# Appendices. Supplementary material

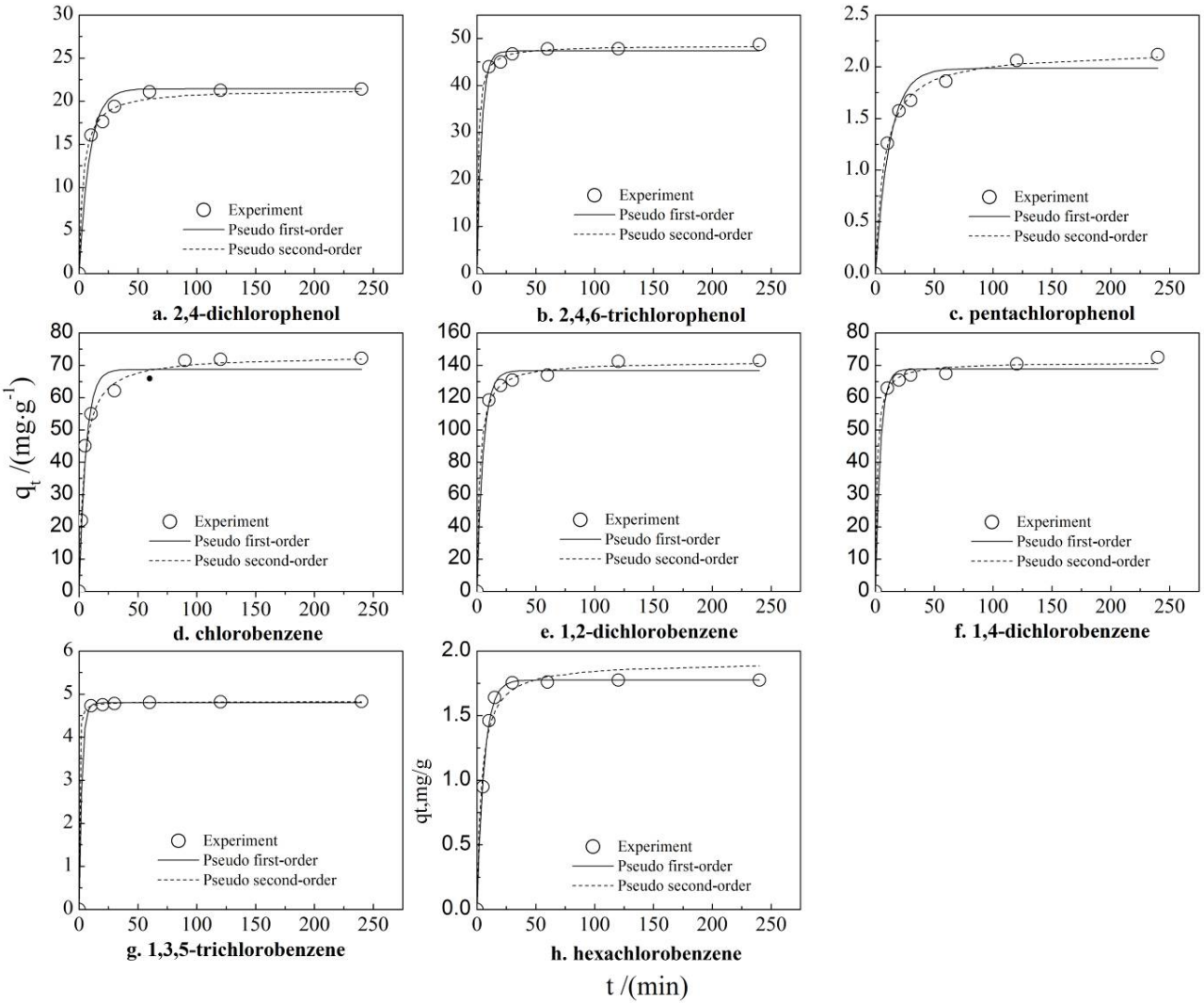


**Fig. A1** Fitting of adsorption kinetics of three chlorophenols and five chlorobezenes with pseudo first-order and pseudo second-order models

Note: powder activated carbon=20 mg·L$^{-1}$; temperature= 25℃; pH= 7.2; $q_t$, adsorption capacity with time, i.e. mg of adsorbed chemical per gram of powder activated carbon at certain contact time.

**Table A1** The Freundlich adsorption isotherm constants and related solute properties

| chemical categories | solutes | pH | $K_j$ | $1/n$ | $R^2$ | $q_{e1}$* /( mg·g$^{-1}$) | $C_e$ range /(mg·L$^{-1}$) |
|---|---|---|---|---|---|---|---|
| chloro-phenols | 2,4-dichlorophenol | 7.2 | 142 | 0.46 | 0.958 | 5.9 | 0.003-0.15 |
| | | 4.0 | 175 | 0.45 | 0.981 | 6.8 | |
| | 2,4,6- trichlorophenol | 7.2 | 247 | 0.51 | 0.980 | 7.3 | 0.005-0.36 |
| | | 4.0 | 376 | 0.41 | 0.980 | 22.0 | |
| | pentachlorophenol | 7.2 | 154 | 0.42 | 0.984 | 25.3 | 0.002-0.5 |
| | | 3.5 | 206 | 0.31 | 0.992 | 50.0 | |
| chloro-benzenes | chlorobenzene | | 155 | 0.53 | 0.981 | 4.0 | 0.02-1.0 |
| | 1,2-dichlorobenzene | | 211 | 0.40 | 0.960 | 13 | 0.1-3.0 |
| | 1,4- dichlorobenzene | 7.2 | 215 | 0.59 | 0.994 | 3.7 | 0.04-0.75 |
| | 1,3,5-trichlorobenzene | | 581 | 0.60 | 0.964 | 9.2 | 0.0001-0.07 |
| | hexachlorobenzene | | 27.1 | 0.42 | 0.992 | 1.1 | 0.0001-0.02 |

Note: The solute parameters were calculated by ACD Labs (ACD/PhysChem Suite) software.

* $q_{e1}$ are the adsorption capacities at the chemical equilibrium concentration of 0.01 mg·L$^{-1}$.