

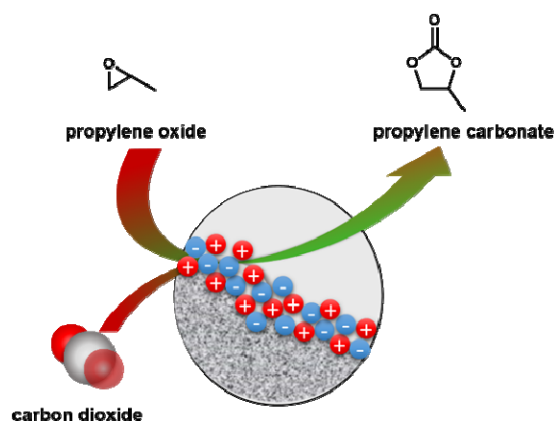
CONTINUOUS TRANSFORMATION OF CARBON DIOXIDE USING SUPPORTED IONIC LIQUIDS

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The utilization of CO₂ as raw material is highly desirable to produce valuable products. In this regard, ionic liquids have attracted considerable interest as they can be used as tailored catalysts for the conversion of CO₂ to chemical feedstocks [1]. Moreover, the liaison of ionic liquids with supercritical CO₂ (scCO₂) provides a convenient tool for the immobilization of catalysts while simultaneously utilizing scCO₂ as both solvent and reactant.

In here, we present our investigations towards the use of supported ionic liquid phases (SILPs) as catalysts for the conversion of scCO₂, aiming for the continuous production of valuable products such as cyclic carbonates or formamides. A set of ionic liquids with different core and anions was initially evaluated under homogeneous conditions in batch mode. Eventually, a continuous flow process using supported ionic liquids was developed, and a considerable impact of ionic liquid structure, support material, and immobilization strategy on long-term process stability was observed [2].



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[1] Cokoja, M.; Wilhelm, M. E.; Anthofer, M. H.; Herrmann, W. A.; Kuhn, F. E. *ChemSusChem* **2015**, *8*, 2436-2454.

[2] Sainz Martinez, A.; Hauzenberger, C.; Sahoo, A.R.; Csendes, Z.; Hoffmann, H.; Bica, K. *ACS Sus. Chem. Eng.* **2018**, *6*, 13131-13139.