

Supporting Information

Synthesis and characterisation of cerium(IV)-incorporated hydrous iron(III) oxide as an adsorbent for fluoride removal from water

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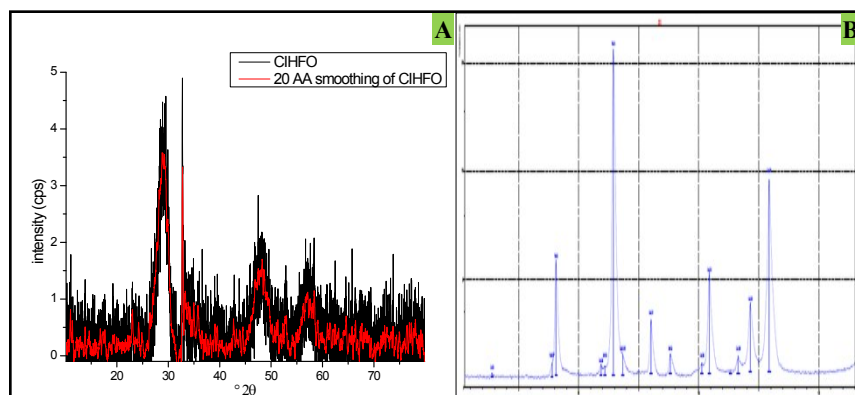


Figure S₁: The plots of (A) powder X-ray diffraction patterns of CIHFO and (B) X-ray fluorescence pattern of CIHFO for the composition.

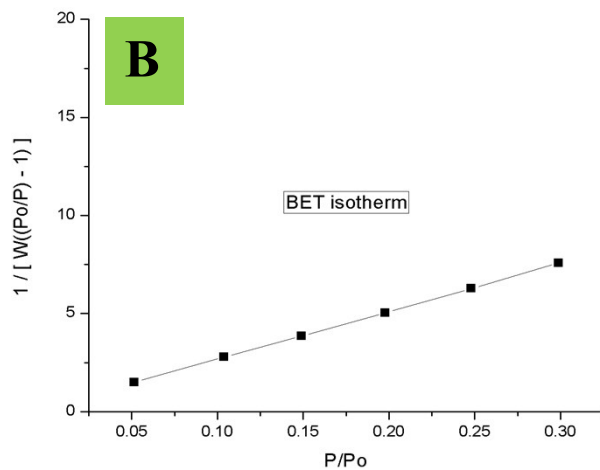
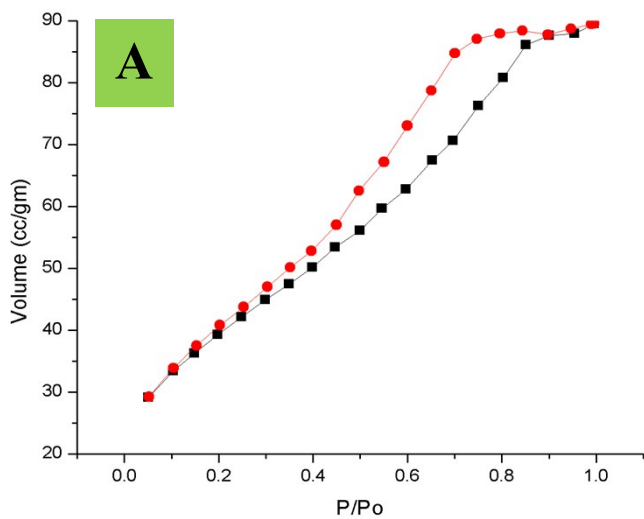


Figure S2: The plots of (A) N₂(vapor) adsorption (black) – desorption (red), Major distributions of pores are of 21.4 Å radius and (B) pore size distribution of CIHFO with Surface Area = 140.711 m²/g.

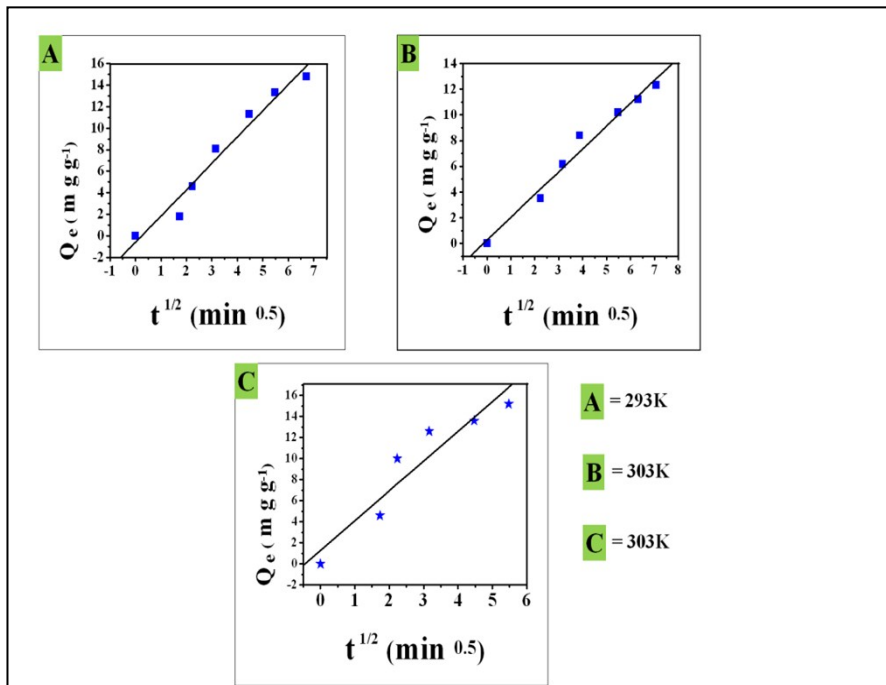


Fig S₃: The plot of Q_e versus $t^{1/2}$ (Weber-Morris plot) of the equilibriums of fluoride adsorption by CIHFO at temperature (A) 293, (B) 303 and (C) 313 K. C_i of fluoride = 10.0 mg L⁻¹, $C_i = 10 - 60$ mg L⁻¹, Ionic strength = 1M and pH 7.0 (\pm 0.2).

