The objective of the GLAMOUR project is the design, scale-up and validation of an integrated process that converts the waste bio-based feedstock such as crude glycerol into aviation and marine diesel fuels. The focus of the project will be a combination of developing a new glycerol reforming/gasification process using chemical looping to produce syngas and the integration of Fischer-Tropsch compact reactor integrated with 3D printed structured catalyst. The GLAMOUR process will achieve full conversion of the crude glycerol into syngas which is later upgraded to synthetic paraffinic kerosene (SPK) to be used in jet fuel and marine diesel oil (MDO). The University of Manchester has started the testing of the glycerol CLR process at TRL4 using a benchmark oxygen carrier material and crude glycerol feedstock. The GLAMOUR process aims to achieve full conversion of the crude glycerol-to-syngas conversion and fuel synthesis in a single process prototype at TRL5 after 1000 hours of operation. This development is expected to increase the overall revenue of existing 2nd generation bio-diesel plants reducing the cost of jet fuel and into marine diesel oil (MDO) with an energy efficiency of 65%. These improvements would increase the overall economics of the process, bringing into the focus of the project exploitation and stakeholders’ engagement. The project objective is the design, scale-up and validation of an integrated process that converts the waste bio-based feedstock such as crude glycerol into aviation and marine diesel fuels. The focus of the project will be a combination of developing a new glycerol reforming/gasification process using chemical looping to produce syngas and the integration of Fischer-Tropsch compact reactor integrated with 3D printed structured catalyst. The GLAMOUR process will achieve full conversion of the crude glycerol into syngas which is later upgraded to synthetic paraffinic kerosene (SPK) to be used in jet fuel and marine diesel oil (MDO). The University of Manchester has started the testing of the glycerol CLR process at TRL4 using a benchmark oxygen carrier material and crude glycerol feedstock. The GLAMOUR process aims to achieve full conversion of the crude glycerol-to-syngas conversion and fuel synthesis in a single process prototype at TRL5 after 1000 hours of operation.

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The GLAMOUR Consortium comprises 10 partners from 6 countries with strong multidisciplinary competences required for carrying out this work plan and match project objectives.

GLycerol to Aviation and Marine prOducts with sUstainable Recycling

PROJECT

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