

Supporting Information

Efficient Extraction of Sulfate from Water using a Metal-Organic Framework

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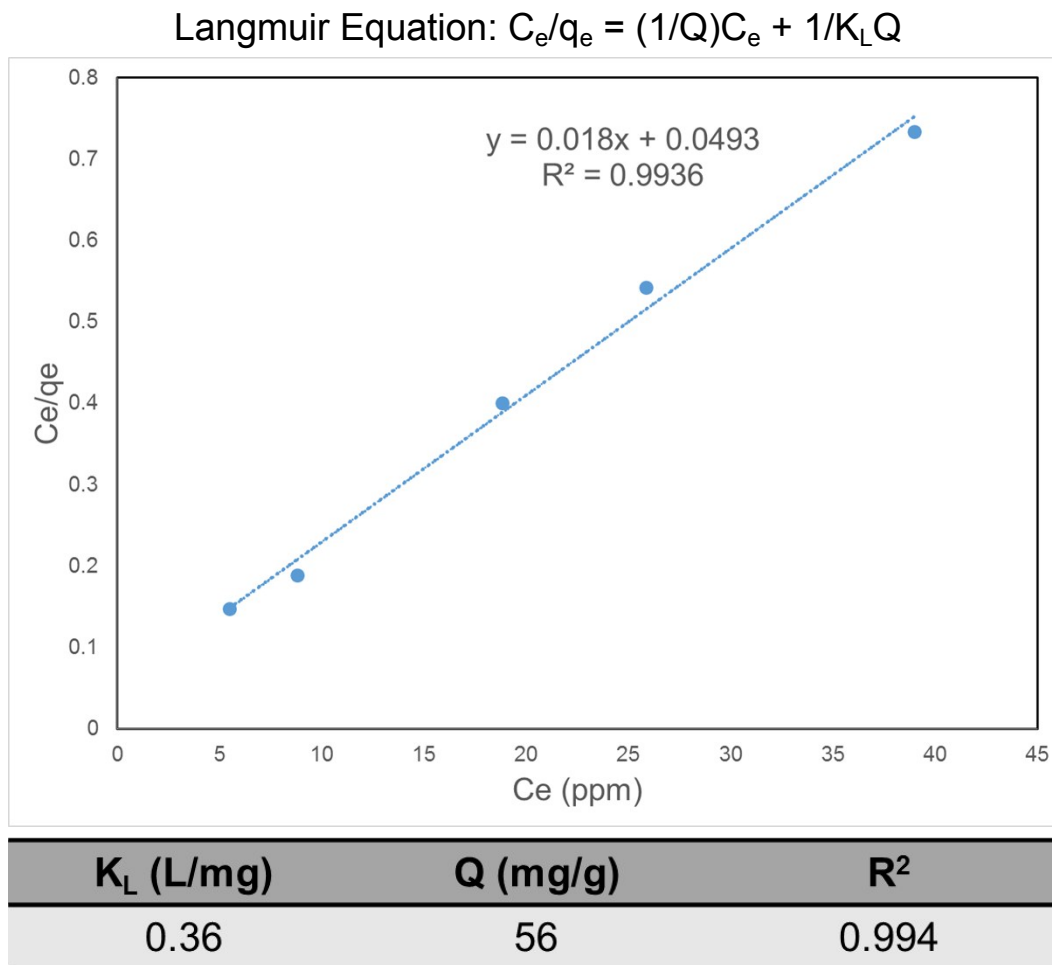


Figure S1. Langmuir plot (linear, type I) for sulfate adsorption on NU-1000.

Table S1. Values of C_e and q_e used in Figure S1 for sulfate adsorption on NU-1000.

Ca. Exposure per Node	C_e (ppm)	Q_e (mg/g)
1.0	5.5	37.1
1.5	8.8	46.5
2.0	18.8	47.0
2.5	25.8	47.7
3.0	39.0	53.1

Table S2. Sulfate adsorption per node in NU-1000 when exposed to various concentrations of aqueous sodium sulfate.

Exposure per Node	Uptake per Node
2	1.3
3	1.3
4	1.3
5	1.3
6	1.5
7	1.5

Table S3. Representative sulfate adsorption capacities for various sorbents including NU-1000.

