilised Oxide Zeolite for Robust CO <sub>2</sub> Hydrogenation	Xiao Lin



# Poster Session

Biomass Conversion & Polymer Degradation

05 August

TUE

NO.	POSTER TITLE	AUTHOR
BP-P-1	Bio-based Surfactants through heterogeneous acid catalyzed reactions	Nicoletta Ravasio
BP-P-2	Biomass-derived solvents for polystyrene depolymerization and functionalization	Bao-Nguyen Nguyen
BP-P-3	Depolymerization of Poly(ethylene terephthalate) by Transesterification Catalyzed by Iron(II) Complexes	Miki Toyoda
BP-P-4	Fast Defluorination of Per- and Polyfluoroalkyl Substances via Solid Bases Activation under Microwave-Induced Arc Discharge	Xiao Fang
BP-P-5	Hydrogenolysis of isosorbide to polyols over heterogeneous TiO <sub>x</sub> -modified Rh catalysts	Natsuki Uno
BP-P-6	Improving both activity and stability for direct conversion of cellulose to ethanol by decorating Pt/WO <sub>x</sub> with mononuclear NbO	Weixiang Guan
BP-P-7	Mechanistic exploration of polytetrafluoroethylene thermal plasma gasification through multiscale simulation coupled with experimental validation	Chu Chu
BP-P-8	Microwave-assisted lignin depolymerization over metal-based catalysts under mild conditions for renewable aromatic production	Zitong Pan
BP-P-9	Monodispersed Nanoscale BaO-MWW Zeolite: A High-Efficiency Catalyst for Sustainable PET Recycling via Catalytic Glycolysis	Haocheng Zhang
BP-P-10	Nitrogen-Doped Biochar-Encapsulated Nickel Catalyst for Efficient Hydrogen Production by Aqueous Phase Reforming of Ethylene Glycol	Zhipeng Tian

# Poster Session

Biomass Conversion & Polymer Degradation

05 August

TUE

NO.	POSTER TITLE	AUTHOR
BP-P-11	Post-synthetic Amide Insertion into Polyethylenes Augments Diverse Physical Properties and Enables Branching-dependent Recyclability	Jaime Pang
BP-P-12	Selective hydrogenolysis of lignin with in-situ produced hydrogen catalyzed by Ni particles nested in Mg-Al mixed oxides	Jinxing Long
BP-P-13	Selective Upcycling of PET waste to High-valued Oxygenated Chemical	Jianian Cheng
BP-P-14	Development of tin oxide catalysts promoting the ring-closing depolymerization of poly( $\epsilon$ -caprolactone)	Tetsu Nakatani
BP-P-15	Tuning the Approach for Efficient Saturated Hydrocarbon Production via Hydroprocessing of Used Cooking Oil	Hyerim Ko
BP-P-16	Upgrading Bioethanol to Fuel-Range Hydrocarbons over Modified HZSM-5 Zeolite Catalysts	Winnie Monama-Tsaulwayo
BP-P-17	Vanadium Catalyzed Polyethylene Oxidative Functionalization Under Aqueous Condition	Haonan Zhao



# Poster Session

Catalysis for Carbon Neutrality

05 August

TUE

NO.	POSTER TITLE	AUTHOR
CN-P-18	Cu Facet-Dependent Activity of Cu/ZnO <sub>x</sub> Catalyst During Methanol Synthesis from Industrially Relevant CO-CO <sub>2</sub> Gas Mixtures: A DFT-Based Microkinetic Analyses	Balaji C D
CN-P-19	Activation Sequence-Driven Control of Product Selectivity in CO <sub>2</sub> /CH <sub>4</sub> Sequential Reaction	Hyogeun Yang
CN-P-20	Advancing ZSM-5 Catalysts for MTG: Structural Optimization for Improved Lifetime and Selectivity	Petr Sazama
CN-P-21	An integrated distributor-type ceramic membrane reactor for continuous CO <sub>2</sub> cycloaddition to cyclic carbonate	Qu Zhengyan
CN-P-22	Aromatics formation from thermal decomposition gas from waste plastics using zeolite catalyst	Kazumasa Oshima
CN-P-23	Carbon Upcycling through Nanostructured Cobalt Oxide for Acetic Acid Production	Hanbit Jang
CN-P-24	Catalytic deactivation behavior over Pt/g-C <sub>3</sub> N <sub>4</sub> photocatalysts for photocatalytic H <sub>2</sub> evolution	Chao Song
CN-P-25	CFD Analysis of the Pilot-scale Reactor for CO <sub>2</sub> Fischer-Tropsch Synthesis	Soojin Lim
CN-P-26	CO <sub>2</sub> Capture & e-CH <sub>4</sub> Synthesis Hybrid System	Joonwoo Kim
CN-P-27	CO <sub>2</sub> hydrogenation to methanol as a hydrogen carrier for sustainable low-carbon energy supply chain	Jeffrey Wu

