

Programme Overview

Abbreviations:

PL - Plenary; **KN** - Keynote; **O** - Oral; **P** - Poster; **V** - Virtual;

SCTH - South Campus Teaching Hub; **LT** - Lecture Theatre;

UK time - British Summer Time (BST), UTC+1.

03/07/2022 (Sunday)	04/07/2022 (Monday)				05/07/2022 (Tuesday)				06/07/2022 (Wednesday)				07/07/2022 (Thursday)	
15:00 – 18:00 Registration	08:00 - 09:00		Registration											
	08:40 - 09:00		Welcome ceremony											
	09:00 – 09:45		PL-1		09:00 – 09:45		PL-2		09:00 – 09:45		PL-3		Session 1	
	Session 1		Session 2		Session 1		Session 2		Session 1		Session 2		09:00 – 09:30 KN-8	
	09:45 – 10:00	O-1	09:45 – 10:00	O-8	09:45 – 10:00	O-23	09:45 – 10:00	O-30	09:45 – 10:00	O-45	09:45 – 10:00	O-48	09:45 – 10:00	O-55
	10:00 – 10:15	O-2	10:00 – 10:15	O-9	10:00 – 10:15	O-24	10:00 – 10:15	O-31	10:00 – 10:15	O-46	10:00 – 10:15	O-49	10:00 – 10:15	O-56
	10:15 – 10:30	O-3	10:15 – 10:30	O-10	10:15 – 10:30	O-25	10:15 – 10:30	O-32	10:15 – 10:30	O-47	10:15 – 10:30	O-50	10:15 – 10:30	O-57
	10:30 – 11:00		Coffee break		10:30 – 11:00		Coffee break		10:30 – 11:00		Coffee break		10:15 – 10:30 O-58	
	11:00 – 11:30		KN-1		11:00 – 11:30		KN-4		Session 3		10:30 – 11:00		Coffee break	
	Session 3		Session 4		Session 3		Session 4		11:00 – 11:30		KN-7		Session 2	
	11:30 – 11:45	O-4	11:30 – 11:45	O-11	11:30 – 11:45	O-26	11:30 – 11:45	O-33	11:30 – 11:45		O-51		11:00 – 11:30 KN-9	
	11:45 – 12:00	O-5	11:45 – 12:00	O-12	11:45 – 12:00	O-27	11:45 – 12:00	O-34	11:45 – 12:00		O-52		11:30 – 11:45 O-59	
	12:00 – 12:15	O-6	12:00 – 12:15	O-13	12:00 – 12:15	O-28	12:00 – 12:15	O-35	12:00 – 12:15		O-53		11:45 – 12:00 O-60	
	12:15 – 12:30	O-7	12:15 – 12:30	O-14	12:15 – 12:30	O-29	12:15 – 12:30	O-36	12:15 – 12:30		O-54		12:00 – 12:15 O-61	
12:30 – 14:00		Lunch		12:30 – 14:00		Lunch		12:30 – 14:00		Lunch		12:15 – 12:30 O-62 12:45 – 14:00 Lunch		
Session 5				14:00 – 14:30		KN-5								
14:00 – 14:30		KN-2		14:30 – 15:00		KN-6								
14:30 – 14:45		O-15		Session 5		Session 6								
14:45 – 15:00		O-16		15:00 – 15:15		O-37		15:00 – 15:15		O-41				
15:00 – 15:15		O-17		15:15 – 15:30		O-38		15:15 – 15:30		O-42				
15:15 – 15:30		O-18		15:30 – 15:45		O-39		15:30 – 15:45		O-43				
15:30 – 16:00		Coffee break		15:45 – 16:00		O-40		15:45 – 16:00		O-44				
Session 6				16:00 – 16:15		Coffee break								
16:00 – 16:30		KN-3												
16:30 – 16:45		O-19												
16:45 – 17:00		O-20												
17:00 – 17:15		O-21												
17:15 – 17:30		O-22												
18:30		Dinner		18:30		Dinner		19:30		Dinner				

