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Degradation of phenol over a TiO₂ nanofiber membrane reactor

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The aim of the present work is to decompose phenol over a TiO₂ nanofiber membrane reactor as a PMR. Although the high surface porosity and permeability and adjustable pore sizes of the electrospun nanofiber membranes have increased their appeal among researchers, the low injection rate of polymer in the electrospinning process has inhibited the fabrication of these types of membranes at the industrial scale. Thus, nanofiber membranes should be fabricated in a way which is cost-effective and applicable at industrial scales. The decomposition of phenol should be accomplished through an economical process as well. The most important part of this process is membrane performance which not only should possess antifouling and self-cleaning properties for long-term durability but also it should have high porosity and high specific surface area to increase the rate of reaction significantly. The fabricated membrane passes the mentioned parameters successfully.

Biography

Mahmoud Sani specializing in chemical engineering, and now he had focused on environment studies, such as degradation of phenol over a TiO₂ nanofiber membrane reactor. In 2011, he graduated with a degree from Dashtestan Azad University, and work for petrochemical company for 7 years.

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