



**QUEEN'S
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BELFAST**

IACC-ICCU Conference Programme (Draft)

International Association for Carbon Capture Conference 2024

Topic: Integrated CO₂ Capture and Utilisation

Organiser: International Association for Carbon Capture (IACC)

Host organiser: Queen's University Belfast

Co-organiser:

- Columbia University in the City of New York,
- East China University of Science and Technology,
- National University of Singapore,
- University of the Basque Country UPV/EHU
- University of Naples Federico II
- Khalifa University of Science and Technology

Chair: Dr Chunfei Wu, Queen's University Belfast

Co-chair:

- Dr Ludovic Dumeénil, Khalifa University of Science and Technology, UAE
- Professor Robert (Bob) Farrauto, Columbia University in the City of New York, USA
- Professor Juan R. González-Velasco, University of the Basque Country UPV/EHU, Spain
- Professor Jun Hu, East China University of Science and Technology, China
- Professor Sibudjing Kawi, National University of Singapore, Singapore
- Professor Fabrizio Scala, University of Naples Federico II, Italy

Date: 3 January 2024

Conference type: Virtual

Contact email: c.wu@qub.ac.uk

Organisation committee:

- Bo Jin, Hunan University
- Changlei Qin, Chongqing University
- Chunfei Wu, Queens University Belfast
- Hongman Sun, China University of Petroleum (East China)
- Hui Zhou, Tsinghua University
- Jun Hu, East China University of Science and Technology
- Shuzhuang Sun, Zhengzhou University
- Xiangkun Cao, Massachusetts Institute of Technology
- Yimin Shao, The University of Edinburgh
- Yongqing Xu, Tsinghua University
- Yuan Zhu, Queens University Belfast
- Yuanyuan Wang, Queens University Belfast



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IACC-ICCU overall programme arrangement

UK time (03 Jan 2024)				
09:00	Opening	Main meeting room		
09:05	Plenary 1	Main meeting room		
09:50	Keynote A1 and A2	Main meeting room/Parallel Room A	Keynote B1 and B2	Parallel Room B
10:30	Oral presentations	Main meeting room/Parallel Room A	Oral presentations	Parallel Room B
11:30	Break		Break	
11:40	Keynote A3 and A4	Main meeting room/Parallel Room A	Keynote B3 and B4	Parallel Room B
12:20	Oral presentations	Main meeting room/Parallel Room A	Oral presentations	Parallel Room B
13:45	Plenary 2	Main meeting room		
14:25	Awards and closing	Main meeting room		

Free conference registration

<https://science-event.com/event/conference-iacc-iccu-conference/>

Optional registration with fees (£100)/donation to IACC

<https://buy.stripe.com/4gwbK3825dRhaDS8wz>



Scan to pay



Awards:

- The IACC-ICCU conference will provide 10 Excellent IACC Presentation awards to speakers (IACC certificate only)
- Another six IACC-ICCU awards (£50 each and a certificate) will be provided from an online raffle event. The awardees will be randomly picked from conference participants using online software.

Please register for the conference (<https://science-event.com/event/conference-iacc-iccu-conference/>) to participate in this raffle event.



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Main room and parallel room A TEAMS link:

https://teams.microsoft.com/l/meetup-join/19%3ameeting_ZTdmMzg5NzAtYWQwMi00NGU4LTlIMjMtYzZIMWY2MDU1ZjM4%40thread.v2/0?context=%7b%22Tid%22%3a%22eaab77ea-b4a5-49e3-a1e8-d6dd23a1f286%22%2c%22Oid%22%3a%2251d684d7-fec6-4c0d-9539-b9fe19032910%22%7d

Parallel room B TEAMS link:

https://teams.microsoft.com/l/meetup-join/19%3ameeting_MjY2M2VIMTMtMTJjMy00ODZiLTk2NWUtMDg2ZTIyNzc5OTgw%40thread.v2/0?context=%7b%22Tid%22%3a%22eaab77ea-b4a5-49e3-a1e8-d6dd23a1f286%22%2c%22Oid%22%3a%2251d684d7-fec6-4c0d-9539-b9fe19032910%22%7d



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Detailed programme (draft)

Main meeting room

UK Time		Chair:	Dr Yeshui Zhang
		Speaker	Title
9:00-9:05		Chunfei Wu	Conference Opening
9:05-9:45	P-1	Professor Fabrizio Scala	CO ₂ capture and catalytic methanation over dual function materials in a twin fluidised bed reactor

