

ENFL

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131 - Photoelectrochemical reduction of CO₂ on hybrid organic/inorganic photocathodes

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Sunlight is undoubtedly one of the most valuable resources in the quest to find adequate solutions towards a diversified and sustainable energy supply. In this paper we present the electrosynthesis of hybrid semiconductor/conducting polymer photocathodes and their use in the photoelectrochemical reduction of CO₂. Through careful control over the composition and morphology, we aim to make improvements in: light absorption, charge separation, and stability. A carefully designed sequential method will be presented, where the oxide SC is in situ generated in the presence of its polymeric counterpart. These methods result and in an intimate contact between the organic and inorganic components, both at the physical and electronic level which contributes to an improved PEC performance.

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[Carbon Dioxide Management: Recent Advances in Carbon Dioxide Capture, Conversion, Utilization and Storage \(08:00 AM - 11:40 AM\)](#)

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