Biological aeration filter post-treating effluent from Fenton oxidation process of wastewater containing rhodamine B

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\textbf{ABSTRACT}

In order to investigate the treatment of refractory organic pollutants in textile wastewater, Rhodamine B (RhB) was selected as a model pollutant to prepare the simulated wastewater. Aim to treat the effluent from Fenton oxidation process for wastewater containing RhB, biological aerated filter (BAF) was used as post-treatment process. The start-up process of the BAF reactor and the optimum operation conditions for the wastewater treatment process were investigated in this study. It was demonstrated by a series of bench-scale tests that the reactor could be successfully started up by exogenously inoculated activated sludge and gradual acclimation method. Operation condition experiments indicated that the BAF could achieve relatively high performance when gas–water ratio was 5–6, hydraulic retention time was controlled at 6–8 h and influent organic loading was within the range from 0.77 to 2.04 kgCOD/(m$^3$d).

\textbf{Keywords:} Rhodamine B; Biological aerated filter; Textile wastewater; Start-up