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Removal of organics from treated palm oil mill effluent (POME) using powdered activated carbon (PAC) (Article)

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Abstract

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Millions of tonne of treated palm oil mill effluent (POME) discharged into the water body in Malaysia after the anaerobic-aerobic treatment as 'clean' waste. However, treated POME potentially can become the alternative of water resource for reclamation and reuse on-site. Therefore, further treatment is needed due to high organic content in treated POME. The removal of organics in terms of chemical oxygen demand (COD) and total suspended solids (TSS)were studied using the commercial powdered activated carbon (PAC) as adsorbent in a batch process. This study shows the effect of process conditions such as PAC dosage, agitation and contact time influenced the removal of COD and TSS in treated POME with equilibrium values of 3.00 g, 150 rpm and 15 minutes respectively. The COD and TSS adsorption was suit with the Freundlich isotherm model with R^2values 0.9812 and 0.9362 respectively.

Author keywords

Adsorption Isotherms Organics PAC Reclamation Treated POME

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