Editorial

Nano materials are at the frontier of research

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Nano materials has been one of the key focuses of material research, from carbon nanotube to graphene, from nano particle to quantum dot, from microstructure to nano structure and etc. How to prepare nano materials, how to make nano composites, what special physical properties such as optical, electronic, electrical, and mechanical properties such as strength, plasticity and ductility, are the research interests. Nano materials are one of the main sectors in Materials science and Engineering International Journal. Several research and review articles were published in volume 2 in 2018. Ghann & Uddin[1] investigated the synthesis and characterization of CdSeS/ZnS quantum–dot–gold nanoparticles hybrids (denoted as QD–GNP) , which is a composite structure of semiconductor nanomaterial and metal nanoparticles. Its wavelength of maximum absorption is different from the gold nanoparticles and the quantum dot. And strong photoluminescence quenching was observed in this hybrid. The interaction of this hybrid with terahertz radiation shows the unique terahertz signal of the un conjugated gold nanoparticles and quantum dots versus the conjugated forms. The results indicate that the hybrid gold nanoparticle and quantum dot will have great potential for other optical application. Abraham et al.,[2] prepared multiwalled carbon nanotube based styrene butadiene rubber nanocomposites. Imdazolium type ionic liquid was found to facilitate the dispersion of MWCNT in polymer matrix and to act as accelerators for the sulphur vulcanisation of SBR composites and to be helpful for the formation of three dimensional network of MWCNT in rubber matrix. Phul et al.,[3] reported a synthesis method of copper nanoparticles by wet chemical reduction using L–ascorbic acid as reducing agent. The as–synthesized nanoparticles have cubic structure with an average particle size of 3 nm, with10times higher surface area as compared to the literature. The fabricated Cu nanoparticles showed noteworthy enhancement in the degradation of Rhodamine B organic dye when used as catalyst for its degradation under both dark and light conditions.

Bañobre et al.,[4] produced nano needles of silicon of varying heights during the treatment of silicon by reactive ion etching to form black silicon. This kind of structure may achieve unique property. Kalinitchev Al.,[5] studied the concentration waves behavior and displacement development in nanocomposites during mass transfer kinetics on the basis of the bi–functional multi component models developed. Groh[6] reviewed a potential nanocomposite-Cu and Al covetics, in which carbon in various forms is considered as a component in Cu- and Al-based composites to increase conductivity and decrease density. The covetic claim of the conversion of graphite into a highly conductive, covalently bonded, carbon-based nano-structure is extraordinary and thus requires strong evidence. Yurukcu et al.,[7] reviewed Platinum-based/alloy thin film core-shell nanostructures to replace Platinum nanoparticles as electro catalysts with higher activity and durability in fuel cell. The Pt shell on Ni, Cr, Pd, Ru, and WC core nanorods increase the stability and durability, this nanostructured design will significantly impact the fuel cell technology by improving catalysts.

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Villegas et al.,[8] reviewed the research on penetration of drug nano carriers into the highly dense extracellular matrix (ECM) usually present in many solid tumors. One method is the decoration of nanoparticles with proteolytic enzymes to digest ECM, the other one is using ultrasounds to induce cavitation which propels the nano carriers to deep areas into the tumor.

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Conflicts of interest

Author declares that there is no conflicts of interest.

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