

Table S1 Textural parameters of SNCH and DNCH.

| Samples | Specific surface area (m <sup>2</sup> /g) | Pore diameter (nm) | Pore volume (cm <sup>3</sup> /g) |
|---------|---|--------------------|----------------------------------|
| SNCH    | 41.5                                      | 38.6               | 0.11                             |
| DNCH    | 74.3                                      | 28.4               | 0.26                             |

Table S2 Parameters of Langmuir and Freundlich isotherm equations.

| Adsorbents | Temperature | Langmuir     |          |        | Freundlich |              |        |
|------------|-------------|--------------|----------|--------|------------|--------------|--------|
|            |             | $q_m$ (mg/g) | K (mg/L) | $R^2$  | n          | $K_F$ (mg/g) | $R^2$  |
| SNCH       | 298K        | 146.20       | 27.43    | 0.9991 | 5.46       | 47.30        | 0.9738 |
|            | 308K        | 105.26       | 30.18    | 0.9992 | 5.53       | 33.58        | 0.9766 |
|            | 318K        | 77.10        | 36.54    | 0.9991 | 5.37       | 23.35        | 0.9801 |
| DNCH       | 298K        | 226.76       | 20.18    | 0.9990 | 5.8665     | 82.04        | 0.9686 |
|            | 308K        | 206.19       | 24.50    | 0.9991 | 5.4016     | 67.23        | 0.9663 |
|            | 318K        | 186.22       | 28.46    | 0.9991 | 5.4484     | 59.54        | 0.9658 |

Table S3 Thermodynamic parameters of phenol adsorption by SNCH and DNCH.

| Adsorbents | Temperature | ln K | $\Delta G^0$ (kJ/mol) | $\Delta H^0$ (kJ/mol) | $\Delta S^0$ (J/mol K) |
|------------|-------------|------|-----------------------|-----------------------|------------------------|
| SNCH       | 298 K       | 4.37 | -10.827               | -36.279               | -85.206                |
|            | 308 K       | 4.02 | -10.294               |                       |                        |
|            | 318 K       | 3.41 | -9.016                |                       |                        |
| DNCH       | 298 K       | 5.43 | -13.453               | -34.012               | -69.800                |
|            | 308 K       | 4.74 | -12.138               |                       |                        |
|            | 318 K       | 4.53 | -11.977               |                       |                        |

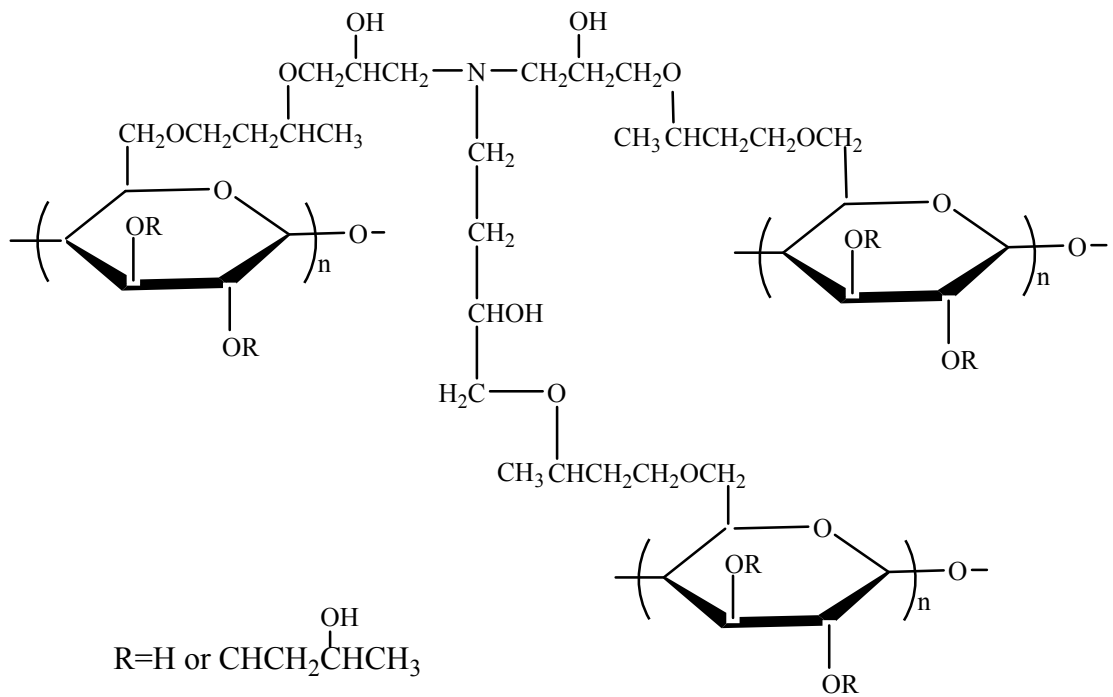


Fig. S1. Structure of the crosslinked HPC.

