

**A strategy for the preparation of super-hydrophilic molybdenum disulfide
composites applied to remove uranium from wastewater**

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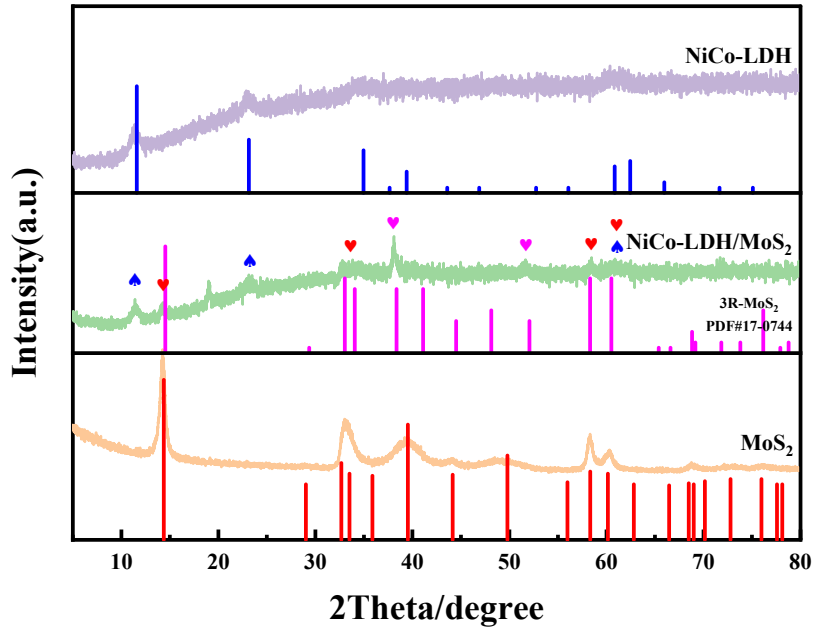


