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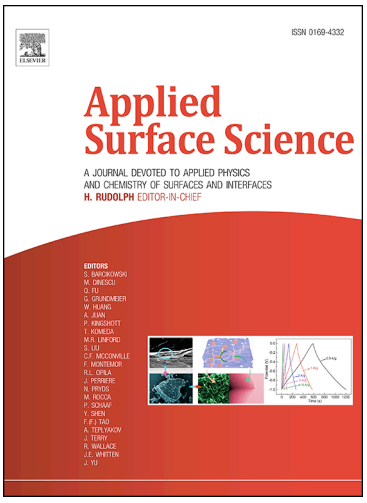

Full Length Article

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Synthesis of carbon doped Bi_2MoO_6 for enhanced photocatalytic performance and tumor photodynamic therapy efficiency

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ABSTRACT

In this work, a series of carbon-doped Bi_2MoO_6 nanomaterials were synthesized by hydrothermal-calcination method using biomass carbon-glucose as carbon source for the first time. The carbon element substituted the host O^{2-} anions in the lattice of Bi_2MoO_6, which induced the lattice expansion, particle size reduction, specific surface area enhancement and band structure variation. The C-doped Bi_2MoO_6 showed significantly enhanced and stable photocatalytic performance in removal of Rhodamine B (RhB), methyl orange (MO) and tetracycline hydrochloride (TC). Simultaneously, the carbon doped sample could also act as photosensitizer in tumor PDT and showed efficient PDT ability for HeLa cancer cells. The electron spin resonance (ESR) result confirmed that the carbon doped sample had higher reactive oxygen species (ROS) concentration than that of pristine Bi_2MoO_6, which are possibly responsible for the enhanced photocatalytic performance and PDT efficiency. This work would open a new