Recent advances in membrane fouling caused by extracellular polymeric substances: a mini-review

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ABSTRACT

Membrane fouling caused by extracellular polymeric substances (EPS) is a complicated issue and a hot topic in membrane bioreactor (MBR) research. A large number of articles have been published recently. However, the results of them are sometimes different, controversial and even contrary, which is hindering our understanding on the role of EPS in membrane fouling. That is mainly attributed to the fact that most of the studies focus on one specific aspect of EPS while overlooking their overall behaviors. This review is designed to synthesize the knowledge of EPS and to eliminate confusions through analyzing their secretion, transformation, release, and adsorption based on the recent publications and our own research, which is expected to provide a sound understanding of membrane fouling caused by EPS in MBRs.

Keywords: Extracellular polymeric substances; Membrane bioreactor; Membrane fouling; Soluble microbial products; Wastewater treatment