

1 **Supporting Information**

2 **La₂O₃ nanoparticles/ polyacrylonitrile nanofibers for bacterial**
3 **inactivation based on phosphate control**

4 Jiaojie He, Wei Wang*, Wenxin Shi, Fuyi Cui

5 †*State Key Laboratory of Urban Water Resource and Environment (SKLUWRE),*
6 *School of Municipal and Environmental Engineering, Harbin Institute of Technology,*
7 *Harbin 150090, P.R. China*

8 Table S1 EDX patterns of the selected part in Fig. 1c for the elements.

9 Table S2 Constant of Langmuir and Freundlich for phosphate adsorption under 25 °C.

10 Table S3 The pseudo-first-order and pseudo-second-order model constants and
11 correlation coefficient in the phosphate solution of different initial concentrations (20
12 mg P/L, 50 mg P/L and 80 mg P/L).

13 Figure S1. XRD spectra of LPNFs and La₂O₃ nanoparticles.

14 Figure S2. (a) Effect of initial pH of LPNFs on phosphate adsorption and the final pH
15 drift of solution. (b) Effect of competitive coexisting anions on the phosphate
16 adsorption capacity.

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18 Table S1

Element	Weight	Atomic %
O	17.70	65.12
La	82.30	34.88

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20 Table S2

Samples	Langmuir			Freundlich		
	q _m (mg P/g (La))	K _L (L/mg)	R ²	n	K _F	R ²

PAN/La ₂ O ₃ Nanofibers	77.46	0.14	0.92	3.61	23.67	0.90
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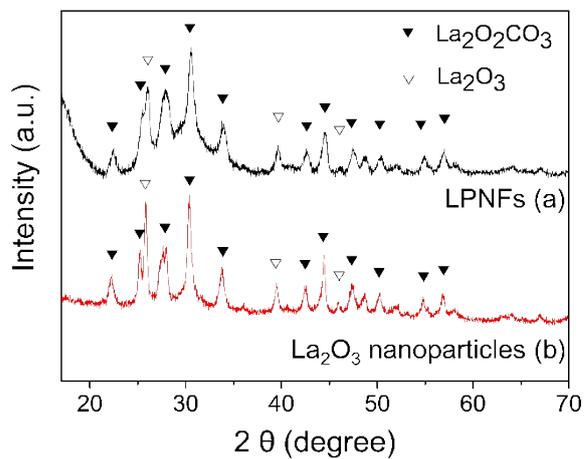
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2 Table S3

Initial concentration C ₀ (mg P/g)	Pseudo-first-order kinetics			Pseudo-second-order kinetics		
	k ₁ (1/min)	q _e (cal) (mg P/g(La))	R ²	k ₂ (g • mg ⁻¹ min ⁻¹)	q _e (cal) (mg P/g (La))	R ²
80	0.019	64.06	0.98	0.0003	71.40	0.99
50	0.012	54.21	0.97	0.0003	61.54	0.97
20	0.018	41.48	0.93	0.0006	45.06	0.98

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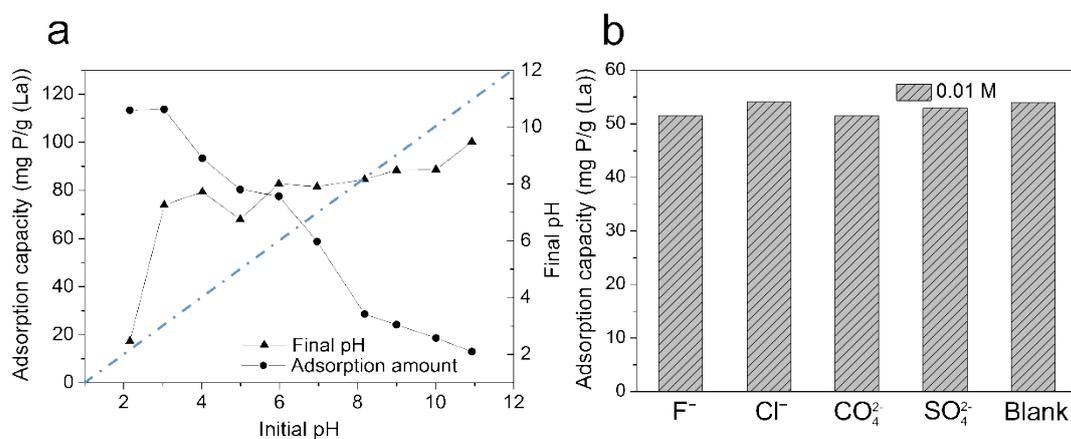
4 Figure S1.



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7 Figure S2.



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