



**The 2023 International
Symposium on Clean
Energy and Advanced
Materials**

SYMPOSIUM PROGRAM

CEAM 2023

**July 2023
Suzhou China**



2023 International Symposium on Clean Energy and Advanced Materials

Technical Committee:

Symposium chair:

Prof. Jianglong Yu (MUS)
Prof. Chunghwan Jeon (PNU)

Symposium Secretary:

A/Prof. Baiqian Dai (MUS)

Committee Members:

Prof. Xianyong Wei (CUMT)
Prof. Sankar Bhattacharya (MU)
Prof. Wei-Hsin Chen (NCKU)
Prof. Hairui Yang (THU)
Prof. Kyung Chun Kim (PNU)
Prof. Yansong Shen (UNSW)
Prof. Shu Zhang (NJFU)
Prof. Jin Bai (CAS)
Prof. Fabrizio Scala (UNF)
Prof. Dongfang Li (KUST)
Prof. Artur Blaszczyk (CUT)
Prof. Jingpei Cao (CUMT)
Prof. Lian Zhan (MU)
Prof. Xingxing Chen (USTL)

Dr. Arash Tahmasebi (UoN)
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Dr. Erfeng Hu (CQU)
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Prof. Changdong Sheng (SEU)
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Prof. Liping Chang (TYTU)
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A/Prof. Yuan Cheng (MUS)
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Prof. Jianglong Yu (MUS)
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Mr. Yuhang Qiu (MUS)
Miss. Ruoqun Zhang (MUS)
Mr. Hongzhe He (MUS)
Mr. Pengxiang Zhao (MUS)

**SYMPOSIUM
COMMITTEES**

2023 International Symposium on Clean Energy and Advanced Materials

Plenary Speakers:



Prof. Chunghwan Jeon
Pusan National University



Prof. Sankar Bhattacharya
Monash University



Prof. Hairui Yang
Tsinghua University



Prof. Xianyong Wei
China University of Mining & Technology



Prof. Yansong Shen
University of New South Wales



Prof. Wei-Hsin Chen
National Cheng Kung University



Prof. Kyung Chun Kim
Pusan National University



Prof. Shu Zhang
Nanjing Forestry University

SPEAKERS

2023 International Symposium on Clean Energy and Advanced Materials

Keynote Speakers:



Prof. Jin Bai
University of
Chinese
Academy of
Sciences



**Prof. Lian
Zhang**
Monash
University



**Prof. Xingxing
Chen**
University of
Science and
Technology
Liaoning



**Prof.
Changdong
Sheng**
Southeast
University



**Prof.
Jiancheng
Wang**
Taiyuan
University of
Technology



**Prof. Dongfang
Li**
Kunming
University of
Science and
Technology



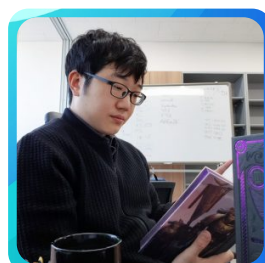
**Prof.
Jingpei Cao**
China
University of
Mining and
Technology



