

Removal of Aromatic Fractions of Natural Organic Matter from Synthetic Water Using Aluminium Based Electrocoagulation

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Abstract : Occurrence of aromatic fractions of Natural Organic Matter (NOM) led to formation of carcinogenic disinfection by products such as trihalomethanes in chlorinated water. In the present study, the efficiency of aluminium based electrocoagulation on the removal of prominent aromatic groups such as phenol, hydrophobic auxochromes, and carboxyl groups from NOM enriched synthetic water has been evaluated using various spectral indices. The effect of electrocoagulation on turbidity has also been discussed. The variation in coagulation performance as a function of pH has been studied. Our result suggests that electrocoagulation can be considered as appropriate remediation approach to reduce trihalomethanes formation in water. It has effectively reduced hydrophobic fractions from NOM enriched low turbid water. The charge neutralization and enmeshment of dispersed colloidal particles inside metallic hydroxides is the possible mechanistic approach in electrocoagulation.

Keywords : aromatic fractions, electrocoagulation, natural organic matter, spectral indices

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