GRAPHENE FLUORIDE

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Abstract

Dispersion of single-layered graphene fluoride was prepared from graphite fluoride by exfoliation in liquid-phase. The synthesized graphene fluoride was characterized by XRD, AFM and SEM techniques showing layer width equal to ~8 Å. Ab initio calculations demonstrate that graphene fluoride is more stable than graphane and also any other halide derivative. General considerations of the relationship between structures of graphene halides and their electronic properties including band gap widths are discussed.

Keywords: