Special Issue

Electrochemical Water and Wastewater Treatment Using Electroconductive Membranes

Message from the Guest Editor

Recently, there is a growing interest in responsive membranes for wastewater and water treatment applications. These include electrically conducing membranes able to couple filtration with electrochemical surface reactions. Typically, electroconductive membranes are fabricated through deposition of a conductive layer on conventional polymeric membranes or through synthesis or stand-alone metallic/ceramic membranes. Electroconductive membranes have been shown efficient in multiple water and wastewater treatment applications including pressure and thermal driven water filtration, and as part of more complex systems as membrane bioreactors, microbial fuel and microbial desalination cells. Through applying external potential on the membrane's surface, electroconductive membranes were shown to mitigate membrane fouling, control membrane properties related to transport. Lately, electroconductive membranes were also shown efficient in mitigating temperature polarization and flux enhancement of hypersaline solution as part of a membrane distillation system used for RO brine management.

Guest Editor

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