**Prof.
Ruizhi
Yang**
Soochow
University



**A/Prof. Yuan
Cheng**
Monash
University



**A/Prof.
Taekyung
Lee**
Pusan
National
University



**Dr. Arash
Tahmasebi**
University
of
Newcastle
(Australia)



**Dr. Erfeng
Hu**
Chongqing
University

SPEAKERS

2023 International Symposium on Clean Energy and Advanced Materials

General Schedule

Day 1 (Monday, 24 July 2023)															
14:00-17:30		Registration													
17:30		Buffet Dinner													
Day 2 (Tuesday, 25 July 2023)															
8:00-8:20		Opening Ceremony													
8:20-9:40		Plenary Lectures													
8:20	9:00	Chunghwan Jeon													
9:00	9:40	Sankar Bhattachary													
9:40	10:00	Coffee Break													
10:00-12:10		Session 1		10:00-12:10		Session 2		10:00-12:10		Session 3		10:00-12:10		Session 4	
10:00	10:30	keynote lecture		10:00	10:30	keynote lecture		10:00	10:30	keynote lecture		10:00	10:30	keynote lecture	
10:30	12:10	Oral		10:30	12:10	Oral		10:30	12:10	Oral		10:30	12:10	Oral	
12:10-13:00		Lunch Break													
13:00-14:20		Plenary Lectures													
13:00	13:40	Hairui Yang													
13:40	14:20	Kyung Chun Kim													
14:20	14:30	Coffee Break													
14:30-17:30		Session 1		15:30-18:10		Session 2		15:30-18:10		Session 3		15:30-18:10		Session 4	
14:30	15:00	keynote lecture		14:30	15:00	keynote lecture		14:30	15:00	keynote lecture		14:30	15:00	keynote lecture	
15:00	17:30	Oral		15:00	17:30	Oral		15:00	17:30	Oral		15:00	17:30	Oral	
17:30		Buffet Dinner													
Day 3 (Wednesday, 26 July 2023)															
8:30-10:10		Plenary lectures													
8:30	9:10	Xianyong Wei													
9:10	9:50	Yansong Shen													
9:50	10:00	Coffee Break													
10:00-12:10		Session 1		10:00-12:10		Session 2		10:00-12:10		Session 3		10:00-12:10		Session 4	
10:00	10:30	keynote lecture		10:00	10:30	keynote lecture		10:00	10:30	keynote lecture		10:00	10:30	keynote lecture	
10:30	12:10	Oral		10:30	12:10	Oral		10:30	12:10	Oral		10:30	12:10	Oral	
12:10-13:00		Lunch Break													
13:00-14:20		Plenary lectures													
13:00	13:40	Wei-Hsin Chen													
13:40	14:20	Shu Zhang													
14:20-15:30		Session 1		14:30-17:30		Session 2		14:30-17:30		Session 3		14:30-17:30		Session 4	
14:30	15:30	Oral		14:30	17:30	Oral		14:30	17:30	Oral		14:30	17:30	Oral	
15:30	15:50	Coffee Break													
15:50-17:00		Poster Session													
18:00		Symposium Dinner (with best paper awards)													

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Day 2 Morning (Tuesday, 25 July 2023)

8:00-8:20		Opening Ceremony			
8:20-9:40		Plenary Lectures (Conference Hall)			
		Chair: Jianglong Yu			
8:20	9:00	Chunghwan Jeon			
9:00	9:40	Sankar Bhattachary			
9:40	10:00	Coffee Break			
10:00-12:10		Session 1			
		Pyrolysis, gasification, and combustion of solid fuels			
		Chair: Erfeng Hu			
10:00	10:30	Jingpei Cao (keynote lecture)			
10:30	12:10	Oral			
10:30	10:50	Che-An Lin	Prediction of thermogravimetric analysis for torrefaction by means of machine learning and whale optimization algorithm	National Cheng Kung University	
10:50	11:10	Wenqing Lv	Fast co-pyrolysis of a massive Naomaoahu coal and waste tyre mixture under negative pressure	Dalian University of Technology	
11:10	11:30	Hongfang Zhou	Characterization of pulverized biomass particles by image analysis	Southeast University	
11:30	11:50	Lei Huang	Effect of temperature on the formation of PM10 from high-sodium coal under gasification conditions in a flat-flame reactor	Chinese Academy of Sciences	
11:50	12:10	Xudong Song	Rheological properties of molten slag in entrained flow co-gasification of coal and other feedstocks	Ningxia University	
10:00-12:10		Session 2			
		Waste treatment and pollution control			
		Chair: Jiancheng Wang			
10:00	10:30	Changdong Shen (keynote lecture)			
10:30	12:10	Oral			
10:30	10:50	Tingting Zhang	Interpretation of interactions between Hami coal and low-density polyethylene during co-pyrolysis from the bond cleavage perspective	Chinese Academy of Sciences	
10:50	11:10	Shujun Sun	The Truth about NO Removal using NaOH/H2O2 System and a New Method for NO Removal under Low Alkali Condition	Southeast University	
11:10	11:30	Yan Guo	Effects of CO and CO2 on the desulfurization of H2S over zeolite: the study of COS generation	Taiyuan University of Technology	
11:30	11:50	Dunyu Liu	Mechanism of mercury removal by copper based oxygen carriers during chemical looping combustion of coal	University of Shanghai for Science and Technology	
11:50	12:10	Biao Kuang	Reduction of copper smelting slag using coal tar slag	Kunming University of Science and Technology	
10:00-12:10		Session 3			
		Carbon neutrality technology			
		Chair: Lian Zhang			
10:00	10:30	Ruizhi Yang (keynote lecture)			
10:30	12:10	Oral			
10:30	10:50	Chengyi Lu	A High Performance Lithium Composite Anode with Li3N In-situ Modification	Soochow University	
10:50	11:10	Xiaoxiao Qu	A Flexible Carbon Nanofiber/Coal-based Carbon Dots/CoOx Film as a Free-standing Anode for High-performance Sodium-Ion Batteries with Advanced Cycling Stability	Henan Polytechnic University	
11:10	11:30	Haoran Pan	ZIF-derived three-dimensional self-supported oxygen reduction reaction electrocatalysts for rechargeable zinc-air batteries	University of Science and Technology Liaoning	
11:30	11:50	Wei Lin Ng	CO2 carboxylation with Ethylene Glycol to produce Ethylene Carbonate on different CeO2 nanostructured catalyst	Monash University	
11:50	12:10	Zhenxi Ma	Multi-criteria optimization of an integrated energy system driven by power grid, photovoltaic and fuel cell	Southeast University	
10:00-12:10		Session 4 (with online meeting room)			
		Energy Storage Technology			
		Chair: Yuan Cheng			
10:00	10:30	Dongfang Li (keynote lecture)			
10:30	12:10	Oral			
10:30	10:50	Liye Shuai	Improvement of photoelectrochemical water oxidation performance by CoFe modified BiOI/TiO2 heterostructure	University of Science and Technology Liaoning	
10:50	11:10	Si-Hyun Cho	Numerical analysis of ammonia pyrolysis reactor using catalyst for hydrogen production	Pusan National University	
11:10	11:30	Hanming Liu	Evaluation of process intensification techniques to enable low-cost and fuel-efficient carbon capture in decarbonising China Huaneng Longdong coal-fired power plant	China Huaneng Group Clean Energy Research Institute	
11:30	11:50	Fengxia Shen	Bipolar Membrane Electrolyzer for CO2 electro-reduction to CO in organic electrolyte with NaClO Produced as byproduct	Kunming University of Science and Technology	
11:50	12:10	Babar Shahzad	Scalable NPAQR-based Molecular Nanocarbons and Their Function-targeted Refactoring with Enhanced Electrical Conductivity and Resilient-elasticity Recovery for Electrochemical Energy Storage	Soochow University	
12:10-13:00		Lunch Break			