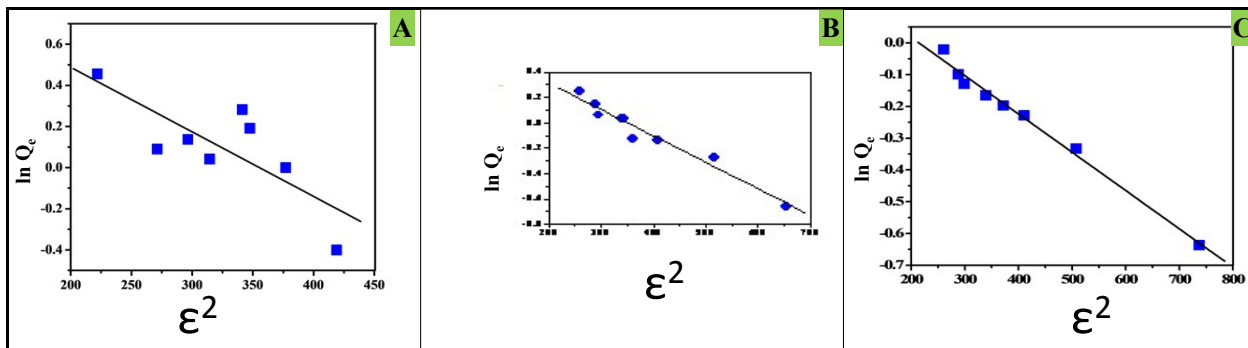


Fig S₄: Dubinin-Redushkevich (D-R) isotherm plots of fluoride adsorption on CIHFO at temperatures: (A) 293K, (B) 303K and (C) 313K. Ionic strength = 1.0 M and pH = 7.0 (± 0.2)

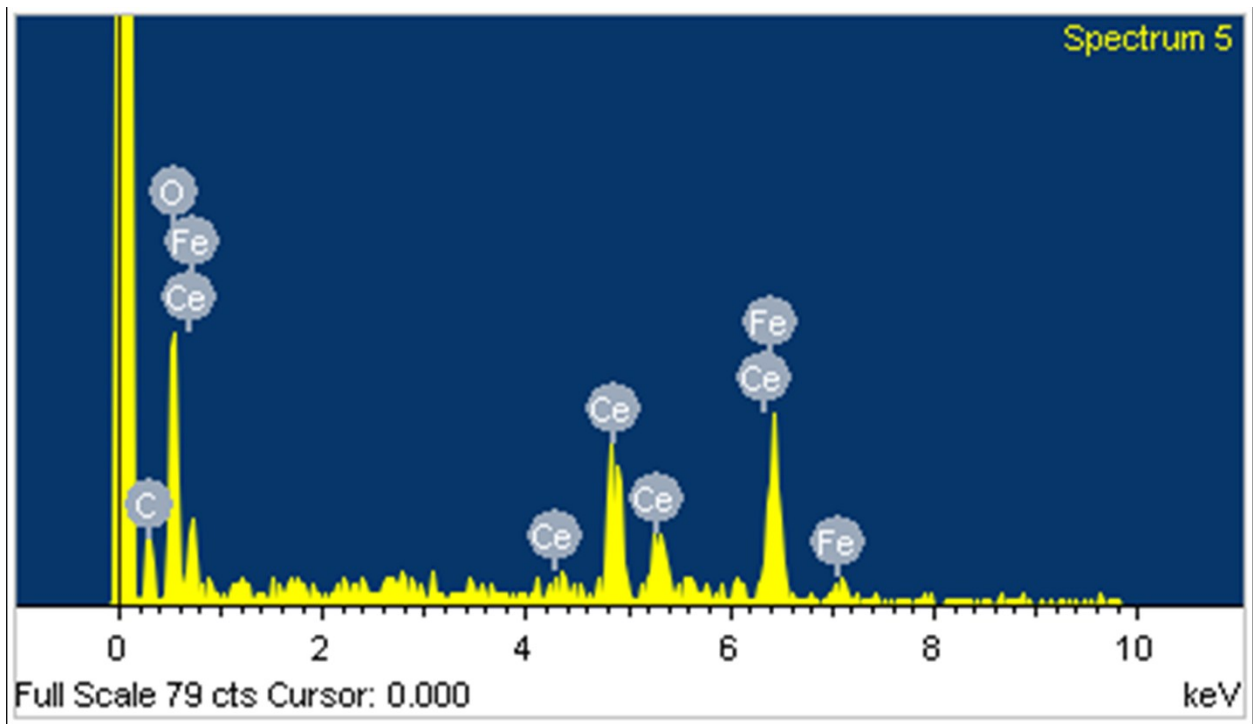


Fig. S₅: EDX spectra of CIHFO