

Supporting Information

Nitrogen-rich covalent organic polymer and potassium iodide for efficient chemical fixation of CO₂ into epoxides under mild conditions

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1. SEM images of NUPs

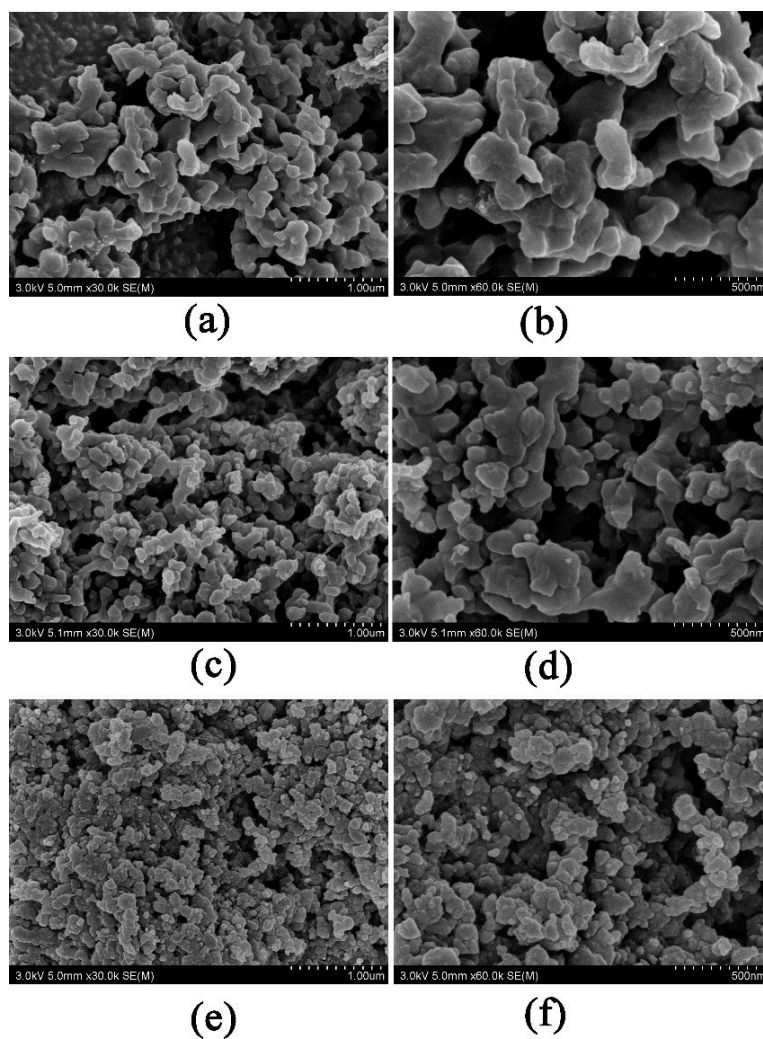


Fig. S1 SEM images of NUP-1(a and b), NUP-2(c and d) and NUP-3(e and f)

2. XRD pattern of NUPs

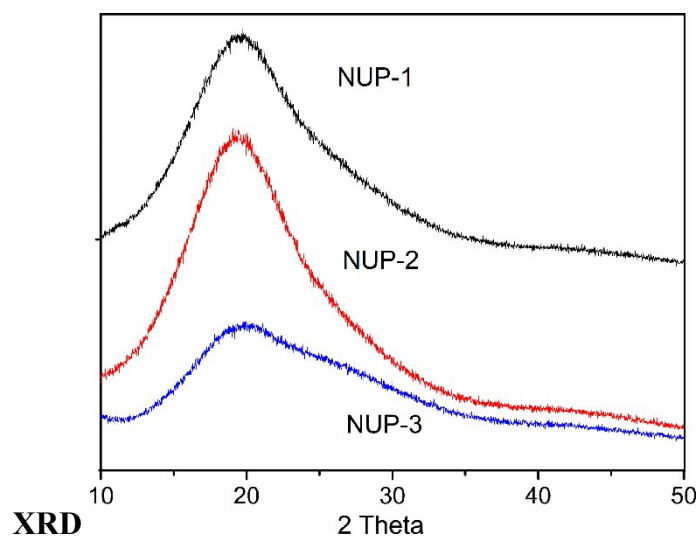


Fig. S2 The XRD pattern of NUPs

3. The solubility of KI studied by UV-vis

UV-vis spectra were performed on a TU-1810 spectrophotometer (1-cm quartz cell). Epoxides (0.78ml, 10mmol) and KI (16.8mg, 0.1mmol) were added into a Schlenk tube, then magnetic stirring for 24 hours, after that, the supernatant was diluted 200 times and studied by UV-vis, according to the standard working line, the concentration of KI in ECH is 6.04×10^{-3} mol / L ($(3.02 \times 10^{-5} \times 200)$ mol / L).

