Supporting Information

Rice Husk Based Nanocellulose Scaffold for Highly Efficient Removal of Heavy Metal Ions from Contaminated Water

Chengbo Zhan[1,2], Priyanka R. Sharma[2], Hongrui He[2], Sunil K. Sharma[2],

Alexis McCauley-Pearl[3], Ruifu Wang[1], Benjamin S. Hsiao[2]*

[1] Space Institute of Southern China, Shenzhen 518117, China

[2] Department of Chemistry, Stony Brook University, Stony Brook, NY11794-3400, United States

[3] Smithtown High School East, Saint James, NY 11780, United States

* Corresponding author E-mail: benjamin.hsiao@stonybrook.edu; Tel: +1(631)632-7793

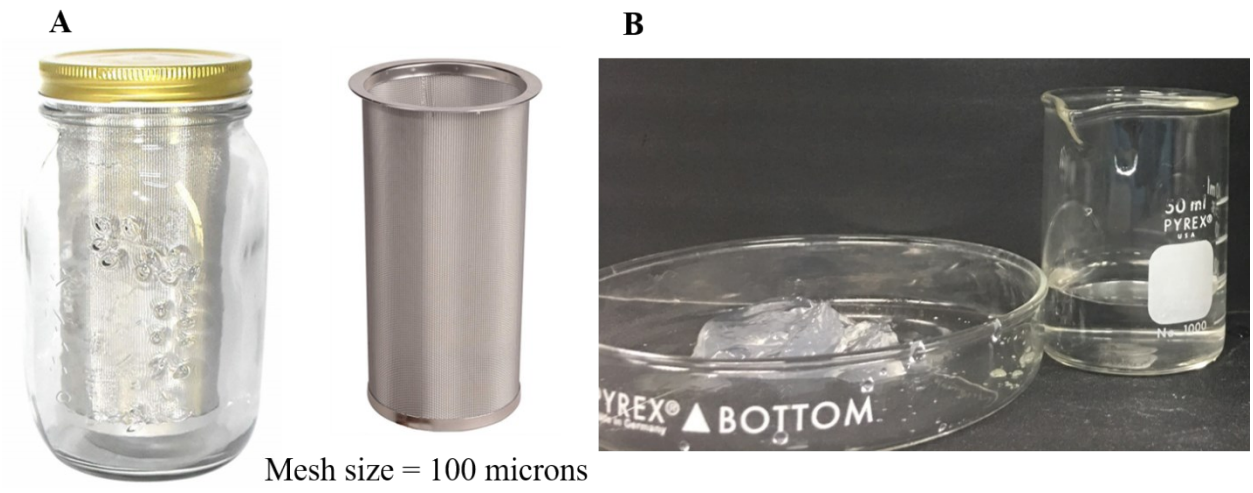

Figure S1. Separation of RHCNF gel after the metal ion adsorption. (A) Separation was carried out by a commercial coffee filter brewer with 100-micron mesh size. (B) Separated gel (induced by RHCNF and metal ion interactions) and permeant.

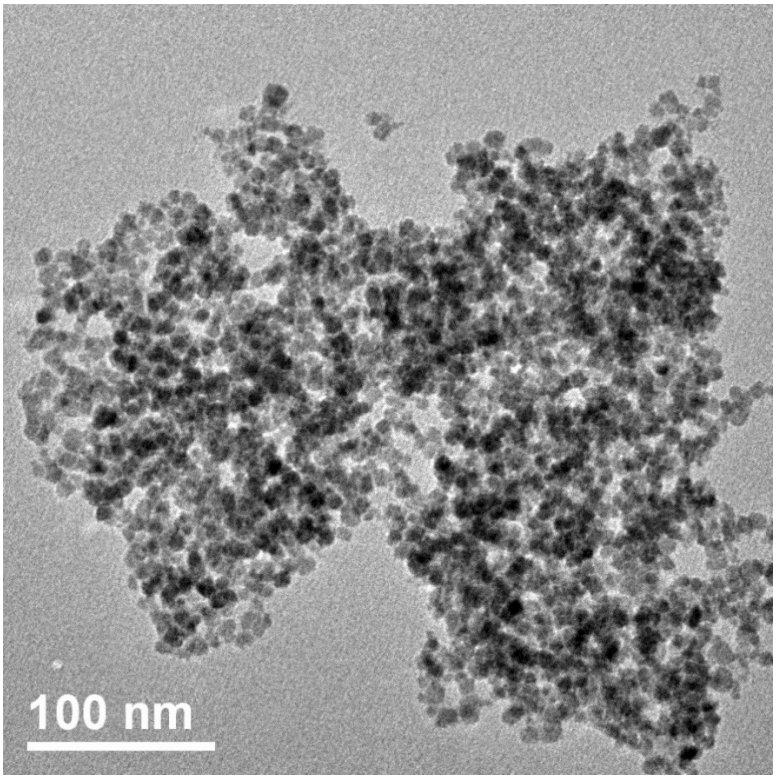

Figure S2. TEM image of magnetic nanoparticles prepared by the co-precipitation method.