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Day 2 Afternoon (Tuesday, 25 July 2023)

13:00-14:20		Plenary Lectures (Conference Hall)		
		Chair: Chunghwan Jeon		
13:00	13:40	Hairui Yang		
13:40	14:20	Kyung Chun Kim		
14:20	14:30	Coffee Break		
14:30-17:20		Session 1		
		Pyrolysis, gasification, and combustion of solid fuels		
		Chair: Jin Bai		
14:30	15:00	Erfeng Hu (keynote lecture)		
15:00	17:20	Oral		
15:00	15:20	Yuxing Jia	Effect of chromium on the spatial distribution of sulfur during pyrolysis with high organic sulfur	Chinese Academy of Sciences
15:20	15:40	Yongfu Zeng	Co-pyrolysis kinetics, thermodynamics and fast pyrolysis product characteristics of long flame coal and furfural residue	Chongqing University
15:40	16:00	Ruofei Wu	Catalytic upgrading of cow manure pyrolysis vapors over zeolite/carbon composites prepared from coal gasification fine slag: high quality bio-oil obtaining and mechanism investigation	Ningxia University
16:00	16:20	Lunjing Yan	Integrated technology of dust removal and in-situ catalytic upgrading of low rank coal pyrolysis tar	Taiyuan University of Technology
16:20	16:40	Hao-Dong Liu	Rapid Construction of Molecular Model of Coal based on Deep Learning	North China University of Science and Technology
16:40	17:00	Anjiang Gao	Volatile-char interactions during biomass pyrolysis: reactor design toward product control	Nanjing Forestry University
14:30-17:20		Session 2		
		Waste treatment and pollution control		
		Chair: Xingxing Chen		
14:30	15:00	Jiancheng Wang (keynote lecture)		
15:00	17:20	Oral		
15:00	15:20	Weiguo Ren	Seeds Solution-Induced Formation of Zeolite Cu-SSZ-13 without template for NH ₃ -SCR of NO	Taiyuan University of Technology
15:20	15:40	Junrong Yuan	Distribution of the pyrolysis products from Karamay oily sludge at different temperatures based on TG-FTIR-GCMS technology	Xinjiang University
15:40	16:00	Bin Liu	Coal gasification fine slag based multifunctional nanoporous silica microspheres for synergistic adsorption of Pb(II) and Congo red	Ningxia University
16:00	16:20	Shi Cheng	Co-treatment of waste oil and copper slag for reuse and recover the heavy metals	Kunming University of Science and Technology
16:20	16:40	Zhikao Li	Overall performance and microbial community analysis of a full-scale aerobic cold-rolling emulsion wastewater (CREW) treatment system	Monash University
16:40	17:00	Jingjing Wang	Encaging of Cu Single Atomic Active Sites into Hollow Y Zeolites for Efficient Adsorption of Thiophene in Presence of Benzene	Taiyuan University of Technology
14:30-17:20		Session 3		
		Carbon free energy technology (Hydrogen and Ammonia)		
		Chair: Ruizhi Yang		
14:30	15:00	Lian Zhang (keynote lecture)		
15:00	17:20	Oral		
15:00	15:20	Wen-Jing Zhang	Sustainable Production of High-Energy-Density Jet Fuel	China University of Mining and Technology
15:20	15:40	Yi-Jie Zeng	Simulation study on combustibility and NO _x emission for NH ₃ -coal co-combustion in 500MW tangentially pulverized-coal boiler	Pusan National University
15:40	16:00	Jie Guo	Gradient MPL Constructed with Silane-grafted Porous Carbon for High-performance PEMFCs	Soochow University
16:00	16:20	Lijun Zhang	Fe ₃ C for catalytic decomposition of methane to hydrogen	Dalian University of Technology
16:20	16:40	Zhixian Bao	Efficient Ni/Y ₂ O ₃ catalyst prepared by sol-gel self-combustion method for ammonia decomposition to hydrogen	Dalian University of Technology
16:40	17:00	Di Wu	Industrial-scale Biomass Gasification-Chemical Looping Hydrogen Production Process: Thermodynamic Simulation and Performance Analysis	Southeast University
14:30-17:20		Session 4 (with online meeting room)		
		Metallurgical coke production		
		Chair: Yunze Hui		
14:30	15:00	Arash Tahmasebi (keynote lecture)		
15:00	17:20	Oral		
15:00	15:20	Beibei Cui	Affecting mechanism of heating rate on the fluidity property and coke structure during coal carbonization	Taiyuan University of Technology
15:20	15:40	Pengxiang Zhao	A Digital Twin Framework Modeling Strategy Embedded with CFD and Machine Learning for Cokemaking Process	Monash University
15:40	16:00	Joseph Donkor Appiah	Investigating the impact of coal rank on the structural changes in the aromatic nucleus of coal during coking	University of Science and Technology Liaoning
16:00	16:20	Yuhang Qiu	A Domain Adaptation-based Framework for Improving Coke Quality Prediction Applicability Across Diverse Distribution of Chinese Coal and Blends	Monash University
16:20	16:40	Guo Jiang	Investigation on the mechanism of process-oriented regulation of sulfur in coking coal by mass transfer behavior of volatiles	Taiyuan University of Technology
16:40	17:00	Yuting Zhuo	Numerical study of ferro coke production process optimisation (from lab-scale to industrial scale)	University of New South Wales
17:30		Buffet Dinner		

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Day 3 Morning (Wednesday, 26 July 2023)

