

عنوان مقاله:

Photocatalytic behavior of nanocomposite membrane for Pharmaceutical wastewater treatment

محل انتشار:

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خلاصه مقاله:

Effective treatment of Pharmaceutical wastewater containing high concentration of solution of pharmaceutical compounds presents a pivotal challenge to wastewater and environmental engineers worldwide. The coupling of membrane separation and photocatalytic oxidation has been studied for the removal of pharmaceutical pollutants. . In this study polysulfone (PSf) membranes were modified with ZrO₂-SnO₂ nanocomposite (0_0.1 wt%) via phase inversion method for ultrafiltration to treat and enhance the biodegradability of a representative pharmaceutical wastewater. The flux of the nanocomposite membrane after irradiation by UV light rose in comparison with the same membrane without UV light. The flux of the membrane with 0.1wt% ZrO₂-SnO₂ was also better than the other membranes. The chemical oxygen demand (COD) removal of pharmaceutical wastewater for modified membranes was also improved by increasing the ZrO₂-SnO₂ nanocomposite. The highest COD removal of the modified .membrane with 0.1 wt% of ZrO₂-SnO₂ was 47.4%. This value increased to 57.6% after UV radiation

کلمات کلیدی:

ZrO₂-SnO₂ nanocomposite; photocatalytic membrane; pharmaceutical compounds

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