E409

Rice husk as a bio-adsorbent for ammonium removal

Hadid Sukmana and Cecilia Hodur
Department of Biological Systems, University of Szeged

Abstract: Agriculture waste is one of the world's largest renewable resources and available in huge quantities. Utilization of agriculture waste has been done in several industries such as energy, cement, rubber, pharmaceutical, etc. In this perspective, rice husk (RH) which is agriculture waste, are potential and invaluable wastewater treatment sources. Adsorption is a simple and effective method in wastewater treatment. RH has properties that provide excellent adsorption ability due to carboxyl and silanol groups' presence, also potential as a material for the removal of nutrients. The present study investigated the potential use of RH for the removal of ammonium (NH4-N) in an aqueous solution. The surface characterization of RH was performed by zeta potential. The adsorption studies were carried out by batch experiments. The effects of different operational parameters, such as pH, adsorbent dose, and initial concentration, were investigated. In conclusion, the RH as a bio-adsorbent would be a potential solution for the mitigation of pollution. Keywords: agriculture waste, bio-adsorbent, rice husk, wastewater treatment.