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Hierarchical architectures of bismuth molybdate nanosheets onto nickel titanate nanofibers: Facile synthesis and efficient photocatalytic removal of tetracycline hydrochloride

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Abstract:

A huge challenge in the field of pollutant removal is the scarcity of visible-light-driven (VLD) photocatalysts that are efficient, stable, easily recyclable and capable of mineralizing organic pollutants. In this regard, a novel hierarchical architecture of Bi₂MoO₆ nanosheets onto NiTiO₃ nanofibers for tetracycline hydrochloride (TC) removal was rationally designed and fabricated via a facile approach. In this heterojunction system, highly homogeneous-distributed Bi₂MoO₆ nanosheets were anchored on electrospun NiTiO₃ nanofibers, endowing the heterojunction with compact interfacial contact. By virtue of the favorable interfacial contact and matched band alignment, promoted suppression of photo-generated electron-hole recombination is achieved in Bi₂MoO₆/NiTiO₃ system, as confirmed by photoluminescence

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