# Poster Session

Catalysis for Carbon Neutrality

05 August

TUE

NO.	POSTER TITLE	AUTHOR
CN-P-28	Coke-free Methane Dry Reforming over Electron-deficient Nickel Tailored by Boron Species	Lei He
CN-P-29	Controlling CO <sub>2</sub> capture ability by an electric field over CeO <sub>2</sub>	Takahiko Ikeda
CN-P-30	Conversion-Selectivity Relationship in the Tandem Process of Fischer-Tropsch Synthesis and Catalytic Cracking over Fe-ZSM-5 Catalysts	Hyeon Song Lee
CN-P-31	DBD Plasma Treatment on Ni/ $\gamma$ -Al <sub>2</sub> O <sub>3</sub> for Catalytic Methane Decomposition: Effects of Pure Argon and Pure Hydrogen	Bella -
CN-P-32	Decarboxylative Cross-Couplings by Supported Gold Nanoparticles as Single-Electron Transfer Catalysts	Yushi Sato
CN-P-33	Development of Nb-based heterogeneous catalysts for N-alkylation of amines with alcohols	Taichi Akiyama
CN-P-34	Direct cleavage of C=O double bond in CO <sub>2</sub> by the subnano MoO <sub>x</sub> surface on Mo <sub>2</sub> N	Wei-Wei Wang
CN-P-35	Effect of Calcination Temperature on Ni Dispersion and Activity in Ni/MgAl <sub>2</sub> O <sub>4</sub> Catalysts for CO <sub>2</sub> Methanation	Aditya Kumar
CN-P-36	Effect of CeO <sub>2</sub> Support with Controlled Crystallinity on the Ammonia Synthesis Reaction in an Electric Field	Reika Nakayama
CN-P-37	Effect of Realistic Operating Considerations on Preferential Oxidation of CO and Regulatory Strategies for Catalyst	Lipeng Wang



# Poster Session

Catalysis for Carbon Neutrality

05 August

TUE

NO.	POSTER TITLE	AUTHOR
CN-P-38	Elucidating the Structure-Sensitivity of Aromatic Hydrogenation on Ru/Al <sub>2</sub> O <sub>3</sub> Catalysts	Tae Wan Kim
CN-P-39	Engineering NiO /Ni <sup>2+</sup> interfaces for the enhanced coke resistance of Ni/Al <sub>2</sub> O <sub>3</sub> catalysts in dry reforming of methane	Zhang Wenzheng
CN-P-40	Enhancing catalytic performance and coke resistance of Ni-Based catalysts for Bi-reforming over Methane by diverse macroporous structure	Phuong Anh Nguyen
CN-P-41	Fe <sup>2+</sup> -based solid-state molecular catalysts for efficient electrochemical NO <sub>x</sub> reduction	Siranuysh Badalyan
CN-P-42	Fully Renewable Alkylbenzene Synthesis Based on Lignin-Derived Compounds and CO <sub>2</sub>	Enze Xu
CN-P-43	Heterogeneous catalysis intensified by ceramic-membrane dispersion	Hong Jiang
CN-P-44	Highly Active and Stable Egg-Shell Pt Catalysts for Continuous-Flow Hydrogenation of Halogenated Nitrobenzenes	Yong Hu
CN-P-45	Influence of Ni-oxygen vacancy interfaces formed via NiAl <sub>2</sub> O <sub>4</sub> reduction on coking resistance in Dry Reforming of Methane	Nhiem Pham- Ngoc
CN-P-46	Integrated Approach to Accelerate Catalyst Discovery for Carbon Utilization	Chun Qi Joy Ng
CN-P-47	Metal-Sulfur Bond Engineering in Electrocatalysts Enables Efficient and Stable Formate Production from CO <sub>2</sub> Reduction	Guoyu Hou

# Poster Session

Catalysis for Carbon Neutrality

05 August

TUE

NO.	POSTER TITLE	AUTHOR
CN-P-48	Modeling of DME Production Process using By-product Gases in the Steel Industries	Myung-June Park
CN-P-49	Non-conventional low-temperature reverse water gas shift reaction over highly dispersed Ru catalysts in an electric field	Kento Shima
CN-P-50	Non-thermal Plasma Catalysis for Sustainable Conversion of CO <sub>2</sub> and CH <sub>4</sub> into Fuels	Pratigya Sharma
CN-P-51	One-Step Spray Pyrolysis Synthesis of Silica-Supported Ni Catalysts with Enhanced Dispersion for Methane Reforming	Bonjun Ku
CN-P-52	PN3P Pincer Iridium hydride complex catalyzed alkane dehydrogenation	Kher Ai Chiaw
CN-P-53	Potassium-Promoted Ru/Al <sub>2</sub> O <sub>3</sub> Catalyst for Ammonia Decomposition	Dongun Kim
CN-P-54	Revisiting the ruthenium oxide-based water oxidation catalysts in acidic media: From amorphous to crystalline	Sze Xing Tan
CN-P-55	Selective Oxidative Ethanol Dehydrogenation to Acetaldehyde over Novel Fibrous Carbon Nano-ring Support AuCu Catalyst: Insight into the Synergy and Mechanism	Mahlet Nigus Gebresillase
CN-P-56	Stepwise Activation of CH <sub>4</sub> and CO <sub>2</sub>	Nurul Farhana Binti Abd Ghaffar
CN-P-57	Structurally Tailored FeK/CuAl <sub>2</sub> O <sub>4</sub> Catalysts for Selective CO <sub>2</sub> Hydrogenation to Gasoline-Range Hydrocarbons	Jongmin Park



