Programme NCCC 2026

Requested: 2026-01-20 20:01

Monday: March 2nd				
10:45	Opening NCCC XXVII by A. Urakawa and C. Paul			
11:00	**PL1** Selin Kara - Aarhus University & Leibniz University Hannover - Intensification of chemo-enzymatic processes towards industrial volumetric productivities			
11:45	**PL2** Charlotte Williams - U Oxford - Catalysis for the circular economy: understanding and predicting performances in polymerizations and depolymerizations			
12:30	Lunch break			
13:30	**O1** CO2 hydrogenation on CeO2 nanorods-supported Fe-Co electrocatalysts in Protonic Ceramic Cell Reactors *E. Marousiadou – University of Groningen*	**O2** Stabilization of Cu species in UiO-66 metal-organic framework for CO2-to-methanol: insights from in situ X-ray studies and electron microscopy *A. Liutkova – Paul Scherrer Institute (PSI)*	**O3** New Metastable Furan-Based Surfactants Designed for End-of-Life: Synthesis, Physicochemical Properties and Degradation *M.M. Broekman – Utrecht University*	**O4** The Mechanism of CO2 conversion over a Ru-K2CO3 Dual Functional Material through operando quick-EXAFS *F. Karaçoban – Wageningen University and Research Centre*
13:50	**O5** Engineering Porous Transport Layers for Efficient Co-Electrolysis of Glucose and Water *D. Zagoraios – DIFFER*	**O6** Flame spray pyrolysis synthesis of NiO-Ga2O3: The role of metal alloy and oxide interfaces in CO2 hydrogenation to methanol *M.A. Attallah – Eindhoven University of Technology*	**O7** Sustainable Paracetamol Production: Enzymatic Oxyfunctionalisation at Kilogram Scale *J.M.A. Hengst – Delft University of Technology*	**O8** X-ray absorption spectroscopy applications on a multi-purpose laboratory X-ray diffractometer *L. Ding – Malvern Panalytical B. V.*
14:10	**O9** The Key Role of Electrocatalysis in the Development of Efficient and Stable Fuel Flexible Protonic Ceramic Cells with Biogas Feedstocks *H. Zheng – University of Groningen*	**O10** It's Not That Deep - Mapping Accessible Surface States of Ni-Ga Catalysts under CO2 Hydrogenation *M.S. Baidun – Delft University of Technology*	**O11** Biocatalytic chiral amine synthesis coupled with in-situ chemo-catalytic substrate production *A. Doutry – UCLouvain*	**O12** Operando Multi-spectroscopy Approach Identifies the Fe^{2+}/Fe^{3+} Couple Responsible for N_2O-Redox-Mediated Reactions in Fe-Zeolites *D.C. Cano Blanco – PSI/EPFL*
14:30	**O13** Structure Sensitivity of the Double-Layer Properties of a Platinum Electrode *N.L. Fröhlich – Leiden University*	**O14** Linking structure to activity in ZnZrOx catalyst for CO2 hydrogenation to methanol: the influence of preparation methods *M. Firmansyah – University of Groningen*	**O15** Hydrogen-driven enzymatic production of (S)-citronellol *T.J. van t Riet – Delft University of Technology*	**O16** Investigating the Radical Stabilization via Paramagnetic Zr3+ *L. Seidling – Utrecht University*
14:50	Coffee break			
15:10	**O17** Ru-Catalyzed Transfer Vinylation of Alcohols *S. Tin – Leibniz Institute for Catalysis, 18059, Rostock, Germany*	**O18** Enhancing higher alcohol synthesis by using mixed solid catalysts *P. Diehl – Ruhr University Bochum*	**O19** Multiscale Impact of Electrolyte Saturation and Transport in Nanoporous Copper Catalyst Layers during CO2 Reduction *D. Choukroun – University of Antwerp*	**O20** Sulfur-Induced Electronic States in Anatase Titania Extend Charge Carrier Lifetime *C. Geci – University of Maine*
15:30	**O21** Conversion of	**O22** Hydroprocessing of tree	**O23** Investigating	**O24** Charge Carriers

	pyrolytic sugars to 5-hydroxymethylfurfural promoted by choline chloride in biphasic systems over homogeneous Lewis catalysts *C Ruan – University of Groningen*	bark-derived sterols into sustainable aviation fuels *N.F. Zuidema – Eindhoven University of Technology*	Single-Crystal Pt(111) at Low Potentials Using Advanced Transient Voltammetry *R.Z. Snitkoff-Sol – Leiden University*	Dynamics of Ru/TiO2: The Importance of Holes in Photothermal CO2 Reduction on Ru/TiO2 *A. Meena – University of Twente*
15:50	TE workshop	TE workshop	TE workshop	TE workshop
16:10	TE workshop	TE workshop	TE workshop	TE workshop
16:30	Poster session A			
18:30	Dinner			
20:15	CDO session			
	Tuesday: March 3rd			
09:00	**PL3** Frank Glorius - U. Münster - On data, discovery & sensitivity in (photo)catalysis			