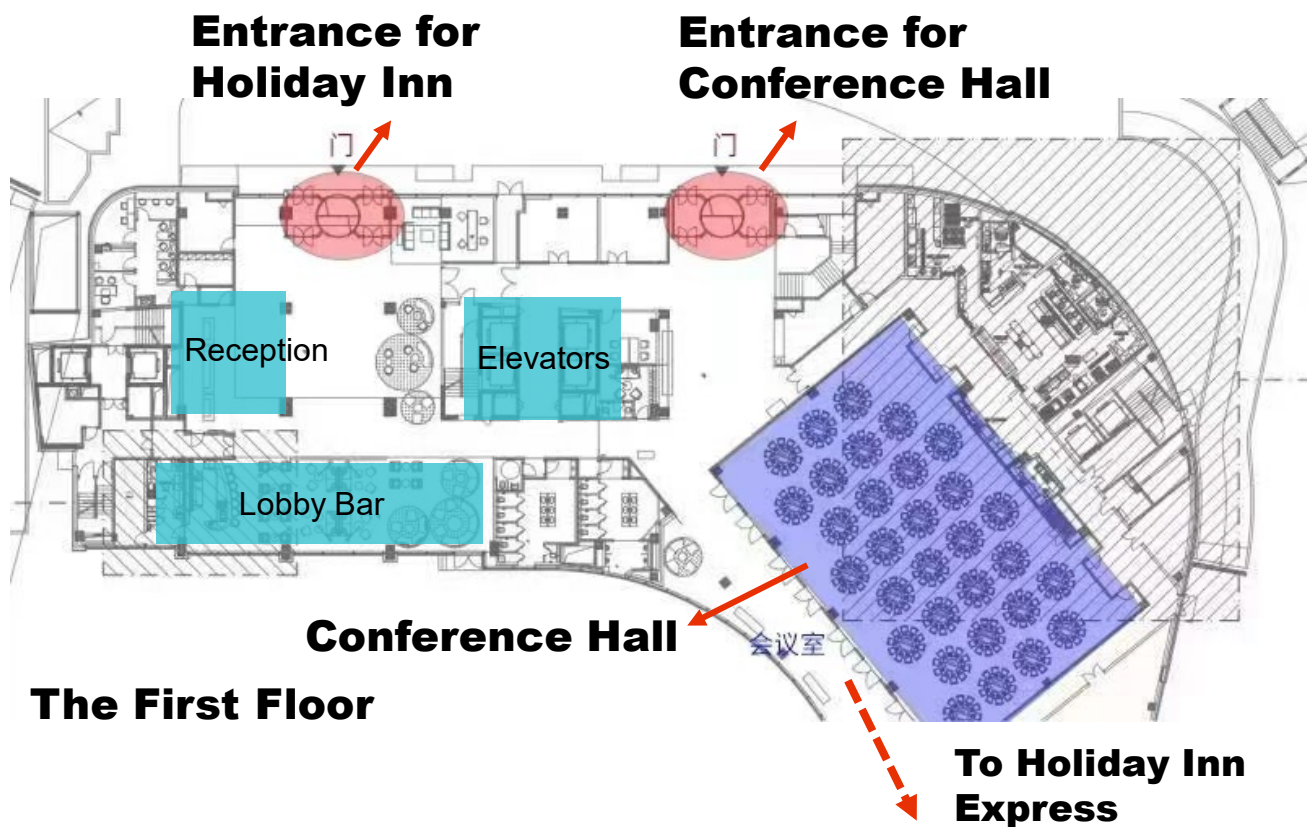
8:30-10:10		Plenary lectures (Conference Hall)		
		Chair: Wei-Hsin Chen		
8:30	9:10	Xianyong Wei		
9:10	9:50	Yansong Shen		
9:50	10:00	Coffee Break		
10:00-12:10		Session 1		
		Pyrolysis, gasification, and combustion of solid fuels		
		Chair: Zhikao Li		
10:00	10:30	Taekyung Lee (keynote lecture)		
10:30	12:10	Oral		
10:30	10:50	Yujie Zhang	Biomass catalytic pyrolysis over CaO microspheres: Relationship between the production of bio-oil components and CO ₂ capture	Ningxia University
10:50	11:10	Xiaorong Li	Study on the tar composition and coke structure in the reaction of volatiles and tetralin during rapid pyrolysis of Naomaohu coal	Taiyuan University of Technology
11:10	11:30	Hyung-Tae Kim	Numerical research of pet-coke gasification mechanism for blue hydrogen production	Pusan National University
11:30	11:50	Yi-Bin Huang	Char structural evolution of Meihuajing lump coal during pyrolysis	China University of Mining and Technology
11:50	12:10	Guo Yu	Escaping mechanism for volatile products of coal pyrolysis determined by in-situ pyrolysis mass spectrometry	Shandong University of Science and Technology
10:00-12:10		Session 2		
		Advanced carbon materials		
		Chair: Changdong Shen		
10:00	10:30	Xingxing Chen (keynote lecture)		
10:30	12:10	Oral		
10:30	10:50	Yahui Wang	Targeted Strategies to Prepare Mercury Sorbent from Different High Sulfur Coals	Taiyuan University of Technology
10:50	11:10	Li Li	Advances in specific catalytic hydrogenation of 2-butyne-1,4-diol to butane-1,4-diol	China University of Mining and Technology
11:10	11:30	Pingping Zuo	Preparation of pitch-based carbon fiber from medium coal tar pitch refined by wash oil	Chinese Academy of Sciences
11:30	11:50	Li Zhan	The characteristics and adsorption behavior of porous materials with high adsorption capacity for phenol from aqueous solution: A review	University of Science and Technology Liaoning
11:50	12:10	Shuang Wang	Theoretical analysis of gas hydrodynamic lubrication in a carbon segmented seal with the local Differential Quadrature-Lagrange method	Shenyang Aerospace University