# Poster Session

Catalysis for Carbon Neutrality

05 August

TUE

NO.	POSTER TITLE	AUTHOR
CN-P-58	Superior CO Selectivity in RWGS Reaction via Physically Integrated Pt/Al <sub>2</sub> O <sub>3</sub> and TiO <sub>2</sub> Catalyst System Using Methylcyclohexane as a Hydrogen Carrier	Doohoo Yoon
CN-P-59	Synergistic Design of Property-controlled Ru/*BEA Catalysts and Open-batch Distillation for Selective Hydrocracking of Polyethylene Waste	Hankyeul Kang
CN-P-60	Synthesis of Network Composite Materials of Biobased Polyesters with Cellulose Nano Fiber	Ayana Inoue
CN-P-61	Tailored Cu-Fe Interfaces and Oxygen Vacancies for CO <sub>2</sub> to Liquid Hydrocarbons	Hyeonji Yeom
CN-P-62	The Catalytic Role of Surface Hydroxyl Groups on Ir/Al <sub>2</sub> O <sub>3</sub> in Methane Dry Reforming	Dai Jialong
CN-P-63	The Effect of Oxygen Vacancy and Phase Compositions of TiO <sub>2</sub> on Ni/TiO <sub>2</sub> Catalysts for the Liquid Phase Selective Hydrogenation of CO <sub>2</sub> to Alcohols	Thapong Teerawatananond
CN-P-64	Thermal radiative catalysis: Selective dehydrogenation of ethane to ethylene by vibrationally excited carbon dioxide	Xue Ding
CN-P-65	Upcycling of Polyesters by Reaction with Amines, Amino Alcohols	Sumiho Hiruba
CN-P-66	Zn-containing ionic liquid catalysts enabling mild and solvent-free CO <sub>2</sub> fixation to cyclic carbonates	Etty Nurlia Kusumawati
CN-P-67	Zr-Promoted Ru/Al <sub>2</sub> O <sub>3</sub> Catalysts for Ammonia Oxidative Decomposition: Role of Oxygen Vacancies and NH <sub>3</sub> Activation	Nohara Kanon
CN-P-68	$\beta$ -Cyclodextrin derived carbon mediated hydrogen spillover on Cu-ZnO-ZrO <sub>2</sub> catalyst for enhancing methanol selectivity in CO <sub>2</sub> hydrogenation	Xiucheng Sun



# Poster Session

Computational Catalysis & AI

05 August

TUE

NO.	POSTER TITLE	AUTHOR
CA-P-69	A Quantitative Study of Halogenophilic (SN2X) and Chalcogenophilic (SN2Ch) Nucleophilic Substitution Reactions	Choon Wee Kee
CA-P-70	Active Sites in CuN <sub>4</sub> Single Atom Catalyst for Electrocatalytic Acetylene Semihydrogenation	Li Wenying
CA-P-71	CH <sub>4</sub> decomposition over carbon for CO <sub>2</sub> -free hydrogen production	Peng Zhao
CA-P-72	Computational Insights into Aromatics Diffusion in H-MCM-22 Zeolite via Machine Learning Potentials	Wang Tao
CA-P-73	Computational Study of C1 and C2 Intermediates in CO <sub>2</sub> Electroreduction on Non-Conventional Copper Surface	Richard Lim
CA-P-74	Impact of high CO coverages on transition-metal surfaces	Paulo De Carvalho Dias Mendes
CA-P-75	Machine Learning Predictions for Regioselectivity of Hydroformylation Reactions: Leveraging Limited Data for High-Precision Results	Jiaqi Wu
CA-P-76	Multidimensional Quantum Fourier Transform for Nanosheet Material Evaluation by Electron Microscopy	Tetsuya Mizu- guchi
CA-P-77	Oxygen and Electron Storage Effects in W-Modified Ceria Catalysts for Ammonia Conversion	Ziyi Guo
CA-P-78	Redefining Catalysis Predictions Through Physics-Based Gaussian Model and Data-Driven Benchmarks: AuPd Alloy in ORR Catalysis for Fuel Cell Applications	Neeru Chaudhary
CA-P-79	Revealing the Gas-Molten Alloy Dynamics in Methane Pyrolysis with Machine Learning Potentials	Haolin Huang

# Poster Session

Computational Catalysis &amp; AI

05 August

TUE

NO.	POSTER TITLE	AUTHOR
CA-P-80	Unveiling Catalyst-Specific CO <sub>2</sub> -to-CO Conversion Mechanisms via Grand-canonical DFT	Jungho Kim
CN-P-81	Mechanistic Study of Bifunctional Thermocatalytic CO <sub>2</sub> Hydrogenation Over Oxide-Supported Palladium Catalysts	Yejung Choi
CN-P-82	Tuning Metal-Support Interactions in Pt/ZrO <sub>2</sub> Catalysts via Ce Doping: A DFT Study	Ju Hyeok Lee
CN-P-83	Unveiling the Reactive Origin in Ni(CN) <sub>2</sub> @Ni <sub>2</sub> P Heterointerface Engineering for OER using Density Functional Theory	Jongseok Kim



