

عنوان مقاله:

Effect of sparger orifice diameter on fouling in a novel aerated membrane photo bioreactor (AMPBR) containing microalgae

محل انتشار:

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خلاصه مقاله:

Membrane photo bioreactors can be regarded as well-established and fruitful approach. They are widely used in industry with different good features. In this article, a novel aerated-membrane photo bioreactor (AMPBR) was built in order to consider the role of orifice diameter (do) on fouling since the most striking drawback is fouling and it could make membrane efficacy less. In addition, some factors could pander to this problem, such as protein in microalgae and the design of bioreactors. There exist some ways to reduce fouling including aeration, backwash and mechanical cleaning. This study is approved that using air sparger with various dos for releasing air bubbles would be significant to diminish the rate of membrane fouling. So two dos 0.5 mm and 1.5 mm were separately used to consider the impact of them on membrane fouling. Furthermore, different resistances were calculated alongside the amount of protein. It is concluded that when the do of air sparger is 0.5mm, the cake layer is max. On the other side, when the do of air sparger is 1.5mm, the cake layer is lower.

کلمات کلیدی:

Fouling, AMPBR, Microalgae, Sparger, Orifice diameter

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