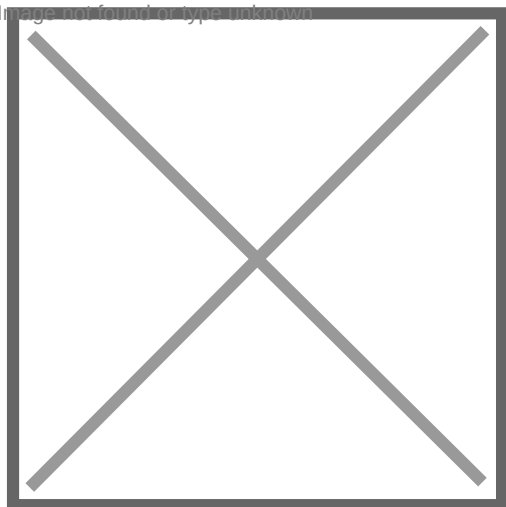


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HORIZON-CL4-2023-TWIN-
TRANSITION-01-31

ELOXYCHEM

Full Title: ELeetrochemical OXidation of cYclic and biogenic substrates for high efficiency production of organic CHEMicals

Aim:

The aim of the ELOXYCHEM project is to revolutionize the production of organic chemicals by replacing traditional, fossil-based thermochemical processes with innovative electrochemical oxidation technologies. By leveraging renewable electricity and advanced digital tools such as AI and digital twins, the project seeks to significantly reduce energy consumption (by up to 60%) and cut CO₂ emissions in the synthesis of valuable carboxylic acids. ELOXYCHEM focuses on converting cyclic and biogenic substrates into high-efficiency chemical building blocks, thereby reducing the EU's dependency on imported feedstocks like nitric acid and fossil resources. The project will culminate in the design and operation of the first pilot-scale electrochemical platform capable of producing multiple tonnes per year of commercial-grade organic acids. These products are intended for use in various applications, including coatings, catalysts, surfactants, agrochemicals, fragrances, dyes, and engineering polymers. By demonstrating industrial feasibility and scalability, ELOXYCHEM paves the way for a more sustainable and resilient European chemical industry.

Start date:
01/01/2024

End date:
01/07/2028