# Poster Session

Emerging Catalytic Materials

05 August

TUE

NO.	POSTER TITLE	AUTHOR
EM-P-84	Facet-sensitive Mn dissolution of MnO <sub>2</sub> crystal	Kun He
EM-P-85	Stabilizing Atomically Dispersed Platinum: The Critical Role of the Vanadia/Titania Support in CO Oxidation	Hongjin Park
EM-P-86	Seeding Atomic Silver into Internal Lattice Sites of Transition Metal Oxide for Advanced Electrocatalysis	Wenjun Song
EM-P-87	Strategies to enhance the stability of low-platinum electrocatalysts	Longhai Zhang
EM-P-88	Surface-Plasmon-Assisted Electrochemical Reduction of H <sub>2</sub> O <sub>2</sub> over Non-noble Metal Bismuth Nanoparticles Electrocatalyst	Yu-Kuei Hsu



# Poster Session

Advanced Catalyst Characterisation

06 August

WED

NO.	POSTER TITLE	AUTHOR
AC-P-1	Decoupling Surface Photoelectric and Photothermal Effect in Surface Plasmon Resonance Photocatalysis	Yuxin Xie
AC-P-2	Direct imaging of ultrafast and long-lived charge separation for efficient photocatalytic overall water splitting	Yongxin Ge
AC-P-3	Effect of Bias on Oxygen Evolution Reaction Kinetics in Ni(OH) <sub>2</sub> Electrocatalyst	Zeyu Cheng
AC-P-4	Experimental and CFD Analysis of Temperature Profiles in a Monolithic Catalyst for VAM Oxidation Reactors	Rahim Karami
AC-P-5	Highly-selective hydrogenation of unsaturated aldehydes in aqueous phase	Shijie Zhou
AC-P-6	In Situ Investigation of PtFe Catalysts under Ammonia Decomposition Conditions	Bingqing Yao
AC-P-7	Latest catalyst applications toward the carbon neutrality using the Hitachi HF5000 Cs-corrected TEM/STEM with in-situ holders and gas injection function	Hiroaki Matsumoto
AC-P-8	Molybdenum-Modified Ni/Al <sub>2</sub> O <sub>3</sub> Catalysts for Propane Dehydrogenation	Mengyao Wang
AC-P-9	Nanosecond Lifetime of Hot Electrons in Gradient-Doped Cu <sub>2</sub> O	Chenwei Ni
AC-P-10	Optimizing Gas Cell for In-situ (Scanning) Transmission Electron Microscopy	Yao Wu

# Poster Session

**Advanced Catalyst Characterisation**
**06 August**
**WED**

NO.	POSTER TITLE	AUTHOR
AC-P-11	Oscillatory Strong Metal-Support Interaction in Pd/TiO <sub>2</sub> under Redox Conditions	Yuhui Chen
AC-P-12	P-block metal monochalcogenides for CO <sub>2</sub> electroreduction via non-invasive van der Waals doping	Pengfei Li
AC-P-13	Phase Separation Induced Amorphous-Al <sub>2</sub> O <sub>3</sub> /CoO Inverse Interface site for highly active reduction Amination of Alcohol to Primary Amine	Mengjiao Huai
AC-P-14	Probing Atomically Resolved Chemical Reactivity of Nickel(II) Norcorrole Macrocycles and Its Oxygen-doped Derivatives via Non-contact Atomic Force Microscopy	Xiaoyu Sheng
AC-P-15	Probing the combined presence of oxygen vacancy and basic sites using CO <sub>2</sub> -DRIFTS	Rajendran K
AC-P-16	Reductive Coupling of Nitroarenes and HCHO for General Synthesis of Functional Ethane-1,2-diamines by a Cobalt Single-Atom Catalyst	Jialu Sun
AC-P-17	Regulating Charge Separation Via Periodic Array Nanostructures for Plasmon-Enhanced Water Oxidation	Qianhong Zhu
AC-P-18	Silicate-1 zeolite encapsulated CuZn Nanocluster for CO <sub>2</sub> Hydrogenation	Shangjin Tian
AC-P-19	Spin-Selective Intermediate Activation via Fe/Ni Single-Atom Doping in MoS <sub>2</sub> for Enhanced Oxygen Evolution	Ze Kun Hu
AC-P-20	Strong Metal-Support Interaction with Partial Encapsulation Boosting Ammonia Synthesis on Ru/CeO <sub>2</sub> Nanocatalysts	Bingwei Chen



# Poster Session

Advanced Catalyst Characterisation

06 August

WED

NO.	POSTER TITLE	AUTHOR
AC-P-21	Structural Evolution Boosts N <sub>2</sub> O Decomposition Efficiency over Ru/Al <sub>2</sub> O <sub>3</sub> Catalysts	Chaokai Xu
AC-P-22	Structure elucidation of Metal-organic Framework-Based Electrochemical Catalysts via Three-dimensional Electron Diffraction	Guojun Zhou
AC-P-23	Surface Restructuring and unexpected Phase Stability of Anatase TiO <sub>2</sub> Nanocrystals	Xiaoyun Guo
AC-P-24	Tailoring surface acidity of amorphous silica-alumina via flame spray pyrolysis for enhanced arenes benzylation	Xingxu Liu
AC-P-25	The promotion effect of La on activity of Ga <sub>2</sub> O <sub>3</sub> -based catalysts in dehydrogenation of propane	Vasilii Kaichev
AC-P-26	Tracking the interfacial defect-induced fcc to hcp transition on Ru/Al <sub>2</sub> O <sub>3</sub> for efficiently catalyzing CO <sub>2</sub> reduction	Weijue Wang
AC-P-27	Tuning carbon supports to optimize ru nanoparticle catalysts for glucose hydrogenation to sorbitol	Oxana Taran
AC-P-28	Unraveling the role of platinum hydride species in long-chain alkane dehydrogenation with H <sub>2</sub> co-feeding	Hi Song
AC-P-29	Unveiling Active Sites of Sub-nm Alloys via Advanced Techniques	Shangchen Lu
AC-P-30	Using manganese-based catalysts supported on cordierite to oxidize aromatic VOCs	Thi Thu Hien Tran