Scientific Program

Day 1 (Monday, 4th July 2022)

Zoom Meeting ID: TBC

Meeting Link: TBC

08:40 – 09:00	Welcome	
Plenary Lecture (SCTH LT2) Chair: Xin Tu		
09:00 – 09:45	PL-1 Plasma catalysis for nitrogen fixation and CO ₂ conversion Hyun-Ha Kim , <i>National Institute of Advanced Industrial Science and Technology (AIST), Japan</i>	
Session 1 (SCTH LT2) Chair: Michail Tsampas		Session 2 (SCTH LT1) Chair: Lanbo Di
09:45 – 10:00	O-1 Discharge and surface mechanisms in plasma-assisted NH ₃ synthesis Gómez-Ramírez Ana , <i>CSIC-Universidad de Sevilla, Spain</i>	O-8 High performance TMD/rGO-based HER catalysts using plasma Treatment (V) Shuyu Zhang , <i>Fudan University, China</i>
10:00 – 10:15	O-2 Plasma-catalytic ammonia synthesis under ambient conditions Yaolin Wang , <i>University of Liverpool, UK</i>	O-9 Tuning oxide overlayers of CuCoS/CuCoO as efficient bifunctional catalyst for oxygen electrocatalysis (V) Jingxuan Zheng , <i>Tianjin University, China</i>
10:15 – 10:30	O-3 Reaction mechanisms and process considerations for plasma-catalytic ammonia synthesis Kevin H. R. Rouwenhorst , <i>University of Twente, The Netherlands</i>	O-10 Synthesis of amorphous molybdenum/tungsten sulfide/reduced graphene oxide nanocomposites toward efficient electrocatalytic H ₂ production using plasma treatment (V) Dai Zhang , <i>Fudan University, China</i>
10:03 – 11:00	Coffee break	
Keynote Lecture (SCTH LT2) Chair: Changjun Liu		
11:00 – 11:30	KN-1 Plasma-enhanced metal-support interaction for engineering robust Ni-based catalysts (V) Xiaoliang Yan , <i>Taiyuan University of Technology, China</i>	

Session 3 (SCTH LT2) Chair: Shaojun Xu		Session 4 (SCTH LT1) Chair: Xiaoliang Yan	
11:30 – 11:45	O-4 Characterization of a plasma dielectric barrier discharge reactor packed with Ni/CeO ₂ nanostructured catalysts for CO ₂ methanation Beatrice Musig , <i>Instituto de Carboquímica ICB-CSIC, Spain</i>	O-11 Highly active and coke resistant Ni/CeZrO ₂ catalysts prepared by plasma decomposition for CO methanation (V) Lei Yu , <i>Tianjin University, China</i>	
11:45 – 12:00	O-5 On the effect of promoters over Ni/CeO ₂ catalyst for plasma-catalytic CO ₂ methanation Golshid Hasrack , <i>Sorbonne Université, France</i>	O-12 Formic acid dehydrogenation over activated carbon supported Pd-based catalysts: Insight into the cold plasma treatment (V) Lanbo Di , <i>Dalian University, China</i>	
12:00 – 12:15	O-6 Room temperature plasma-catalytic CO ₂ methanation over Ni-Fe/(Mg, Al)O _x catalysts: A study using response surface methodology Yao Zhang , <i>The University of Manchester, UK</i>	O-13 TiO ₂ -supported AuFe plasmonic nanocatalysts activated by O ₂ plasma with a high performance for CO oxidation (V) Xiang Li , <i>Yangtze University, China</i>	
12:15 – 12:30	O-7 Plasma catalysis for CO ₂ hydrogenation: Unlocking new pathways toward CH ₃ OH Roel Michiels , <i>University of Antwerp, Belgium</i>	O-14 Enhanced CO ₂ methanation activity over Ni/SiO ₂ catalysts by plasma Decomposition (V) Xingwang Wu , <i>Tianjin University, China</i>	
12:30 – 14:00	Lunch		
Session 5 (SCTH LT2) Chair: Lea Winter			
14:00 – 14:30	KN-2 What do we need for catalysts to be used in hybrid non-thermal plasma catalytic systems? Xiaolei Fan , <i>The University of Manchester, UK</i>		
14:30 – 14:45	O-15 Tuning oxygenates selectivity in plasma-driven conversion of CO ₂ and CH ₄ (V) Li Wang , <i>Dalian Maritime University, China</i>		
14:45 – 15:00	O-16 Efficient conversion of CO ₂ and CH ₄ into value-added compounds through plasma catalysis process in a dielectric barrier discharge reactor (V) Danhua Mei , <i>Nanjing Tech University, China</i>		
15:00 – 15:15	O-17 Confined atmospheric pressure glow discharge for CO ₂ and CH ₄ conversion (V) Bart Wanten , <i>University of Antwerp, Belgium</i>		
15:15 – 15:30	O-18 Modelling of plasma-catalytic dry reforming of CH ₄ : How do radicals affect the behavior of different transition metal catalysts? (V) Loenders Björn , <i>University of Antwerp, Belgium</i>		