10:00-12:10		Session 3		
		Solid fuels to chemicals and solid fuel chemistry		
		Chair: Jingpei Cao		
10:00	10:30	Jin Bai (keynote lecture)		
10:30	12:10	Oral		
10:30	10:50	Liu-Li Xuan	Monosaccharide yield improvement using alkaline ionized water pretreatment and microwave-assisted heating hydrolysis of Gracilaria for bioethanol production	National Cheng Kung University
10:50	11:10	Hongzhe He	Molybdenum and Cobalt Selenides-Supported on Coal Gasification Slag Residual Carbon as Electrocatalyst for Water Splitting	Monash University
11:10	11:30	Ji Xu	Effect of acid washing on the structure of USY and catalytic upgrading of biomass pyrolysis volatiles	Dalian University of Technology
11:30	11:50	Ruoqun Zhang	Synthesis of defected iron oxide nanomaterials from red mud: A detailed study on the structure and application to mixture VOCs catalytic	Monash University
11:50	12:10	Fang-Jing Liu	Mild hydroconversion of lignite and its derivatives for producing value-added chemicals	China University of Mining and Technology
10:00-12:10		Session 4		
		Chair: Lian Zhang		
10:00	10:30	Yuan Cheng (keynote lecture)		
10:30	12:10	Oral		
10:30	10:50	Qifu Luo	Insights into the oxygen-containing groups transformation during coal char gasification in H ₂ O/CO ₂ atmosphere by using ReaxFF reactive force field	Ningxia University
10:50	11:10	Ji-Hwan Lee	A Study on the Applicability of Coal Combustion Algorithm through ANN-based Boiler NO _x Emission Prediction	Pusan National University
11:10	11:30	Qingqing Liu	Pyrolysis behaviors of cedar under different atmospheres in a fixed-bed reactor	Dalian University of Technology
11:30	11:50	Jiaofei Wang	In-situ release detection and mechanism of alkali metals during coal and biomass co-pyrolysis/gasification	Ningxia University
11:50	12:10	Weibo Tie	Insight into the multiple interactions in the coking process of binary blends	University of Science and Technology Liaoning
12:10-13:00	Lunch Break			