# Poster Session

Advanced Catalyst Characterisation

06 August

WED

NO.	POSTER TITLE	AUTHOR
AC-P-31	Visualizing direct Z-scheme charge workflow in well-designed lateral heterojunction photocatalysts	Hanyu Yao
AC-P-32	Synthesis and Application of Nanosized and Hierarchical Zeolites	Y Kalvachev



# Poster Session

Artificial Photosynthesis

06 August

WED

NO.	POSTER TITLE	AUTHOR
AP-P-33	Accelerated Discovery of Plasmonic Photocatalysts for Overall Water Splitting via Bayesian Optimization	Hong Wang
AP-P-34	Achieving High Selectivity in Photocatalytic Oxidation of Toluene on Amorphous BiOCl Nanosheets Coupled with TiO <sub>2</sub>	Hao Wang
AP-P-35	Boron Promoted Pt/Al <sub>2</sub> O <sub>3</sub> Catalysts with Superior Stability for Methylcyclohexane Dehydrogenation	Voon Huey Lim
AP-P-36	Carbon dot doped carbon nitride for efficient photocatalysis of emerging contaminant degradation	Season Si Chen
AP-P-37	Charge Photoaccumulation in Covalent Polymer Networks for Boosting Photocatalytic Nitrate Reduction to Ammonia	Xinjia He
AP-P-38	Core-shell photocatalysts design for selective methane conversion to oxygenates	Chenlu Xie
AP-P-39	Diastereoselective dearomatization of indoles via photocatalytic hydroboration on hydramine-functionalized carbon nitride	Yongcan Liu
AP-P-40	Enhanced Generation and Effective Utilization of Cr(VI) for Coexisting Pollutants Simultaneously Removal via MOF@COF Photocatalysts	Lanyue Qi
AP-P-41	Highly CO-Selective Photocatalytic CO <sub>2</sub> Reduction Enabled by Metal-Support Coupling and Vacancy Engineering in Au@TiO <sub>2</sub> -OVs	Shicheng Liu
AP-P-42	High-performance Bi <sub>2</sub> S <sub>3</sub> /ZnO photoanode enabled by interfacial engineering with oxyanion for efficient photoelectrochemical water oxidation	Ying-Chu Chen
AP-P-43	Investigation of non-noble metal BiO-decorated g-C <sub>3</sub> N <sub>4</sub> /SrTiO <sub>3</sub> sheet-like photocatalyst for boosting solar hydrogen production	Thi Hoang Yen Le

# Poster Session

**Artificial Photosynthesis**
**06 August**
**WED**

NO.	POSTER TITLE	AUTHOR
AC-P-44	Laser Synthesis in Liquid Induced Lattice Distortion in PtFeSn/AC for Enhanced Methylcyclohexane Dehydrogenation	Zheng Wang
AC-P-45	Light-Driven Metal Exsolution-Redissolution of High-Entropy Oxide Enabling High-Performance Dry Reforming of Methane	Yu Cui
AC-P-46	Manipulating Microdroplets with Light	Yang Xiao
AC-P-47	Manipulating Photoconduction in Supramolecular Networks for Solar-Driven Nitrate Conversion to Ammonia and Oxygen	Feiyang Hong
AC-P-48	Photocatalytic CH <sub>4</sub> -to-Ethanol Conversion on Asymmetric Multi-shelled Interfaces	Shuya Hao
AC-P-49	Selective Removal of Sulfur-Containing Persistent Organic Pollutants through Precise Electronic-State Control of Au Nanoclusters Enabled by Nanoconfinement	Wei Guo
AC-P-50	Strong Metal-Support Interaction between Layered Double Oxides and High-Entropy Alloys for the Efficient Light-Driven Dry Reforming of Methane	Tingting Kong
AC-P-51	Subnanometer Molybdenum Oxide-Stabilized Platinum Nanocatalysts for Efficient Methylcyclohexane Dehydrogenation	Shenghui Zhou
AC-P-52	Tuning Pt-Fe Interactions via Fe Dispersion on SiO <sub>2</sub> for Enhanced Methylcyclohexane Dehydrogenation	Zitao Li
AC-P-53	Unveiling the Role of Cl <sup>-</sup> Ions in Water Oxidation Kinetics: High-Performance Self-Supporting Ni-Co-MOF Electrodes for Alkaline Seawater Electrolysis	Pitchai Thangasamy
AC-P-54	Upcycling CO <sub>2</sub> into polylactic acid via an electrochemical-biological hybrid	Yingchen Wang