09:50	**KN1** Chris Slootweg - UvA - Catalysing a sustainable future: radical redesign of chemistry for circularity	**O25** Photoredox Entatic Catalysis in Porous Materials *M. Di Berto Mancini – University of Amsterdam*	**O26** The Mechanism of CO2 Electroreduction in Acetonitrile-based Electrolytes: An In Situ IR Study *A. Berghuis – University of Twente*	**O27** Nanoscale strain-engineering for modulating oxidation and hydrogenation catalysis *J.P. Jonasse – Utrecht University*
10:10		**O28** Two Routes, One Vision: Inorganic–Organic Materials Engineering for High-Performance Visible-Light Photochemical Systems *MR Ashu Abey – University of Bath*	**O29** Nature of the Pb surface during CO2 reduction in N,N-Dimethylformamide *J.P. Smaak – Leiden University*	**O30** Regulating Dynamic Coordination Environments in Pt_1/CeO_2 Single-Atom Catalysts *Q. Gu – Eindhoven University of Technology*
10:30	Coffee break			
10:50	**KN2** Clemens Mayer - RUG - Harnessing evolution to break PFAS: engineering next-generation defluorinases	**O31** Catalysis in Ball Mills: Mechanochemistry as an Alternative Synthesis Strategy *M. Wohlgemuth – Ruhr-University Bochum*	**O32** Formate selective CO2 reduction in water promoted by triethanolamine using immobilized Mn(bpy) catalyst *M.C. van Rijn – University of Amsterdam*	**O33** Atomic-level investigation of TM and Ln co-doping effects on Pd/CeO2 single-atom catalysts for CO oxidation *M. Li – Eindhoven University of Technology*
11:10		**O34** Accounting for the Footprints of Bulky Molecules in Multi-site Kinetic Models *A. Fischer – Ghent University*	**O35** Active Site Determination of Heterogenized Molecular Electrocatalysts *E. Antoniono – Delft University of Technology*	**O36** Rapid Analysis of Uncondensed Lignin Feedstocks and Reductive Catalytic Depolymerization Products with ATR-FTIR and Chemometrics *T. Dezaire – Utrecht University*
11:30	**O37** Photobiocatalytic atroposelective biaryl coupling *B. Dačević – University of Groningen*	**O38** Integrated direct air capture and conversion of CO2 on metal-free covalent triazine frameworks *F. Müller – RWTH Aachen University*	**O39** Tuning Product Selectivity in Electroreduction of NO via Phase Engineering of MoS2 Nanosheets *M. Li – Delft*	**O40** CO2 methanation over nickel: a kinetic balancing act between CO2 and CO activation *K.T. Rommens – Ghent University*

			University of Technology	
11:50	**O41** Tuning Old Yellow Enzymes for desaturation via non-canonical amino acids *T. Greven – Delft University of Technology*	**O42** Understanding Hydrodynamics in a Circulating Fluidised Bed Reactor for Integrated Carbon Capture and Utilisation: A Computational and Experimental Study *M.R.A. Coppens – Delft University of Technology*	**O43** Tuning MoS2 electrocatalyst's nanostructures and HER performances by optimizing the reduction treatments *M. Poully – IFPEN*	**O44** Active sites in MAPO-18 zeotypes for CO2 hydrogenation: a NMR study *W. Temmerman – Ghent University*
12:10	Lunch break			
13:10	**O45** Elucidating the reaction mechanism of COx hydrogenation using 12C/13C and 1H/2H isotope fractionation *M. Verstraten – Eindhoven University of Technology*	**O46** Impact of catalyst layer architectures on a zero-gap CO2 electrolyzer towards multi-carbon products *F.M.B. Gusmão – University of Antwerp*	**O47** From Molecules to Reactors: Modeling the Hydrogenolysis of Polyolefins *S. Bissesar – University of Twente*	**O48** Exploring H2O2 – dependent inactivation of rAaeUPO *A. Pothuizen – Delft University of Technology*
13:30	**O49** Unprecedented CO2 reduction activity through in situ self-assembly of Ru-CeOx heterostructures *D. Vico van Berkel – Delft University of Technology*	**O50** Investigation of Water Management in MEA Cells for CO2 Electrolysis to Prolong System Lifetime *H.M. Pelzer – Delft University of Technology*	**O51** AI-Driven Electrocatalysis: Adaptive Control of the Glycerol Oxidation Reaction via Reinforcement Learning *V.A. Mints – Imperial College London*	**O52** Force feeding PaDa-I: a hybrid nest for selective chemo-enzymatic oxyfunctionalization *M. Kinnaer – UCLouvain*
