Electronic Supplementary Material (ESI) for Inorganic Chemistry Frontiers.

Supporting Information

Direct phosphorylation in pyridine-functionalized porous organic polymer for an efficient uranium capture

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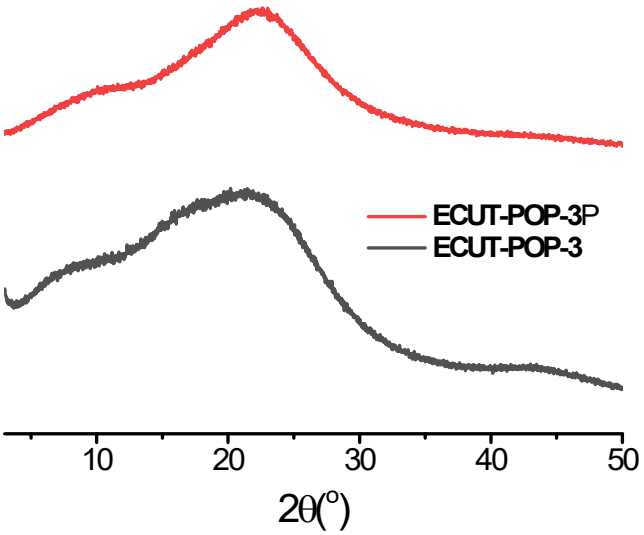

Fig. S1 PXRD pattern of ECUT-POP-3 and ECUT-POP-3P.

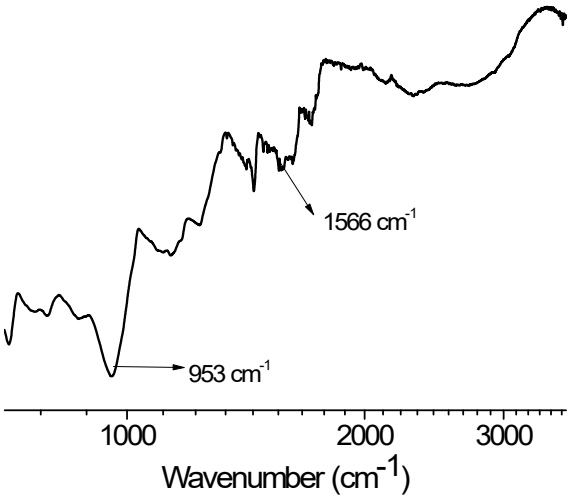

Fig. S2 IR of ECUT-POP-3P.

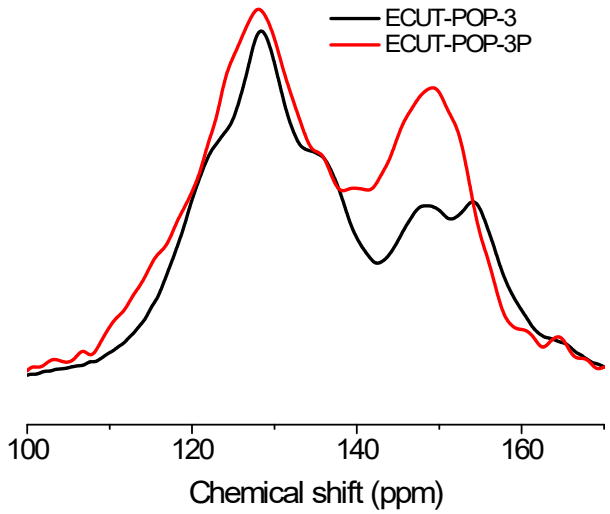

Fig. S3 The ^{13}C solid-state nuclear magnetic resonance (NMR) spectrum of ECUT-POP-3 and ECUT-POP-3P.

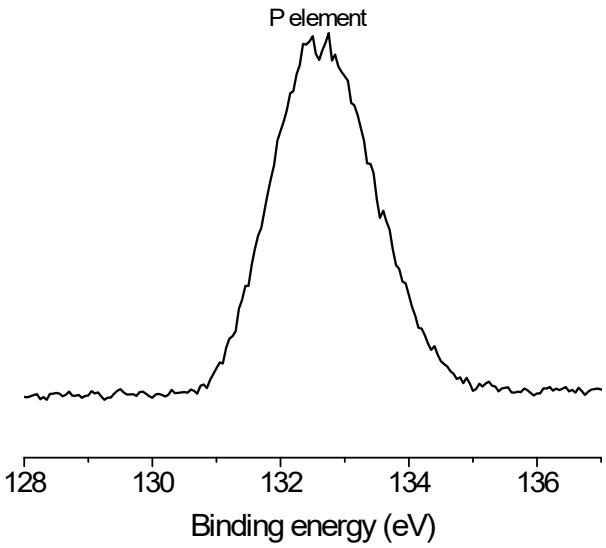

Fig. S4 XPS of P element in ECUT-POP-3P.

