Paper ID: 78203
student

IAF MATERIALS AND STRUCTURES SYMPOSIUM (C2)
Specialized Technologies, Including Nanotechnology (8)

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THE CREATION AND ASSEMBLY OF NOVEL MATERIALS WITH THE GREATEST STRENGTH AND FLEXIBILITY IS CURRENTLY A PRESSING GLOBAL ISSUE. GRAPHENE OXIDE, FOR EXAMPLE, IS A NANOSTRUCTURED SUBSTANCE THAT HAS BEEN USED IN TECHNOLOGY, MEDICINE, AND THE MIL

Abstract

The creation and assembly of novel materials with the greatest strength and flexibility is currently a pressing global issue. Graphene oxide, for example, is a nanostructured substance that has been used in technology, medicine, and the military. We are attempting to create novel composite materials using graphene-oxygen nanolayers in light of all of this. We performed a synthesis to enhance the method for obtaining and further oxidizing graphene oxide to obtain functionalized layers with a significant number of active carbonyl and carboxyl centers in order to obtain new composites with high strength that could be used in the structuring of space and astronaut technology. We have discovered a process that requires the least quantity of oxidizing chemicals and time to produce functionalized graphene oxide. The structure of the resultant graphene-oxide was validated using the outcomes of instrumental analyses such as SEM, TEM, and IR spectroscopy.