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Abstract	:	Magnetic chitosan/cellulose nanofiber-Fe(III) [M-Ch/CNF-Fe(III)] composites were isolated for the elimination of Cr(VI), Cu(II), and Pb(II) from aqueous solution. Various analytical methods, such as field emission scanning electron microscopy (FE-SEM), transmission electron microscopy (TEM), Fourier-transform infrared spectroscopy (FT-IR), X-ray diffraction analysis (XRD), and thermogravimetric analysis (TGA) were employed to determine the morphological, physicochemical, and thermal properties of the isolated M-Ch/CNF-Fe(III) composites. It was found that the M-Ch/CNF-Fe(III) composites were porous materials, and they have the potential to be implemented as an adsorbent for heavy metals removal. The adsorption efficiency of M-Ch/CNF-Fe(III) composites was determined for Cr(VI), Cu(II), and Pb(II) elimination with changing pH (pH 1.0–8.0), adsorbent doses (0.05–1.0 g), time (15–90 min), and temperature (28–80 °C). In addition, isothermal and kinetics studies were conducted to assess the adsorption behavior and mass transfer phenomena of M-Ch/CNF-Fe(III) composites as an adsorbent for Cr(VI), Cu(II) and Pb(II) elimination from aqueous solution. The outcomes of the present study reveal that the M-Ch/CNF-Fe(III) composites could be utilized as an adsorbent for the Cr(VI), Cu(II), and Pb(II) elimination from industrial effluents.