15:30 – 16:00	Coffee break
Session 6 (SCTH LT2) Chair: Sibudjing Kawi	
16:00 – 16:30	KN-3 Oxygenate production from plasma-activated reaction of CO ₂ and ethane (V) Lea Winter , <i>Yale University, USA</i>
16:30 – 16:45	O-19 Splitting of CO ₂ by a nanosecond pulsed dielectric barrier discharge Sepideh Mousazadeh Borghei , <i>Leibniz Institute for Plasma Science and Technology (INP), Germany</i>
16:45 – 17:00	O-20 CO ₂ capture and conversion by plasma-sorbent system Sirui Li , <i>Eindhoven University of Technology, The Netherlands</i>
17:00 – 17:15	O-21 Catalysts implication in the CH ₄ -CO ₂ conversion under dielectric barrier discharge (DBD) plasma Elodie Fourré , <i>Université de Poitiers, France</i>
17:15-17:30	O-22 Experimental insights in the development of an oxygen removal process for coke oven gas with non-thermal plasma Tim Nitsche , <i>Fraunhofer Institute for Environmental, Safety, and Energy Technology UMSICHT, Germany</i>
18:30	Dinner

Day 2 (Tuesday, 5th July 2022)

Zoom Meeting ID: TBC

Meeting Link: TBC

Plenary Lecture (SCTH LT2) Chair: Mahendra Sunkara		
09:00 – 09:45	PL-2 Cold plasmas for catalyst preparation: Current status and perspective (V) Changjun Liu , <i>Tianjin University, China</i>	
Session 1 (SCTH LT2) Chair: Heechae Choi		Session 2 (SCTH LT1) Chair: Li Wang
09:45 – 10:00	O-23 Non-thermal plasma: An efficient technology for regeneration of coked zeolite (V) Catherine Batiot-Dupeyrat , <i>Université de Poitiers, France</i>	O-30 Fluidized-bed DBD reactor for reverse water gas shift reaction: Break kinetic and equilibrium limit (V) Xiaozhong Chen , <i>Tokyo Institute of Technology, Japan</i>
10:00 – 10:15	O-24 Application of nonthermal plasma for regeneration of deactivated catalysts Richard Cimerman , <i>Comenius University, Slovakia</i>	O-31 Plasma-activated perovskite catalysts with Ni-Fe alloy and oxygen vacancies for CO ₂ utilization via reverse water-gas shift reaction (V) Lina Liu , <i>Nankai University, China</i>
10:15 – 10:30	O-25 Adjacent surface streamer interactions in packed bed dielectric barrier discharges (PBDBD) Zaka-ul-Islam Mujahid , <i>Ruhr University Bochum, Germany</i>	O-32 Pulsed CO ₂ methanation in plasma-enhanced catalytic reaction (V) Chunyuan Zhan , <i>Tokyo Institute of Technology, Japan</i>
10:30 – 11:00	Coffee break	
Keynote Lecture (SCTH LT2) Chair: TBC		
11:00 – 11:30	KN-4 Plasma catalysis for modular production of hydrogen and ammonia Mahendra Sunkara , <i>University of Louisville, USA</i>	
Session 3 (SCTH LT2) Chair: Zaenab Abd-Allah		Session 4 (SCTH LT1) Chair: Lina Liu

