

May 21, 2024	ECCNS Electrochemical Conversion National Symposium
09:00 - 09:30	Registration (Wardrobe) + Coffee (Foyer 2)

Plenary session	
09:30 - 10:15	Plenary speaker Brian Seger A synchrotron analysis of high current density CO₂ electrolysis devices

Breakout session 1: Water electrolysis	
Amare studio	Chair: Fokko Mulder
10:30 - 11:00	Keynote Thijs de Groot Increasing performance, flexibility and durability of Alkaline Water Electrolysis
11:00 - 11:15	a Onno van der Heijden Li+ Cations Activate NiFeOOH for Oxygen Evolution in Sodium and Potassium Hydroxide
11:15 - 11:30	b Sohan Phadke Modelling Anodic H₂O₂ Accumulation in Alkaline Water Electrolysis with Experimental Validation
11:30 - 11:45	c Venkataramana Rishikesan Catholyte-free Anion Exchange Membrane water electrolysis enabled by thin form factor Nanomesh Electrodes
11:45 - 12:00	d Maximilian Demnitz Catalyst coating of diaphragms for increased performance in alkaline water electrolyzers

Breakout session 2: (Bio) CO₂ electrochemical conversions - electrolyser	
Room: Swing	Chair: Tom Burdyny
10:30 - 11:00	Keynote David Vermaas Scalable cell architectures for CO₂ electroconversion
11:00 - 11:15	a Merin Varghese The effect of electrolyte flow rate on product selectivity in CO₂/CO electrolysis
11:15 - 11:30	b Siddhartha Subramanian Enhancing hydrocarbon production in a copper-based zero-gap carbon dioxide electrolyzer through spatial modulation of CO₂ and CO
11:30 - 11:45	c Hugo-Pieter Iglesias van Montfort Mapping Spatial Effects in CO₂ Electrolyzers
11:45 - 12:00	d Mu Lin Low energy consumption AEM-based electrochemical carbon capture process design

Breakout session 3: Electrochemical production of NH₃, C-N and specialty chemicals – Session 1	
Room: Jazz 3	Chair: Ruud van Ommen
10:30 - 11:00	Keynote Marta Costa Figueiredo Electrocatalytic synthesis of fertilizers
11:00 - 11:15	a Min Li Polymer Modified Ru Nanoparticles Boost Electroreduction Nitrate to Ammonia in Water-fed PEM Cell
11:15 - 11:30	b Boaz Izelaar Electrochemical Ammonia Synthesis via Lithium-mediated Nitrogen Reduction
11:30 - 11:45	c Ruipeng Luo Operando NMR study of electrochemical lithium-mediated ammonia synthesis
11:45 - 12:00	d Phebe van Langevelde The Electrochemical Production of Hydrogen Peroxide with Molecular Copper Catalysts

Breakout session 4: Integrated equipment & Plant design	
Room: Jazz 4	Chair: Ana Somoza-Tornos
10:30 - 11:00	Keynote Mar Pérez-Fortes Exploring the implementation of CO₂ electrolysis for syngas production: scaling strategies and trade-offs
11:00 - 11:15	a Jeroen Homan Processing of PEM fuel cell catalyst layers
11:15 - 11:30	b Akmal Irfan Majid A Rotating Disc Electrochemical Reactor to Produce Iron Powder for the CO₂-Free Iron Fuel Cycle
11:30 - 11:45	c Esteban Camilo Lage Cano A two-stage optimization approach for the design of an electrochemical plant powered by solar energy
11:45 - 12:00	d Josephine Vos Ex-ante techno-economic assessment of a co-electrolysis-based plant for synthetic fuel production

12:00 - 13:30	Lunch + Posters (Foyer 2)
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Plenary session	
13:30 - 14:15	Plenary speaker Andre Bardow Power to the plastics! A systems perspective on a sustainable chemical industry

Breakout session 5: Scaling, dynamic operation & grid connection	
Room: Jazz 3	Chair: Mar Pérez-Fortes
14:30 - 15:00	Keynote Matteo Gazzani Green Hydrogen: From Production to Industry Applications and Technological Advancements - Insights from energy system modelling
15:00 - 15:15	a Lucas Cammann A plantwide control structure for improved flexible production of green hydrogen
15:15 - 15:30	b Jan Wiegner Unleashing the full potential of the North Sea – The role of hydrogen towards 2030 and beyond
15:30 - 15:45	c Thijmen Wiltink Optimal CO ₂ -based syngas supply chain configurations: Insights into location and scaling
15:45 - 16:00	d Özlem Mahmutogullari Sustainable supply chain design for CO ₂ electrolysis under CO ₂ -based syngas demand uncertainty

Breakout session 6: (Bio) CO ₂ electrochemical conversions - component	
Amare Studio	Chair: Ruud Kortlever
14:30 - 15:00	Keynote Ward van der Stam Probing the dynamics of CO ₂ electrolysis with X-ray and Raman scattering
15:00 - 15:15	a Rafael Vos How Temperature and Pressure Affect the Selectivity of the Electrochemical Reduction of CO ₂ at Au, Cu and Ni
15:15 - 15:30	b Matt Peerlings Improving durability of Cu-based electrodes for CO ₂ reduction
15:30 - 15:45	c Shilong Fu Electrochemical CO ₂ Reduction in the Presence of SO ₂ Impurities on a Nitrogen-doped Carbon Electrocatalyst
15:45 - 16:00	d Senan Amireh Engineering gas diffusion electrode microstructures for the electrochemical reduction of CO ₂

Breakout session 7: Electrochemical production of NH ₃ , C-N and specialty chemicals – Session 2	
Room: Swing	Chair: Marta Costa Figueiredo
14:30 - 15:00	Keynote Ludovic Jourdin Microbial Electrosynthesis from CO ₂ reaches Productivity of Syngas and Chain Elongation Fermentations
15:00 - 15:15	a Pim Broersen Electrochemical glycine production from biomass derived starting chemical materials
15:15 - 15:30	b Talal Ashraf Electrooxidation of Carboxylic Acids on Boron Doped Electrodes for Pyrolysis Oil Upgradation Application
15:30 - 15:45	c Ivo van Luijk Enhancing Faradaic Efficiency in Electrocatalytic H ₂ O ₂ Production: Geometrical Particle Size Effects of Non-Noble Transition Metal Nanoparticles
15:45 - 16:00	d Adam Vass Electrochemical formation of H ₂ O ₂ on a boron-doped diamond-coated mesh anode in a zero-gap PEM electrolyzer

Breakout session 8: Integrating electrolysis with current processes and systems	
Room: Jazz 4	Chair: Atsushi Urakawa
14:30 - 15:00	Keynote Melis Duyar Designing dual function materials for integrated carbon dioxide capture and utilisation
15:00 - 15:15	a Eliana Lozano Integration of BtL and PtX for the production of renewable fuels and ethylene
15:15 - 15:30	b Julia Tiggeloven Exploring the role of electrolyzers in the decarbonization of the ammonia industry
15:30 - 15:45	c James Tonny Manalal The relevance of hydrogen origin for the selection of alternative carbon based technologies - A case study of alternative ethylene production pathways
15:45 - 16:00	d Sanghamitra Chakravarty Exploring enablers and barriers shaping carbon dioxide electrolysis in Europe: A policy and governance perspective

16:00 - 16:30	Closing + Poster prize (Amare Studio)
16:30 - 17:30	Borrel (Foyer 2)
17:30 - 20:00	Dinner (Foyer 3)