

Removal of Nitrate and Phosphates from Waste Water Using Activated Bio-Carbon Produced from Agricultural Waste

Authors : Kgomotso Matobole, Natania De Wet, Tefo Mbambo, Hilary Rutto, Tumisang Seodigeng

Abstract : Nitrogen and phosphorus are nutrients which are required in the ecosystem, however, at high levels, these nutrients contribute to the process of eutrophication in the receiving water bodies, which threatens aquatic organisms. Hence it is vital that they are removed before the water is discharged. This phenomenon increases the cost related to wastewater treatment. This raises the need for the development of processes that are cheaper. Activated biocarbon was used in batch and filtration system to remove nitrates and phosphates. The batch system has higher nutrients removal capabilities than the filtration system. For phosphate removal, 93 % removal is achieved at the adsorbent of 300 g while for nitrates, 84 % removal is achieved when 200 g of activated carbon is loaded.

Keywords : waste water treatment, phosphates, nitrates, activated carbon, agricultural waste

Conference Title : ICSR2020 : International Conference on Scientific Research and Development

Conference Location : Chicago, United States

Conference Dates : December 12-13, 2020