

Properties and Applications of “White Graphene”

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Abstract Boron nitride (BN) nanosheets, sometimes called “white graphene”, are an important member of two-dimensional (2D) nanomaterials. They have many properties similar to graphene, such as high strength and good thermal conductivity, but also some unique properties unavailable in graphene. For example, BN nanosheets are electrical insulator with a stable wide bandgap about 6 eV in regardless of thickness, and hence excellent dielectric substrate for graphene and MoS₂ based devices. In contrast to the intensive studies on graphene, many fundamental properties and potential applications of BN nanosheets have yet been experimentally investigated. In this talk, my recent research progress on the unique property (e.g. oxidation resistance, thermal, mechanical, optical, dielectric screening and surface adsorption) to application (e.g. corrosion protection, surface enhanced Raman spectroscopy, and water treatment) of BN nanosheets will be reviewed. [1-4]. These results will stimulate more studies and use of BN nanosheets.

References

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Figures