# Poster Session

Biocatalysis

06 August

WED

NO.	POSTER TITLE	AUTHOR
BC-P-55	Development of a Hybrid Photo/biocatalytic System for Sustainable L-Alanine Production from Biomass-Derived Urea and Pyruvate	Yamada Kyosuke
BC-P-56	Facet-Engineered Copper Electrocatalysts Enable Sustainable NADH Regeneration with High Efficiency	Shuo Sun
BC-P-57	Fine-tuning the L-lactate fermentation of <i>Lactococcus lactis</i> with dihydroxyacetone and glycerol by Hemin	Sun Wenhui
BC-P-58	Hydrogen Evolution from Formate Using a System of Bio/metal Catalysts and Supramolecular Photocatalysts with a High Reduction Potential	Yoshikawa Shintaro
BC-P-59	Engineering Microbial Consortia and Plasmid Dynamics to Enhance Strigolactone Biosynthesis	Heng Yih Tan
BC-P-60	Hydrogenation of N-Benzyl Nicotinamide on Pt/SiO <sub>2</sub> : A Comparative Study with Nicotinamide Adenine Dinucleotide	Hirano Makoto
BC-P-61	Metalloenzyme design via the dialogue between DNA and iron	Jia Guoqing
BC-P-62	Novel CoA Transferase Enhances Lactate Fraction in P(LA-co-3HB) Biosynthesis	Guo Pengye
BC-P-63	Engineering <i>Escherichia coli</i> to assimilate 1,3-PDO as a major carbon source	Nga Yu Poon



# Poster Session

C1 Chemistry & Olefins

06 August

WED

NO.	POSTER TITLE	AUTHOR
CO-P-64	A Novel Fischer-Tropsch Synthesis Active Site with Shortened Fe-C Bond for Valuable C <sub>2</sub> + Products Synthesis from CO <sub>2</sub> Hydrogenation	Xinze Bi
CO-P-65	A Novel Plasma-thermal Catalytic Tandem Reaction System for Direct Oxidation of Methane to High-concentration Methanol	Chaoqun Gu
CO-P-66	Ceria Promoted Interface for Boosted Water-Gas Shift Reaction	Xin-Pu Fu
CO-P-67	CO <sub>2</sub> hydrogenation to methanol and dimethyl ether (DME) on CuO-incorporated mesoporous Al <sub>2</sub> O <sub>3</sub>	Hyuk Jeong
CO-P-68	Potential of levulinic acid and furfural co-feeding for the renewable synthesis of 2-methyltetrahydrofuran	Errol D. Saluta
CO-P-69	Construction of Highly Active Fe <sub>5</sub> C <sub>2</sub> -FeCo Interfacial Sites for Oriented Synthesis of Light Olefins from CO <sub>2</sub> Hydrogenation	Haozhe Feng
CO-P-70	Control of External Acidity and Defects In Mo/ZSM-5 for Shale Gas Aromatization	Yangho Jeong
CO-P-71	Data-driven Discovery of Pt Single Atom embedded in germanosilicate MFI Zeolite Catalysts for Propane Dehydrogenation	Zhao Qian-Cheng

# Poster Session

**C1 Chemistry & Olefins**
**06 August**
**WED**

NO.	POSTER TITLE	AUTHOR
CO-P-72	Deoxygenation of guaiacol over the series of Mo-based catalysts	Jiyuan Fan
CO-P-73	Direct Partial Oxidation of Methane to Syngas over Metal Oxide Catalyst	Kazumasa Murata
CO-P-74	Efficient self-catalytic reactors for catalytic C1 molecular conversion	Hao Huang
CO-P-75	Enhancing Fischer–Trøpsch Catalyst Performance via Tuned Core-Shell Co@SiO <sub>2</sub> Synthesis with 3D Micromixing	Sin Kim Tang
CO-P-76	FeCo Alloy Clusters Optimized Heterogeneous Catalytic Interface for Driving CO <sub>2</sub> Hydrogenation to Light Olefins	Hanyao Song
CO-P-77	Frustrated Brønsted Pairs for Methanol Conversion in Zeolites	Han-Xuan Liu
CO-P-78	Gas-solid phase photocatalytic methane oxidative coupling mediated by a bimetallic single-atom catalyst	Zhang Pengye
CO-P-79	Inducing Structural and Electronic Alterations Through Mg Doping of Ceria for Reverse Water-Gas Shift Reaction	Nomer C. Arriola Jr



