

2nd International Conference on

Nanostructured Materials & Nanochemistry

November 02-03, 2018 | San Francisco, USA

Electrospun poly(vinylbenzyl chloride) nanofibers functionalized with 2,2-pyridylimidazole and its application as metals adsorbent in wastewater treatment

AI Okewole¹ and ZR Tshentu²

¹Yaba College of Technology, Nigeria

²Nelson Mandela Metropolitan University, South Africa

Effective treatment of industrial wastewater containing heavy metals required efficient metal adsorbent. Polymeric substrates anchored with suitable adsorbent are known to have performed better. This study uses the method of electrospinning to produce polymeric nanofibers with nanoscale structures having high loading capacity for the adsorption of heavy metals contaminants from the industrial waste water. Poly(vinylbenzoylchloride) homopolymers prepared by bulk polymerization were subsequently electrospun into fibers and functionalized with 2,2-pyridylimidazole. The polymer materials were characterized by scanning electron microscopy (SEM), microanalysis, infrared (IR), X-ray photoelectron spectroscopy (XPS). The sorption capacities of the sorbent were first assessed in both batch and column studies on an aqueous salt solution containing lead, cadmium, chromium, zinc, nickel, cobalt, copper and iron ions prior to its application on polluted industrial effluent and were found to perform very efficiently.

okewolestar@yahoo.com