CO₂ as chemical feedstock – a challenge for sustainable chemistry

15–16 March 2018, Maternushaus, Cologne (Germany)

1st Day, 15 March 2018: Political Framework & Visions
• Innovation and Strategy
• Sustainability and Policy
• CO₂ Capture and New Technologies

2nd Day, 16 March 2018: Chemicals & Energy from CO₂
• CO₂ for Chemicals and Polymers
• CO₂ for Fuels

One of the leading events on Carbon Capture and Utilization (CCU) in the world

Big visions – and also real potential! The usage of carbon dioxide, among experts referred to as Carbon Capture & Utilization (CCU), is gaining momentum. First commercial production of CO₂-based polymers has been launched, several additional technologies have progressed so far to allow production on an industrial scale in the near future – with advanced biotechnology and chemical catalysis. At the same time are renewable energy from solar, wind and hydro becoming cheaper each year and the latest plants at favourable locations are already at the same price level as fossil energy sources and even below. A perfect situation for combining cheap and abundant renewables with carbon utilization to store energy, to produce renewable fuels and chemicals. Renewable energy and CCU will reshape the energy system of the future and the chemical industry, too. Join the revolution, visit the conference, meet the leading entrepreneurs of the new industry.

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### Programme of the 1st Day, 15 March 2018

**10:00** Conference Opening  
*nova-Institut GmbH*  
Michael Carus

**10:10** Opening Words: Ministry of Economic Affairs, Innovation, Digitalization and Energy of the State of North Rhine-Westphalia  
*Minister Prof. Dr. Andreas Pinkwart*  
Carbon Dioxide as a Raw Material of the Future – Perspectives for the North Rhine-Westphalian Industry

**10:30** European Commission  
*Jürgen Tiedje*  
**CCU in the EU Policy Framework of the Decarbonisation of Industry**

**10:50** Bundesministerium für Bildung und Forschung  
*Dr. rer. nat. Helmut Löwe*  
**CO2 Valorisation – new Developments in Germany and Europe**

**11:00** Bundesministerium für Bildung und Forschung  
*Dr. rer. nat. Helmut Löwe*  
**CO2 Valorisation – new Developments in Germany and Europe**

**11:10** VITO  
*Linsey Garcia-Gonzalez, Heleen de Wever*  
**Carbon Capture and Utilization (CCU): Current Status, Challenges and Way Forward**

**11:30** CO2 Value Europe  
*Uniper SE*  
*Dr. Stefanie Kesting*  
**CO2 Value Europe, the New Industry Association Dedicated to CCU**

**12:15** Lunch Break

**13:30** Solar Economy  
*Lappeenranta University of Technology*  
*Prof. Christian Breyer*  
**The Potential for a Global Renewable Energy System and the Implications for Synthetic Fuels and Chemicals**

**14:00** nova-Institut GmbH  
*Michael Carus*  
**Sustainability of Carbon Capture and Utilization**

**14:40** Coffee Break

**15:10** Umweltbundesamt  
*Lisa Buchner*  
**CCU in the Framework of the EU Emissions Trading System (EU ETS) Today and Tomorrow**

**15:30** Energy Research Centre of the Netherlands (ECN)  
*Dr. Remko J. Detz*  
**The Future of Solar Fuels: When Could They Become Competitive?**

**15:50** VTT  
*Dr. Sc. Juha-Pekka Pitkänen*  
**Production of Single-cell Protein from CO2 and Electricity**

**16:10** Panel Discussion: CCU and Sustainability

**16:40** Coffee Break

**17:10** Climeworks AG  
*Daniel Egger*  
**Direct Air Capture for Sustainable Carbon Capture and Utilisation Processes**

**17:30** University of York  
*Prof. Dr. Michael North*  
**CO2 Capture and Electrochemical Mineralisation**

**17:50** University of Antwerp  
*Marileen Ramakers*  
**Carbon Dioxide as Feedstock for Value-Added Chemicals and Fuels in a Sliding Arc Plasmatorn**