Material	Sulfate Adsorption mg/g
Tripodal Hexaurea Receptor ¹	184
Tris[2-(3-pyridylurea)ethyl]-amine ²	81
NU-1000	56
Oligopyrrolic Macrocycle ³	52
Acrylic Acid Grafted Cotton ⁴	33
Zeotreat™ (modified mordenite) ⁵	5

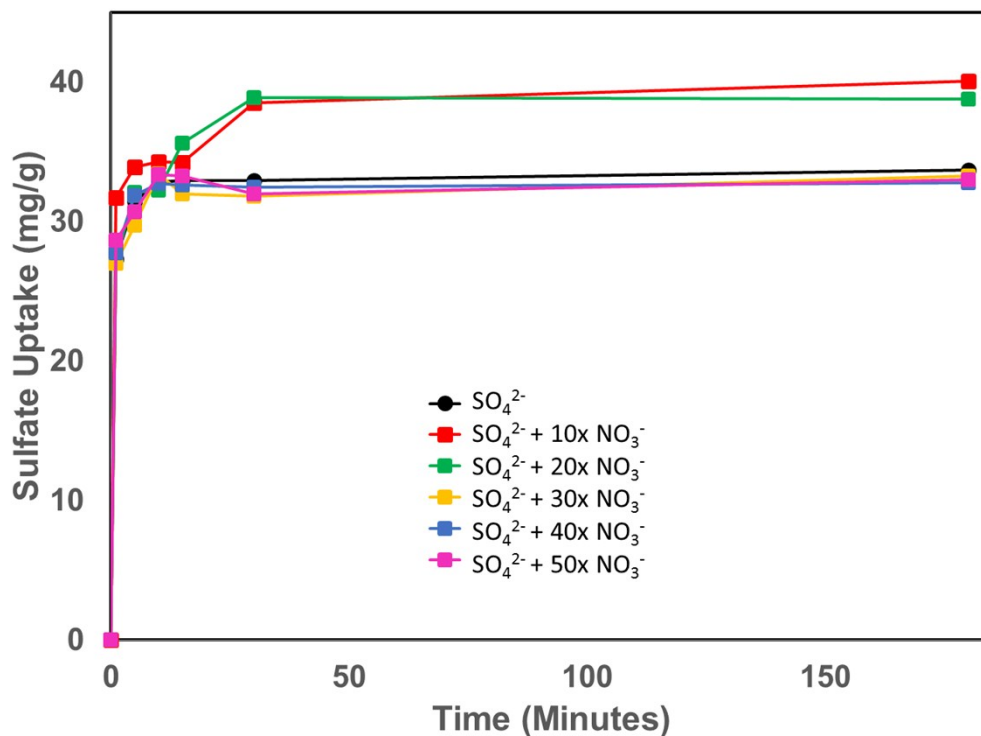


Figure S2. Sulfate uptake as a function of time in the presence of 10-50x the molar concentration of NO₃⁻.

