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Recent advances in nanocomposites

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Presently clean and safe drinking water is a prior requirement of the society. Water pollution due to toxic metals and organic compounds remains a serious problem to the environment and public health. Heavy metal ions, and dyes are often found in the environment as a result of industrialization. They are known to be common contaminants in wastewater and many of them are highly toxic. Thus, there is a need to develop technologies that can remove toxic pollutants found in wastewaters. Several methods are available; including membrane technology, but adsorption is one of the more popular methods for the removal of pollutants from the wastewater. Biopolymers represent an interesting and attractive alternative as adsorbents because of their particular structure, physico-chemical characteristics, chemical stability, high reactivity and excellent selectivity towards aromatic compounds and metals. Adsorption on biopolymers and their derivatives are known to remove pollutants from water. The current focus of the talk will be the recent advancement in nanocomposites with the synthesis of adsorbents containing polysaccharides, in particular modified biopolymers and also the advantages of the removal of pollutants from the wastewater.

Biography

Ajay Kumar Mishra is currently working as Professor at Nanotechnology and Water Sustainability Unit, College of Science, Engineering and Technology, University of South Africa, Florida Science Campus, Johannesburg, South Africa. He is also working as "Adjunct Professor" at Jiangsu University, China. Prof. Mishra has pursued PhD in Chemistry from Department of Chemistry, University of Delhi, Delhi, India. In 2006, he moved to the University of Free State, South Africa for Postdoctoral studies in the area of composites/nanocomposites. Later in 2009 he has joined Department of Applied Chemistry as Senior Lecturer where he was promoted to Associate Professor in 2011. He is currently group leader of the research area for the composites/nanocomposites, water research and bio-inorganic chemistry. He has hosted several visiting researchers/scientists/postdocs in his group. He has also developed a number of collaborations worldwide. His research contribution includes many publications in international journals. He has delivered a number of including Plenary/Keynote/Invited Lectures. For his outstanding research profile, he was awarded a number of awards. He also served as Associate Editor as well as member of the Editorial Board of many international journals. He has edited several books by the renowned publishers. He has been reviewing a number of international journals and member of a number of scientific societies.

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