Supplementary Information of

Retention of U(VI) by the Formation of Fe Precipitates from Oxidation of Fe(II)

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1. Measurement of fluorescence spectra.

The excitation-emission matrix data were recorded under room temperature after the precipitates were put into a 1 cm quartz sample holder. The scan speed was set at 1200 nm/min and both of the emission and excitation wavelength range were set from 200 to 600 nm by 5 nm steps. Both of the excitation and emission slit band widths were set as 10 nm.

Table S1. A systematic comparison on the experimental conditions and results of this work with those of the previous studies.

Fe(II) (mM)	pH	Temperature	Aging time (h)	$NaHCO_3$ (mM)	Phase(s)		Ref.
					Dominant	Minor	
50	6.5	25°C	48	100	goethite	lepidocrocite	1
50	5.5	Room temperature	48	1000	goethite	lepidocrocite	2
1.0	7.0	Room temperature	5	8	lepidocrocite	goethite	3
0.54	7.0	Room temperature	4-5	8	lepidocrocite	goethite	4
1.0	7.0	Room temperature	24	8	lepidocrocite	goethite	This study

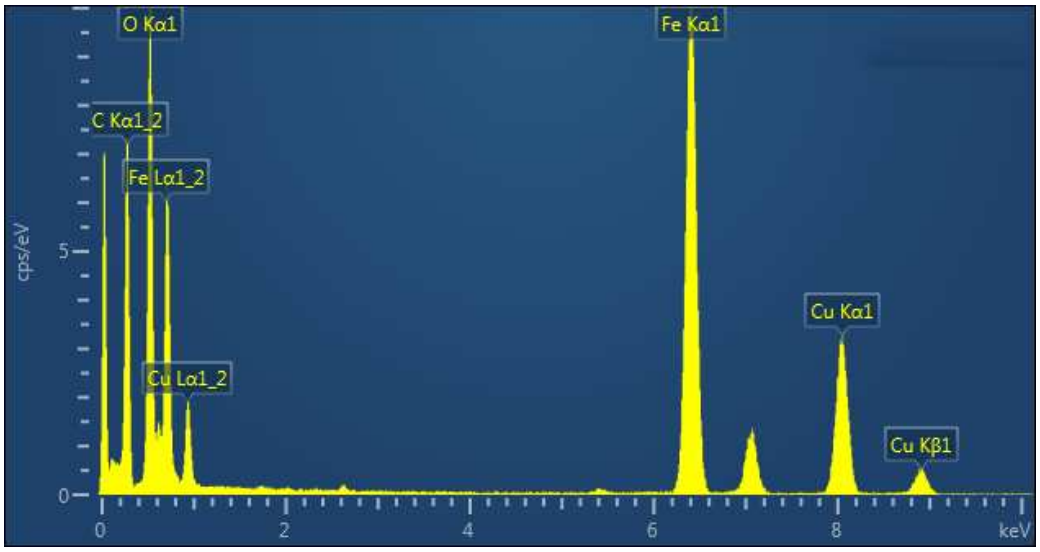

Figure S1. EDS spectrum of Fe-U0.10$_{ads}$ after successive washing process.

