# Programme NCCC 2026

Requested: 2026-02-07 01:02

| 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<br>*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<br>*A. Liutkova – Paul Scherrer Institute (PSI)* | **O3** New Metastable Furan-Based Surfactants Designed for End-of-Life: Synthesis, Physicochemical Properties and Degradation<br>*M.M. Broekman – Utrecht University* | **O4** The Mechanism of CO2 conversion over a Ru-K2CO3 Dual Functional Material through operando quick-EXAFS<br>*F. Karaçoban – Wageningen University and Research Centre* |
| 13:50 | **O5** Engineering Porous Transport Layers for Efficient Co-Electrolysis of Glucose and Water<br>*D. Zagoraios – DIFFER* | **O6** Flame spray pyrolysis synthesis of NiO-Ga2O3: The role of metal alloy and oxide interfaces in CO2 hydrogenation to methanol<br>*M.A. Attallah – Eindhoven University of Technology* | **O7** Sustainable Paracetamol Production: Enzymatic Oxyfunctionalisation at Kilogram Scale<br>*J.M.A. Hengst – Delft University of Technology* | **O8** X-ray absorption spectroscopy applications on a multi-purpose laboratory X-ray diffractometer<br>*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<br>*H. Zheng – University of Groningen* | **O10** It's Not That Deep - Mapping Accessible Surface States of Ni-Ga Catalysts under CO2 Hydrogenation<br>*M.S. Baidun – Delft University of Technology* | **O11** Biocatalytic chiral amine synthesis coupled with in-situ chemo-catalytic substrate production<br>*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<br>*D.C. Cano Blanco – PSI/EPFL* |
| 14:30 | **O13** Structure Sensitivity of the Double-Layer Properties of a Platinum Electrode<br>*N.L. Fröhlich – Leiden University* | **O14** Linking structure to activity in ZnZrOx catalyst for CO2 hydrogenation to methanol: the influence of preparation methods<br>*M. Firmansyah – University of Groningen* | **O15** Hydrogen-driven enzymatic production of (S)-citronellol<br>*T.J. van t Riet – Delft University of Technology* | **O16** Investigating the Radical Stabilization via Paramagnetic Zr3+<br>*L. Seidling – Utrecht University* |
| 14:50 | Coffee break | | | |
| 15:10 | **O17** Ru-Catalyzed Transfer Vinylation of Alcohols<br>*S. Tin – Leibniz Institute for Catalysis, 18059, Rostock, Germany* | **O18** Enhancing higher alcohol synthesis by using mixed solid catalysts<br>*P. Diehl – Ruhr University Bochum* | **O19** Multiscale Impact of Electrolyte Saturation and Transport in Nanoporous Copper Catalyst Layers during CO2 Reduction<br>*D. Choukroun – University of Antwerp* | **O20** Sulfur-Induced Electronic States in Anatase Titania Extend Charge Carrier Lifetime<br>*C. Geci – University of Maine* |

