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Title:

ENHANCED PHOTOCATALYTIC ACTIVITY OF HALIDE PEROVSKITE NANOCRYSTALS

Photocatalytic processes are among the prime means for mitigating the pollution caused by toxic effluents, i.e., gases emitted into the air we breathe, liquids that pollute our drinking water, and fields used to grow our crops. In this context, photocatalysis presents a promising path, thus undergoing rapid evolution. Because of its negative conduction band minimum and low work function, halide perovskites have emerged as a promising candidate for dye degradation and hydrogen generation. Interestingly, adding MoS2 or WS2 as a co-catalyst increases the performance of halide perovskites, allowing for reduced charge recombination and appropriate band alignment. Here, we investigate the photocatalytic performance of halide perovskite nanocrystals (NCs) as well as their hybrid nanocomposites towards organic dye degradation under visible light illumination. Moreover, we explore how adding WS2 as a co-catalyst increases the stability of the NCs.