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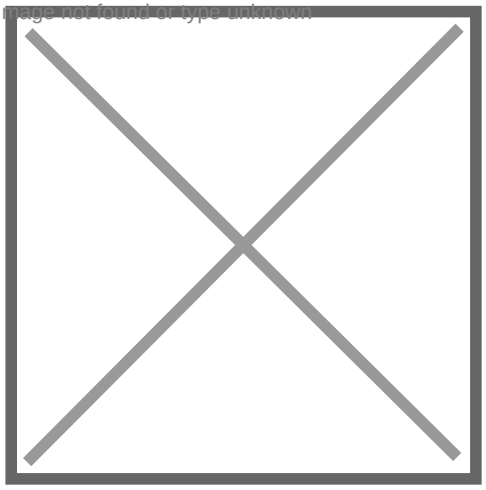

HORIZON-CL4-2022-TWIN-TRANSITION-01-15

FIREFLY

Full Title: FlexIble, predictive and Renewable Electricity powered electrochemical toolbox For a sustainable transition of the catalyst-based European chemicaL industry

Aim:

The FIREFLY project supports the sustainable evolution of the catalyst-based chemical industry towards its electrification and reduced third-party dependence on metals and fossil energy. The FIREFLY project aims to electrify a large part of the chemicals value chain in a sustainable way (environmental, economic and social): power-to-catalyst and chemicals fostered via electrochemical catalyst recycling.

Concept:
In a revolutionary way, the FIREFLY concept introduces RES in the manufacturing process of (electro)catalysts from secondary resources, which will lower significantly the production costs. Using mainly spent, waste and off-specifications catalysts from different industrial applications, the project follows the road to circularity, proposing more sustainable and viable pathways for the chemical industry. The FIREFLY concept relies on the development of: - Electro-driven technologies for metal recycling from spent, waste, and off-specification catalysts available in Europe - Efficient integration of renewable electricity - A digital tool for predictive decision-making - Production of (electro)catalysts for innovative (electro)chemical processes that overcome traditional production routes associated with high operating conditions, greenhouse gas emissions, and lack of circularity

Start date:
01/01/2023

End date:
31/12/2026