| | | | | |
|---|---|---|---|---|
| 15:30 | **O21** Conversion of pyrolytic sugars to 5-hydroxymethylfurfural promoted by choline chloride in biphasic systems over homogeneous Lewis catalysts<br>*C Ruan – University of Groningen* | **O22** Hydroprocessing of tree bark-derived sterols into sustainable aviation fuels<br>*N.F. Zuidema – Eindhoven University of Technology* | **O23** Investigating Single-Crystal Pt(111) at Low Potentials Using Advanced Transient Voltammetry<br>*R.Z. Snitkoff-Sol – Leiden University* | **O24** Charge Carriers Dynamics of Ru/TiO2: The Importance of Holes in Photothermal CO2 Reduction on Ru/TiO2<br>*A. Meena – University of Twente* |
| 15:50 | Workshop: Measuring adsorbate profiles in catalytic reactors by iso-potential operando DRIFTS - Bruker & REACNOSTICS - R. Horn (TUHH) | Workshop: (A) Next generation meso-macropore analysis - Anton Paar - M. Thomas | Workshop: Work on methanation and steam methane reforming, data acquisition and kinetic modeling - Hiden Analytical - J. De Wilde (UC Louvain) | Workshop: Advanced GC Technologies for Catalyst and Biofuel Analytical Challenges - Shimadzu - E. Shimbo |
| 16:10 | Workshop: Advanced FTIR solutions for catalysis studies - Bruker - X. Stammer | Workshop: (B) In-situ pore structure and chemisorption analysis of catalysts - Anton Paar - M. Thomas | Workshop: Autonomous kinetic model development for heterogeneous catalytic reactions – AI-based calculation from reactor profiles and DRIFTS - REACNOSTICS - S. Jakobtorweihen | Workshop: Metal Organic Framework (MOF), Silica Alumina (Zeolites), Precious Metal- (supported and homogeneous), Mixed Metal Oxide-, Skeletal Nickel-, catalyst and their applications - Neocat & CatOlyst - P. Vadalia & J. Groen |
| 16:30 - 18:30 | Poster session A | | | |
| 17:00 - 17:45 | Parallel Career development workshop - J. Campos (Coaching and counselling) - Cambridge 30 | | | |
| 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<br>*M. Di Berto Mancini – University of Amsterdam* | **O26** The Mechanism of CO2 Electroreduction in Acetonitrile-based Electrolytes: An In Situ IR Study<br>*A. Berghuis – University of Twente* | **O27** Nanoscale strain-engineering for modulating oxidation and hydrogenation catalysis<br>*J.P. Jonasse – Utrecht University* |
| 10:10 | | **O28** Two Routes, One Vision: Inorganic–Organic Materials Engineering for High-Performance Visible-Light Photochemical Systems<br>*MR Ashu Abey – University of Bath* | **O29** Nature of the Pb surface during CO2 reduction in N,N-Dimethylformamide<br>*J.P. Smaak – Leiden University* | **O30** Regulating Dynamic Coordination Environments in $Pt_1/CeO_2$ Single-Atom Catalysts<br>*Q. Gu – Eindhoven University of Technology* |
| 10:30 | Coffee break | | | |
| 10:50 | **KN2** Clemens Mayer - RUG - Harnessing evolution to break PFAS: engineering next-generation | **O31** Catalysis in Ball Mills: Mechanochemistry as an Alternative Synthesis Strategy | **O32** Formate selective CO2 reduction in water promoted by triethanolamine using immobilized Mn(bpy) | **O33** Atomic-level investigation of TM and Ln co-doping effects on Pd/CeO2 single-atom catalysts for CO oxidation<br>*M. Li – Eindhoven University of* |

| | | | | |
|---|---|---|---|---|
| | defluorinases | *M. Wohlgemuth – Ruhr-University Bochum* | catalyst<br>*M.C. van Rijn – University of Amsterdam* | *Technology* |
| 11:10 | | **O34** Accounting for the Footprints of Bulky Molecules in Multi-site Kinetic Models<br>*A. Fischer – Ghent University* | **O35** Active Site Determination of Heterogenized Molecular Electrocatalysts<br>*E. Antoniono – Delft University of Technology* | **O36** Rapid Analysis of Uncondensed Lignin Feedstocks and Reductive Catalytic Depolymerization Products with ATR-FTIR and Chemometrics<br>*T. Dezaire – Utrecht University* |
| 11:30 | **O37** Photobiocatalytic atroposelective biaryl coupling<br>*B. Dačević – University of Groningen* | **O38** Integrated direct air capture and conversion of CO2 on metal-free covalent triazine frameworks<br>*F. Müller – RWTH Aachen University* | **O39** Tuning Product Selectivity in Electroreduction of NO via Phase Engineering of MoS2 Nanosheets<br>*M. Li – Delft University of Technology* | **O40** CO2 methanation over nickel: a kinetic balancing act between CO2 and CO activation<br>*K.T. Rommens – Ghent University* |
| 11:50 | **O41** Tuning Old Yellow Enzymes for desaturation via non-canonical amino acids<br>*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<br>*M.R.A. Coppens – Delft University of Technology* | **O43** Tuning MoS2 electrocatalyst's nanostructures and HER performances by optimizing the reduction treatments<br>*M. Poully – IFPEN* | **O44** Active sites in MAPO-18 zeotypes for CO2 hydrogenation: a NMR study<br>*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<br>*M. Verstraten – Eindhoven University of Technology* | **O46** Impact of catalyst layer architectures on a zero-gap CO2 electrolyzer towards multi-carbon products<br>*F.M.B. Gusmão – University of Antwerp* | **O47** From Molecules to Reactors: Modeling the Hydrogenolysis of Polyolefins<br>*S. Bissesar – University of Twente* | **O48** Exploring H2O2 – dependent inactivation of rAaeUPO<br>*A. Pothuizen – Delft University of Technology* |
| 13:30 | **O49** Unprecedented CO2 reduction activity through in situ self-assembly of Ru-CeOx heterostructures<br>*D. Vico van Berkel – Delft University of Technology* | **O50** Investigation of Water Management in MEA Cells for CO2 Electrolysis to Prolong System Lifetime<br>*H.M. Pelzer – Delft University of Technology* | **O51** AI-Driven Electrocatalysis: Adaptive Control of the Glycerol Oxidation Reaction via Reinforcement Learning<br>*V.A. Mints – Imperial College London* | **O52** Force feeding PaDa-I: a hybrid nest for selective chemo-enzymatic oxyfunctionalization<br>*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<br>*R. Haaring – Korea Advanced Institute of Science and Technology* | **O54** Dynamically correct reaction rate constants in heterogeneous catalysis<br>*M. Bocus – Ghent University* | **O55** Exploring the biocatalytic reduction of alkynes to alkenes using the Old Yellow Enzyme family<br>*C. Ferrer Carbonell – Delft University of Technology* |
| 14:10 | | **O56** Scaling Up Membrane Electrode Assembly Electrolyzers for $CO_2$ Conversion: | **O57** The Stability of Single-Atom Catalysts<br>*A.N. van Dam – VU University Amsterdam* | **O58** Bulky alkene reduction catalyzed by ene reductases<br>*J. Berger – Delft University of Technology* |

