water

Removal of trace thallium from real industrial wastewater by Fe^0-electrocoagulation: Flocs characterization, processing and mechanism

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Table S1. The content of Fe^{3+} and TFe (*wt.*%) in flocculent sludges obtained at vary initial pH.

pH	7	8	9	10	11	12
Fe^{3+}	56.01	55.64	54.77	52.26	51.27	50.78
TFe	56.03	55.69	54.90	52.44	51.54	51.12

Table S2. The specific surface area, average pore size and pore volume of flocculent sludges obtained at vary initial pH.

pH	7	8	9	10	11	12
Specific surface area/(m^2/g)	156.91	182.79	189.56	220.33	208.29	191.97
Average pore size/nm	-	-	-	-	6.32	6.79
Pore volume/(cc/g)	-	-	-	-	0.465	0.383

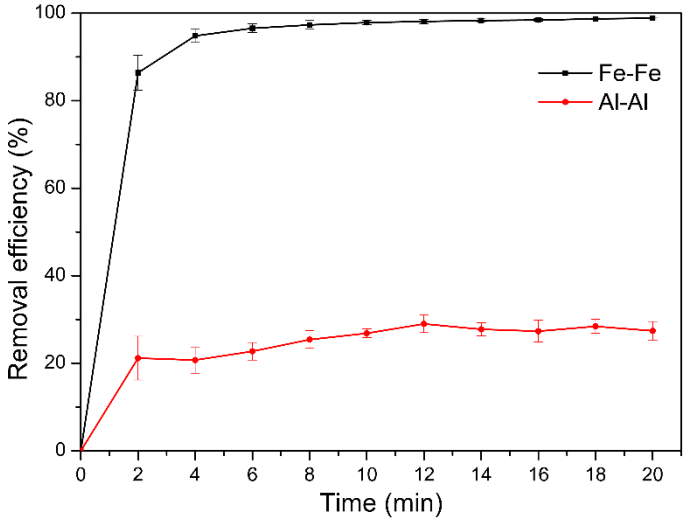

Figure S1. Effect of electrode material on Tl(I) removal efficiency within 20 min EC treatment under applied current density of 16.7 mA/cm2 with initial pH of 11±0.1, electrodes distance of 2 cm. C_0 = 109 μg/L.

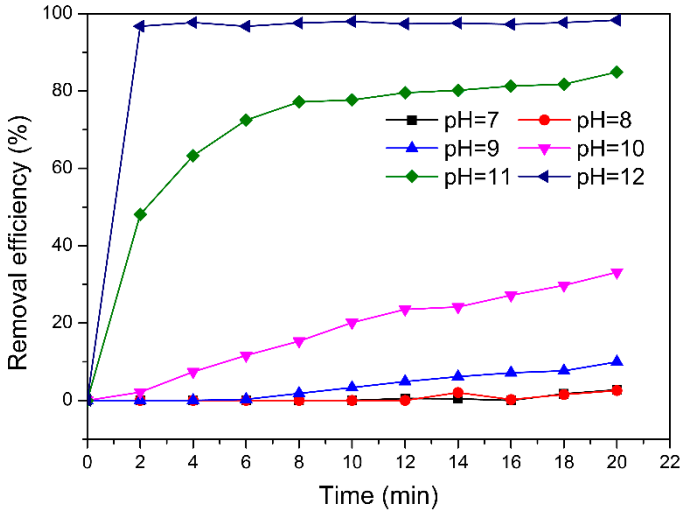

Figure S2. Effect of pH on Mg removal efficiency within 20 min EC treatment under applied current density of 16.7 mA/cm², using Fe-Fe electrodes at distance of 2 cm. C_0 = 41.5 mg/L.

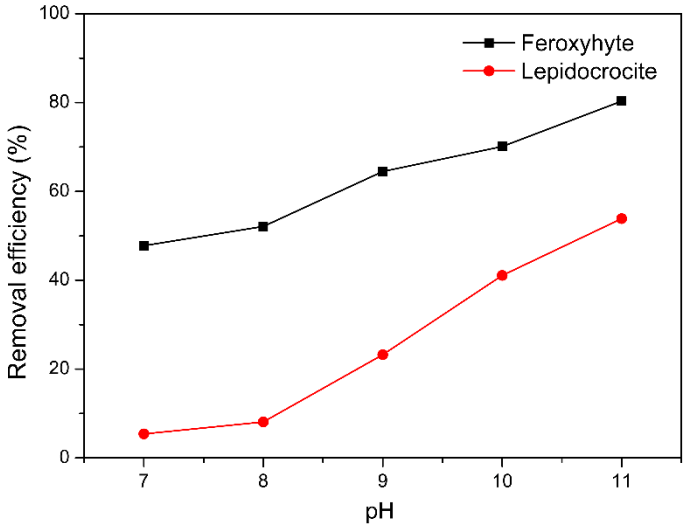

Figure S3. Effect of pH on Tl(I) removal efficiency of the as-prepared FeOOH. Adsorbent dose 0.44 g/L, agitation speed at 100 rpm for 4 hours at room temperature (25 °C). C_0 = 141 μg/L.

