

Abstract:

As we navigate through the critical era of climate change, the urgency to minimize greenhouse gas (GHG) emissions is intensifying. The innovative strategy of sealing the CO₂ cycle via electrochemistry offers a compelling solution to significantly reduce the environmental impacts of GHGs, marking a major shift towards a green industrial structure. However, achieving the required capacity to maximize the effectiveness of electrochemical CO₂ conversion remains a difficult challenge. In this context, large-scale production of electrodes that combine effectiveness, durability and scalability is of paramount importance. In this presentation titled "Innovative Approaches for Industrial Electrode Production: A WaterProof EU Horizon Initiative", we will provide a comprehensive overview of the latest industrial breakthroughs at our company, Coatema Coating machinery GmbH, in electrode production that strategically aim to improve CO₂ conversion methods and capacity for broad industrial application.

Keywords: CO₂ Electrochemistry, Industrial Electrodes Production, Carbon Cycle, Biorefinery, Greenhouse Gas Reduction.