Main meeting room/parallel room A

UK Time		Chair:	Dr Professor Fabrizio Scala
		Speaker	Title
9:50-10:10	KA-1	Bo Jin	Chemical looping CO ₂ capture and in-situ conversion: a promising platform for green and low-carbon industry transition
10:10-10:30	KA-2	Stefano Cimino	Sulfur tolerance and self-regeneration mechanism of Li-Ru/Al ₂ O ₃ DFM during the integrated CO ₂ capture and methanation
		Chair	Dr Changlei Qin
10:30-10:45	OA-1	Zouhair Boukha	La-modified hydroxyapatite-based DFMs: Preparation, characterisation and performance in the ICCU-methanation process
10:45-11:00	OA-2	Unai De La Torre	Lanthanum partial substitution by basic cations in LaNiO ₃ /CeO ₂ precursors to develop new generation DFMs for ICCU technology



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11:00-11:15	OA-3	Elena Gómez Bravo	Modeling the CO ₂ hydrogenation to CH ₄ for application in the Integrated Carbon Capture and Utilization (ICCU)
11:15-11:30	OA-4	Jie Chu	Comparative study on integrated CO ₂ capture and conversion performance of Ni-Na ₂ ZrO ₃ bifunctional materials
11:30-11:40			<i>Break</i>
		Chair	Dr Bo Jin
11:40-12:00	KA-3	Nannan Sun	Continuous decarbonisation of flue gas by integrated carbon capture and conversion to methane
12:00-12:20	KA-4	Changlei Qin	Reaction characteristics and technical analysis of Integrated CO ₂ capture and methanation
12:20-12:35	OA-5	Chae Jeong-Potter	Modified Cu-Zn-Al mixed oxide dual function materials enable reactive carbon capture to methanol
12:35-12:50	OA-6	Shuzhuang Sun	Integrated CO ₂ capture and hydrogenation using transition-metal free dual functional materials
		Chair	TBC
12:50-13:05	OA-7	Boyu Li	Amidation-Reaction Strategy Constructs Versatile Mixed Matrix Composite Membranes Towards Efficient Volatile Organic Compounds Adsorption and CO ₂ Separation
13:05-13:20	OA-8	Jizhou Wu	Research on the Route of Carbon Capture Technology for New Pollutants
13:20-13:35	OA-9	Xiao Feng	Controlled synthesis of defective MOFs for separation



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13:35-13:50	OA-10	Qi Huang	Photo responsive porous materials for Low energy CO ₂ capture and conversion
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Parallel Room B

UK Time		Chair:	Professor Juanra Gonzalez
		Speaker	Title
9:50-10:10	KB-1	Xiangyang Liu	Carbon dioxide capture and energy storage system for coal-fired power plant
10:10-10:30	KB-2	Vincenzo	Enabling blue hydrogen production via chemical looping reforming: technology scale up and process feasibility
		Chair:	TBC
10:30-10:45	OB-1	Muhammad Nadeem Shaheen	Carbon capture
10:45-11:00	OB-2	Yusak Hartanto	Chitosan-coated polyvinylidene fluoride biocatalytic gas-liquid membrane contactor for carbon capture application
11:00-11:15	OB-3	Omnya Al-yafiee	Atmospheric Water Generation to Direct air capture of CO ₂
11:15-11:30	OB-4	Pablo Comendador Morales	Parametric study of the sorption enhanced steam reforming of biomass fast pyrolysis volatiles
11:30-11:40			<i>Break</i>
		Chair:	TBC



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11:40-12:00	KB-3	Yan Liu	Enhanced Tibetan geological carbon sink: A cheap end to rapidly escalating atmospheric CO ₂ concentrations
12:00-12:20	KB-4	Yafei Guo	Recent Advances in Ni-based Dual Function Materials for Integrated CO ₂ Capture and Conversion
12:20-12:35	OB-5	Ziwen Xiong	Prediction of carbon emissions based on machine learning of coal-fired power plants
12:35-12:50	OB-6	Yangna Luo	Modulation of the performance of CO ₂ electrocatalytic reduction to syngas over copper-based bimetallic catalysts
		Chair	Dr Yaofei Guo
12:50-13:05	OB-7	Rajashree Borgohain	A review on the conversion of CO ₂ to hydrocarbon fuel using bio-inspired hybrid photocatalyst: A green and sustainable route for CO ₂ utilisation
13:05-13:20	OB-8	Dr Syed Ali Ammar Taqvi	Energy, exergy, economic, environment, exergo-environment based assessment of amine-based hybrid solvents for natural gas sweetening
13:20-13:35	OA-9	Hushan Chand	Facile Low-Temperature Synthesised Novel Carbon Nitrides for Efficient Carbon Dioxide Conversion into Value-Added Chemicals

Main meeting room

UK Time		Chair:	Professor Jun Hu
		Speaker	Title
13:45-14:25	P-2	Professor Daryl Williams	Metrics for Assessing Adsorbent Performance for Gas Phase Carbon Capture



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14:25-14:45

Chunfei Wu

Raffle event, Awards and Closing