Thus, the solubility of KI in ECH is: $S = 6.04 \times 10^{-3} / (16.8 / 168 \times 0.78) = 4.7\%$.

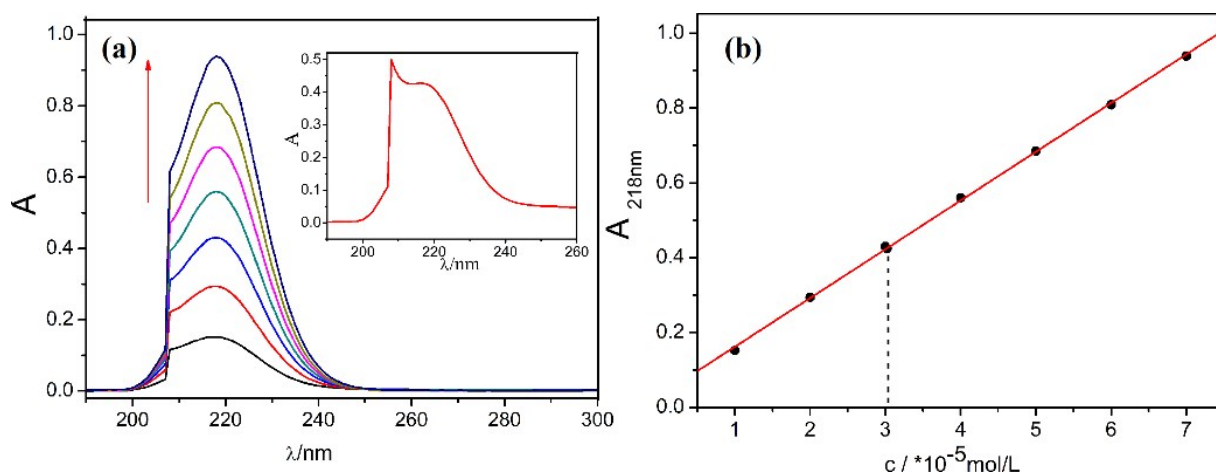


Fig. S3 Solubility of KI in ECH studied by UV-vis. (a) Absorption spectra of KI (1×10^{-5} M $\sim 7 \times 10^{-5}$ M in ethanol), Inset: the absorption spectra of the sample diluted 200 times. (b) The variation of the absorption spectra of KI at 218nm.

4. FT-IR spectra

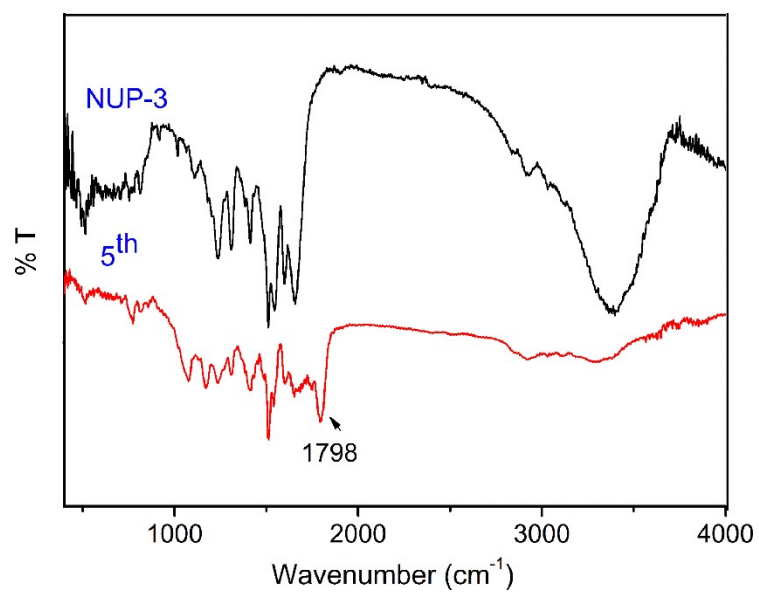


Fig. S4 The FT-IR spectra of NUP-3 and recycled solid of 5th.