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Detergent Removal from Rinsing Water by Peroxi Electrocoagulation Process

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Abstract : Among the various methods of treatment, advanced oxidation processes (AOP) are the most promising ones. In this study, Peroxi Electrocoagulation Process (PEP) was investigated for the treatment of detergent wastewater. The process was compared with electrooxidation treatment. The results showed that chemical oxygen demand (COD) was high 7584 mgO₂.L⁻¹, while the biochemical oxygen demand was low (250 mgO₂.L⁻¹). This wastewater was hardly biodegradable. Electrochemical process was carried out for the removal of detergent using a glass reactor with a volume of 1 L and fitted with three electrodes. A direct current (DC) supply was used. Samples were taken at various current density (0.0227 A/cm² to 0.0378 A/cm²) and reaction time (1-2-3-4 and 5 hour). Finally, the COD was determined. The results indicated that COD removal efficiency of PEP was observed to increase with current intensity and reached to 77% after 5 h. The highest removal efficiency was observed after 5 h of treatment.

Keywords : AOP, COD, detergent, PEP, wastewater
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