

An Overview of Recent Progress in Nanofiber Membranes for Oily Wastewater Treatment

ABSTRACT

Oil separation from water becomes a challenging issue in industries, especially when large volumes of stable oil/water emulsion are discharged. The present short review offers an overview of the recent developments in the nanofiber membranes used in oily wastewater treatment. This review notes that nanofiber membranes can efficiently separate the free-floating oil, dispersed oil and emulsified oil droplets. The highly interconnected pore structure nanofiber membrane and its modified wettability can enhance the permeation flux and reduce the fouling. The nanofiber membrane is an efficient separator for liquid–liquid with different densities, which can act as a rejector of either oil or water and a coalescer of oil droplets. The present paper focuses on nanofiber membranes' production techniques, nanofiber membranes' modification for flux and separation efficiency improvement, and the future direction of research, especially for practical developments.