# Poster Session

C1 Chemistry and Olefins

06 August

WED

NO.	POSTER TITLE	AUTHOR
CO-P-80	Light-tuned plasmonic catalysis drives direct methane conversion to ethanol	Shuxu Zhu
CO-P-81	Mechanochemically-prepared Cu/ZnO/Al <sub>2</sub> O <sub>3</sub> catalysts for methanol synthesis via CO <sub>2</sub> hydrogenation	Pei Ying Moo
CO-P-82	Overcome Selectivity-activity Trade-off via Oscillating Electric Polarization in Acetylene Semi-hydrogenation	Di Xu
CO-P-83	Preparation and catalytic performance of Ni@SAPO-11/34 bifunctional catalysts in n-Hexane hydroisomerization	Tuan Doan
CO-P-84	Probing the Role of MgO in CH <sub>3</sub> Cl to Light Olefins Conversion over Acidic Zeolites	Changgi Kim
CO-P-85	Promotional effect of silica shell coated NiO physically mixed with Mo/HZSM-5 catalyst on methane dehydroaromatization	Jangeon Roh
CO-P-86	Protocol to Synthesis Highly Active and Selective Molecular Imprinting Catalyst for Nitroarene Hydrogenation	Feng Shi
AP-P-87	Research on the highly selective photocatalytic conversion of methane to liquid C1 oxygenates using silver-heteropolyacid-titanium dioxide composites	Wang Wenbin
AP-P-88	Tailoring Electronic States of Ni Sites via Laser-Engineered Carbon Defects Enables Superior Dry Reforming of Methane	Kaixuan Huo
AP-P-89	The effect of bimodal structure catalyst on a modified Fischer-Tropsch synthesis with ethylene insertion for SAF production	Shunosuke Fujii
AP-P-90	The role of Zn as a carbon chemical potential modulator in the precipitated iron-based catalysts for the production of linear $\alpha$ -olefin from syngas via high-temperature Fischer-Tropsch synthesis	Gyoung Woo Lee
AP-P-91	Water-induced pseudocarboxylic pathway enhancing hydroformylation in zeolite channel for linear aldehyde production	Yue Chen



# Poster Session

Electrocatalysis

06 August

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NO.	POSTER TITLE	AUTHOR
EL-P-92	A New Stable CoO <sub>2</sub> Phase for Electrocatalysis Identified by High-Throughput DFT Exploration of Co <sub>x</sub> O <sub>y</sub> Polymorphs	Jinbo Zhu
EL-P-93	Accelerating the Development of Hydrogenation Catalysts through the Hydrogen Evolution Reaction	Donge Wang
EL-P-94	Amino Acids Electrosynthesis with Oxygen Vacancy-Mediated CeO <sub>2</sub> Nanocrystals: Facet Effect and Catalytic Mechanism	Jiang Shao
EL-P-95	Ammonia Electrosynthesis from Nitrate via Enhancing Hydrogenation of Nitrogen-intermediate Species on Cu-based Catalysts	Lei Qiu
EL-P-96	Application of Novel Cyanamide Compounds in CO <sub>2</sub> Reduction	Shuyi Kong
EL-P-97	Atomically dispersed O-coordinated Ni on ordered mesoporous carbon as 2e <sup>-</sup> ORR electrocatalyst	Leonhard Tannesia
EL-P-98	Benzothiophene-based covalent organic frameworks for H <sub>2</sub> O <sub>2</sub> electrosynthesis: The critical role of conjugated structure	Yan Wan
EL-P-99	Bioelectrocatalysis on Electroactive <i>Shewanella Oneidensis</i> in Flow Cells	Jie Cheng
EL-P-100	Bromide-mediated membraneless electrosynthesis of ethylene carbonate from CO <sub>2</sub> and ethylene	Menglu Cai
EL-P-101	Bubble Dynamics during Hydrogen Evolution Reaction over Fluidizable Electrocatalyst Particles	Qing-Nan Wang
EL-P-102	Cation Effects in Electrolytes for Electrocatalysis	Qian Wu
EL-P-103	Cobalt Oxide Anchoring for Designing Heterointerfaces in Nickel-Molybdenum Oxide Electrodes Toward Enhanced Alkaline Hydrogen Evolution Reaction	Kyeong Su Kim

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EL-P-104	COF-Derived Ni-N-C Catalysts Hybridized with MWCNTs for Efficient CO <sub>2</sub> Electroreduction	Sehee Han
EL-P-105	CoO <sub>x</sub> clusters-decorated IrO <sub>2</sub> electrocatalyst activates NO <sub>3</sub> - mediator for benzylic C-H activation	Ziyu Mi
EL-P-106	Direct Electrochemical Conversion of CO <sub>2</sub> from Flue Gas	Wang Meng
EL-P-107	Do Rh-Hydride Phases Contribute to the Catalytic Activity of Rh Catalysts under Reductive Conditions?	Lin Chen
EL-P-108	Dopant-induced switch in rate-determining step enables high current ethylene electrosynthesis at <2 V full-cell voltage	Yang Qin
EL-P-109	Electrocatalytic hydrogenation of alkynes and alkenes using a proton conductive graphene oxide membrane	Sohail Ahmad
EL-P-110	Electrocatalytic Methanol Reforming for Hydrogen Production	Xinlong Lin
EL-P-111	Electrocatalytic nitrate reduction to ammonia coupled with organic oxidation	Jinze Li
EL-P-112	Electrochemical conversion of low concentration nitrate over Ni-loaded CuO nanowires	Xuting Liu Liu
EL-P-113	Electrochemical oxidation of hydrazine and its derivatives catalyzed by transition metal single atoms	Jin Zhang
EL-P-114	Enhancing Direct Borohydride Fuel Cell Performance via Pd/C60 Electrocatalyst and Electrical Double Layer Modulation	Mingwei Shen



