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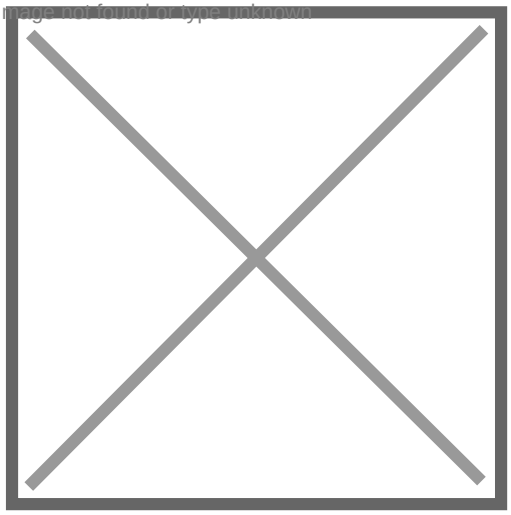

HORIZON-CL4-2022-TWIN-TRANSITION-01-15

Power2Hype

Full Title: Electrochemical synthesis of hydrogen peroxide from water, air and renewable electric energy

Aim:

In line with the European Green Deal, the Processes4Planet partnership and the European initiative for more affordable, secure and sustainable energy (REPowerEU), the RIA proposal Power2Hype aims to establish a sustainable route for the hydrogen peroxide production. Based on air and water as feedstocks, and renewable energy as the sole energy source, the POWER2HYPE route addresses an economically viable and green alternative to the classical energy-demanding anthraquinone oxidation (AO) process.

Concept:
Hydrogen peroxide will be produced by paired electrolysis at both the cathode and anode using an innovative custom-made 200% electrolyser. Aiming the electrification and decentralization of the chemical industry, the POWER2HYPE concept proposes the TRL 6 demonstration of electrolytic hydrogen peroxide production at any given concentration (from 20 to 99 %) at the site where it is needed. With this flexibility of concentration range, hydrogen peroxide could be used from sanitation, bleaching to niche markets as propulsion fuels.

Start date:
01/01/2023

End date:
31/12/2026