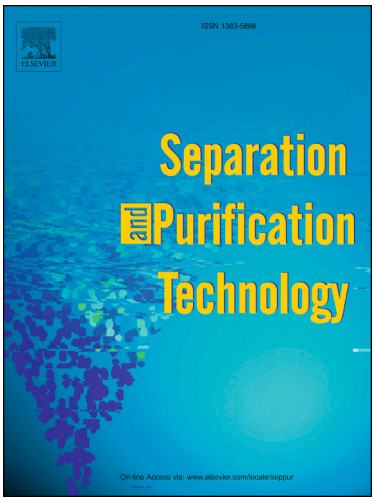

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Facile fabrication of superhydrophobic wood slice for effective water-in-oil emulsion separation

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Abstract

Oily wastewater treatment has attracted the attention of many researchers. The development of high efficiency and green emulsified oil/water separation materials is urgent. In this paper, inspired by nature, the wood slice with superhydrophobic/superoleophilic property was prepared successfully via a simple vacuum impregnation and surface modification process. The superhydrophobic wood slice possesses outstanding separation capability with separation efficiency higher than 98.0 % for a series of water-in-oil emulsions. More importantly, the separation efficiency of the superhydrophobic wood slice was still greater than 98.0 % after 6 cycles, indicating that the superhydrophobic wood slice had excellent recyclability. In addition, wood is an abundant, low-cost, readily processed, biodegradable and environmentally friendly materials. Therefore, we believe that such a simple, low-cost, high-efficiency, and large-scale preparation method has great potential for solve the pollution problems caused by oily industrial wastewater in the practical application.

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