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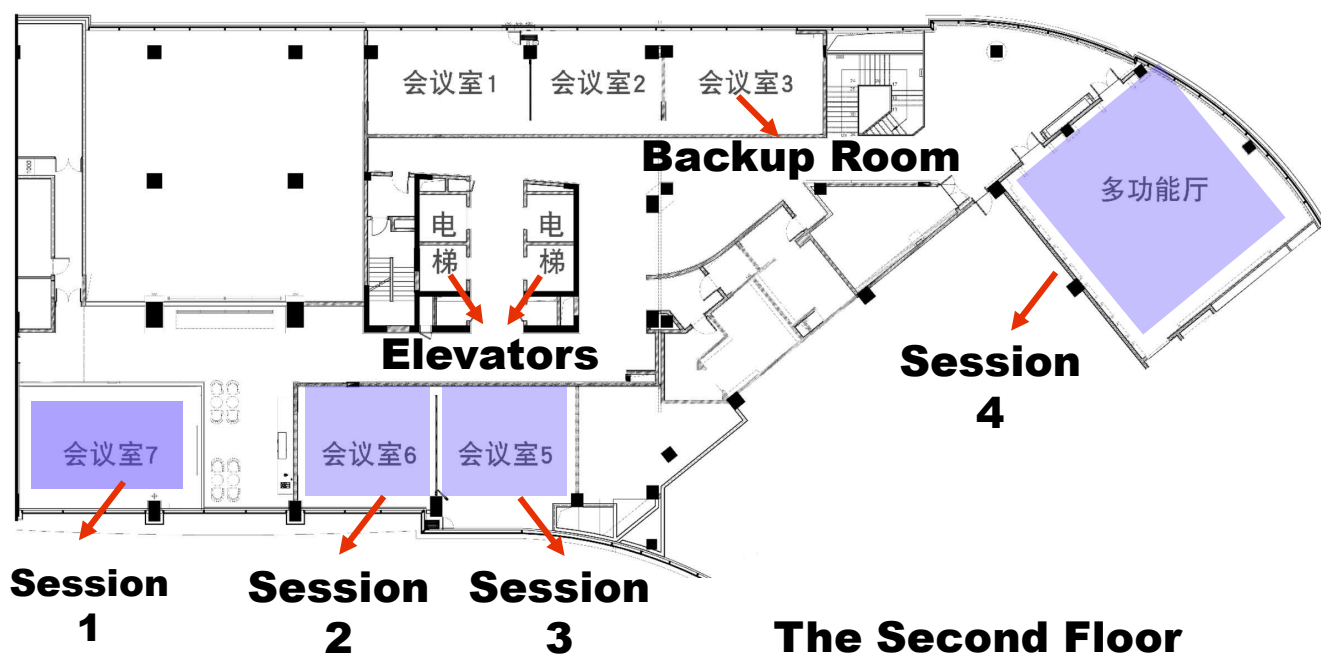
Day 3 Afternoon (Wednesday, 26 July 2023)

