

## Influence of ionic spacers on the fouling mitigation in an electro dialysis process

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Organic foulants existing in many wastewater effluents foul anion exchange membranes by deposition and/or chemical adsorption during electro dialysis operation due to negatively charges. The introduction of ion exchange spacers in an electro dialysis unit has advantages such as (i) decrease in the electrical resistance, (ii) increase in the desalting rate without altering the hydrodynamic flow pattern in the diluate cells. For the influence of ion exchange spacer on fouling mitigation, cation and anion exchange spacers were considered in the presence of an organic foulant, humate. With three different cell configuration with ion exchange spacers, the cell of anion exchange spacer in diluate had better performances. In the characterization results, the transport number increased due to conducting properties of the anion exchange spacer and that the electrochemical properties were affected significantly due to interaction between membrane and the ionic spacer in diluate compartment. The results clearly showed that the introduction of ion exchange spacers in the fouling experiments in the presence of humate mitigate fouling of ion exchange membranes.