13:50	**KN3** Jingxiu Xie - RUG - Thermocatalytic CO2 conversion to chemicals and fuels via Fischer–Tropsch synthesis	**O53** Polymer Membrane Gas-Diffusion Layer with Nanowire Catalyst Implemented in Zero-Gap CO2 Electrolyzer Prevents Salt Precipitation-Induced Failure *R. Haaring – Korea Advanced Institute of Science and Technology*	**O54** Dynamically correct reaction rate constants in heterogeneous catalysis *M. Bocus – Ghent University*	**O55** Exploring the biocatalytic reduction of alkynes to alkenes using the Old Yellow Enzyme family *C. Ferrer Carbonell – Delft University of Technology*
14:10		**O56** Scaling Up Membrane Electrode Assembly Electrolyzers for CO_2 Conversion: Strategies to Mitigate Salt Deposition *L. Gatti – Italian Institute of Technology*	**O57** The Stability of Single-Atom Catalysts *A.N. van Dam – VU University Amsterdam*	**O58** Bulky alkene reduction catalyzed by ene reductases *J. Berger – Delft University of Technology*
14:30	**O59** Understanding Structure-activity Relationship over Al-Fe based Catalysts for CO and CO2 Hydrogenation *Y. Fan – Eindhoven University of Technology*	**O60** Understanding and Mitigating SO2-induced Deactivation of Ag Electrocatalysts during CO2 Electrolysis *S Fu – Delft University of Technology*	**O61** Multiscale Computational Insights into Thermal and Catalytic Pyrolysis of Polyolefins *F. Xu – Utrecht University*	**O62** Exploring dehydrogenases for redox catalysis with the noncanonical cofactor NMN - N. Travnicek - Delft University of Technology
14:50	Coffee break			
15:10	**O63** Kinetics of mechano-catalytic polypropylene depolymerization for recycling: Effects of surface-activated beads and mill geometry.	**O64** Electrolyte-dependent behavior of a cobalt-based MOF during the glycerol oxidation reaction *F.J.A van Lieshout – University of Groningen*	**O65** The Circle of Life: A Catalyst's Story Revealed through Kinetics and Dynamic NMR *S. Yassiri – Delft University of*	**O66** Tuning porosity in 3D-printed Ni/TiO2 catalysts for enhanced CO2 methanation efficiency *Y. De Vos – Flemish Institute for Technological*

	L. Delarue – Utrecht University		*Technology*	*Research (VITO)*
15:30	**KN4** Maarten Roeffaers - KU Leuven - Illuminating microplastics: chemical, optical and materials approaches to a growing challenge	**O67** Graphene-Covered Pt(111): A Tunable, CO-Tolerant Hydrogen Oxidation Catalyst *K Boterman – Leiden University*	**O68** Strategies for homogeneous thermal hydrogenation of CO2 to methanol *G. Gherardini – University of Amsterdam*	**O69** Tuning active Ni particle size with dopants enhances carbon yield in catalytic methane pyrolysis *D.P.C. van Eck – Utrecht University*
15:50		**O70** On the pH-Dependent Role of Oxygen Functional Groups in Carbon Catalysts for Electrochemical H_2O_2 Production *P. Mazaira Couce – Wageningen University and Research Centre*	**O71** Fluoroalkoxy ligands: Neither too much, Nor too little Fluorine Optimizes Ligand Fields *F.J. de Zwart – ETH Zürich*	**O72** Bismuth-Regulated Metal-Support Redox: Preventing Over-Oxidation in Pd Catalysts for Lean Methane Oxidation *JHB Pouw – University of Twente*
16:10	Poster session B			
18:10	Dinner			
21:00	Bowling tournament			
	Wednesday: March 4th			
09:00	**PL4** Hirohito Hirata - Toyota Motor Cooperation - Progress and future of automotive exhaust gas purification catalysts: mutual utilization of materials data for exploring material application			
09:50	**O73** PEM fuel cell catalyst layer performance starts in solution - J. Homan - Delft University of Technology	**O74** Mesoporous titanosilicate-silica-coated magnetic ferrite core-shell catalysts for the epoxidation of limonene *A.B. Lozada Miniguano – Université catholique de Louvain*	**O75** The Origin of the Constant Phase Element Behaviour of Pt(111) Near the Potential of Zero Charge *K.J. Levey – Leiden University*	**O76** Catalytic conversion of CO2 and bio-based compounds into renewable polycarbonates *H. Moradi – University of Groningen*
10:10	**O77** Microwave-assisted batch and continuous flow process for the sustainable synthesis of the water electrolysis anode materials *Dr Khan – SDU*	**O78** Unraveling the synergistic effect of alcohol and water in lignin transfer hydrogenolysis *J Chen – University of Groningen*	**O79** The Inherent Voltage Penalties of Emerging Electrochemical Reactions in near-neutral pH conditions *G. Prats Vergel – Delft University of Technology*	**O80** Catalytic Cascade Strategies for Transforming CO2 into High-Value Products via Formaldehyde equivalents *W. Vande Capelle – Katholieke Universiteit Leuven*
