Supplementary Material

The Preparation of a Lignosulfonate/Chitosan–Graphene Oxide Hydrogel Biosorbent to Effectively Remove Cr(VI) from Wastewater: Adsorption Performance and Mechanisms

Caohui Han [1,2], Xiaonan Liu [1,2], Tingting Wang [1,2], Xiaoyin Sun [1,2], Lu Bai [1,2] and Yongchang Sun [1,2,*]

[1] School of Water and Environment, Chang'an University, Xi'an 710054, China；

[2] Key Laboratory of Subsurface Hydrology and Ecological Effect in Arid Region, Ministry of Education, Chang'an University, Xi'an 710054, China

[*] Correspondence: ycsun@chd.edu.cn; Tel.: +86-29-82339952; Fax: +86-29-82339281
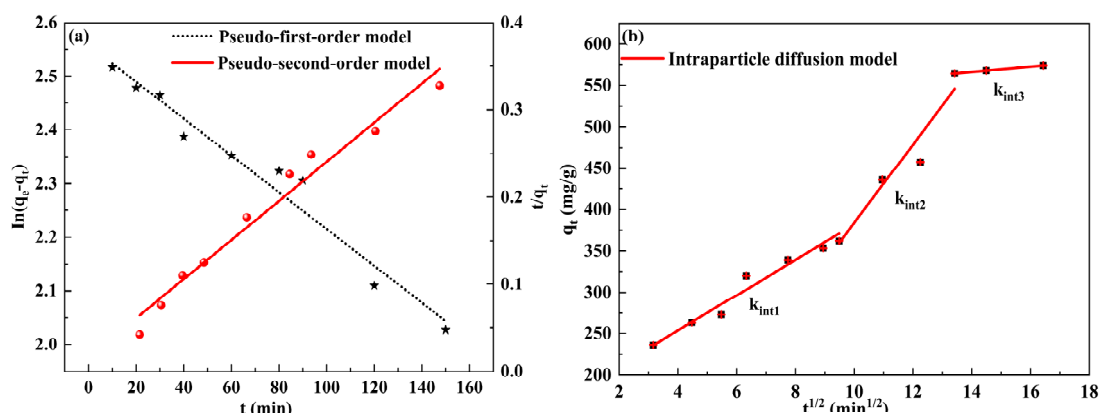
Figure S1. (a) pseudo-first-order model and pseudo-second-order kinetic model, (b) Intraparticle diffusion model.

Table S1. Langmuir and Freundlich isotherm models fitting parameters for Cr(VI) adsorption on LCGH at the range of temperature of 298 K–318 K.

Isotherm model	Parameter	Temperature (K)		
		298 K	308 K	318 K
Langmuir	q_m (mg/g)	621.12	806.45	1001.00
	K_L (L/mg)	0.1861	0.3435	1.2902
	R^2	0.9951	0.9899	0.9999
	q_{exp} (mg/g)	564.2	768.6	967.6
Freundlich	K_F((mg/g)(L/mg)$^{1/n}$)	8.8410	11.2436	13.2249
	$1/n$	0.3342	0.2765	0.2741
	R^2	0.9743	0.9568	0.9236

Table S2. R_L values based on the Langmuir equation.

Temp.	K_L	R_L			Concentration (mg/L)		
		5	10	25	50	75	100
298 K	0.1861	0.5180	0.3495	0.1769	0.09704	0.06686	0.05099
308 K	0.3435	0.3680	0.2255	0.1043	0.05502	0.03737	0.02829
318 K	1.2902	0.1342	0.07193	0.03007	0.01526	0.01023	0.00769