

## Supporting Information

### **A phytic acid-functionalized graphene oxide/chitosan composite as a high-performance electrode for electrosorptive removal of uranium (VI) from aqueous solutions**

Chunpei Yan<sup>1</sup>, Minnan Xiao<sup>1</sup>, Ting Yang<sup>1</sup>, Jugong Zheng<sup>1\*</sup>, Yating Fu<sup>1</sup>, Yaxi Zhu<sup>2</sup>, Chunyan Wang<sup>1\*</sup>

<sup>1</sup>State Key Laboratory of Nuclear Resources and Environment, East China University of Technology, Nanchang, Jiangxi 330013, China

<sup>2</sup>Market Supervision and Administration of Law Enforcement Inspection Bureau of Nanchang City, Nanchang, Jiangxi 330000, China

Email: chunyanwang@ecut.edu.cn (C. Wang), ecutjgzheng@126.com (J. Zheng)

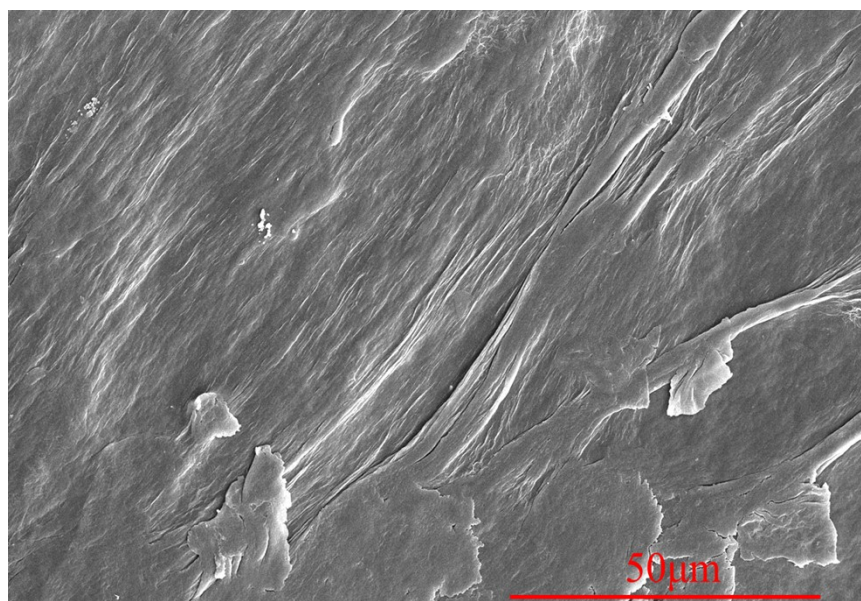


Figure S1 SEM image of GO-CS.

Table S1 Comparison of the maximum uranium electrosorption capacity of PA-GO-CS with other reported materials.

Adsorbents	exp conditions	pH	$q_{max}$ ( mg g <sup>-1</sup> )	Reference
PA-CS	-0.9V	pH=5	572.1	[S1]
HGP	1.2V	pH=5	545.7	[S2]
PBTCA-CS	-0.6V	pH=5	631.9	[S3]
CS/BC	0.9V	pH=4	207.6	[S4]
PEI/GOA	-1.2V	pH=6	419.7	[S5]
MAFP/GO/CS	-1.2V	pH=6	260.6	[S6]
PA-GO-CS	-0.9V	Ph=6	760.36	This Work

Note : PA-CS: Phytic acid modified chitosan

HPG: Highly porous phosphate-functionalized graphene

PBTCA-CS: PBTCA-modified self-crosslinked chitosan

CS/BC: Chitosan/biocarbon composite membrane

PEI/GOA: Polyethyleneimine/graphene oxide aerogel

MAFP/GO/CS: Malonamide-amidoxime bifunctional polymers decorated graphene oxide/chitosan

## Reference

- [S1] Huang J, Huang B, Jin T, Liu Z, Huang D, Qian Y, Electrosorption of uranium (VI) from aqueous solution by phytic acid modified chitosan: an experimental and DFT study, Separation and Purification Technology. 2022, 284: 120284.
- [S2] Liao Y, Wang M, Chen D, Electrosorption of uranium(VI) by highly porous phosphate-functionalized graphene hydrogel, Applied Surface Science. 2019, 484: 83-96.
- [S3] Yang S, Yan C, Huang B, Jin T, Guo D, Xiao M, Qian Y, PBTCA-modified self-crosslinked chitosan gels for efficient electrosorption of uranium from wastewater, Desalination. 2025, 612: 118984.
- [S4] Tang X, Zhou L, Xi J, Ouyang J, Liu Z, Chen Z, Adesina A A, Porous chitosan/biocarbon composite membrane as the electrode material for the electrosorption of uranium from aqueous solution, Separation and Purification Technology. 2021, 274: 119005.
- [S5] Ren Q, Wang Y, Wang Y, Feng Z, Jiang H, Liu Y, Yuan D, Wang C, Li Y, Construction of three-dimensional polyethyleneimine incorporated graphene oxide aerogels as high-capacity electrode for enhanced uranium(VI) electrosorption performance, Separation and Purification Technology. 2025, 352: 128191.
- [S6] Ren Q, Xia H, Wang Y, Lv J, Yuan D, Liu Y, Zhou L, Li Y, Wang Y, Novel malonamide-amidoxime bifunctional polymers decorated

graphene oxide/chitosan electrode for enhancing electrosorptive  
removal of uranium(VI), Separation and Purification Technology.  
2024, 330: 125292.