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Volker Sick

Developing Carbon Dioxide as a Versatile Raw Material for Chemicals and Fuels

Abstract

Many of the chemicals and fuels we need contain fossil carbon. While we cannot decarbonize these substances, we can change the source of the carbon they contain. More technologies to accomplish this with CO₂ in an environmentally and economically beneficial way must be developed and scaled. This talk presents an overview of research examples at the University of Michigan that range from simulations and experiments to develop catalysts for CO₂ conversion, the use of algae to produce fuels, to semiconductor-based devices that directly convert CO₂ and water into chemicals and fuels.