**18:10** Cold Beer on Tap in the Exhibition Space

**20:00** Dinner Buffet

**22:00** Live Musik

**23:00** German Bowling & Bar
## Programme of the 2nd Day, 16 March 2018

### CO₂ for Chemicals and Polymers

**Chairpersons:** Prof. Dr. Haralabos Zorbas, IBB | Dr. Cornelia Baehr, CLIB2021 / BIG C

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<thead>
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<th>Time</th>
<th>Session</th>
<th>Speaker</th>
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<tbody>
<tr>
<td>09:00</td>
<td>ICIQ / ICREA</td>
<td>Prof. Dr. Arjan Kleij</td>
<td>Where Carbon Dioxide and Terpenes Merge into Biopolymers: Creating Potential as Platform Molecules for the Polymer Industry</td>
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<tr>
<td>09:20</td>
<td>Wageningen University</td>
<td>David Strik</td>
<td>CO₂ to N-caproate: Bioelectrochemical Chain Elongation to new Platform Chemical</td>
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<td>09:40</td>
<td>CO₂ Solutions</td>
<td>Ph.D. Louis Fradette</td>
<td>Valorisation Carbone Québec: A unique CO₂ Capture and Utilization Project</td>
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<tr>
<td>10:00</td>
<td>Nordic Blue Crude</td>
<td>Gunnar Holen</td>
<td>sunfire GmbH</td>
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### CO₂ for Fuels

**Chairpersons:** Dr. Holger Bengs, BCNP Consultants | Dr. Ing. Frank Köster, EnergieAgentur.NRW

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<tbody>
<tr>
<td>11:00</td>
<td>Covestro AG</td>
<td>Dr. Jochen Norwig</td>
<td>CO₂ – A Versatile Building Block for a Broad Range of Applications</td>
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<td>11:30</td>
<td>Avantium</td>
<td>Dr. Klaas Jan Schouten</td>
<td>CO₂ Electrocatalysis as Key Technology for the Production of High Value Chemicals</td>
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<tr>
<td>11:50</td>
<td>EnergieAgentur.NRW</td>
<td>Dr. Ing. Frank Köster</td>
<td>Green Growth and Bioeconomy from a Regional Perspective</td>
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<tr>
<td>12:10</td>
<td>Harp Process Chemistry Consulting</td>
<td>Dr. Günter Harp</td>
<td>Methanol as Key for Industrial Symbiosis between Chemistry and Steel</td>
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<td>12:30</td>
<td>Mitsubishi Hitachi Power Systems Europe GmbH</td>
<td>Dr.-Ing. Muhammad Majid, University of Stuttgart, Dipl.-Ing. Aleksandar Lozanovski</td>
<td>OptiMeH – Optimised Process Chain for a Resource-efficient Methanol Synthesis</td>
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### 10:30 Coffee Break

### 11:00 Lunch Break

### 14:30 Phytonix Inc.                                                 | Bruce Dannenberg | Phytonix Latest Developments and the Challenging Process of Moving Towards Pilot and Commercial Scale-up |
| 15:00 | Thyssenkrupp AG                                                        | Dr. Markus Oles, Fraunhofer UMSICHT, Prof. Dr.-Ing. Görge Deerberg | Carbon2Chem – Valorising Emissions from the Steel Industry |
| 15:30 | VTT                                                                    | Dr. Pekka Simell | SOLETAIR – Fuels and Chemicals from the Sun and Air: Experiences from the Integration and Test Campaigns |
| 15:50 | Fraunhofer-Institut für Solare Energiesysteme                           | Dr.-Ing. Achim Schaadt | A Hybridised Approach to Oxyethylene Ethers (OME) Synthesis – Designer Oxygenated Fuels and Solvents |

### 16:10 Coffee Break

### 16:40 SkyNRG                                                   | Misha Valk | Sustainable Aviation Fuels, the Challenges and Opportunities for CO₂ Based Technologies |
| 17:00 | bse Engineering Leipzig GmbH                                         | Christian Schweitzer | System Relevant Energy Consumption for CO₂ Processing Fuels |

**17:20 Networking Reception**
6th Conference on CO₂
Carbon Dioxide as Feedstock for Fuels, Chemistry and Polymers

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6th Conference on
Carbon Dioxide as Feedstock for Fuels, Chemistry and Polymers

WWW.CO2-chemistry.eu

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Leading event on Carbon Capture & Utilization (CCU)
More than 200 leading international experts in CO₂ utilization are expected to attend the conference and share their recent success stories, as well as new ideas and products in realization.
www.co2-chemistry.eu
Register now!

Call for posters
You are welcome to present your scientific poster to inform the participants about your projects and results. If you would like to present your work in the field of carbon dioxide as a feedstock for chemistry and polymers please send an abstract to Mr. Achim Raschka.

Venue & Accommodation
Maternushaus
Kardinal-Frings-Straße 1
50668 Cologne
+49 (0)221 163 10
www.maternushaus.de
The venue is located within twelve minutes walking distance from Cologne central station.

Entrance Fee

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<th>1st Day of Conference</th>
<th>2nd Day of Conference</th>
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<tbody>
<tr>
<td></td>
<td>15 March 2018</td>
<td>16 March 2018</td>
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<tr>
<td></td>
<td>545 €</td>
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(Conference incl. Catering, 19 % VAT exclusive)

2018-02-26