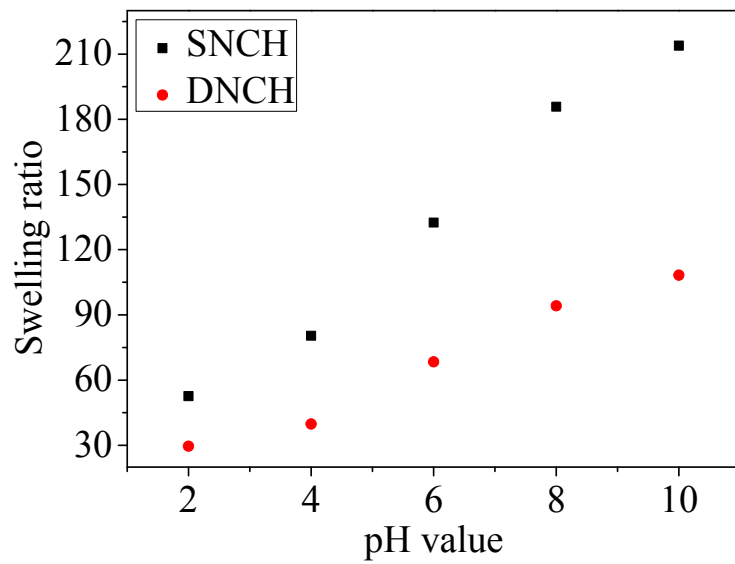


Fig. S2. Swelling ratios of the SNCH and DNCH at different pH values.

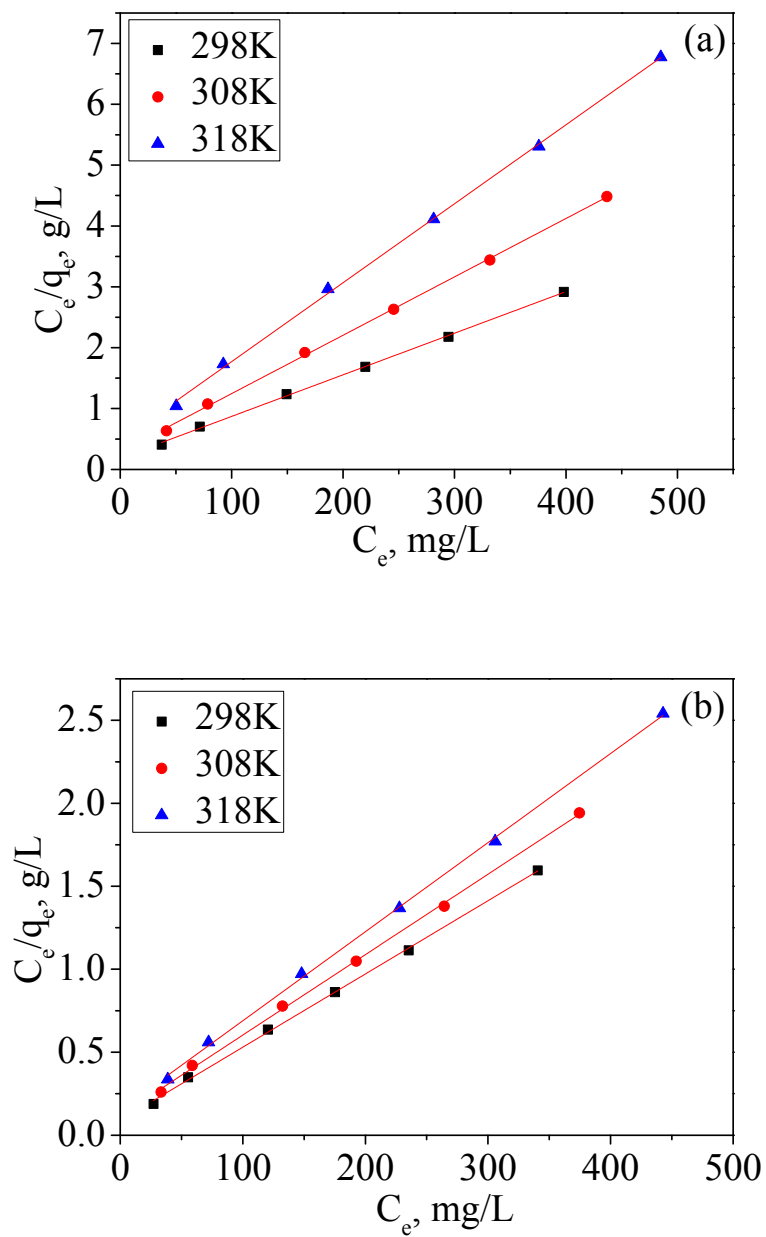


Fig. S3. Adsorption isotherm data presented in terms of the linearized Langmuir model for (a) SNCH and (b) DNCH.