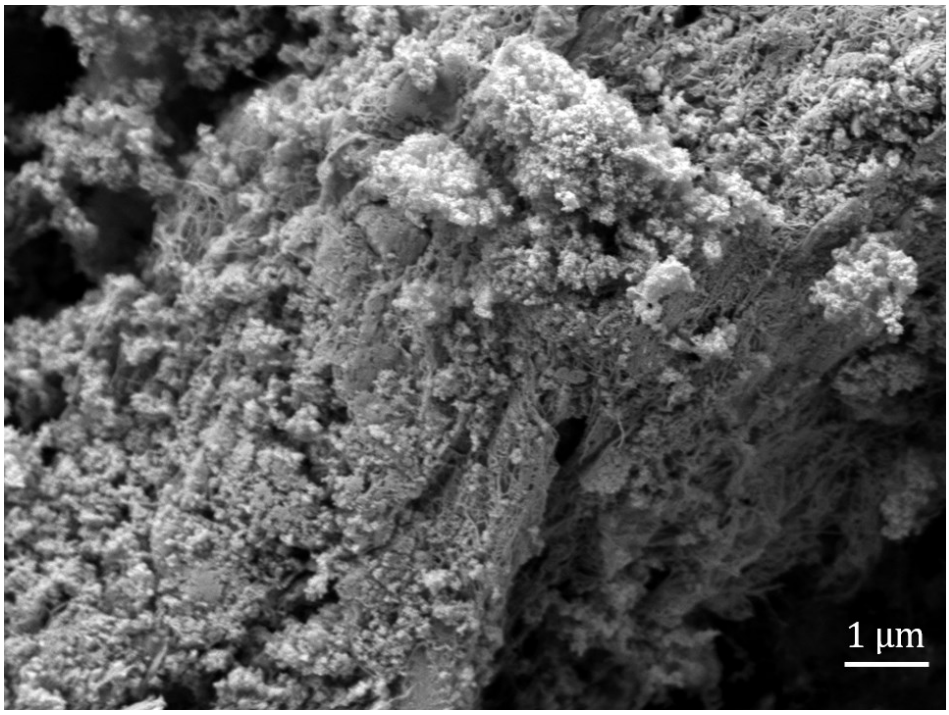

Figure S3. SEM image of Mag-RHCNF composite. Magnetic particles were visible as the granular particles adhered to the porous nanocellulose scaffold.

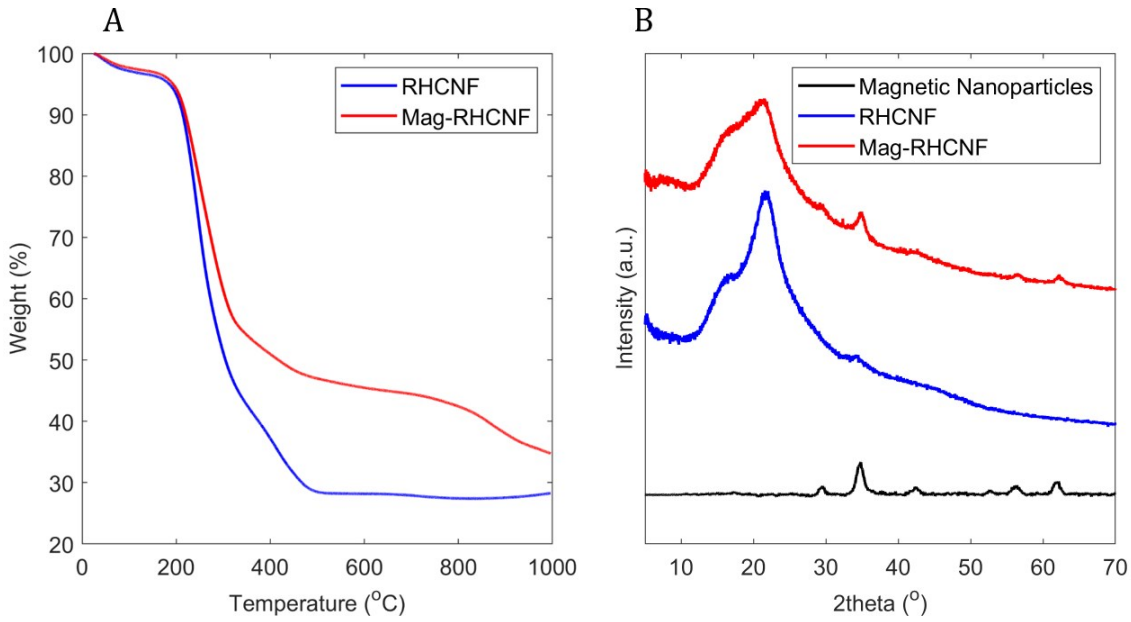

Figure S4. (A) TGA and (B) XRD profiles of RHCNF and Mag-RHCNF samples.

