

Composites containing graphene-related materials: potential defense applications

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The development of graphene-related materials (GRM), such as graphene nanoplatelets (GNP), graphene oxide (GO) or reduced graphene oxide (rGO), has led to a wide range of applications in the field of composite materials and nanocomposites. Initially, polymer/GRM nanocomposites have attracted the interest of researchers in order to improve the thermal, mechanical and electrical properties of polymers [1-3] and carbon fiber reinforced polymers (CFRP) [4-5]. More recently, the research in this field is focused in the improvement of the multifunctional behavior, for example health monitoring, EMI shielding or system integration [6-8].

Among the functionalities that could be useful for military applications, GRMs have shown a great potential in the flame retardancy of polymers and composites [9-11]. In addition, it was reported the use of GRMs or other nanomaterials could improve the impact resistance of polymers and FRPs [12].

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