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MWCNTs based nanocomposites for the removal of oil and organic dyes from water

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Although the global economy continues to expand rapidly because of the exploitation and production of crude oil, its transportation and derivatives potentially remain a serious threat to the environment. Among many other challenges, oil spills remain major ecological and environmental concerns. Oil spills release volatile organic compounds (VOCs) and heavy hydrocarbons into the aquatic environment causing severe damage to the ecosystem. The intensive development of the pharmaceutical, agricultural and chemical industries has resulted in the release of a diverse range of chemical compounds such as antibiotics, plastics, pesticides, and dyes into aquatic environments. These industries serve as major contributors towards the contamination of aquatic environments since manifold chemicals are discharged directly and very frequently into the environment.

This study aims to develop effective, flexible, sustainable, and environmentally friendly adsorbent-based multi-walled carbon nanotube (MWCNTs) composites by adding polymers and metal oxides which make MWCNTs cost-effective and increase their removal efficiency of hydrocarbons and dyes from water.

Recent Publications

1. Thamer Adnan Abdullah, et.al, (2022) V2O5, CeO2 and Their MWCNTs Nanocomposites Modified for the Removal of Kerosene from Water. *Nanomaterials*. 2022; 12(2):189.

2. Thamer Adnan Abdullah, et.al, (2022). Polyethylene over magnetite-multiwalled carbon nanotubes for kerosene removal from water. *Chemosphere*, 287, 132310.
3. Thamer Adnan Abdullah, et.al, (2021). V2O5 Nanoparticles for Dyes Removal from Water. 16(2), 102-111.
4. Thamer Adnan Abdullah, et.al, (2021). "Polystyrene-Fe3O4-MWCNTs Nanocomposites for Toluene Removal from Water" *Materials* 14, no. 19: 5503.
5. Thamer Adnan Abdullah, et.al, (2021). Preparation and characterization of MnO2-based nanoparticles at different annealing temperatures and their application in dye removal from water. *International Journal of Environmental Science and Technology*, 18(6), 1499-1512.

Biography

Thamer Adnan Abdullah completed his Master of Chemical Engineering from Guru Gobind Singh Indraprastha University New Delhi in 2008. He is working as an assistant lecturer at the University of Technology, Baghdad, in the Applied Science Department, Chemistry Branch Group. Currently, he is doing his PhD and he is a researcher in the Sustainability Solutions Research Lab, Faculty of Engineering, University of Pannonia, Veszprem, Hungary. He has several articles published in ScienceDirect reputed journals and has participated in many international conferences in the field of environmental chemistry and nano-research.

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