



Showcasing research from Professor Minegishi's laboratory, Research Center for Advanced Science and Technology (RCAST), The University of Tokyo, Tokyo, Japan.

A novel particulate photocathode composed of CdTe-ZnTe solid solutions with a composition gradient for solar hydrogen evolution from water

A CdTe-based particulate photocathode with a ZnTe contact layer and composition gradient was developed to improve hydrogen evolution efficiency. Charge recombination was suppressed, and photocurrent onset shifted positively. Additional enhancements, including a Cu back contact and thermal annealing, led to -7 mA/cm^2 photocurrent and 1.1% solar-to-hydrogen efficiency. The electrode achieved up to 36% IPCE at 520 nm and over 10% across 440–800 nm, marking one of the highest performances among particulate photocathodes.

Image reproduced by permission of Tsutomu Minegishi from *Chem. Sci.*, 2025, **16**, 12833.

As featured in:



See Tsutomu Minegishi *et al.*, *Chem. Sci.*, 2025, **16**, 12833.