

Carbon and Silica Nanomaterials Reinforced MMCs and PMCs - Biopolymers Nanocomposites

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Abstract

Carbon nanotubes (CNTs) and metal oxide nanostructures exhibit many interesting features in composite engineering due to their novel nanoscopic properties. This talk is going to highlight the CNTs, ZnO, and SiO₂ nanostructures-based composites for photocatalysis and water purification applications. The CNTs were synthesized by arc discharge using the Yttria-Nickel (Y₂O₃-Ni) catalyst and characterized in detail by various techniques and discussed in detail how to incorporate CNTs into Al-11 wt% Si alloy for unique mechanical properties, later on, explored chitosan-silica nanocomposite for water treatment applications. On the other hand, dived on the synthesis method of ZnO nanoparticles by eco-friendly gelation method via biopolymer (sodium alginate) for photocatalysis and water purification technologies.

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