



Showcasing research from Professor Tiancheng Mu's laboratory, Renmin University of China, and Professor Zhimin Xue, Beijing Forestry University, Beijing, China.

Deep eutectic solvothermal NiS<sub>2</sub>/CdS synthesis for the visible-light-driven valorization of the biomass intermediate 5-hydroxymethylfurfural (HMF) integrated with H<sub>2</sub> production

CdS nanospheres deposited with NiS<sub>2</sub> was prepared by one-step deep eutectic solvothermal method. The prepared NiS<sub>2</sub>/CdS exhibits efficiently visible-light-driven dehydrogenation of biomass intermediate 5-hydroxymethylfurfural (HMF) to one of the most important platform molecules in the organic chemicals industry 2,5-diformylfuran (DFF). The entire photocatalytic process could be achieved in water at ambient condition without using sacrificial agents or organic solvents. The photocatalytic dehydrogenation strategy could be used in other biomass-derivative transformation processes.

As featured in:



See Zhimin Xue *et al.*, *Green Chem.*, 2023, 25, 2620.