10:30	Coffee break			
10:50	**KN5** Tom Burdyny - TUD - How extreme gradients govern the performance and stability of electrocatalysis	**O81** Structural Dynamics of Lacunary Polyoxometalate Activated with H2O2 Elucidated by in situ ATR-IR and atomistic simulations *T. Iwano – Delft University of Technology*	**O82** $Sn(oct)_2$-mediated mechano-catalytic PLA depolymerization *F. Mattarozzi – Utrecht University*	**O83** Unusual synthesis approach for core-shell cocatalysts, resulting in enhanced photocatalytic activity of SrTiO3 during gas phase methanol dehydrogenation. *Y. Haver – Ruhr-Universität Bochum*
11:10		**O84** Ultrafast Probing of Heat-Induced Chemistry on Metal Nanoparticles *B. Yilmaz – Delft University of Technology*	**O85** Quantifying Internal Transport in Plastic Hydrogenolysis and Overcoming It through Innovative Catalyst	**O86** Synergistic optimisation of photocatalytic hydrogen production based on experimental design and Bayesian optimisation *J. Pöttker-Menke – Ruhr-*

			Architecture *P. Venugopal – University of Twente*	*Universität Bochum*
11:30	**O87** Co9S8/Ni Precursor for Efficient Conversion of Complex Carbohydrate Mixtures Derived from Ethanosolv Fractionation *C. Jiang – University of Groningen*	**O88** Accelerated Hydrogen Evolution at Polymer-Functionalized Gold – A Kinetic or a Local pH Effect? *S. Hardt – Leiden University*	**O89** Effect of Molybdenum on the Performance of Ni/SiO2 Catalysts for Polyolefin Hydrogenolysis *X Huang – University of Groningen*	**O90** TiO_2 Nanorod-Coated Activated Carbon Cloth for Dual Pollutant Removal in Air and In-Situ Mineralization *K. Schoofs – University of Antwerp*
11:50	**O91** Surface Electrochemistry of Au(111) and Pt(111) in Non-Aqueous Electrolytes *GP Grossman – Leiden University*	**O92** Poly(vinyl alcohol)/chitosan hydrogel microneedles for transdermal delivery of Mitragyna speciosa crude extracts: fabrication, release behavior, and antibacterial activity *A. Panchuchird – Department of Chemistry, Faculty of Science, Silpakorn University*	**O93** Radical Initiated Polymer Degradation to Enhance Polypropylene Recyclability *RB Maas – Utrecht University*	**O94** Lucigenin: A Strongly Oxidizing Dicationic Photocatalyst for the Direct Azolation of Arenes *A. Matei – University of Groningen*
12:10	Lunch break			
13:00	**KN6** Max Voß - RWE - Towards net zero: decarbonizing flexible power generation	**O95** Hydrothermally stable catalysts for the one-pot conversion of cellulose to ethylene glycol *A.L. Slama de Freitas – University of Groningen*	**O96** Optimizing nickel anode regeneration strategies for alkaline water electrolysis *N. Cucu – University of Groningen*	**O97** Partially Ammonium-Substituted Phosphotungstic Acid as a Catalyst for Efficient Methanolation of Toluene into Xylenes *N. Laloux – Université Catholique de Louvain*
13:20		**O98** Carbide fraction effect of molybdenum carbide catalysts on furfural reductive amination *Y. Ding – Wageningen University and Research Centre*	**O99** Effect of Fe Impurities on the Surface Structure of Ni-based Electrodes *M. Hage – University of Amsterdam*	**O100** The Phosgene-Free Synthesis of Isocyanates Through The Dehydrogenation of Formamides *E. Daenens – Katholieke Universiteit Leuven*
13:40	**O101** Mitigating CO poisoning of platinum electrodes for efficient electrochemical hydrogen oxidation in hydrogen compression applications *C. Englezos – University of Twente*	**O102** Mechanistic insights in the selective catalytic oxidation of glycolaldehyde: an industrially feasible route to bio-glycolic acid *M. Heshmat – Wageningen University and Research Centre*	**O103** Advancing Alkaline Water Electrolysis with Stable Raney Nickel Coatings for High Current Density Operation *H.Y. Chen – Eindhoven University of Technology*	**O104** Upcycling Polyethylene to C12–C18 Olefins via Isomerizing Ethenolysis *A.A. Tsygankov – Delft University of Technology*
14:05	**PL5** Pelayo García de Arquer - ICFO - Beyond static approaches to control electrolysis interfaces			
14:50	Prizes & Closure			
15:15	Buses to Leiden Central Station			