

PRESS RELEASE

CO₂Fokus Project

February 2022

Great progress towards CO₂ utilization – The CO₂Fokus catalyst development is completed and the reaction optimization for DME production is underway.

A key objective of the CO₂Fokus project is developing a highly selective and durable catalysts for the direct conversion of CO₂ to DME.

Partner *Hybrid Catalysis (HyCAT)* working together with *ITAE, FEY* and *HTF*, synthesized a reference catalyst formulation by conventional deposition on solid carriers. From an industrial application perspective, the selection criteria for a competitive catalyst include their superior stability in the catalytic reactor and its regeneration capacity.

The synthesis of a reference catalyst in CO₂Fokus was accompanied by activity and stability testing, with further testing work completed to describe possible catalyst deactivation mechanisms. A set of duration tests led to the identification of the most suitable formulations for the specific process conditions of DME production over time.

This reference catalyst formulation is an important building block towards the optimization of the CO₂ utilization reaction for the production of DME. Crucial activities are ongoing in the second phase of the project. These focus on selecting and testing the best performing catalyst materials and catalyst configurations. The partner and project coordinator VITO developed 3D printed multi-channel monolithic catalysts in close collaboration with partners HyCAT, FEY and ITAE. The project is also advancing on the design specifications for the pilot unit, the optimization of the reaction conditions to maximize DME yields, and also in the selection of reactor and equipment configurations to build on-site at the facilities of partner SOCAR in Turkey.

There is also significant progress in other CO₂Fokus project tasks, for example an extensive market review and interviews with over 15 experts to shape the CO₂Fokus business plans, as well as survey results for the Social acceptance analysis. These are more task will be showcased in the next CO₂Fokus Newsletter, due March 2022.