11:30 – 11:45	O-26 Influence of the catalyst coating geometry on conversion and selectivity for plasma-assisted n-butane removal in synthetic air in an SDBD reactor Timothy Oppotsch , Ruhr University Bochum, Germany	O-33 Investigation of synergic response on low temperature plasma-catalytic CH ₄ partial oxidation for the production of value-added chemicals (V) Yuan Gao , Institute of Electrical Engineering, CAS, China
11:45 – 12:00	O-27 Removal of benzene as a toxic volatile organic compound using non-thermal plasmas: Understanding the influence of humidity on removing solid residue Usman Dahiru , Newcastle University, UK	O34 Plasma catalysis for conversion of light alkanes and CO ₂ (V) Yanhui Yi , Dalian University of Technology, China
12:00 – 12:15	O-28 Metal-organic frameworks supported catalyst for room-temperature pollution control by non-thermal plasma Shaojun Xu , Cardiff University, UK	O-35 A novel plasma reactor for syntheses of hydrogen peroxide as well as Nanoparticles (V) Qiang Chen , Xiamen University, China
12:15 – 12:30	O-29 Impact of nonthermal plasma ionizer on particulates from biomass boiler combustion Zakariah Adu Adejoh , Newcastle University, UK	O-36 Synthesis of nickel phosphosulfide by reduction of amorphous Ni ₂ P ₂ S ₆ in hydrogen plasma (V) Ming He , Tianjin University of Science and Technology, China
12:30 – 14:00	Lunch	
Keynote Lecture (SCTH LT2) Chair: Xiaolei Fan		
14:00 – 14:30	KN-5 Unravelling mechanisms of plasma catalysis: Reconciling atomistic models and experiments Kristof Bal , University of Antwerp, Belgium	
14:30 – 15:00	KN-6 Innovating catalytic technologies using plasma for low-carbon energy solutions Sibudjing Kawi , National University of Singapore, Singapore	
Session 5 (SCTH LT2) Chair: Danhua Mei		Session 6 (SCTH LT1) Chair: Xuming Zhang
15:00 – 15:15	O-37 Enhanced CO ₂ conversion by frosted dielectric surface with ZrO ₂ coating in a dielectric barrier discharge reactor (V) Wanyan Ding , Tianjin University, China	O-41 Enhancement of surface discharge of packed particle in dielectric barrier discharge reactor (V) Min Zhu , Nanjing University of Aeronautics and Astronautics, China

15:15 – 15:30	O-38 Conversion CO ₂ into CO-rich gas via the boudouard reaction in a packed-bed dielectric barrier discharge reactor (V) Minjie Sun , <i>Nanjing Tech University, China</i>	O-42 Combined high-voltage pulse and radiofrequency excitation for large-volume high-pressure non-thermal plasma generation (V) Dante Filice , <i>McGill University, Canada</i>
15:30 – 15:45	O-39 CeO ₂ enhanced CO ₂ decomposition via frosted dielectric barrier discharge plasma (V) Mengyu Xia , <i>Tianjin University, China</i>	O-43 Plasma promoted hierarchical porous carbon-supported Ni single atom catalysts for highly efficient electrocatalytic CO ₂ reduction (V) Qiulin Ye , <i>Zhejiang University, China</i>
15:45 – 16:00	O-40 Effect of gas composition on CO ₂ conversion in a gliding arc Plasmatron (V) Wencong Xu , <i>University of Antwerp, Belgium</i>	O-44 Atomic-scale modeling of photoelectrochemical and electrocatalytic reaction of plasma-synthesized nanomaterials Heechae Choi , <i>University of Cologne, Germany</i>
16:00 – 16:15	Coffee break	
16:15 – 17:30	Poster session (In-person Only)	
18:30	Dinner	