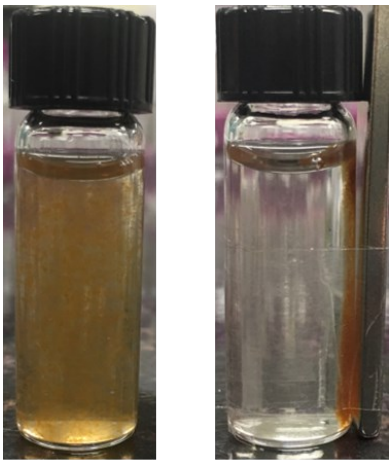

Figure S5. Demonstration of magnetic separation using Mag-RHCNF. (A) The initial suspension of Mag-RHCNF, (B) a magnet was placed on the right side of the sample vial to attract Mag-RHCNF.

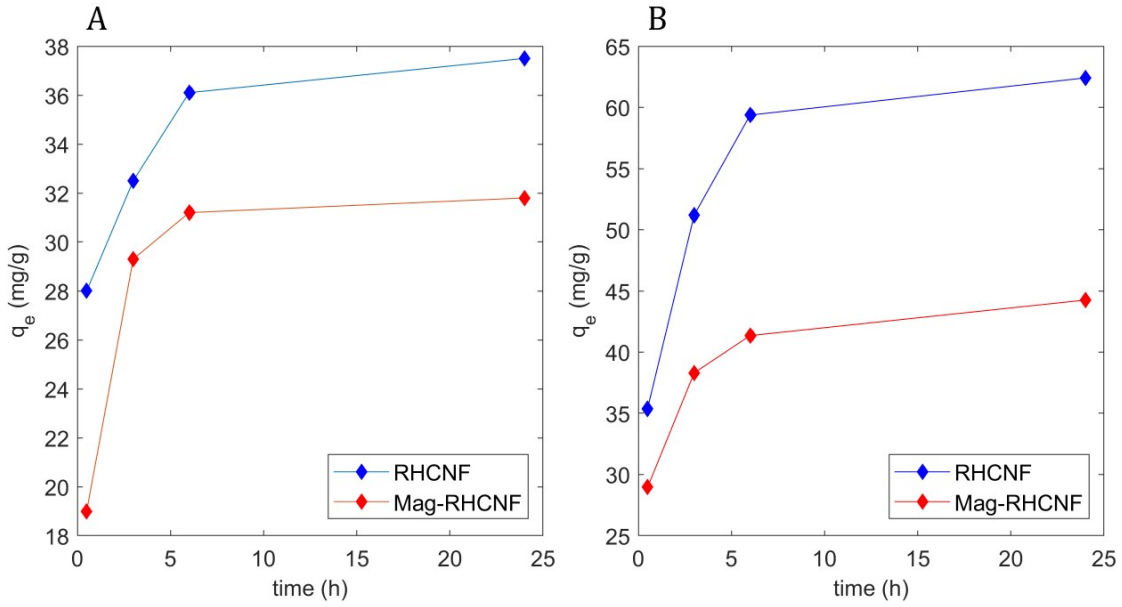

Figure S6. The adsorption kinetics of solid RHCNF and Mag-RHCNF samples for (A) $LaCl_3$ and (B) $Pb(OAc)_2$ adsorption. All experiments were equilibrated for 24 h (i.e., the static adsorption test was carried out for 24 h).

Table S1. The adsorption capacity of the RHCNF suspension for mixed solutions of La(III) and Pb(II). The measurements were conducted at pH = 7, room temperature. The dosage of 0.12 wt% RHCHF suspension was 2 mL.

Original La(III) Concentration (ppm)	Original Pb(II) Concentration (ppm)	Experimental adsorption capacity for La(III) (q_e, mg/g)	Experimental adsorption capacity for Pb(II) (q_e, mg/g)
50	50	17.7	19.2
125	125	23.1	51.3
250	250	36.7	69.2
500	500	39.2	104.1