
Editorial

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Biographical notes: Changhui Ye studied Materials Science at the University of Science and Technology of China, where he obtained his Bachelor's and Master's degrees in 1997 and 2000, respectively. He obtained his PhD in 2005 from the Institute of Solid State Physics, Chinese Academy of Sciences. He is currently a Hundred Talents Program Research Professor at Key Laboratory of Materials Physics, Institute of Solid State Physics, CAS, China. His research effort is oriented towards the development of novel nanoarray materials and devices, aiming at applications in areas of clean energy.

I am delighted to welcome all of you to the special issue on 'Nanomaterials for solar energy harvesting' published in this interdisciplinary peer-reviewed journal, *International Journal of Nanoparticles (IJNP)* (<http://www.inderscience.com/browse/index.php?journalID=241>).

As an important research field, solar energy harvesting using nanomaterials has already shown promising progress and is generating more and more perspectives in energy and environment applications. It is therefore, the right time to provide a thorough introduction of the up-to-date progress and breakthrough. The aim of this special issue is to sum up the state-of-the-art multidisciplinary research on the applications of nanomaterials for harvesting solar energy.

This special issue includes two related topics, that is, converting the solar energy to electricity or clean fuel (hydrogen) and using the solar energy to degrade organic pollutants in water with the aid of semiconductor nanophotocatalysts. Papers included in this issue are intended to guide the readers to explore various fruitful adventures in the world of solar energy harvesting using nanomaterials.

This special issue includes two key review articles, four review articles, and five invited full length research articles on a broad range of topics related to solar energy harvesting. The key review articles include, 'Photogenerated charge carriers in semiconductor nanomaterials for solar energy conversion' by J.K. Hensel and J.Z. Zhang and 'Nanostructured heterogeneous photocatalysts for H₂ production using solar energy' by Z. Li and Z. Zou. The review articles include 'Nanostructured niobate photocatalysts' by D. Chen and G. Shen, 'Self-assembly of one-dimensional nanomaterials for cost-effective photovoltaics' by Z. Fan and J. Ho, 'One-dimensional coaxial nanowire solar cell' by X. Ni et al., and 'Nanomaterials for third generation photovoltaics' by G. Conibeer and S. Huang. The invited full length research articles include 'Effect of TiO₂/WO₃/C photoanode composition on the photocurrent of all-solid photoelectrochemical cells' by J. Georgieva et al., 'Nanostructural control of ZnO photoelectrodes for enhancing solar energy conversion efficiency in dye-sensitised solar

cells' by S. Ueno et al., 'Nanostructured ZnO for photoelectrochemical splitting of water to produce hydrogen: swift heavy ion irradiation vis-à-vis dye-sensitisation' by R. Shrivastav et al., 'A review in visible-light-driven BiVO₄ photocatalysts' by Y-H. Xu et al., and 'Texturing of crystalline Si thin film solar cells via nanostructure to boost efficiency' by H. Yu and J. Li.

The successful completion of this special issue was not possible without the great effort of all the authors, to whom I feel very much indebted. Special thanks to Professor Weiping Cai, Editor-in-Chief, *International Journal of Nanoparticles*, for his tireless efforts to very smooth and successful compilation of this special issue.