Day 3 (Wednesday, 6th July 2022)

Zoom Meeting ID: TBC

Meeting Link: TBC

Plenary Lecture (SCTH LT2) Chair: Hyun-Ha Kim	
09:00 – 09:45	PL-3 Microplasma jet processing in gas/liquid microvessels - rational design, process design, and outlook to fertilizer application (V) Volker Hessel , <i>The University of Adelaide, Australia</i>
Session 1 (SCTH LT2) Chair: Tomohiro Nozaki	
Session 2 (SCTH LT1) Chair: Yaolin Wang	
09:45 – 10:00	O-45 Reforming of biomass gasification tar model compounds using hybrid plasma-catalysis processes (V) Yunyang Lu , <i>Nanjing Tech University, China</i>
	O-48 The prediction of ammonia synthesis by dielectric barrier discharge using an artificial neural network model (V) Xing Wang , <i>Chongqing University, China</i>
10:00 – 10:15	O-46 Investigation on the mechanism difference of plasma catalytic oxidation of methanol between CeO ₂ and Mn ₂ (V) Guangyi Zhang , <i>South China University of Technology, China</i>
	O-49 A paradigm research on plasma parameters analysis by machine learning for plasma-enabled ammonia synthesis (V) Xin Zeng , <i>Institute of Electrical Engineering, CAS, China</i>
10:15 – 10:30	O-47 Electrode erosion during liquid-phase discharge plasma treatment of phenol solution (V) Weiwei Zhang , <i>Nanjing Tech University, China</i>
	O-50 Partial oxidation of n-pentane to syngas and oxygenates in a plasma-catalytic reactor: Performance and mechanism study (V) Xuming Zhang , <i>Zhejiang Sci-Tech University, China</i>
10:30 – 11:00	Coffee break
Session 3 (SCTH LT2) Chair: Gómez-Ramírez Ana	
11:00 – 11:30	KN-7 Plasma activated electrolyzers for nitrogen fixation Michail Tsampas , <i>Dutch Institute for Fundamental Energy Research (DIFFER), The Netherlands</i>
11:30 – 11:45	O-51 Improving the performances and the arc stability in an N ₂ -O ₂ gliding arc plasma: Selecting the optimum resistance for the discharge Filippo Manaigo , <i>Université de Mons, Belgium</i>

11:45 – 12:00	O-52 The effect of photocatalyst coatings on the formation of ozone and nitrogen oxides in non-thermal atmospheric pressure plasma Zaenab Abd-Allah , <i>Manchester Metropolitan University, UK</i>
12:00 – 12:15	O-53 Insight into nitrogen fixation kinetics in a pulsed microwave discharge Omid Samadi Bahnamiri , <i>Université de Mons, Belgium</i>
12:15 – 12:30	O-54 Nitrogen fixation through MoO ₃ -based catalysts embedded in a microwave plasma post-discharge Babak Sadeghi , <i>Université Libre de Bruxelles, Belgium</i>
12:30 – 14:00	Lunch

Day 4 (Thursday, 7th July 2022)

