D2.1 Design selection of the heat upgrade reactors

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Deliverable 2.1

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1 Summary

This document describes the design selection process of the thermochemical heat upgrade reactor to be further developed during this project. The design selection process includes the literature review of the existing reactors coupled with the previous experience among the consortium partners, to understand the possible reactor types/configurations that can be used for the TechUPGRADE process. Several reactor types are considered and their advantages and disadvantages are compared. A closed system configuration with a packed bed-type reactor is considered for further development. Within this frame, a novel design of the heat upgrade system is proposed. It is a modular design in which the power output can be increased by adding several modules in the stack. To determine the performance of the proposed design, a numerical model is developed using COMSOL Multiphysics software. The preliminary results show that the proposed design is capable of increasing the input waste heat temperature significantly.

2 Explore Our Findings: Contact for Detailed Insights

For detailed information on the research methodology, analysis, or specific results related to this activity, please contact the TechUPGRADE consortium. Comprehensive project insights are available upon request to interested and qualified parties.

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