**Table S1**: The kinetic parameters for the Pseudo- first order model, Pseudo- Second order model and Intra-particle diffusion model application for adsorption of Cr(VI) on SCP600 material.

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Initial**  **[C]** | **Pseudo- first order model** | | | | **Pseudo- Second order model** | | | **Intra-particle diffusion** | | |
| **Co** | **qexp**  **mg/g** | **qe** | **R2** | ***k*1** | **qe**  **mg/g** | **R2** | **K2** | **R2** | ***k*int**  **(mg/g)**x **(min1/2)** | ***C*** |
| **50** | 25 | 32.78595 | 0.458 | -0.052 | 16.545 | 0.999 | -0.381 | 0.231 | 0.178 | 17.370 |
| **100** | 50 | 20.18622 | 0.678 | -0.03 | 41.999 | 0.999 | 0.201 | 0.273 | 0.211 | 40.204 |
| **150** | 75 | 9.698779 | 0.161 | 0.008 | 53.248 | 0.998 | -0.092 | 0.0007 | -0.048 | 56.466 |
| **200** | 100 | 32.86046 | 0.005 | -0.002 | 79.681 | 0.999 | 0.098 | 0.520 | 3.024 | 67.385 |