



CO₂ and N-compounds management and valorisation

Portfolio international webinars 2024

**A series of talks
given by academic and industrial
top-players**

PROGRAMME

**Organised by Portfolio Communication
DAM4CO2 Managers
*Elisa Esposito, CNR-ITM
Mireia Buaki, PRIMALCHIT
& Communication Portfolio team***

<p style="text-align: center;">EIC-Program Manager Dr. Francesco MATTEUCCI</p> <p style="text-align: center;">Exploring the European Innovation Council (EIC): Empowering Innovation on CO₂ and N management and valorisation</p>	
10.04.2024	Membrane Technology for CO₂ and Nitrogen management and valorisation
15:00 - 15:10 CET	<i>Moderators: Dr. Alessio Fuoco, Dr. Elisa. Esposito (DAM4CO2 project)</i>
15:10 - 15:35	Membrane reactors for CO₂ valorization <i>Prof. Fausto GALLUCCI, Eindhoven University of Technology, Eindhoven, Netherlands.</i>
15:35 - 16:00	Carbon Membranes for gas, vapor, and liquid separation <i>Dr. Arash Mamaghani, CEO XMEM Spinoff, Eindhoven University of Technology, Eindhoven, Netherlands.</i>
12.06.2024	Electrochemical methods for CO₂ and Nitrogen valorization: Electro catalysis and Gas Diffusion Electrodes
15:00 - 15:10 CET	<i>Moderators: Dr. Gonzalo Guirado, Mrs. Virginia Mata Marcano (CONFETI project).</i>
15:10 - 15:35	Electrocatalytic systems of high-value compounds from waste molecules <i>Prof. Marta Costa Figueiredo, University of Eindhoven, Eindhoven, Netherlands.</i>
15:35 - 16:00	Gas Diffusion Electrodes in Electrolysis - from Chlorine to CO₂ Reduction <i>Dr. Jürgen Kintrup, Covestro Deutschland AG, Leverkusen, Germany.</i>
11.09.2024	TOPIC TO BE ANNOUNCED
15:00 - 15:10 CET	<i>Moderator: Dr. JR Galán-Mascarós (SUPERVAL project)</i>
15:10 - 15:35	Title to be announced <i>Dr. Poul Georg Moses, TOPSOE, Lyngby, Denmark.</i>
15:35 - 16:00	Challenges in the fundamental understanding of electrochemical CO₂ reduction <i>Prof. Marc Koper, Leiden University, Leiden, Netherlands.</i>
11.12.2024	Advancements in Microbial Gas Fermentation and Engineering for Sustainable CO₂ and Nitrogen Management
15:00 - 15:10 CET	<i>Moderators: Dr. Arttu Luukanen, Dr. Senni Lehtonen (HYDROCOW project)</i>
15:10 - 15:35	Microbial gas fermentation (oral presentation) <i>Dr. Juha-Pekka Pitkänen, Solar Foods, Helsinki, Finland.</i>
15:35 - 16:00	Engineering microbes towards new-to-nature functions for sustainable production (oral presentation) <i>Prof. Sonja Billerbeck, University of Groningen, Groningen, Netherlands.</i>

Francesco Matteucci EIC Programme Manager for advanced materials for energy & environmental sustainability



Francesco Matteucci is an innovation manager with 20 years of experience spent as a researcher in materials science, as a Corporate R&D Manager within the field of technologies for renewable energy production and storage, and as an intermediary of knowledge trying to exploit the research results within the field of energy and environment. As R&D Corporate manager, he also cofounded and directed several start-ups and joint-labs managing public-private partnerships.

As a facilitator of knowledge exploitation (IoK), he co-managed publicly funded projects, as well as Emilia Romagna Climate-KIC Innovation Centre, Dhitech Living Lab on Nanotechnologies, Emilia-Romagna Greentech Clust-ER. Francesco acted as scientific expert within the Vanguard Initiative ADMA Pilot, reviewer of research projects, co-authored over 30 scientific papers, 5 patents, and was Visiting Professor at the University of Ferrara as well as speakers in many conferences and workshops.

Prof. Fausto GALLUCCI Eindhoven University of Technology, Eindhoven, The Netherlands

Membrane reactors for CO₂ valorization



Fausto Gallucci is Full Professor of Inorganic Membranes and Membrane Reactors at the Chemical Engineering and Chemistry department of Eindhoven University of Technology/ Netherlands. In the last 10 years responsible of more than 60 projects (35 EU) on membranes and integrated reactors. His research lead to the creation of 3 spinoff companies, H2SITE, MODELTA and X:MEM. He has published more than 300 papers h-index of 58.

Dr. Arash Mamaghani, XMEM, Eindhoven University of Technology, Eindhoven, The Netherlands

Carbon Membranes for gas, vapor, and liquid separation



Arash Mamaghani finished his PhD and postdoc with a specialization in the Development of Carbon Membranes for Membrane Reactors from the Eindhoven University of Technology in the group of Sustainable Process Engineering under the supervision of Prof. Fausto Gallucci. The knowledge gained during the years of development of Carbon Membranes led to the creation of a Spinoff company XMEM. Arash at XMEM, is focused on the development and scale-up of separation technologies based on carbon membranes to be applied in industries for gas, vapor, and liquid separation.

