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Nanocomposites: greener solution for environmental sustainability

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Abstract

Nanocomposites are recognized as promising and green materials for environmental problem resolution. Nanocomposites are low-cost, potential adsorption and eco-friendly materials. Green nanocomposites with the small size of fillers increase the interfacial area as compared to conventional composites. Green nanocomposites usually fabricated by combination of nanomaterials with either natural materials such as biopolymers or derived through green source, are the new trend in the remediation of environmental problems. Green nanocomposites have advanced characteristics of excellent adsorption properties and biocompatibility. Green nanocomposites minimized the exposure of metal to the environment what enables special recognition owing to their advanced properties over conventional adsorbents. Various types of functionalized nanomaterials have been developed in the virtue of anchoring specific functional groups on their surface modification. The current talk will be focused on various nanocomposites for the remediation of the various organic and inorganic pollutants from waste water.

Biography:

Ajay Kumar Mishra is a full Professor at the Nanotechnology and Water Sustainability Research Unit at College of Science, Engineering & Technology, University of South Africa, Florida Science Campus, South Africa and also a "Fellow" member at "Royal Society of Chemistry" UK. He received his B. Sc, M. Sc., degrees in 1997 and 2001 respectively from Purvanchal University Jaunpur, India and M. Phil. and Ph.D. degrees in 2003 and 2007, respectively, from The University of Delhi, India. From March 2006 to September 2009, he was postdoctoral fellows at various South African Institutes/Universities. In addition, he was appointed as "Senior Lecturer" in October 2009 at the Department of Applied Chemistry, University of Johannesburg, South Africa where he was promoted to "Associate Professor" in November 2011 until December 2014. Recently, he was appointed by University of South Africa as "Full Professor" since January 2015. He is also working as "Adjunct Professor" at Jiangsu University, China. His research interests include synthesis of multifunctional nano-materials, nano-composites, biopolymer and/or petrochemical based biodegradable polymers, polymers-based materials/composites, smart materials, CNT and graphene based composite materials and water research. He has delivered a number of including Plenary/Keynote/Invited Lectures.

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