Decolorization of dye wastewater by ceramic membrane bioreactor

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The combined membrane process with biological reactor has been developed for the treatment and reuse of municipal and industrial wastewaters. Ceramic membrane bioreactor (C-MBR) using alginate-immobilized fungal strain was a combination of the stable bioprocess by entrapped cells and the membrane separation by ceramic membrane. By cell immobilization, we intended to increase the stability and productivity, and to reduce the membrane fouling and cell loss. Decolorization rate was calculated in the fed-batch and continuous reaction. In the case of continuous reaction, it showed better cell viability and higher decolorization rate comparison with the fed-batch reaction. During about 90 hour after dye feeding, it could be treated as the amount of 2 L per day. According to the increase of the operation time, the permeate flux decreased due to the fouling such as the adsorption of organic material in ceramic membrane surface.

References

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