

Anodic half-cell with highly alkaline medium facilitates homogeneous Fe(VI) generation for air pollutants removal at electroscrubber

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A less expensive electron mediator with minimized over voltage can be a good choice to get higher current efficiency. In the present work, Fe(III)O_2^- used to generate Fe(VI)O_4^{2-} in highly NaOH medium at anodic half-cell at less current density and attempted to air pollutant removal. First, effect of membrane was analysed during electrolytic generation of Fe(VI) at anodic half-cell. The oxidation efficiency was derived using potentiometric titration method. Almost 38% of Fe(VI) was achieved while use of Nafion115 membrane at the current density of 10 mAcm^{-2} . A model air pollutant N_2O was checked at electroscrubber that was monitored by online FTIR gas analyser.

Key words: MEO, Fe(VI) generation, electroscrubbing, air pollutant removal.