

Electronic Supplementary Information (ESI)

**Well-defined nanoporous palladium for electrochemical
reductive dechlorination**

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Pore size (and ligament thickness) distribution, HRTEM and TEM images, EDS spectra, XRD patterns, CVs, and Tables.

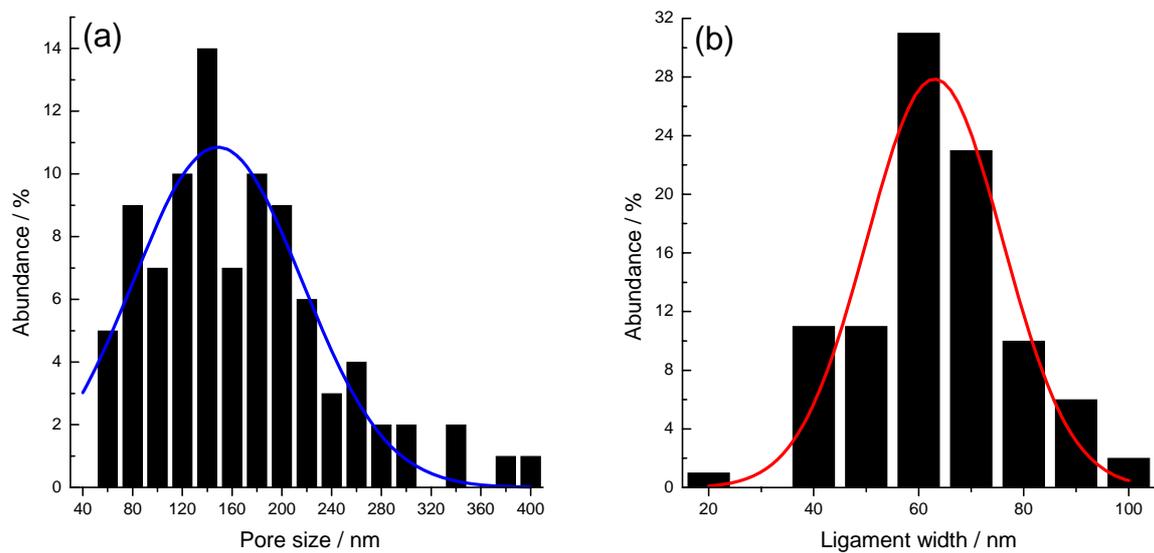


Fig.S1 Pore size (a) and ligament thickness (b) distribution of the nanoporous Pd (np-Pd) sample shown in Fig.1a.

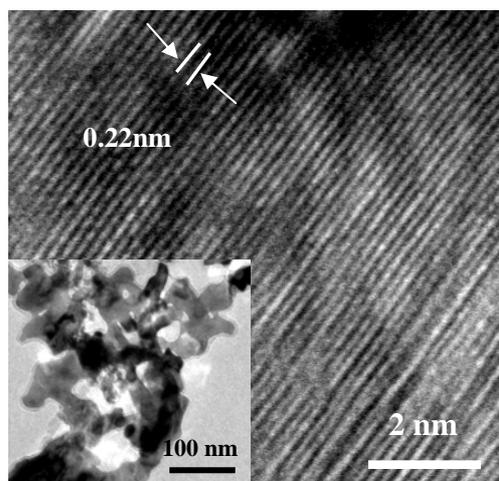


Fig.S2 HRTEM image of an as-prepared np-Pd sample. The inset shows the TEM image for the np-Pd.

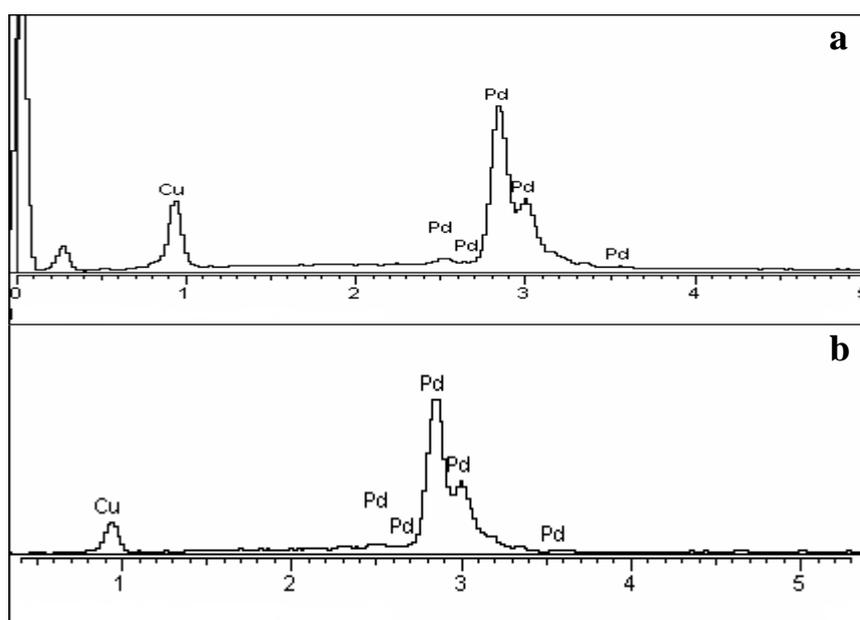


Fig.S3 EDS analysis of a nanoporous Pd (np-Pd) sample (a) and an as-treated nanoporous Pd (*t*-np-Pd) sample (b).