| | | | | |
|---|---|---|---|---|
| | | Strategies to Mitigate Salt Deposition<br>*L. Gatti – Italian Institute of Technology* | | |
| 14:30 | **O59** Understanding Structure-activity Relationship over Al-Fe based Catalysts for CO and CO2 Hydrogenation<br>*Y. Fan – Eindhoven University of Technology* | **O60** Understanding and Mitigating SO2-induced Deactivation of Ag Electrocatalysts during CO2 Electrolysis<br>*S Fu – Delft University of Technology* | **O61** Multiscale Computational Insights into Thermal and Catalytic Pyrolysis of Polyolefins<br>*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.<br>*L. Delarue – Utrecht University* | **O64** Electrolyte-dependent behavior of a cobalt-based MOF during the glycerol oxidation reaction<br>*F.J.A van Lieshout – University of Groningen* | **O65** The Circle of Life: A Catalyst's Story Revealed through Kinetics and Dynamic NMR<br>*S. Yassiri – Delft University of Technology* | **O66** Tuning porosity in 3D-printed Ni/TiO2 catalysts for enhanced CO2 methanation efficiency<br>*J. Cazemier – VITO NV* |
| 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<br>*K Boterman – Leiden University* | **O68** Strategies for homogeneous thermal hydrogenation of CO2 to methanol<br>*G. Gherardini – University of Amsterdam* | **O69** Tuning active Ni particle size with dopants enhances carbon yield in catalytic methane pyrolysis<br>*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<br>*P. Mazaira Couce – Wageningen University and Research Centre* | **O71** Fluoroalkoxy ligands: Neither too much, Nor too little Fluorine Optimizes Ligand Fields<br>*F.J. de Zwart – ETH Zürich* | **O72** Bismuth-Regulated Metal-Support Redox: Preventing Over-Oxidation in Pd Catalysts for Lean Methane Oxidation<br>*JHB Pouw – University of Twente* |
| 16:10 - 18:10 | Poster session B | | | |
| 17:00 - 17:45 | Parallel Career development workshop - J. Campos (Coaching and counselling) - Cambridge 30 | | | |
| 18:10 | Dinner | | | |
| 21:00 | Bowling tournament NIOK NPP | | | |
| | Wednesday: March 4th | | | |
| 09:00 | **PL4** Hirohito Hirata - Toyota Motor Corporation - 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 | **O75** The Origin of the Constant Phase Element Behaviour of Pt(111) Near the Potential of Zero Charge<br>*K.J. Levey – Leiden* | **O76** Catalytic conversion of CO2 and bio-based compounds into renewable polycarbonates<br>*H. Moradi – University of Groningen* |

