# Supporting Information

# A green adsorbent derived from banana peel for highly effective removal of heavy metal ions from water

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**Table S1** Adsorption isotherm models.

| Adsorption isotherm equations | | Symbol definition |
|---|---|---|
| Langmuir | $Q_e = (K_L Q_m C_e)/(1+ K_L C_e)$ | $Q_e$ – adsorption capacity at equilibrium (mg/g) |
| Freundlich | $Q_e = K_F C_e^{1/n}$ | $Q_m$ – maximum adsorption capacity (mg/g) |
| | | $C_e$ – equilibrium concentration (mg/L) |
| | | $K_L$ – Langmuir adsorption constant (L/mg) |
| | | $K_F$ – Freundlich adsorption capacity (mg/g) |
| | | n – Freundlich dimensionless constant |

**Table S2** Adsorption kinetic models.

| Adsorption kinetic equations | | Symbol definition |
|---|---|---|
| Pseudo-first order | $\log(Q_e - Q_t) = \log Q_e - (k_1 t)/2.303$ | $Q_e$ and $Q_t$ – adsorption capacity at equilibrium and at time $t$ (mg/g) |
| Pseudo-second order | $t/Q_t = 1/(k_2 Q_e^2) + t/Q_e$ | $k_1$–first order rate constant($min^{-1}$) |
| | | $k_2$–second order rate constant (kg/mmol·min) |