Zoom Meeting ID: TBC

Meeting Link: TBC

Session 1 (SCTH LT2) Chair: Oi Lun (Helena) Li	
09:00 – 09:30	KN-8 Plasma-assisted fabrication of nanomaterials for energy storage (V) Zheng Bo , <i>Zhejiang University, China</i>
09:30 – 09:45	O-55 Methane coupling in nanosecond pulsed plasma discharges: Kinetic modeling to unravel the effect of pressure and temperature on product selectivity Eduardo Morais , <i>University of Antwerp, Belgium</i>
09:45 – 10:00	O-56 Electric field-induced oxidative coupling of methane Valeria Maslova , <i>Université de Poitiers, France</i>
10:00 – 10:15	O-57 Selective oxidation of CH ₄ to CH ₃ OH by plasma catalysis Shangkun Li , <i>University of Antwerp, Belgium</i>
10:15 – 10:30	O-58 Plasma-assisted chemical looping scheme for H ₂ production Yaoyao Zheng , <i>University of Cambridge, UK</i>
10:30 – 11:00	Coffee break
Session 2 (SCTH LT2) Chair: Kristof Bal	
11:00 – 11:30	KN-9 Plasma-engineered bifunctional oxygen cathode catalysts for rechargeable metal-air batteries Oi Lun (Helena) Li , <i>Pusan National University, Republic of Korea</i>
11:30 – 11:45	O-59 Study on nanosecond pulsed discharge plasma driven CH ₄ /CH ₃ OH to C ₂ -C ₄ alcohols (V) Jiacong Li , <i>Institute of Electrical Engineering, CAS, China</i>
11:45 – 12:00	O-60 Kinetics of plasma-catalytic water-gas shift reaction over bimetallic Co-M/ γ -Al ₂ O ₃ (M=Fe, Ni and Cu) catalysts (V) Xiaoqiang Shen , <i>Chongqing University, China</i>

12:00 – 12:15	O-61 Ethylene removal by atmospheric pressure honeycomb plasma with Pd/ZSM-5/monolith catalyst (V) Shirjana Saud , <i>Jeju National University, Republic of Korea</i>
12:15 – 12:30	O-62 Plasma-catalytic CO ₂ hydrogenation to chemicals: Insights into surface reaction Ni Wang , <i>University of Liverpool, UK</i>
12:45 – 14:00	Lunch

Poster Session

5 th July 2022, Tuesday (16:15 – 17:30)	
P1	Hydrogen evolution from biomass by combined ultrasound-plasma treatment Volker Brüser , <i>Leibniz Institute for Plasma Science and Technology (INP), Germany</i>
P2	Plasma catalytic dry reforming of methane: How material properties influence conversion and kinetics – the PlasMaCatDESIGN project Sander Bossier , <i>University of Antwerp, Belgium</i>
P3	Mass spectrometry measurements of plasma catalysis conversion of n-butane at atmospheric pressure Laura Chauvet , <i>Ruhr-University, Germany</i>
P4	Plasma assisted hydrogen peroxide synthesis: Looking at the interface Mery Hernandez , <i>Karlsruhe Institute for Technology, Germany</i>
P5	Synergistic effect of Co/LDH catalyst on plasma-assisted ammonia synthesis Yuxin Zhang , <i>The University of Manchester, UK</i>
P6	Ni-Co/SBA-15 catalysts for non-thermal plasma activated dry reforming of methane to syngas Xinrui Wang , <i>The University of Manchester, UK</i>
P7	Plasma-catalytic ammonia synthesis over Ru-based catalysts under ambient conditions Yaolin Wang , <i>University of Liverpool, UK</i>
P8	Understanding the pressure dependence of sub-atmospheric microwave air plasma Ashley Hughes , <i>University of Liverpool, UK</i>
P9	Plasma-catalytic CO ₂ hydrogenation over Fe-Cu-based perovskite catalysts Yuxiang Cai , <i>University of Liverpool, UK</i>

P10	Enhanced hydrogen production using a two-stage biomass pyrolysis and plasma-catalytic reforming process Weitao Wang , <i>University of Liverpool, UK</i>
P11	Plasma-enhanced CO ₂ methanation over Ni-based catalysts Ni Wang , <i>University of Liverpool, UK</i>
P12	Non-equilibrium plasma for hydrogen production Ibrahim Bakoji , <i>University of Salford, UK</i>