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Waste Biomass Management – A Holistic Approach

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Treatment of Dye Wastewater for Water Reuse Using Membrane Bioreactor and Biofouling Control

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Abstract Wastewater treatment for water reuse and membrane biofouling control is of significant value to sustainable performance of a membrane bioreactor system. Different treatment techniques have been employed to treat dye wastewater. In recent studies, membrane bioreactor was employed to treat dye wastewater; however, membrane bioreactors are facing biofouling problem. Biofouling (is a process of membrane surface colonization by microbial cells via adhesion and production of extracellular polymeric substances (EPSs)) is almost always a major hitch for membrane bioreactors (MBRs) and membrane systems. Biofouling of membrane reactors results in higher operational expenses and reduced stability and operational performance. In this chapter, biological treatment of membrane biofouling is demonstrated. Furthermore, major causes of biofouling and biological control strategies are discussed. Lastly, conclusions on wastewater treatment and membrane biofouling are presented.

Keywords Dye wastewater • Membrane biofouling • Extracellular polymeric substances • Biofouling control