Extraction of Heavy Metal Ion from Industrial Wastewater by Using Bio-Nanomaterial Composite

S. Baskar[1], Altamash Khan[2], Sahendra Yadav[3], Abhishek Nikhil[4]

[1]PhD Scholar & Assistant Professor, Department of Civil Engineering, Vel Tech Rangarajan Dr.Sagunthala R & D Institute of Science and Technology, Avadi, Chennai, Tamil Nadu, India
[2,3,4] UG Student, Department of Civil Engineering, Vel Tech Rangarajan Dr.Sagunthala R & D Institute of Science and Technology, Avadi, Chennai, Tamil Nadu, India
baskars@veltech.edu.in

ABSTRACT

The need to develop more efficient adsorbent comparable to commercially available adsorbent, garnering a lot of attention as a viable adsorbent for industrial wastewater treatment. The application of Bio-nanomaterial composite as an adsorbent for the removal of lead from industrial wastewater is the focus of this research. Adsorption is a potential approach for removing heavy metals that have harmful effects on both the aquatic system and humans. The goal of this research is to remove lead using potential raw materials such as sugarcane bagasse and graphene oxide. In the adsorption of Lead, the raw material chosen for the experiment exhibited promising adsorption capabilities. Various analytical techniques, such as UV-Visible Spectrophotometer, were used to investigate the mechanism of interaction of Bio-nanomaterial with lead. Batch adsorption studies were conducted to optimise affecting parameters including contact time and adsorbent dosage.

Keywords: *Adsorption, Bio-nanomaterial, graphene oxide (GO), sugarcane bagasse (SCB), lead, batch study.*