

## 投加ABS颗粒对MBR膜过滤特性的影响

Effect of feeding ABS particles into membrane bioreactor on membrane filtration performance

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英文关键词: [ABS particles](#) [membrane fouling](#) [EPS](#) [weight of sludge cake](#)

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中文摘要:

向膜生物反应器(MBR)中投加ABS颗粒,以干扰膜表面泥饼层的形成和减轻膜污染的发生。结果表明,向MBR中投加粒径为1 mm的ABS颗粒,发现颗粒的最佳投加量为 $1.5 \text{ kg/m}^3$ ,投加颗粒的膜运行时间是对照实验运行时间的3倍。颗粒对膜表面泥饼沉积层抑制明显,与对照实验泥饼层重量最大相差290 g,颗粒使膜上泥饼层的分布也不同。颗粒的投加也改变了污泥EPS含量,相比对照实验,多糖、蛋白质含量分别提高了17.2%和8%,污泥粘度提高了17.6%。细格栅与颗粒使MBR对TN、TP去除效果分别提高了8.5%和9.7%,对COD的影响不大。

英文摘要:

ABS was fed into MBR to disturb the formation of cake layers on membrane surfaces and to reduce membranes fouling effect. The result indicated that the optimized feed rate is  $1.5 \text{ kg/m}^3$ , when using 1 mm diameter ABS particles. The MBR operating time achieves three times of the contrast test. Feeding ABS particles could effectively suppress the sludge cake layer formation rate on membrane surfaces, whose largest weight difference between the ABS feeding test and contrast test is 290 g, with a different content distribution between these two results. As ABS particles fed into MBR, the EPS concentration in sludge was also impacted. Comparing to the contrast test, the concentration of polysaccharide and protein increased by 17.2% and 8%, respectively. Sludge viscosity increased by 17.6%. The removal rates of TN and TP increased by 9.7% and 8.5%, respectively as the fine grid and particles were added into MBR. However, The results indicating fairly small influence on COD.

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