



Zinc Oxide Nanostructures: Synthesis and Characterization

Guest Editor:

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Deadline for manuscript
submissions:

closed (30 November 2017)

Message from the Guest Editor

Due to its excellent properties, ZnO is widely used for various potential applications such as catalysis, solar cells, ultraviolet (UV) lasers, light emitting diodes, photo-detectors, sensors (chemical, bio- and gas), optical and electrical devices and so on. Among various applications, the use of ZnO nanomaterials as a photocatalyst has particular interest due to their large surface area; wide band gap; ease of fabrication and cost effective synthesis; biocompatible and environmentally benign nature.

More specifically, the nanostructured ZnO semiconductor used as photocatalytic degradation material against environmental pollutants has also been extensively studied, because of its advantages of non-toxic nature, low cost and high reactivity. Furthermore, the synthesis of large-scale arrayed 1D ZnO nanostructures, including nanowires, nanorods, nanobelts and whiskers, is an important step for the fabrication of functional nano/microdevices. Finally, Magnetic ion-doped ZnO quantum dots (QDs) have been targeted as promising candidates for the implementation of novel technologies, such as in spintronic and quantum computation.





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