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Construction of a porous core-shell homojunction for the photocatalytic degradation of antibiotics

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Abstract:

The photocatalytic mineralization efficiency of antibiotics is primarily determined by the adsorption ability and photoactivity of the photocatalyst. In this work, we constructed a porous core-shell homojunction by growing amorphous TiO₂ onto mesoporous rutile TiO₂ crystals (MRCs) to simultaneously enhance the adsorption ability and photoactivity of the catalyst. Tetracycline hydrochloride (TCH) was chosen as a model agent of antibiotics. Scanning electron microscopy, high resolution transmission electron microscopy, N₂ adsorption-desorption, and X-ray diffraction experiments were conducted to investigate the physical properties of the prepared samples. Surface photovoltage spectroscopy and X-ray photoelectron spectroscopy were applied to study the charge

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