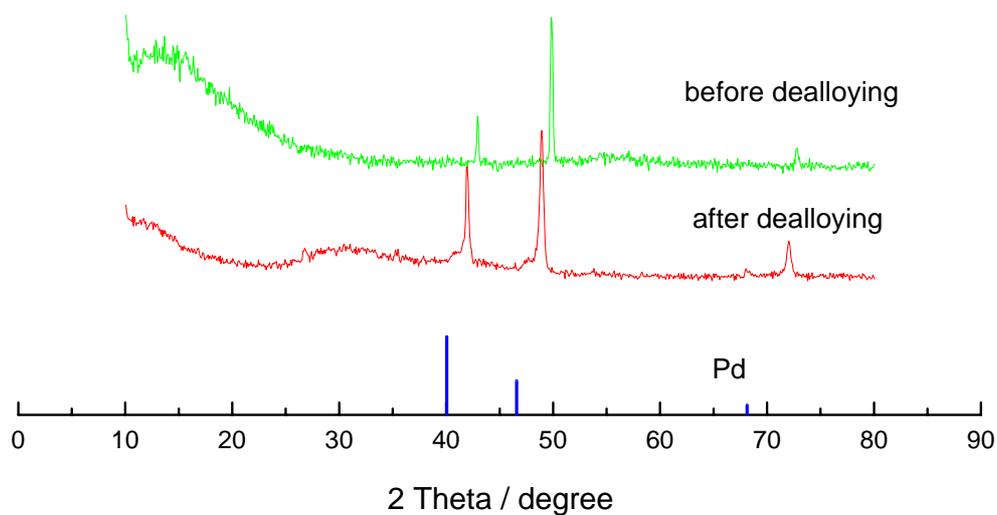


Fig.S4 XRD patterns for Pd₂₅Cu₇₅ samples before and after electrochemical dealloying in ionic liquid [BMIM]BF₄. The standard pattern for pure Pd (JCPDS 65-2867) is also placed at the bottom for comparison.

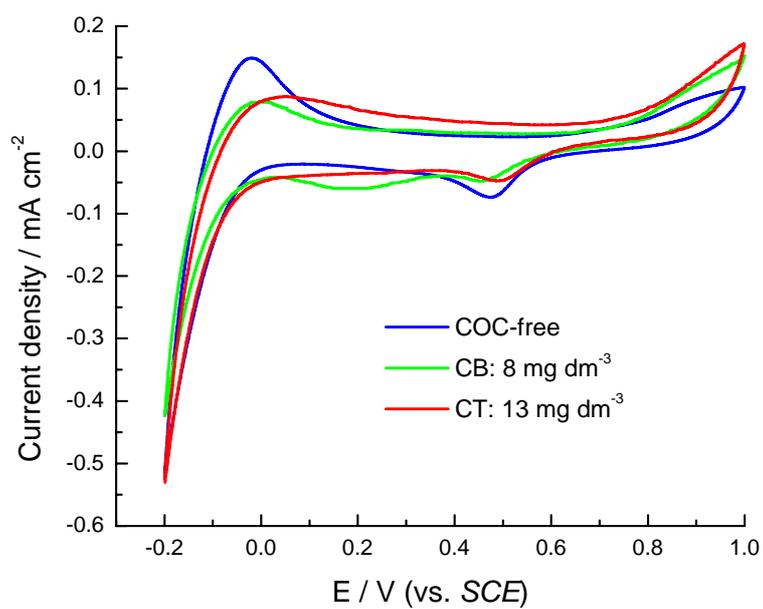


Fig.S5 CVs of a bulk Pd electrode in the COC-free and COC-containing $0.5 \text{ mol dm}^{-3} \text{ H}_2\text{SO}_4$ solutions. Scan rate: 50 mVs^{-1} .

Table S1 The removal efficiency of CT and CB on untreated nanoporous Pd (np-Pd) electrodes (prepared by dealloying method in ionic liquid [BMIM]BF₄) under different electrolysis conditions.

Potential and time	CT (/ %) on np-Pd
-0.06 V for 30 min	58.3%
-0.15 V for 30 min	30.4%
-0.22 V for 30 min	94.8%
	CB (/ %) on np-Pd
-0.06 V for 30 min	47.6%
-0.15 V for 30 min	31.9%
-0.22 V for 30 min	77.2%

Table S2. The removal efficiency of CT and CB on nanoporous Pd (np-Pd) electrodes (prepared by dealloying method in $1 \text{ mol dm}^{-3} \text{ H}_2\text{SO}_4$) under different electrolysis conditions.

Potential and time	CT (/ %) on np-Pd dealloyed in H_2SO_4
-0.06 V for 30 min	55.7%
-0.15 V for 30 min	27.6%
-0.22 V for 30 min	89.8%
	CB (/ %) on np-Pd dealloyed in H_2SO_4
-0.06 V for 30 min	41.3%
-0.15 V for 30 min	28.0%
-0.22 V for 30 min	74.9%