Fig.S1 The XRD pattern of MoS₂, NiCo-LDH and NiCo-LDH/MoS₂

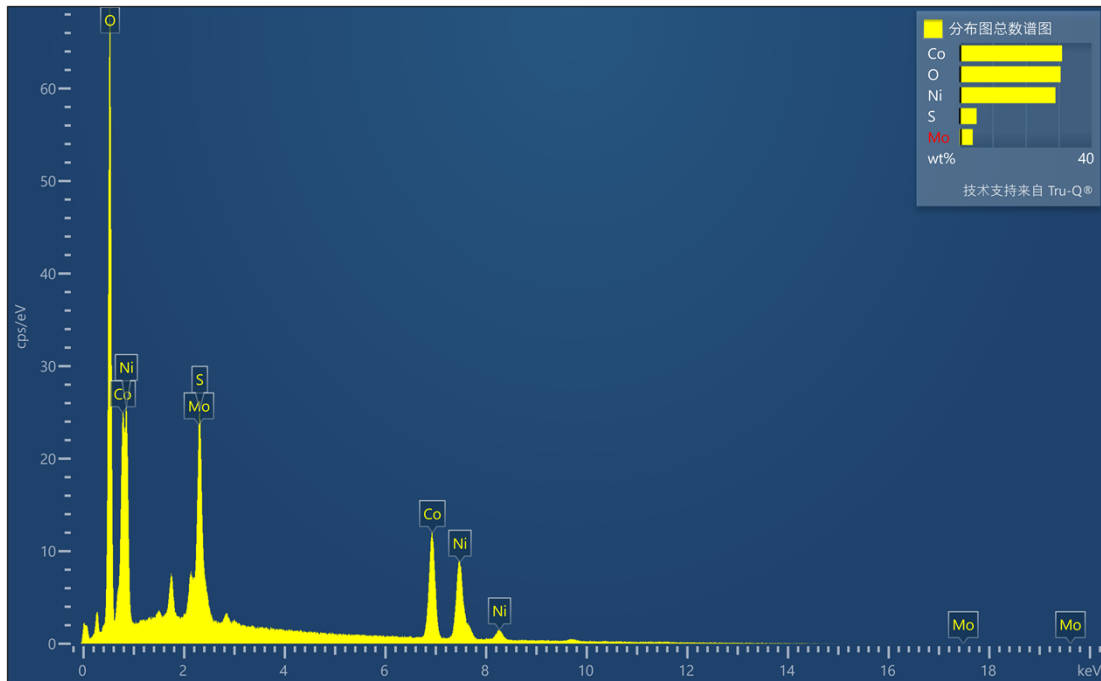


Fig.S2 Spectrum of total element distribution of NiCo-LDH/MoS₂

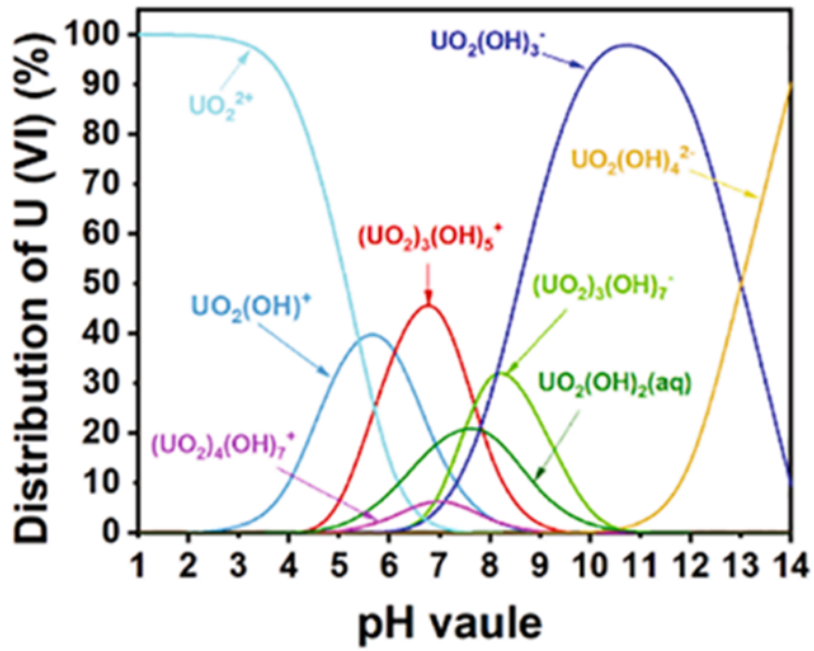


Fig.S3 Uranyl ions exist in different pH forms



Fig.S4 Solution after desorption

Table S1 Adsorption kinetic model parameters

Adsorbent	Q_e (mg/g)	Pseudo-first-order models			Pseudo-second-order models		
		Q_e	k_1	R^2	Q_e	k_2	R^2
		(mg/g)	(min^{-1})		(mg/g)	(g/mg·min)	
MoS ₂	112.57	9.31	0.00906	0.61819	112.74	0.00466	0.99998
MoS ₂ /NiCo-LDH	309.68	59.11	0.01812	0.94004	312.50	0.00095	0.99995
NiCo-LDH	238.89	116.32	0.00555	0.66049	240.38	0.00014	0.99280

Table S2 Parameters of the Intra-particle Diffusion Model

Adsorbent	k_{p1}	R_1^2	k_{p2}	R_2^2	k_{p3}	R_3^2
MoS ₂	7.28	0.94492	1.26	0.66703	0.05	0.18833
MoS ₂ /NiCo-LDH	20.35	0.99996	5.4	0.99253	0.2	0.6298
			3		8	
NiCo-LDH	30.64	0.98538	5.4	0.98416	0.3	0.99448
			0		6	

Table S3 Parameters of adsorption isotherm model

Isothermal model	Parameter	25°C	35°C	45°C
Langmuir	Q_m ($\text{mg}\cdot\text{g}^{-1}$)	492.61	755.80	908.45
	b ($\text{L}\cdot\text{mg}^{-1}$)	0.11849	0.11316	0.11171
	R^2	0.98487	0.98223	0.98122
Freundlich	K_f ($\text{L}\cdot\text{g}^{-1}$)	139.9119	178.8521	200.7739
	n	3.96557	3.33946	3.08938
	R^2	0.83546	0.81592	0.85225
Sips	Q_m ($\text{mg}\cdot\text{g}^{-1}$)	492.83	703.24	851.01
	K	0.11837	0.13342	0.13032
	m	0.99836	1.31326	1.23051
	R^2	0.98609	0.99203	0.98341