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Review

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Anaerobic dynamic membrane bioreactor (AnDMBR) for wastewater treatment: A review

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Abstract: Recently, an increasing level of attention has focused on the emerging technology of anaerobic dynamic membrane bioreactors (AnDMBRs), owing to its merits such as low membrane module cost, easy control of membrane fouling, low energy consumption and sludge production, as well as biogas production. As research on AnDMBRs is still in the nascent stage, an introduction of bioreactor configurations, dynamic membrane (DM) module, and DM layer formation and cleaning is firstly presented. The process performance of the AnDMBR for wastewater treatment is then reviewed with regard to pollutant removal, DM filterability, biogas production, and potential advantages over the conventional anaerobic membrane bioreactor (AnMBR). In addition, the important parameters affecting process performance are briefly discussed. Lastly, the challenges encountered and perspectives regarding the future development of the AnDMBR process to promote its practical applications are presented.

Keywords: Anaerobic dynamic membrane bioreactor; operational parameter; membrane fouling; wastewater treatment; biogas production

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