

Title: Co-catalyst MoS₂-nanosheets/TiO₂ nanotubes for the enhancement of photocatalytic hydrogen production

Abstract: The MoS₂ nanosheets/TiO₂ nanotubes heterojunctions are designed for enhancing photocatalytic hydrogen production. The results of XRD, SEM and TEM imply that the heterojunctions are successfully prepared via electrostatic spinning technology and hydrothermal co-deposition method. Besides, the results of UV and PL display that the MoS₂ nanosheets enhance the absorption of visible light, drive the transfer of photo-electro and promote the separation of photo-generated carries. Further, compared with the pure TiO₂ nanotubes, the heterojunctions exhibit excellent photocatalytic hydrogen production enhancement of about ~340.739 μ mol/g.h, which is about 7 times of pure TiO₂ nanotubes.