
Editorial

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Biographical notes: Hirendranath Banerjee was awarded a degree with honours in Biology and Chemistry from Long Island University, NY, USA in 1984 and an MBBS in Medicine and Surgery from Calcutta University, India in 1994. He completed a PhD in Molecular Biology at Howard University in 1998. He has been a House Physician at the National Medical College and Hospital, Kolkata, India, a Postdoctoral Fellow at the Laboratory of Respiratory Cell and Molecular Biology, Yale University, New Haven (1999–2000), a Postdoctoral Fellow at the Department of Pediatrics, Laboratory of Neurogenetics Medical University of South Carolina, Charleston (2000) and at present is an Associate Professor in the Biology Department, Elizabeth City State University, University of North Carolina, Elizabeth City.

Semiconductor quantum dots (QDs) are nanoparticles in which charge carriers are three dimensionally confined or quantum confined. The quantum confinement provides size-tunable absorption bands and emission colour to QDs. Also, the photoluminescence (PL) of QDs is exceptionally bright and stable, making them potential candidates for biomedical imaging and therapeutic interventions.

In this special issue of the *IJBNN*, several renowned scientists from different corners of the world have written several review's on the potential application of QDs in microbiology, cancer research, material science, molecular biology and drug delivery.

Authors Callan et al., have discussed the application of QDs in detecting zinc in aqueous solution, which will have an application in material science. Ram et al. have shown the effectiveness of a short peptide called maurocalcine to deliver QDs in cell, which has a great potential in drug delivery and therapeutics. Banerjee and Verma have reviewed the potential application of QDs in cancer detection and therapy, which discusses its importance in the cutting edge research in the field of oncology. Sarkar et al. has described the use of QDs in molecular biology and DNA technology while Galvez and Pardo has shown its application in protein-protein interaction by FRET a very novel technology with widespread impact in cell biology and drug discovery. Peral et al. discussed another novel application for QDs in detection of environmental microbes and pathogens, which could be of great importance in the field of medicine and also preventing bioterrorism.

This issue of the *IJBNN* contains all the pertinent information regarding QDs and its application in science and technology and I firmly believe this will be of a great resource for knowledge and reference for scientists working in the field of nanoscience and

nanotechnology. My special thanks goes to Dr. A. White, Editor of this journal for inviting me to be the Guest Editor and also for his hard work in handling the manuscripts, sending to peer reviewer's and working patiently with the authors. I wish all success for this novel journal in the budding field of nanoscience and nanotechnology.