



Showcasing research from Professor Sarp Kaya's laboratory, Department of Chemistry, Koç University, İstanbul, Türkiye.

Profound influence of surface trap states on the utilization of charge carriers in CdS photoanodes

The fundamental charge transfer and utilization processes of CdS photoanodes have been analysed and a surface electron trapping mechanism through surface sulfur vacancies has been proposed. Transient photocurrent (TPC) measurements reveal surface sulfur vacancies as the electron trap centres that are also involved in the oxygen-evolution reaction. By using a cationic surfactant, hexadecyltrimethylammonium bromide (CTAB) occupying surface sulfur vacancies, electron trapping processes on the surface can be eliminated.

As featured in:



See Sarp Kaya *et al.*,  
*Mater. Adv.*, 2024, 5, 1513.