

Supporting Information

for

Molecular Identification Guided Process Design for Deep Removal of Fluoride from Electroplating Effluent

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This supporting file contains two tables (**Table S1-S2**) and seven figures (**Fig. S1-S7**).

Table S1 Thermodynamic parameters obtained from Langmuir model.

	298 K	308 K	318 K
K_L (L/mg)	2.37×10^{-2}	1.74×10^{-2}	1.93×10^{-2}
Q_m (mg/g)	191.04	196.09	155.35

Table S2 Thermodynamic parameters obtained from Van't Hoff equation.

	298 K	308 K	318 K
ΔG° (kJ $\cdot$ mol $^{-1}$)	-25.09	-25.25	-26.23
ΔH° (kJ $\cdot$ mol $^{-1}$)		-8.26	
ΔS° (kJ $\cdot$ K $^{-1}$ $\cdot$ mol $^{-1}$)		5.59×10^{-2}	

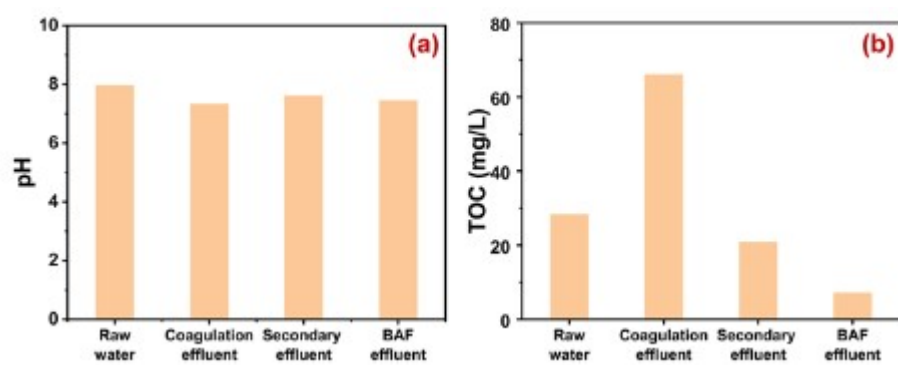


Fig. S1 The evolution of pHs (a) and TOC (b) during wastewater treatment

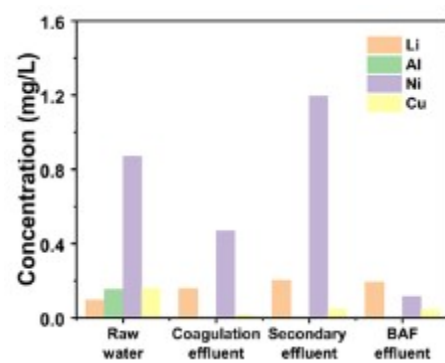


Fig. S2 Element content of Li, Al, Ni, and Cu in the effluents from LXWWT

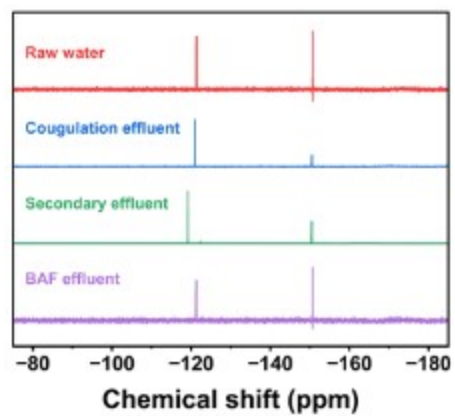


Fig. S3 ^{19}F NMR spectra of the effluents from LXWWT

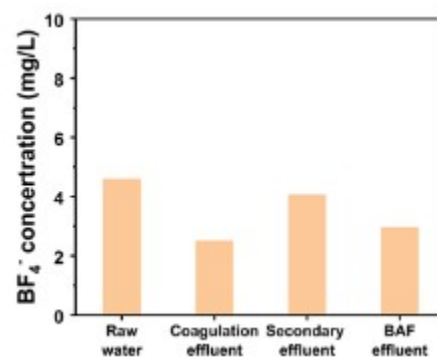


Fig. S4 Concentration of BF_4^- in the effluents from each section of LXWWT.

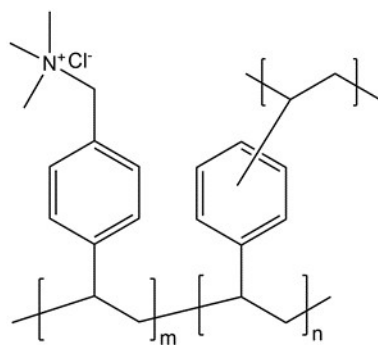


Fig. S5 Chemical structure of D201.

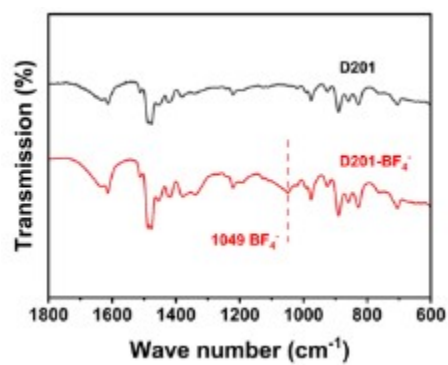


Fig. S6 FT-IR spectroscopy of D201 before and after adsorption

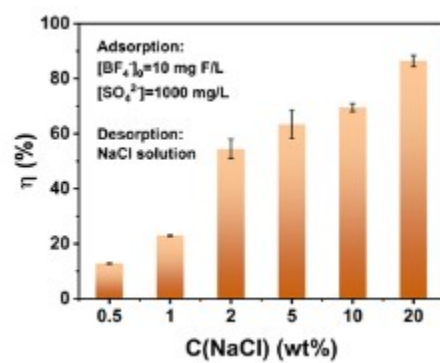


Fig. S7 Batch regeneration of D201 with NaCl solution (20 wt%)