



GLycerol to Aviation and Marine prOducts with sUstainable Recycling

PROJECT

GLAMOUR (GLycerol to Aviation and Marine prOducts with sUstainable Recycling) is a H2020 research project to demonstrate the conversion of bio-waste feedstock such as glycerol into jetfuel and marine diesel oil by combining two technologies: Syngas generation using gas solid reactions and compact Fischer-Tropsch process with 3D printed catalyst.

OBJECTIVES

- To develop, test and scale-up new catalyst formulations for chemical and calcium looping reforming
- To select, test and scale-up a new 3D-printed structured catalyst for FT synthesis
- To integrate and demonstrate the glycerol-to-syngas conversion and fuel synthesis in a single process prototype at TRL5 after 1000 hrs of operation
- To perform the overall techno-economic analysis and optimisation of the process for full scale applications
- To assess the overall economics of the process
- To implement the business plan of the GLAMOUR process of the entire value chain
- To improve the social sustainability of bio-fuels and inform policy makers

LATEST UPDATES

The Project is currently entering the pre-demonstration stage.

The research activities on Industrial Applications in WP2 are almost completed with the conceptual process design and integration of the glycerol to liquid fuels plant fully simulated and designed to achieve a performance efficiency close to 19%. The preliminary LCA has been carried out including data from the literature and results from the laboratory scale analysis.

The syngas generation via chemical looping has been carried out using existing material at small laboratory scale and the new catalyst developed within the GLAMOUR project can achieve 100% glycerol conversion into syngas.

The 3D printed reactor for FT synthesis is currently looking at the testing and modelling validation to tune the thermal behaviour and heat management using the 3D printed structures.

The Eindhoven University of Technology has purchased most of the equipment and they are now completing the integrated pilot plant for the TRL5 demonstration. The results of the project have been disseminated at different international conferences, including workshops with other EU projects and its industrial workshop held in the frame of the ECOMONDO exhibition in November 2022.



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