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## Template-Free Synthesis of Nanosliced BiOBr Hollow Microspheres with High Surface Area and Efficient Photocatalytic Activity

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### ABSTRACT:

BiOBr hollow microspheres which were composed of BiOBr nanoslices were synthesized via a simple one-pot solvothermal method at 160 °C for 12 h without the addition of any spherical template. The resulted BiOBr hollow microspheres were regular in shape with external diameter of 1.4 μm in average. As a result, due to the highly hollow architecture, the resulted BiOBr hollow microsphere processed high BET surface area of 76.38 m<sup>2</sup> g<sup>-1</sup>. Besides, a series of time-depended experiments had been listed, showing the morphological evolution for the formation and decomposition of the BiOBr hollow microspherical structure. SDS, which acted as a surfactant, played an important role in controlling the morphology of BiOBr. The obtained BiOBr hollow microspheres exhibited higher photocatalytic activity in the degradation of MB and RhB under visible-light irradiation.

### Keywords:

BiOBr; microstructure; nanoslice; semiconductors; photocatalytic activity

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