

SUSTAINABLE PLASTICS

Joining CCU, Circular Economy and Power-to-X for better Polymers

25th of March 2021

Online

Programme

Moderated by Alexis Bazzanella, DECHEMA and Christoph Gürtler, Covestro

Welcome and Keynotes

10:00	Welcome <i>Moderators</i>
10:05	Green Deal and Horizon Europe – Facilitating a European circular economy <i>Søren Bøwadt, European Commission, Deputy Head "Advanced Materials and Nanotechnology"</i>
10:20	Processes4Planet: Transforming the European process industry for a sustainable planet & a prosperous society <i>Marta Domper, A.SPIRE</i>
10:35	Renewable Carbon Strategy – CO₂ utilization for a resilient European circular economy <i>Michael Carus, CEO nova institute</i>
10:50	Short break

Carbon4PUR Highlights Session

11:00	Innovation for tomorrow – today's chemical champions for more sustainable products <i>Markus Steilemann, CEO Covestro</i>
11:10	Carbon4PUR – Industrial waste gases from steel industry for more sustainable polyurethane applications <i>Liv Adler, Covestro, Coordinator Carbon4PUR</i>
11:20	Carbon4PUR – Building bridges along industries <i>Consortium partners</i> <ul style="list-style-type: none">• Status quo and future needs from the point of view of the steel industry• Gas purification and conditioning developed in Carbon4PUR• Chemical approaches to produce sustainable CO/CO₂-based polyols• Application potentials, products, and markets for the new polyols• Challenges and implementation of industrial symbiosis



12:00 **Carbon4PUR – Assessment of environmental impact, economic aspects, acceptance and perception of CO₂/CO utilization and policies and regulations**
Consortium partners

12:30 **Q&A**
Moderators

12:45 **Lunch break**

Keynote

13:15 **Sustainable Plastics Strategy**
Nieves Gonzalez Ramon, SusChem

CO₂EXIDE Highlights Session

13:30 **Power-to-X and the chemical industry – The role of electrification for future sustainable markets**
Armin Schnettler, EVP Siemens Energy

13:35 **CO₂EXIDE – Electrochemical CO₂ conversion to produce ethylene and ethylene oxide derivatives**
Arne Roth, Fraunhofer IGB, Coordinator CO₂EXIDE

14:00 **CO₂EXIDE – The CO₂EXIDE electrochemical cell: Simultaneous ethylene and hydrogen peroxide production**
Kerstin Wiesner-Fleischer, Siemens Energy

14:30 **CO₂EXIDE – Life cycle assessment and impact-related studies**
Johannes Lindorfer, Energy Institute at the Johannes Kepler University Linz

15:00 **Q&A**
Moderators

15:15 **Short break**

Joint Session

15:30 **Lessons learned during Carbon4PUR and CO₂EXIDE**
Liv Adler and Arne Roth, Coordinators Carbon4PUR and CO₂EXIDE

15:45 **Panel discussion: Demands and next steps towards a circular industry in Europe**
Walter Leitner, MPI-CEC / RWTH Aachen University
Maximilian Fleischer, Siemens Energy
Sophie Wilmet, CEFIC
Carmine Marzano, European Commission, DG Research and Innovation
Florian Ausfelder, DECHEMA

16:15 **Wrap-up of the event**
Moderators

16:30 End of the event

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Carbon4PUR

The EU process industry needs to become less dependent of fossils as source of carbon, and – at the same time – to reduce the greenhouse effect. The project Carbon4PUR tackles the two challenges at the same time: CO/CO₂-rich waste gas streams, e.g., from the steel industry, shall serve as potentially interesting alternative carbon-resources for the chemical industry. In Carbon4PUR, we aim to transform steel mill waste gas streams into higher value intermediates for more sustainable polyurethane applications. Both the multidisciplinary consortium and the work are organized along the full value chain starting with the provision and conditioning of industrial emissions from a steel to a chemical company in line with the concept of industrial symbiosis. Carbon4PUR targets on rigid foams for building insulation and polyurethane dispersion resins for wood coatings for market-oriented consumer products.

www.carbon4pur.eu/



Funding

Programme: EU Horizon 2020

Action: Research and Innovation Action (RIA)

Topic: H2020-SPIRE-8-2017

Call: Carbon dioxide utilisation to produce added value chemicals

H2020-IND-CE2016-17

Duration

October 2017 – March 2021



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 768919.



CO₂EXIDE

The key objective of the project CO₂EXIDE is the development of an electrochemical, energy efficient and near-to-CO₂-neutral process to produce the bulk chemical ethylene oxide from CO₂, water, and renewable energy. The process is adapted to the utilisation of biogenic emissions from fermentation or biogas upgrading which produce a highly concentrated CO₂-off-gas. One of the central innovations of the process is the development of a new type of electrolyser that enables a simultaneous value-added reaction on both anode and cathode. The technology is suitable for the utilisation of excess energy or off-peak power and feasible for decentralised application, as adjunct to wind parks or solar-electric generation.

The CO₂EXIDE technology is currently developed by the collaboration of ten organisations from six European countries, bundling expert knowledge from the fields of surface physics, electrochemistry, apparatus engineering, energy management and communication. The project is assigned to the SPIRE initiative „Sustainable Process Industry“.

www.co2exide.eu



ACADEMIC CENTRE
FOR MATERIALS
AND NANOTECHNOLOGY AGH



SCHAEFFLER

SIEMENS
energy

UNIVERSITY OF
Southampton

Funding

Programme: EU Horizon 2020

Action: Research and Innovation Action (RIA)

Topic: SPIRE-10-2017

Call: Industry 2020 in the Circular Economy

H2020-IND-CE2016-17

Duration

January 2018 – June 2021



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Registration for free

- Scan the QR Code
- Or visit the events section on www.carbon4pur.eu or www.co2exide.eu
- Or go directly to the registration website:
<https://dechema.converia.de/frontend/index.php?sub=459>.



Costs

Free of charge. You can attend the symposium at no further costs. Registration required.

Contact



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