Kick-off meeting of the H2020 project "CO_2-based Electrosynthesis of ethylene oXIDE – CO_2EXIDE"

On 18th/19th January, the kick-off meeting of the CO_2EXIDE project "CO_2-based electrosynthesis of ethylene oxide", coordinated by Fraunhofer IGB, Straubing branch BioCat, was held in Brussels to give the initial starting point for partners to work. "Every partner, from academia to industry, knows about the significance and impact of the CO_2EXIDE project on the further development of future chemical factories", Dr. Tobias Gärtner introduced to the audience. In the course of the meeting, the workplan and project internal cooperations have been discussed intensively - partners from different areas of science had the chance to get in touch with each other.

The CO_2EXIDE project aims at the development of a combined electrochemical-chemical technology for the production of ethylene oxide from biobased CO_2. Initially, the electrochemical step pursues the simultaneous conversion of CO_2 to ethylene at the cathode and water oxidation to hydrogen peroxide at the anode. A subsequent chemical conversion of both intermediates to ethylene oxide will deliver e.g. oligo-/polyethylene glycol in a chemical cascade reaction. The CO_2EXIDE technology combines a modular nature for the feasibility of a decentralised application, a high energy and material efficiency/yield and the substitution of fossil based production of ethylene oxide.

In line with the energy turnaround, the CO_2EXIDE technology will be combinable with renewables and allows for the direct creation of products, which can be integrated into the existing supply chain. The reactions will be operated at low temperatures and pressures and forecast significant improvements in energy and resource efficiency combined with an enormous reduction of GHG emissions. All improvements will be quantitated using life cycle assessment.

The CO_2EXIDE approach will bring together physicists, chemists, engineers and dissemination and exploitation experts from five universities/research institutions, three SMEs and two industries, innovatively joining their key technologies to develop and exploit an unprecedented process based on CO_2, renewable energy and water to connect the chemical and energy sector.

Partners:

No	Participant organisation name	Country
1 (Coord.)	Fraunhofer Institute for Interfacial Engineering and Biotechnology IGB	Germany
2	AGH University of Science and Technology, Academic Centre for Materials and Nanotechnology, Kraków	Poland
3	Institute of Solid State Physics of the University of Latvia	Latvia
4	Budapest University of Technology and Economics, Department of Atomic Physics	Hungary
5	University of Southampton	UK
6	Schaeffler Technologies AG & Co. KG	Germany
7	Siemens AG	Germany
8	Energieinstitut an der Johannes-Kepler-Universität Linz	Austria
9	axiom Angewandte Prozesstechnik Ges.m.b.H.	Austria
10	EPC Projektgesellschaft Klima. Nachhaltigkeit. Kommunikation mbH (gemeinnützig)	Germany

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