

## **Title of the issue: Smart nanomaterials as theranostics nanomedicines for Healthcare applications: From Bench to Bed Side**

### **Background:**

Smart nano-materials respond to a stimulus and produce a characteristic dynamic and reversible change in its critical properties for a meaningful therapeutic response. These materials have gained considerable attention in many areas including drug delivery, biomedical applications, diagnostics, imaging and many more. Since development of smart nanocarriers as theranostics nanomedicines require in-depth knowledge of material science and composites including polymer chemistry, particle surface chemistry, non-covalent binding, electrovalent strategies, biospecific interaction, hydrophobic adsorption and safety. These characteristics provides controlled and improved reproducibility of smart nanomaterials as theranostics nanomedicines. The nanomaterials with size varying between 10-200 nm are best suited for theranostics nanomedicine. It provides umpteen opportunities for better optical, magnetic and thermodynamic sensing, thus makes them efficient in targeted drug delivery with high drug loading capacity, superior bioavailability, reduces off-side target issues and avoids problem associated with multi-drug resistance. The present guest issue, therefore, endeavors to emphasize on recent progress in smart nanomaterials like graphenes, quantum dots, carbon nanotubes, dendrimers, silica nanoparticles, stimuli-sensitive nanomaterials, etc. as intelligent systems for harnessing diverse range of therapeutic applications. Moreover, the issue with respect to regulatory approval and commercial acceptance has been covered further for the purpose.

### **Aims & Scope:**

The applications of nanomaterials and nanomedicines in various functional areas including diagnosis, treatment and prevention of diseases make it as most attractive areas of nanotechnology. The unique properties of such materials in drug delivery applications and therapeutic interventions have certainly gained immense attention to overcome cellular and physiological barriers. Biofunctionalization of nanomaterials by anchoring of antibodies, transferases, lectins and avidins provides higher specificity to the delivery systems by enhancing their drug release, absorption, biodistribution characteristics, etc. Therefore, the present guest issue of the journal will principally describes the importance of nanomaterials, along with current scientific advances in the field, and in-depth knowledge on the applications of nanomaterials as theranostics nanomedicines in biomedical applications from bench to bed side.

**List of topics to be included in the guest include:**

- Intelligent Drug Delivery and Release Systems
- Graphene and other 2D-materials applied to diagnosis and therapy
- Stimuli-Responsive Materials
- Use of Nanoparticles in medicine
- Quantum Dots for Anticancer drug delivery and medical Imaging
- Biofunctionalized nanomaterials in drug delivery applications

**Time frame:**

Manuscript submission deadline: **10 December, 2017**

Peer Review Due: **25 December, 2017**

Revision Due: **5 January, 2018**

Notification of acceptance by the Guest Editor: **15 January, 2020**

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