

Preface for Special Section

Multi-functionality of Nanoparticles in the fields of Biomedicine and Nanobioelectronics

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Nanobiotechnology, an interface between *Life sciences* and *Nanotechnology* is a rapidly growing research field in the 21st century encompassing the development of various novel functional materials with tunable properties for interactions with various biomolecules such as DNA, proteins and lipids [1, 2]. Thin films have been largely explored for their wide range of bio compatible MEMS applications [3]. Recent advances related to the biofunctionalization of various nanomaterials has imparted a new future direction to this upcoming area for applications in diagnostic biosensors, drug and gene delivery.

The current special section includes a collection of six articles, one review and five research articles, by well established researchers. The synthesis methods along with the approaches for functionalization of nanomaterials for a range of biomedical applications reported in the special issue will add value to the existing literature in fields of Biomedicine as well as Nanobioelectronics.

Nanoliposomes and various other nanocarriers have been reviewed for their potential as herbal bioactives for breast cancer (refer to paper by K. Wani, K. Tarwadi). Investigations on amine functionalized CoFe₂O₄ & NiFe₂O₄ magnetic nanoparticles for cell viability and cell death as also polymer assisted NiZnFe₂O₄ ferrites for soft magnetic applications have been presented (refer paper by J. Jadhav et al). Fabrication technique of graphene based bimetallic (Ag/Au) SPR biosensor (refer to paper by G. Mohanty, B. Sahoo, J. Akhtar) as also electrochemically deposited CdTe thin films (refer to paper by A. Mayabadi et al) have been put forth for applications in biomedical devices. Interaction of MWCNTs with human cell line for their '*in vivo*' biocompatibility underscores their potential in drug delivery (refer to paper by S. Sinha, S. Aravamudhan, K. Kosaraju).

We hope that this section will prove to be a timely and valuable reference for researchers in this area. Special thanks go to the referees for their scientific comments and valuable suggestions. I am grateful to Professor Stathis Meletis, the editor-in-chief of the *Journal of Nano Research*, for providing us with the opportunity to produce this special section. I also thank all authors for their valuable contributions and timely submissions.

References

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