| | | | | |
|---|---|---|---|---|
| | | *A.B. Lozada Miniguano – Université catholique de Louvain* | *University* | |
| 10:10 | **O77** Microwave-assisted batch and continuous flow process for the sustainable synthesis of the water electrolysis anode materials<br>*I.A. Khan – SDU* | **O78** Unraveling the synergistic effect of alcohol and water in lignin transfer hydrogenolysis<br>*J Chen – University of Groningen* | **O79** The Inherent Voltage Penalties of Emerging Electrochemical Reactions in near-neutral pH conditions<br>*G. Prats Vergel – Delft University of Technology* | **O80** Catalytic Cascade Strategies for Transforming CO2 into High-Value Products via Formaldehyde equivalents<br>*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<br>*T. Iwano – Delft University of Technology* | **O82** $Sn(oct)_2$-mediated mechano-catalytic PLA depolymerization<br>*F. Mattarozzi – Utrecht University* | **O83** Unusual synthesis approach for core-shell cocatalysts, resulting in enhanced photocatalytic activity of SrTiO3 during gas phase methanol dehydrogenation.<br>*Y. Haver – Ruhr-Universität Bochum* |
| 11:10 | | **O84** Ultrafast Probing of Heat-Induced Chemistry on Metal Nanoparticles<br>*B. Yilmaz – Delft University of Technology* | **O85** Quantifying Internal Transport in Plastic Hydrogenolysis and Overcoming It through Innovative Catalyst Architecture<br>*P. Venugopal – University of Twente* | **O86** Synergistic optimisation of photocatalytic hydrogen production based on experimental design and Bayesian optimisation<br>*J. Pöttker-Menke – Ruhr-Universität Bochum* |
| 11:30 | **O87** Co9S8/Ni Precursor for Efficient Conversion of Complex Carbohydrate Mixtures Derived from Ethanosolv Fractionation<br>*C. Jiang – University of Groningen* | **O88** Accelerated Hydrogen Evolution at Polymer-Functionalized Gold – A Kinetic or a Local pH Effect?<br>*S. Hardt – Leiden University* | **O89** Effect of Molybdenum on the Performance of Ni/SiO2 Catalysts for Polyolefin Hydrogenolysis<br>*X Huang – University of Groningen* | **O90** $TiO_2$ Nanorod-Coated Activated Carbon Cloth for Dual Pollutant Removal in Air and In-Situ Mineralization<br>*K. Schoofs – University of Antwerp* |
| 11:50 | **O91** Surface Electrochemistry of Au(111) and Pt(111) in Non-Aqueous Electrolytes<br>*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<br>*A. Panchuchird – Department of Chemistry, Faculty of Science, Silpakorn University* | **O93** Radical Initiated Polymer Degradation to Enhance Polypropylene Recyclability<br>*RB Maas – Utrecht University* | **O94** Lucigenin: A Strongly Oxidizing Dicationic Photocatalyst for the Direct Azolation of Arenes<br>*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<br>*A.L. Slama de Freitas – University of Groningen* | **O96** Optimizing nickel anode regeneration strategies for alkaline water electrolysis<br>*N. Cucu – University of Groningen* | **O97** Partially Ammonium-Substituted Phosphotungstic Acid as a Catalyst for Efficient Methanolation of Toluene into Xylenes<br>*N. Laloux – Université Catholique de Louvain* |

| | | | | |
|---|---|---|---|---|
| 13:20 | | **O98** Carbide fraction effect of molybdenum carbide catalysts on furfural reductive amination<br>*Y. Ding – Wageningen University and Research Centre* | **O99** Effect of Fe Impurities on the Surface Structure of Ni-based Electrodes<br>*M. Hage – University of Amsterdam* | **O100** The Phosgene-Free Synthesis of Isocyanates Through The Dehydrogenation of Formamides<br>*E. Daenens – Katholieke Universiteit Leuven* |
| 13:40 | **O101** Mitigating CO poisoning of platinum electrodes for efficient electrochemical hydrogen oxidation in hydrogen compression applications<br>*C. Englezos – University of Twente* | **O102** Mechanistic insights in the selective catalytic oxidation of glycolaldehyde: an industrially feasible route to bio-glycolic acid<br>*M. Heshmat – Wageningen University and Research Centre* | **O103** Advancing Alkaline Water Electrolysis with Stable Raney Nickel Coatings for High Current Density Operation<br>*H.Y. Chen – Eindhoven University of Technology* | **O104** Upcycling Polyethylene to C12–C18 Olefins via Isomerizing Ethenolysis<br>*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 | | | |