doi: 10.5004/dwt.2018.21962

A review on the present situation of wastewater treatment in textile industry with membrane bioreactor and moving bed biofilm reactor

Xuefei Yang^{a,*}, Martí Crespi^a, Victor López-Grimau^{a,b}

^aInstitute of Textile Research and Industrial Cooperation of Terrassa (INTEXTER), Universitat Politècnica de Catalunya-BarcelonaTech (UPC), C/Colom 15, Terrassa 08222, Spain, Tel. +34 937398260, email: xuefeiyang@hotmail.com (X. Yang), Tel. +34 937398247, email: crespi@etp.upc.edu (M. Crespi)

^bDepartment of Project and Construction Engineering, Universitat Politècnica de Catalunya-Barcelona Tech (UPC), C/Colom 11, Terrassa 08222, Spain, Tel, +34 937397316, email: victor.lopez-grimau@upc.edu

Received 25 September 2017; Accepted 29 January 2018

ABSTRACT

Membrane bioreactor (MBR) is one of the advanced treatment technologies used in industrial wastewater treatment due to its various advantages over conventional biological processes. Recently, the application of MBR in treatment of textile wastewater has increased significantly with an effective removal of contaminants. Moving bed bioreactor (MBBR) has been efficiently used for the treatment of different municipal and industrial wastewater during the last decades and it is a relatively novel and effective technology applied in textile wastewater treatment. This review paper presents the situation of MBR and MBBR technology for textile wastewater purification under different conditions and collates results of previous studies during the past years about MBR and MBBR treatment technologies used in textile processes. Both of these two technologies have shown their efficiency, but they still have problems in textile wastewater treatment. To this end, MBR-MBBR hybrid system could be an attractive solution for textile wastewater purification because of the high efficiency and low consumption of energy and space.

Keywords: Membrane bioreactor (MBR); Moving bed bioreactor (MBBR); Textile wastewater