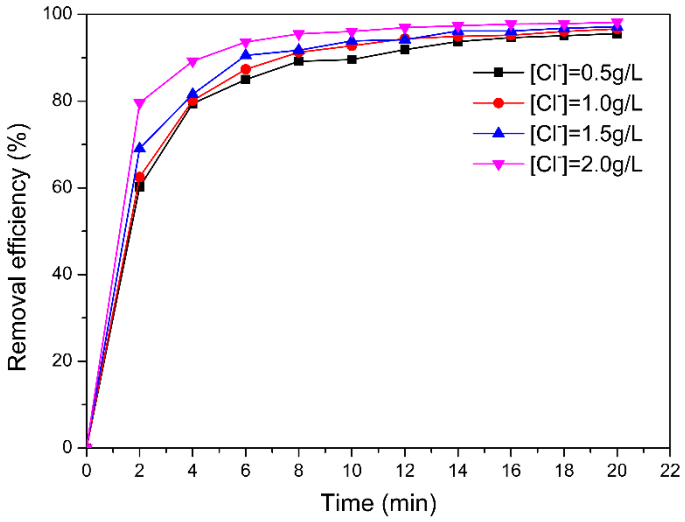

Figure S4. Effect of Cl- concentration on Tl(I) removal efficiency within 20 min EC treatment under applied current density of 16.7 mA/cm², initial pH of 11 ± 0.1, using Fe-Fe electrodes at distance of 2cm. C_0 = 95 µg/L.

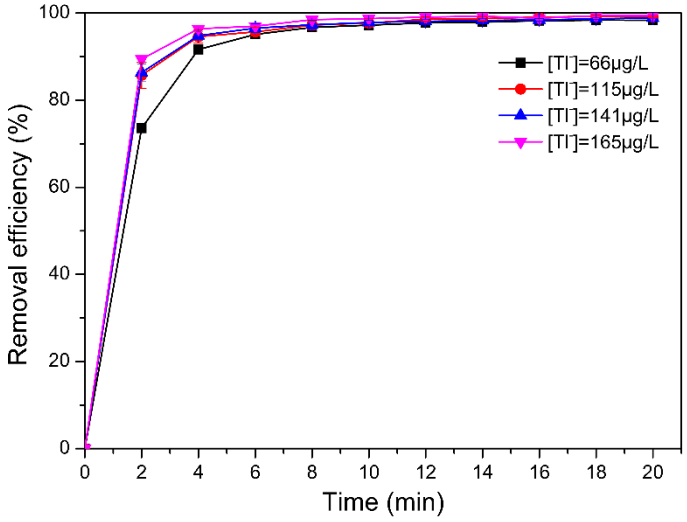

Figure S5. Effect of initial Tl(I) concentration on Tl(I) removal efficiency within 20 min EC treatment under initial pH of 11 ± 0.1 with aeration of 0.2 L/min, using Fe-Fe electrodes at distance of 2 cm. C0 = 66, 115, 141, 165 µg/L, respectively.

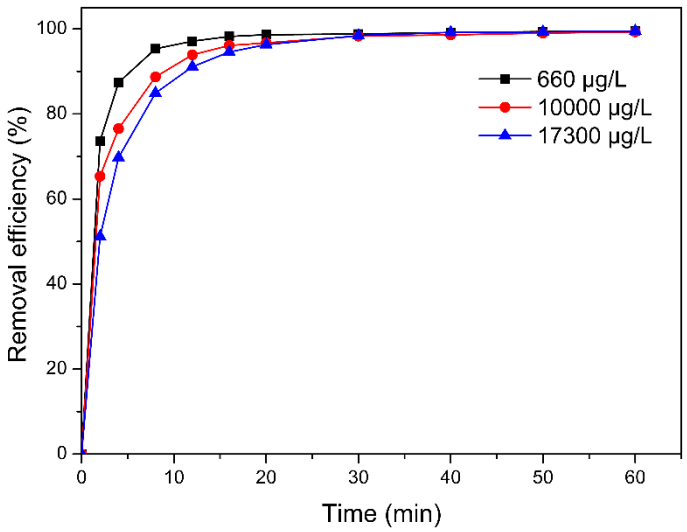

Figure S6. Removal efficiency of high Tl(I) concentration within 60 min EC treatment under initial pH of 11 ± 0.1 with aeration of 0.2 L/min, using Fe-Fe electrodes at distance of 2 cm. C_0 = 660, 10000 and 17,300 μg/L, respectively.

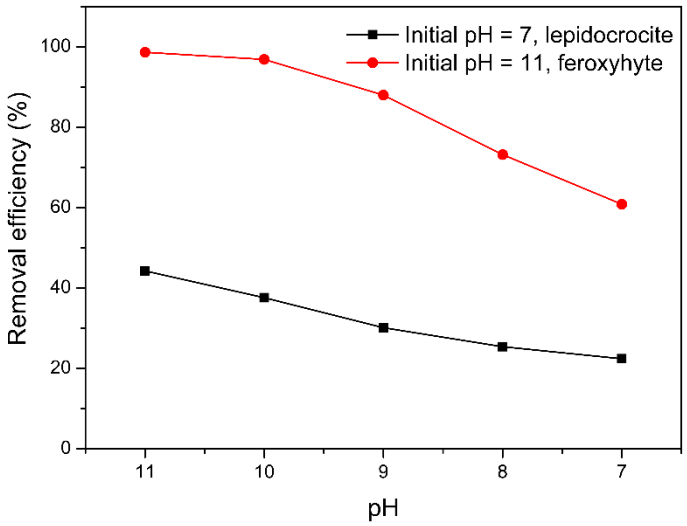

Figure S7. Effect of pH on Tl(I) removal efficiency of effluent after 20 min EC treatment under applied current density of 16.7 mA/cm² with aeration of 0.2 L/min. using Fe-Fe electrodes at distance of 2 cm. Initial pH of 7 and 11, respectively.