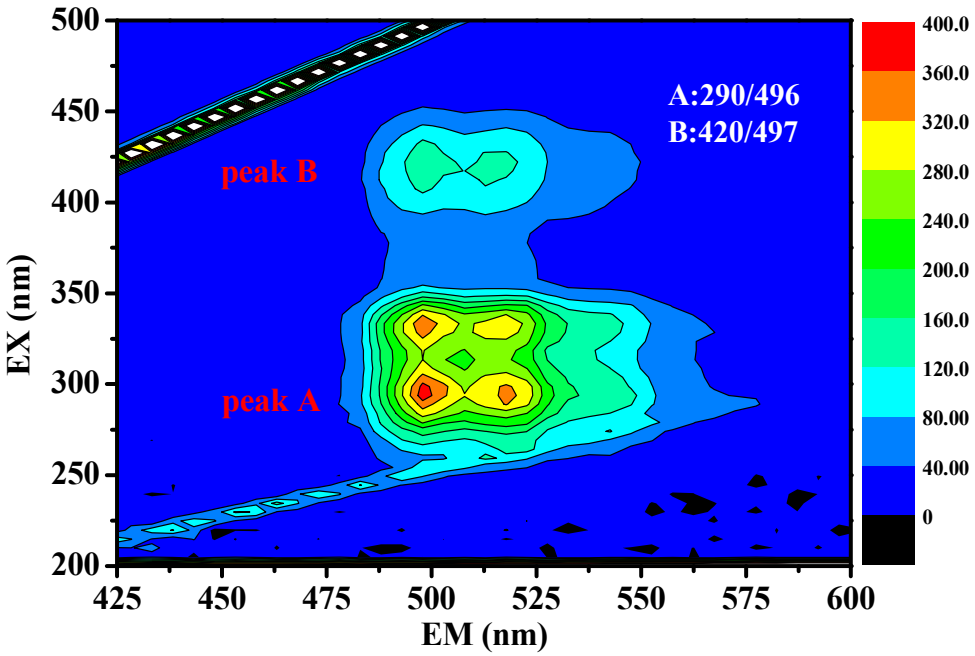

Figure S2. Fluorescence excitation-emission matrix spectrum of uranyl solution.

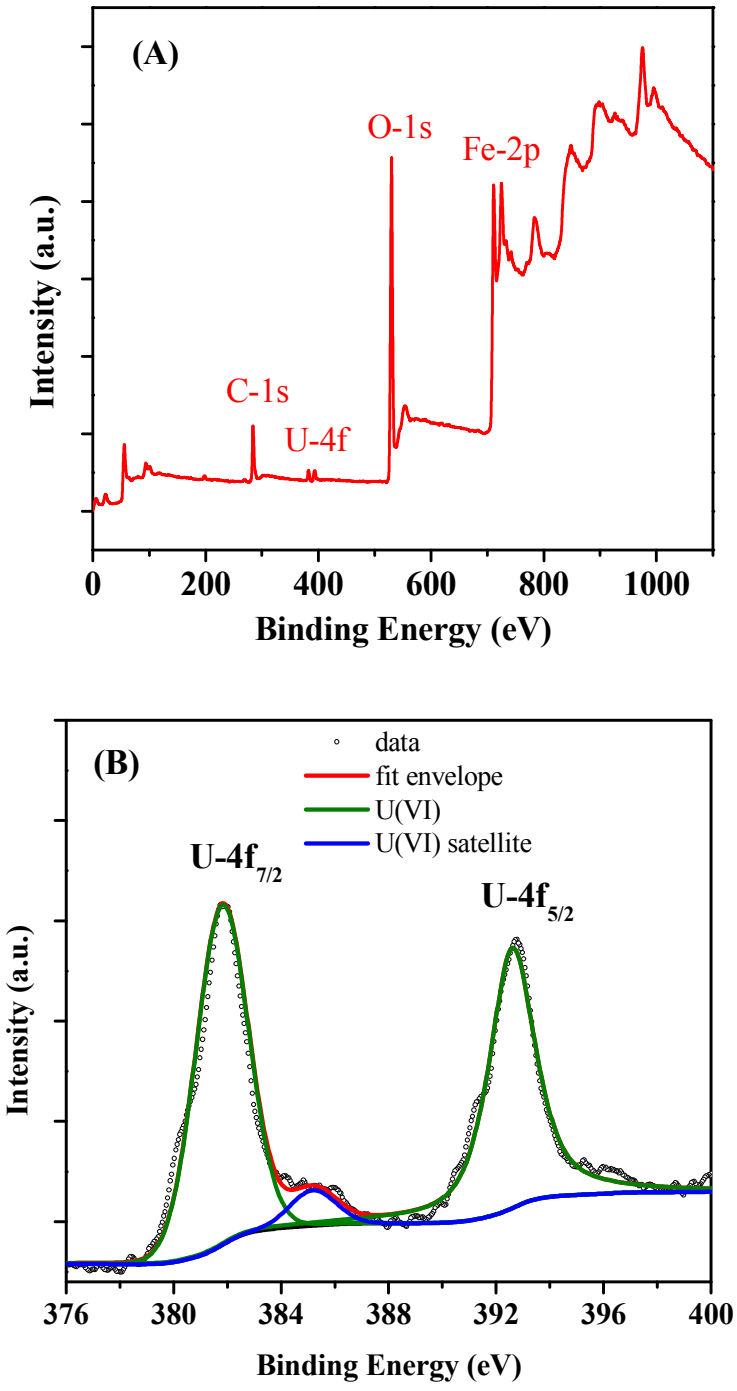

Figure S3. XPS survey spectrum of the adsorption sample Fe-U0.10$_{ads}$ (A) and corresponding U 4f spectrum (B).

REFERENCES

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