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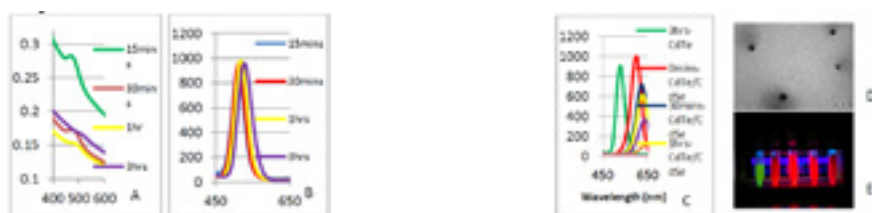
DIAMOND AND CARBON MATERIALS & GRAPHENE AND SEMICONDUCTORS

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Facile synthesis of L-cysteine CdTe core shell system and its antioxidant properties

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L-cysteine CdTe core and CdTe/CdSe core-shell were successfully synthesized in an aqueous solution medium. The synthesized QDs were analyzed using UV-vis absorption spectroscopy and fluorescence spectroscopy, transmission electron microscope (TEM), Fourier transform infra-red spectra (FT-IR) and X-ray powder diffraction (XRD). Systematic investigations were carried out for the determination of optimal condition namely: Reaction times, pH and mole ratios. Compared to CdTe core (529 nm), the core shell (601 nm) demonstrates a drastic shift in wavelength to the red region proving that as extra material had been deposited unto the surface of the core. The 20, 40 and 60 days stability tests conducted proved that core-shell nanoparticles were quite stable compared to the core material. Investigation was also conducted on the total anti-oxidant capacity (TAC) and lipid peroxidation with the use of six (8) Swiss albino mice and this was done using ferric reducing antioxidant power (FRAP) and TBARS was used to malondialdehyde (MDA) concentration. It was discovered that the core-shell demonstrated a poor anti-oxidant property at the heart, spleen, kidney and brain except at the liver where good anti-oxidant property was demonstrated after 24 and 72 hours of exposure. The result at the testis was not significant as against the control. Since this reaction did not involve the use of a nitrogen atmosphere nor special ligand or buffer solutions, it suggests that the process could be easily operated on an industrial scale.



Biography

Daramola Abiodun Olamide is a Material Scientist and specializes in the synthesis of nano-materials known as quantum dots. His passion is in the applicability of these materials in drug delivery system which helps in addressing some current epidemic diseases such as tuberculosis and cancer killing people every day. This has been achieved through the discovery of suitable method together with the unique optical and photo-physical properties produced by the materials. This process can successfully lead to the production of a simple drug model which can be used in our modern day society and recommended for large scale industrial purposes.

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