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EL-P-115	Grain Boundary Effects of Hierarchical Ni-Fe (Oxy)hydroxide Nanosheets in Water Oxidation	Jing Du
EL-P-116	Graphene quantum dot assemblies for sequential modulation of coordination environment in single-atom catalysts	Sheng Qian
EL-P-117	H/D isotopic labeling elucidates the hydrogen transfer route in electrochemical CO <sub>2</sub> reduction	Jiguang Zhang
EL-P-118	Halogen-Incorporated Sn Catalysts for Selective Electrochemical CO <sub>2</sub> Reduction to Formate	Tian Wang
EL-P-119	Highly Durable Fourteen-Membered Macrocyclic Cobalt Complex Catalysts for Oxygen Reduction and Hydrogen Evolution Reactions	Zhiqing Feng
EL-P-120	In situ investigations on Bi-based electrocatalyst construction and reaction dynamic monitoring toward efficient CO <sub>2</sub> reduction	Zeyang Li
EL-P-121	Interfacial water activation by Pd promotes SO <sub>2</sub> electroreduction to H <sub>2</sub> S on CuPd bimetallic catalysts	Wang Zhujiang
EL-P-122	Lanthanide-Induced Co-Tetrahedral Vacancies Boost Acidic Oxygen Evolution	Tenghui Yuan
EL-P-123	Ligand Engineering on Atomically Precise Metal Nanoclusters for Electrocatalysis	Zhihe Liu
EL-P-124	Mass Transfer-Enhanced Electrocatalytic Urea Synthesis via Nanobubble-MEA Synergy System	Yuhao Qian
EL-P-125	Molecular Self-Assembly in Conductive Covalent Networks for Selective Nitrate Electroreduction to Ammonia	Feiqing Sun
EL-P-126	On-demand and on-site production of hydrogen peroxide via an acid-shuttling strategy	Xiu Lin

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EL-P-127	Optimizing Electronic Synergy of Atomically Dispersed Dual-metal Ni-N4 and Fe-N4 sites with Adjacent Fe nanoclusters for High-efficiency Direct Ammonia Fuel Cells	Bin Wu
EL-P-128	Oxygen-bridging Fe, Co dual-metal dimers boost reversible oxygen electrocatalysis for rechargeable Zn-air batteries	Wendan Xue
EL-P-129	Phase-Dependent Sulfide Catalysts for CO <sub>2</sub> Electrochemical Reduction to HCOOH under Acidic Media	Chenrui Ji
EL-P-130	Poisoning effect of sulfate ions in acidic electrolyte on oxygen evolution on a perovskite-derived IrO <sub>x</sub> H <sub>y</sub> catalyst in water electrolysis	Justin Seow
EL-P-131	Promotion of Nitric Oxide to Ammonia via Nickel Species Enhanced Active Hydrogen Production	Lin Wu
EL-P-132	Pt/IrO <sub>x</sub> enables selective electrochemical C-H chlorination at high current	Bo Wu
EL-P-133	Pt <sub>2</sub> Ni <sub>1</sub> alloy for electrocatalytic ammonia oxidation	Lizhen Liu
EL-P-134	Rapid Joule heating method for preparation of highly-efficiently catalysts	Xiangchao Meng
EL-P-135	Rapid Joule-Heating Synthesis of PtM (M=Ln) Catalysts for Boosted AOR Performance Toward Green Hydrogen Production	Jialei Huang
EL-P-136	Remote Iron dynamics of NiFe (oxy)hydroxides toward robust active sites in water oxidation	Yuwei Zhang
EL-P-138	Selective and Energy Efficient Electrocatalytic CO <sub>2</sub> -to-Ethanol Conversion Through Anion Modulation	Yumin Da



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EL-P-140	Single-Atom Ru-Triggered Lattice Oxygen Redox Mechanism for Enhanced Acidic Water Oxidation	Menghui Qi
EL-P-141	Spin State Effect of Tetrahedron-Coordinated Single Atom Catalysts on CO <sub>2</sub> Electroreduction	Yuan Liu
EL-P-142	Strengthened Ru-O Bond for Robust Oxygen Evolution in Acid Media	Danning Li
EL-P-143	Structural Origin for Efficient Photoelectrochemical Water Splitting over Fe-Modified BiVO <sub>4</sub>	Yi-Fan Hu
EL-P-144	Surface-Modified IrO <sub>2</sub> Electrocatalysts for Efficient Water Splitting	Deep Lata Singh
EL-P-145	Synergistic Effects of Shell-Hollow Confinement Catalysis in Au@Cu <sub>2</sub> O Nanoreactors toward Efficient Electrocatalytic CO <sub>2</sub> to multi-carbon Products	Wenqing Chu
EL-P-146	Tailoring Coordinated Steps with Ni-Substituted Co <sub>3</sub> O <sub>4</sub> Asymmetric Active Unit for Durable and Efficient Acidic Water Oxidation	Yue Qin
EL-P-147	Tuning microenvironment of Bi catalyst for efficient bicarbonate reduction	Miao Wang
EL-P-148	Understanding Catalyst Behavior and Time-Dependent CNT Growth in Molten Salt CO <sub>2</sub> Electroreduction	Cheng Fang
EL-P-149	Understanding the Role of Cu Defects in Electrochemical CO <sub>2</sub> Conversion	Caiwei Zhang
EL-P-150	Vanadium leaching modulated in-situ surface reconstruction of V-doped Ni(OH) <sub>2</sub> for boosting selectivity toward 5-Formylfuran-2-carboxylic acid of 5-Hydroxymethylfurfural electrooxidation	Giang-Son Tran

