Supplementary Materials

Choline chloride-modified hydrochar from organic waste for the removal of PFOA from aqueous matrices: feasibility, isotherm, and kinetic studies

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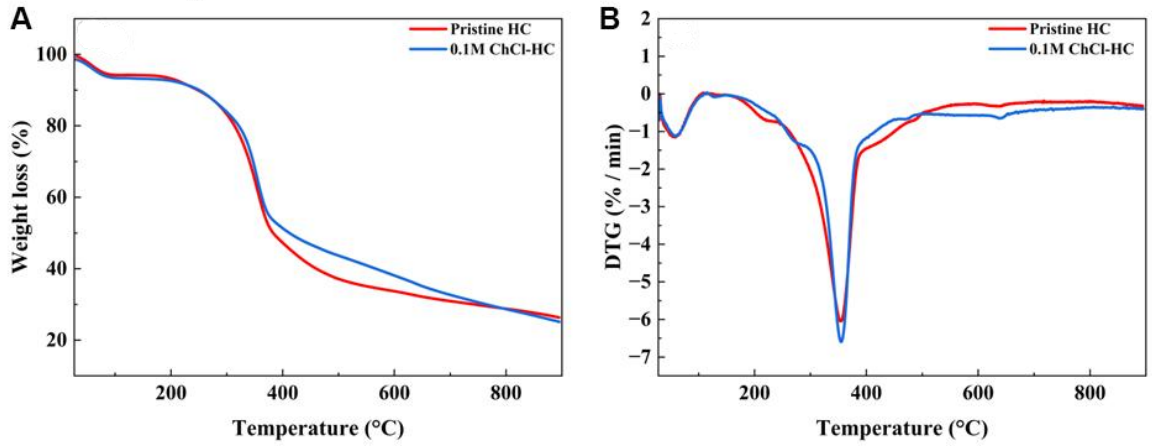
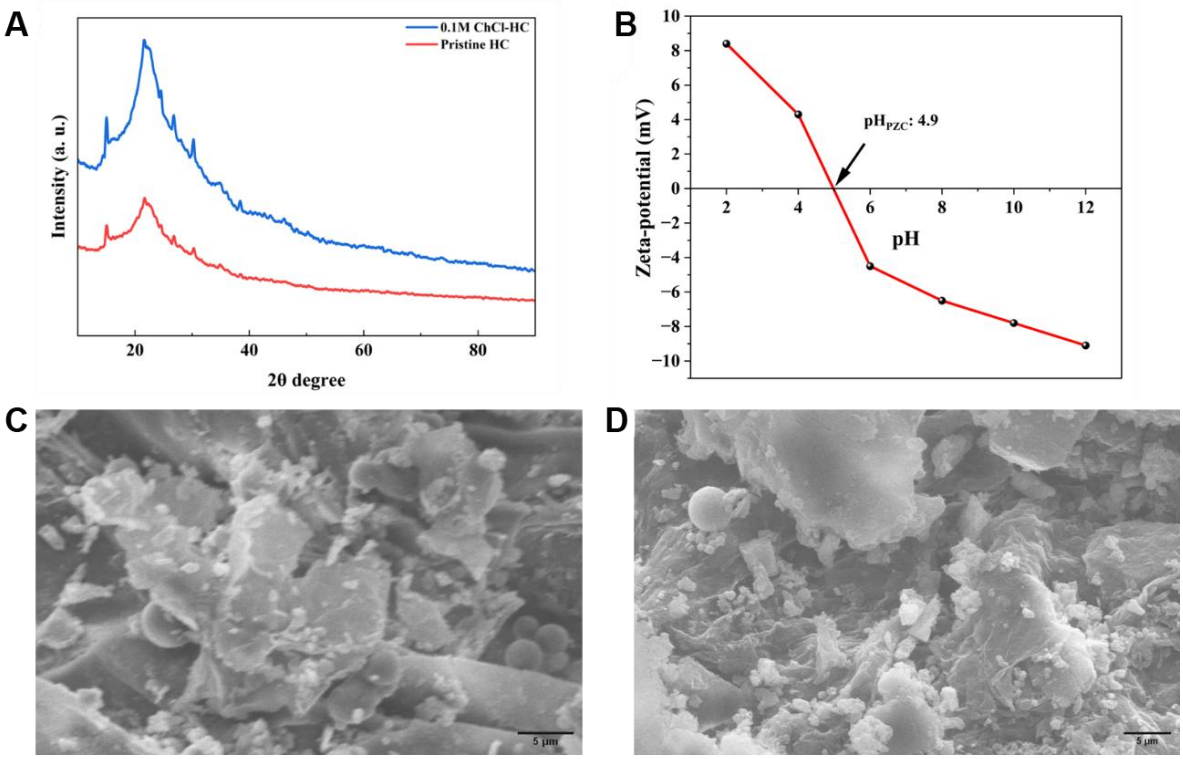
Supplementary Table 1. Physical characteristics of the hydrochars at different temperature and reaction time

	180 °C (2 h)	180 °C (4 h)	200 °C (2 h)	200 °C (2 h)	0.1M ChCl-HC
Carbon (%)	49.916	54.812	55.362	60.640	55.106
Hydrogen (%)	6.316	6.032	5.954	5.821	6.057
Oxygen (%)	37.068	32.367	31.861	26.776	31.832
Nitrogen (%)	5.603	5.711	5.770	5.719	5.845
Sulfur (%)	1.097	1.078	1.053	1.044	1.160
Specific surface area (m^2/g)	8.286	28.055	12.405	26.468	62.188
Pore volume (cc/g)	0.022	0.040	0.024	0.064	0.072
Pore width (Å)	31.692	27.690	16.970	48.870	27.69