13:00-14:20		Plenary Lectures (Conference Hall)		
		Chair: Sankar Bhattacharya		
13:00	13:40	Wei-Hsin Chen		
13:40	14:20	Shu Zhang		
14:30-15:30		Session 1		
		Chair: Taekyung Lee		
		Oral		
14:30	14:50	Youming Yang	Nitrogen-doped carbon catalyst preparation by grading of nitrogen-rich livestock and poultry waste And the mechanism of in situ-tar directional conversion of catalytic biomass pyrolysis	Ningxia University
14:50	15:10	Qingqing Liu	Pyrolysis behaviors of cedar under different atmospheres in a fixed-bed reactor	Dalian University of Technology
15:10	15:30	Yang liu	Regulation of co-pyrolysis behavior of Naomaohu coal and polypropylene by controlling the cracking of polypropylene pyrolysis volatiles	Xinjiang University
14:30-15:30		Session 2		
		Chair: Xingxing Chen		
		Oral		
14:30	14:50	Wenjing Zhang	Effect of methanol extract on organic sulfur transformation during high sulfur coal pyrolysis	Taiyuan University of Technology
14:50	15:10	Jinlong Du	Co-pyrolysis of coal tar slag and wine lees into biochar-based briquette	Kunming University of Science and Technology
15:10	15:30	Yalkunjan Tursun	Exploring the interaction between biomass pyrolysis volatiles and oxygen carrier for biomass chemical looping gasification	Xinjiang University
14:30-15:30		Session 3		
		Chair: Jinxiao Dou		
		Oral		
14:30	14:50	Kaibing Zhang	Modeling optimization and economic evaluation for a typical VOCs thermal conversion process	Monash University
14:50	15:10	Jiakun Mei	Simulation of ammonia/biomass co-firing of the down-fired furnace using CFD modelling and a reduced chemistry mechanism	Kunming University of Science and Technology
15:10	15:30	Bing Wang	Interzeolite transformation of Zeolite from Coal Fly Ash-Derived Analcime	Taiyuan University of Technology
14:30-15:30		Session 4		
		Chair: Jin Bai		
		Oral		
14:30	14:50	Peng Lv	Tandem catalytic upgrading of cow manure pyrolysis volatiles over Ru/C and ZSM-5 dual catalysts graded preparation from coal gasification fine slag	Ningxia University
14:50	15:10	Jiaofei Wang	In-situ release detection and mechanism of alkali metals during coal and biomass co-pyrolysis/gasification	Ningxia University
15:10	15:30	Jing-Ping Zhao	Catalytic reforming of lignite pyrolysis volatiles over HZSM-5: Significance of dealumination and realumination	China University of Mining and Technology
15:30	15:50	Coffee Break		
15:50-17:00		Poster Session (Conference Hall) (Chair: Jianglong Yu, Dr Yunze Hui)		
18:00		Symposium Dinner		

Venue Guide



The First Floor



2023 International Symposium on Clean Energy and Advanced Materials

Notes



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