

Special Issue

Nanostructures in Energy and Sensing Applications

Message from the Guest Editor

Nanostructures are nowadays widely used in a vast variety of applications, thanks to their peculiar physical and chemical properties, which are mainly brought about by their low dimensionality. In the field of energy materials, it is now known that the nanostructured electrodes and nanocomposites can improve the energy density, safety, and cycling-life of lithium-based batteries. Moreover, it has been shown that the improved electrical conductivity can even be accompanied by cathode protection via utilisation of novel sulfur/carbon nanocomposite which results in higher battery performance. As another example, silicon-based nanostructures can be designed in such a way that their absorption range of the electromagnetic wavelengths is improved. Such nanostructures have been shown to considerably increase the efficiency of solar cells. Nanostructures have also been employed to design more efficient gas, humidity, pressure, and (bio)molecule sensors with shorter response time and improved sensitivity. The current Special Issue covers the most recent theoretical and experimental studies on nanostructure materials used in the fields of energy and sensing.

Guest Editor

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