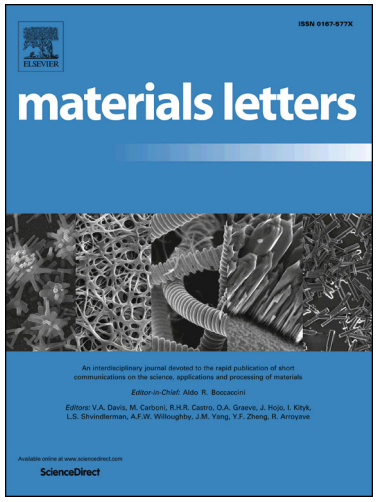

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Exfoliation of two-dimensional phosphorene sheets with enhanced photocatalytic activity under simulated sunlight

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ABSTRACT

Two-dimensional phosphorene (2D-BP) nanosheets were successfully prepared by an environmental friendly water exfoliation process. The morphology and structure of exfoliated 2D-BP nanosheets were characterized by SEM, AFM, Raman and UV-Vis. The photocatalytic results demonstrated that 2D-BP nanasheets can generate reactive oxygen species of $^1O_2$ and $O_2^{\cdot-}$ and effectively enhance the photodegradation of dibutyl phthalate pollutants when coexist with water, oxygen, and light.

Keywords: 2D-BP nanosheets, Photodegradation, Microstructure, Simulated sunlight