Correction to: Intelligent-activated carbon prepared from pistachio shells precursor for effective adsorption of heavy metals from industrial waste of copper mine

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The original publication of this paper contains a mistake.

The correct figure images are presented in this paper.

The original article was corrected.

The online version of the original article can be found at <https://doi.org/10.1007/s11356-019-06732-4>

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Scheme 1 The general route for the preparation of AC, MAC, and $\text{H}_2\text{NSO}_3\text{-MAC NCs}$

Scheme 2 Proposed mechanism for the chelation of Cu(II) onto $\text{H}_2\text{NSO}_3\text{-MAC NCs}$

Fig. 1 TEM images of **a** AC-H, **b** MAC, and **c** H_2NSO_3 -MAC NCs

Fig. 2 FT-IR spectra of **a** AC, **b** MAC, **c** H_2NSO_3 -MAC NCs, and **d** H_2NSO_3 -MAC NCs-Cu(II)

Fig. 3 XRD patterns of **a** AC-H, **b** MAC and **c** H_2NSO_3 -MAC NCs

Fig. 4 Magnetization curves of MAC and H_2NSO_3 -MAC NCs

Fig. 5 TGA plots of **a** AC-H, MAC, and H_2NSO_3 -MAC NCs and **b** H_2NSO_3 -MAC NCs-Cu

Fig. 6 N_2 adsorption-desorption isotherms for **a** AC-H and **b** H_2NSO_3 -MAC NCs

Fig. 7 EDS pattern of **a** H_2NSO_3 -MAC NCs and **b** H_2NSO_3 -MAC NCs-Cu

Fig. 8 The 3D plots exhibit the effect of **a** dosage of H_2NSO_3 -MAC NCs and Cu(II) concentration, **b** dosage of H_2NSO_3 -MAC NCs and contact time, and **c** Cu(II) concentration and contact time

Fig. 9 Effect of pH on adsorption behavior of Cu(II) onto MAC and H_3NSO_3 -MAC NCs

Fig. 10 Zeta potential of MAC and $\text{H}_2\text{NSO}_3\text{-MAC NCs}$

Fig. 11 Adsorption kinetic of Cu(II) on $\text{H}_2\text{NSO}_3\text{-MAC NCs}$

Fig. 12 Kinetic adsorption of Cu(II) ions on H₂NSO₃-MAC NCs: **a** pseudo-first-order model and **b** pseudo-second-order models model

Fig. 13 Effect of temperature on adsorption capacity of H₂NSO₃-MAC NCs for Cu(II) ions ($C_i = 60 \text{ mg L}^{-1}$, $M/V = 0.6 \text{ g L}^{-1}$, $t = 180 \text{ min}$, $\text{pH} = 6.5$)

Fig. 14 Adsorption isotherms of Cu(II) ions on the AC-H, MAC, and H_2NSO_3 -MAC NCs

Fig. 15 a Langmuir, b Freundlich, c Temkin, and d DR isotherms for the adsorption of Cu(II) ions onto AC-H, MAC and H_2NSO_3 -MAC NCs