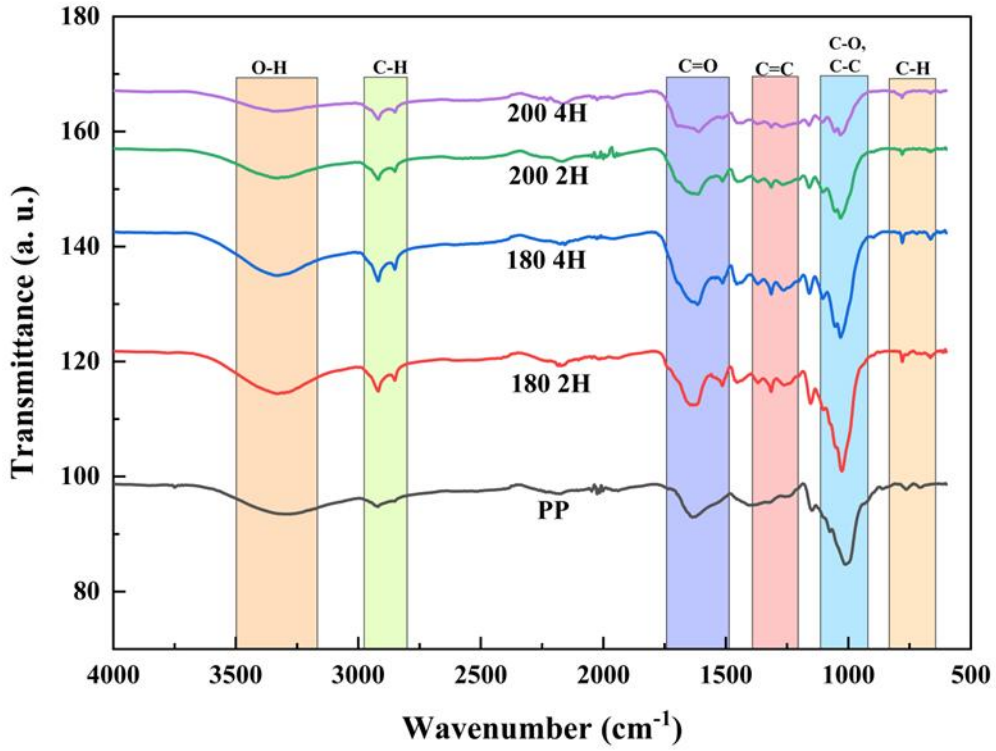
Note: Oxygen (%) = 100-(Carbon+Hydrogen+Nitrogen+Sulfur).



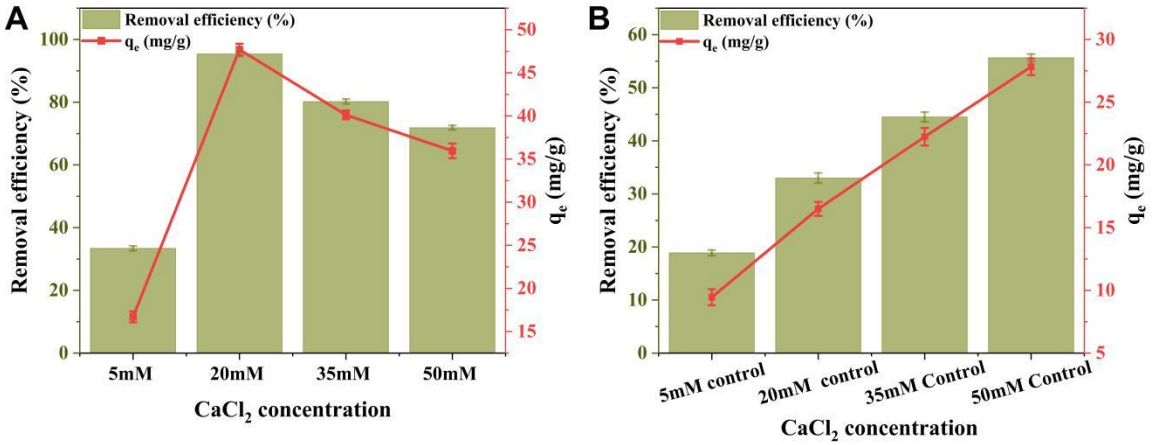
Supplementary Figure 1. TGA (A) and DTG (B) graphs of pristine HC and 0.1M ChCl-HC.



Supplementary Figure 2. XRD patterns of pristine HC and 0.1M ChCl-HC (A), Zero point charge (pH_{ZPC}) of 0.1M ChCl-HC (B), FESEM images (C and D) of pristine HC and 0.1M ChCl-HC.



Supplementary Figure 3. FTIR of potato peel waste and hydrochars prepared at different temperature and reaction time.



Supplementary Figure 4. Effect of $CaCl_2$ dosage: adsorption of PFOA on the 0.1M ChCl-HC (A) and control study without 0.1M ChCl-HC (B) (Experimental conditions: PFOA concentration: 20 mg/L, Adsorbent dose: 20-600mg/L, Temperature: 298K, and RPM: 250).