

Two-Dimensional Boron Nanosheets for Aqueous Electrochemical Capacitor

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Two-dimensional (2D) materials have been attracted great attention for energy storage applications owing to their active species are mostly present onto the surface. Here, we demonstrate the synthesis and characterization of 2D boron nanosheets derived from its bulk counterpart in order to apply in aqueous electrochemical capacitor electrode. Liquid exfoliation was conducted to achieve few layers of boron and effect of oxygen content present on the boron surface was also studied. Several neutral aqueous electrolytes were tested to investigate the electrochemical activity. Our work may open up the new analogue of 2D materials beyond graphene for future energy applications.