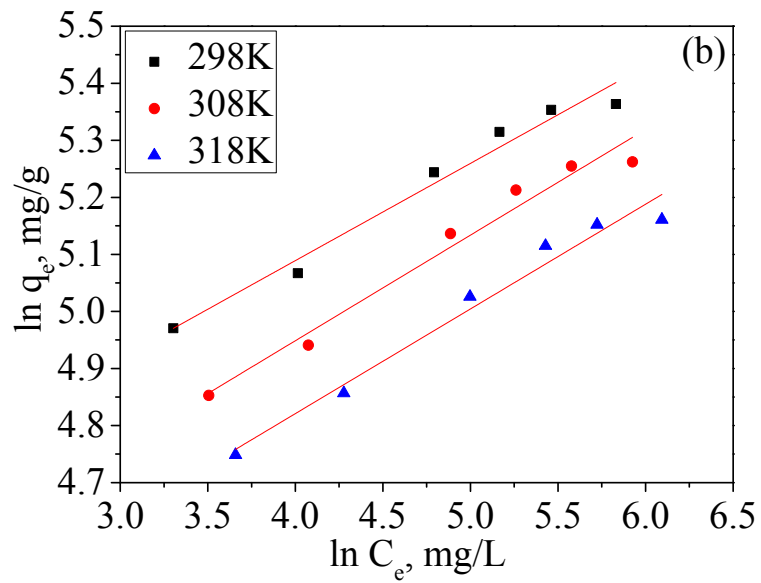
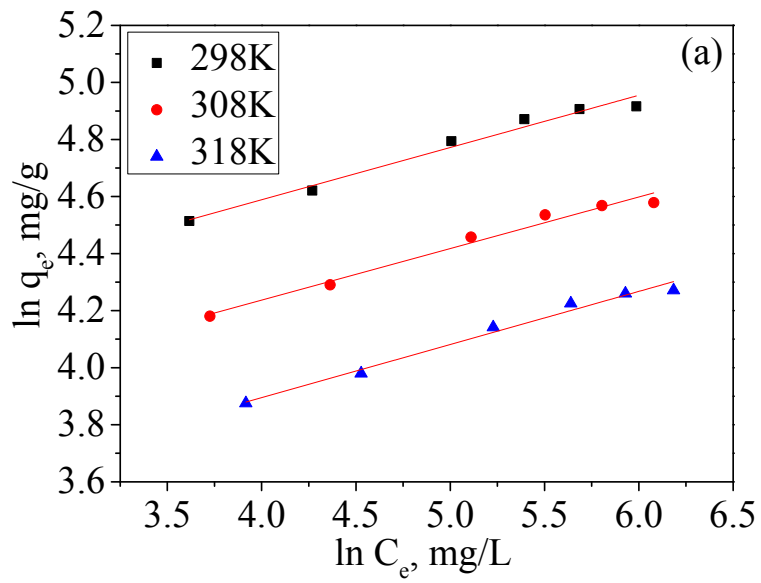


Fig. S4. Adsorption isotherm data presented in terms of the linearized Freundlich model for (a) SNCH and (b) DNCH.

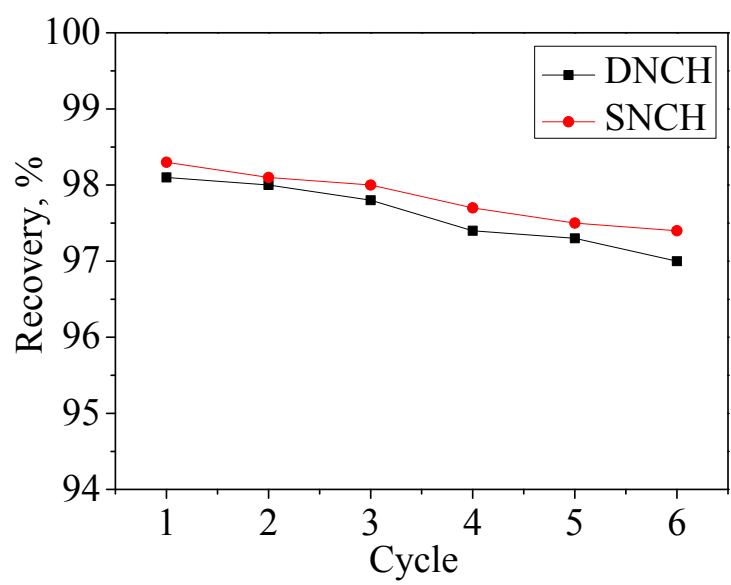


Fig. S5. Effect of reused times on the adsorption capacity of phenol.