Prof. Marta Costa Figueiredo from the University of Eindhoven, The Netherlands

Electrocatalytic approaches for the synthesis of fertilizers



Marta Costa Figueiredo studied chemistry at Porto University where she obtained her MSc degree in 2008. From 2009 to 2012, she moved to Spain for her PhD research in electrocatalysis for the reduction of nitrogen-containing compounds under the supervision of Prof. Juan Feliu. After finishing her PhD in 2012, Marta was a postdoctoral researcher at different Universities in Europe Aalto University, Leiden University, and the University of Copenhagen. From 2017 until 2019, Marta was a Scientist at Avantium (Amsterdam), working on CO₂ electrochemical conversion. In April 2019, she was appointed as an assistant professor at the Inorganic Materials Chemistry research group at TU/e. Her research is devoted to electrocatalysis and electro(catalytic)synthesis for sustainable processes and the production of high-value chemicals like fuels and organic molecules from "waste" substrates, for example, carbon dioxide, and biomass.

Dr. Jürgen Kintrup from Covestro Deutschland AG, Leverkusen, Germany

Gas Diffusion Electrodes in Electrolysis - from Chlorine to CO₂ Reduction



Jürgen Kintrup received his PhD in Physical Chemistry in the field of metal hydrogen systems at the University of Münster (Germany). Since 1999 he is working for Bayer, Bayer MaterialScience and now Covestro in R&D in the fields of heterogeneous catalysis, electrocatalysis, electrode and electrochemical process development. His key expertise is in the field of chlorine manufacturing as well as the production and use of gas diffusion electrodes for reduction of oxygen and carbon dioxide. In his work Jürgen was part of several industry cooperations, research alliances and project teams which have established industrial electrolyses for energy saving chlorine production using oxygen depolarized cathode (ODC) technology. He is devoted to the development of sustainable electrochemical processes from laboratory to plant scale and is passionate to share his knowledge and experience with young scientists.

Dr. Poul Georg Moses Haldor Topsøe Denmark

TITLE PRESENTATION TBA



Poul Georg Moses is Director of exploratory R&D at Haldor Topsoe.

The exploratory R&D portfolio lies in the fuzzy end of innovation and aims at supporting Haldor Topsoe long term strategy to provide solutions for sustainable production of fuels and chemicals. Poul Georg Moses has been with Haldor Topsoe since 2011 and have held various positions in R&D. Prior to joining Haldor Topsoe in 2011 Poul Georg Moses held post doc positions at Stanford university and UCSB. Experienced leader working within the exciting field of innovating deep tech solutions for the energy transition. Innovating sustainable solutions in the interface between business model innovation, engineering, material science and early stage production. Member of the Industrial Researcher Committee under the Danish Innovation Fund.

Prof. Marc Koper Leiden University

Challenges in the fundamental understanding of electrochemical CO₂ reduction



Marc Koper (1967) studied chemistry at Utrecht University, and obtained his PhD (cum laude) with Prof. J.H. Sluyters from Utrecht University in 1994 on "Far-from-equilibrium phenomena in electrochemical systems: instabilities, oscillations and chaos". From 1995 to 1997 he was a postdoctoral Marie Curie Fellow in the group of Prof. W. Schmickler at the University of Ulm (Germany). In 1997, he returned to the Netherlands to join the group of Prof. R.A. van Santen at Eindhoven University of Technology, where he initially was a Fellow of the Royal Netherlands Academy of Arts and Sciences and later associate professor. In 2005, he was appointed full professor in fundamental surface science at Leiden University.

His interests are in electrochemistry, electrocatalysis, (electrochemical) surface science, and theoretical and computational (electro-)chemistry.

Dr Juha-Pekka Pitkänen, Solar Foods

Microbial gas fermentation



Prior to co-founding Solar Foods, Dr Juha-Pekka Pitkänen was a principal scientist in bioprocess engineering at VTT Technical Research Centre of Finland. He was in charge of bioprocess development for production of fuels and chemicals. In addition, he has previous start-up experience having served as the CTO of BioSampler, an automated sterile sampling system from industrial fermentations. He has also developed a sampling and parallel cultivation device for bioprocesses, which was actually the first product of Medice Oy. Juha-Pekka is currently the CTO and a co-founder at Solar Foods.

Prof Sonja Billerbeck, University of Groningen

Engineering microbes towards new-to-nature functions for sustainable production



Sonja holds a Master's in Microbiology / Biochemistry from the University of Tübingen and the Max Planck Institute for Developmental Biology, and a PhD in Bioengineering from ETH Zürich. After postdoctoral work in yeast Synthetic Biology at Columbia University in New York City, Sonja joined the University of Groningen as Assistant Professor in 2019.

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