

## **Combining chemistry and biotechnology for the production of CO<sub>2</sub>-based chemicals - Chances and risks**

*Ulrike Junghans, Grzegorz Kubik, Carsten Pietzka, Michael Richter, Arne Roth,*

*Christine Rasche*

*Fraunhofer IGB, Germany*

To leverage the whole potential of chemicals accessible from CO<sub>2</sub> a combination of various processes and conversion pathways via e.g. electro- and biocatalysis are needed. What allows on the one hand to choose the most efficient route in terms of conversion rates, may on the other result in complex setups for scaling-up and final plant layout. Here, novel reactor designs or modes of operation can help to overcome critical challenges. In this presentation, the authors will benchmark and discuss various routes based on specific product examples including various aspects along the value chain.