

Table2 Adsorption isotherm models and corresponded parameters

| Isotherms | Equations | Parameters |
|------------|---|---|
| Langmuir | $q_e = \frac{k_L q_m C_e}{1 + k_L C_e}$ | <p>q_m means the adsorption amount (mg/g).</p> <p>k_L (L/mg) is coefficient.</p> |
| Freundlich | $q_e = k_F C_e^{1/n}$ | <p>k_F is adsorption constant (mg/g).</p> <p>$(L/mg)^{1/n}$, $1/n$ is adsorption intensity</p> |
| Hill | $q_e = \frac{Q_m C_e^n}{C^n + C_e^n}$ | <p>Q_m is the maximum adsorption capacity (mg/g) , n and C are the number of ions per site and semi saturated concentration, respectively.</p> |