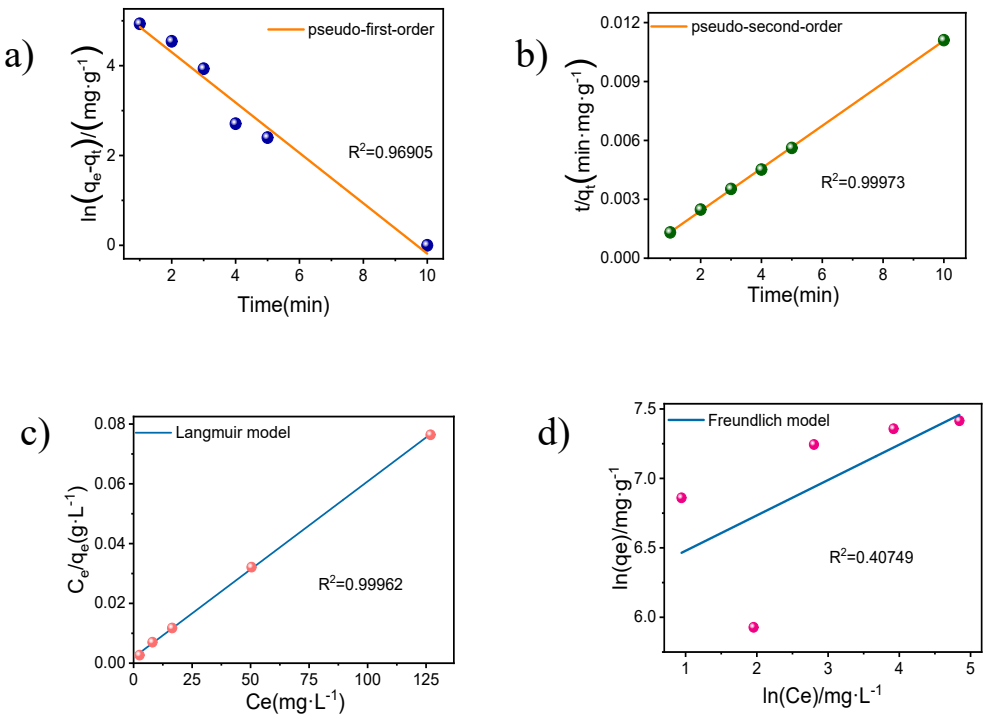

Fig. S5 a) The fitting by the pseudo-first-order model. b) The fitting by pseudo-second-order model. c) The fitting by Langmuir model. d) The fitting by Freundlich model.

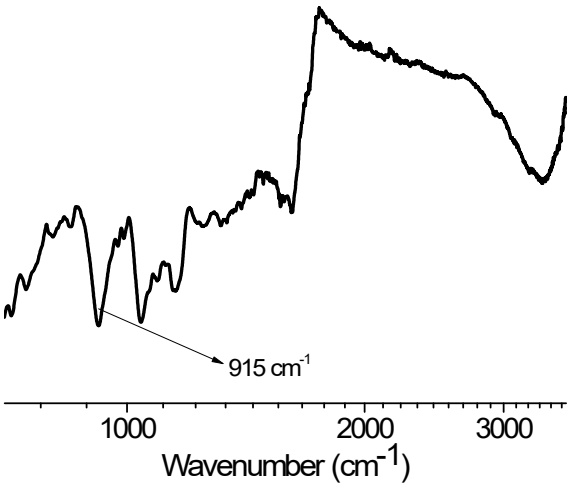

Fig. S6 IR of U-loaded samples on ECUT-POP-3P.