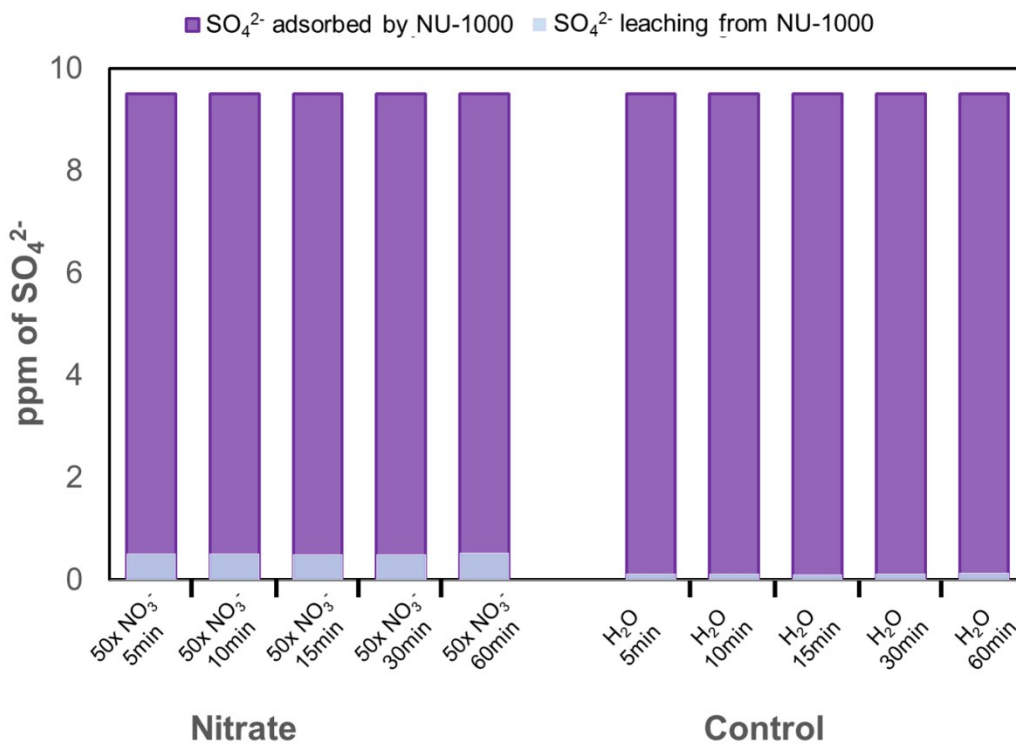


Figure S3. Sulfate leaching from NU-1000 in the presence of 50x the molar concentration of NO₃⁻ vs. NO₃⁻-free water as a control.

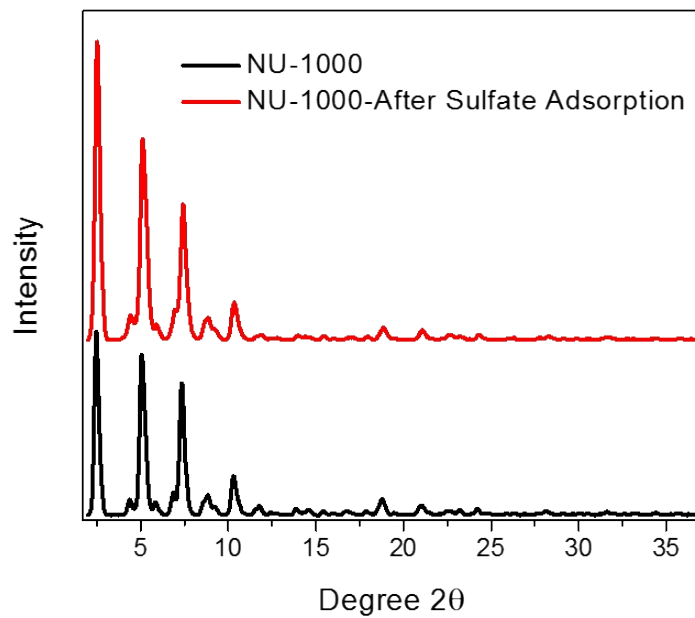


Figure S4. PXRD patterns for NU-1000 before and after adsorption of sulfate.

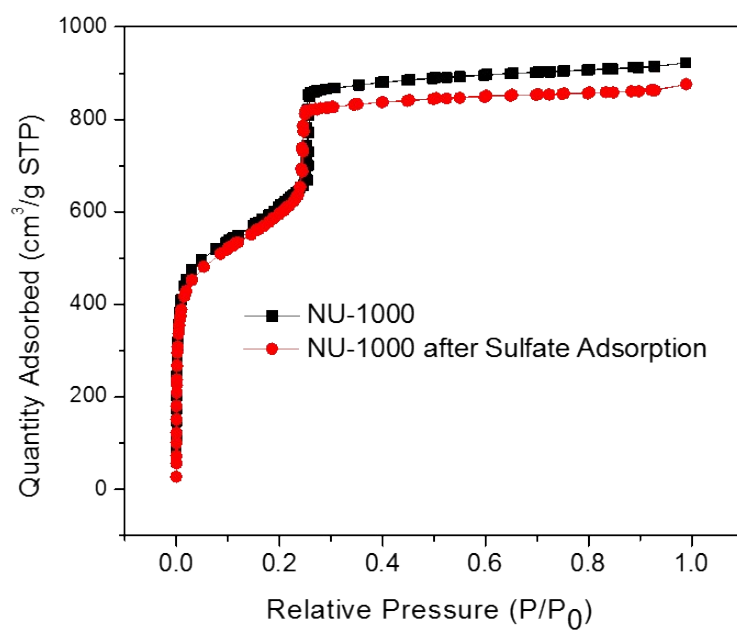


Figure S5. Nitrogen adsorption isotherms of NU-1000 before and after adsorption of sulfate.

References:

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