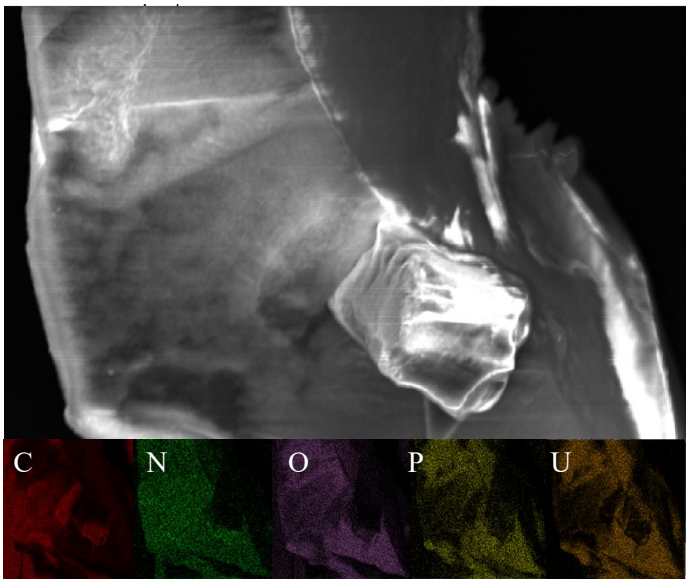

Fig. S7 The SEM-EDS images of C, N, O, P ,U element in U-loaded samples.

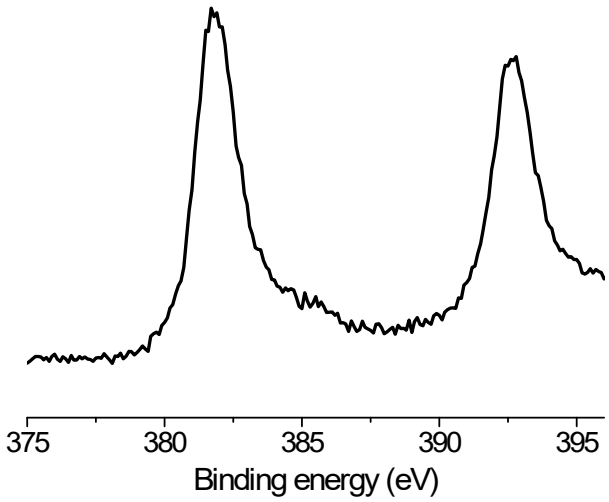

Fig. S8 XPS of U element in U-loaded samples.

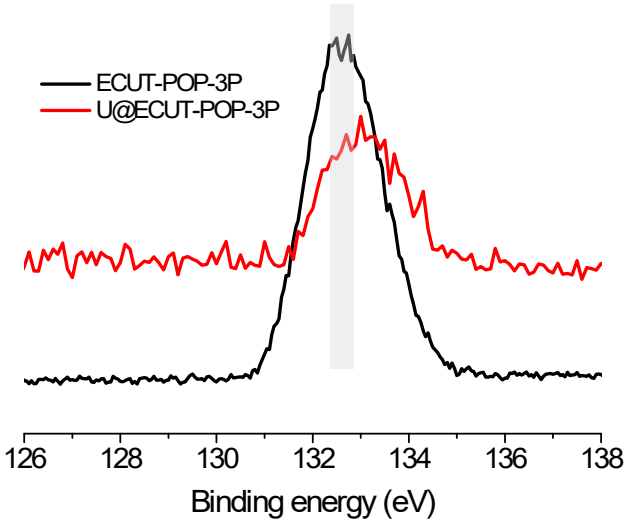

Fig. S9 XPS of P element in ECUT-POP-3P and the U-loaded samples.

Table S1. A comparison in the adsorption kinetics and capacity between established materials and this case.

Adsorbents	**Adsorption capacity(mg/g)**	**Adsorption equilibrium time(min)**	**References**
ECUT-POP-3P	1660	4	**This work**
TpDBD-Phos	633.3	30	Adv. Fun. Mater. 2024, 34, 2313314
ZIF-90-AO	324.5	10	J. Hazard. Mater. 2022, 422, 126872
TZDa-Phos	394	10	Chem. Eng. J. 2023, 463, 142408
tPE-AO	481.3	15	Environ. Sci. Technol. 2023, 57, 9615
LZU-530	860	300	J. Am. Chem. Soc. 2024, 146, 4822
$[NH_4]^+$[COF-SO_3^-]	851	600	Adv. Sci. 2019, 6, 1900547
iMOF-1A	1336.8	120	Small 2024, 20, 2302014