Electronic Supplementary Material (ESI) for Analytical Methods.


# Electronic Supplementary Information

## Ion imprinted magnetic organosilica nanocomposite for the selective determination of traces of Cd (II) in a minicolumn flow-through preconcentration system coupled to graphite furnace atomic adsorption spectroscopy.

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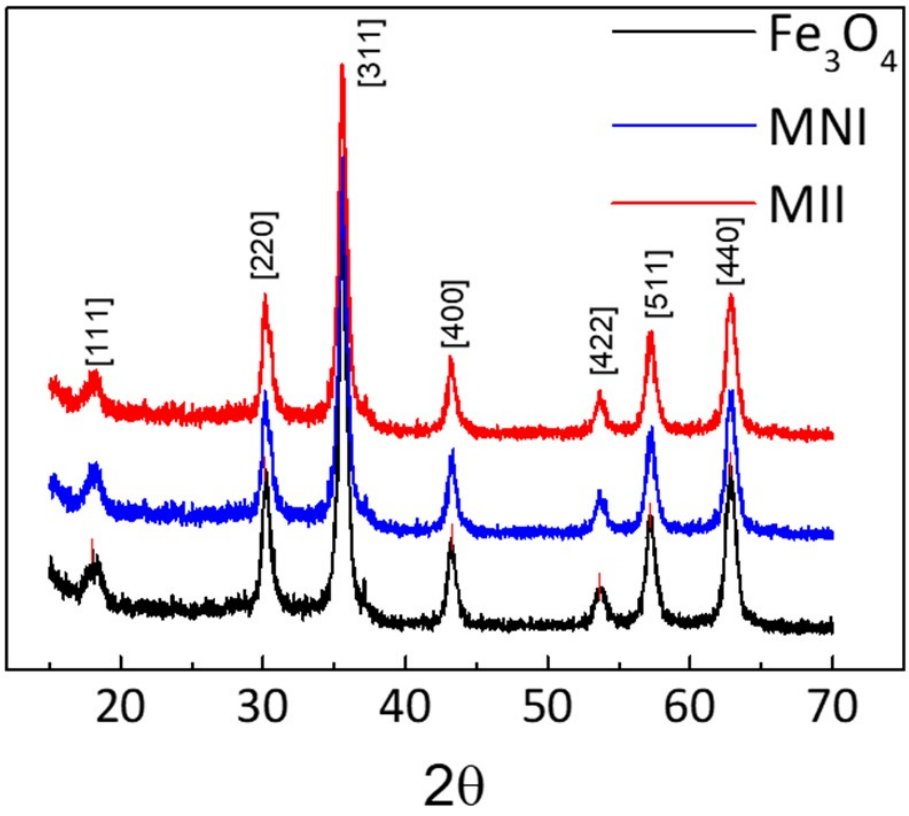


**Fig.S1** DRX patterns for $Fe_3O_4$, MINI and MII solids.

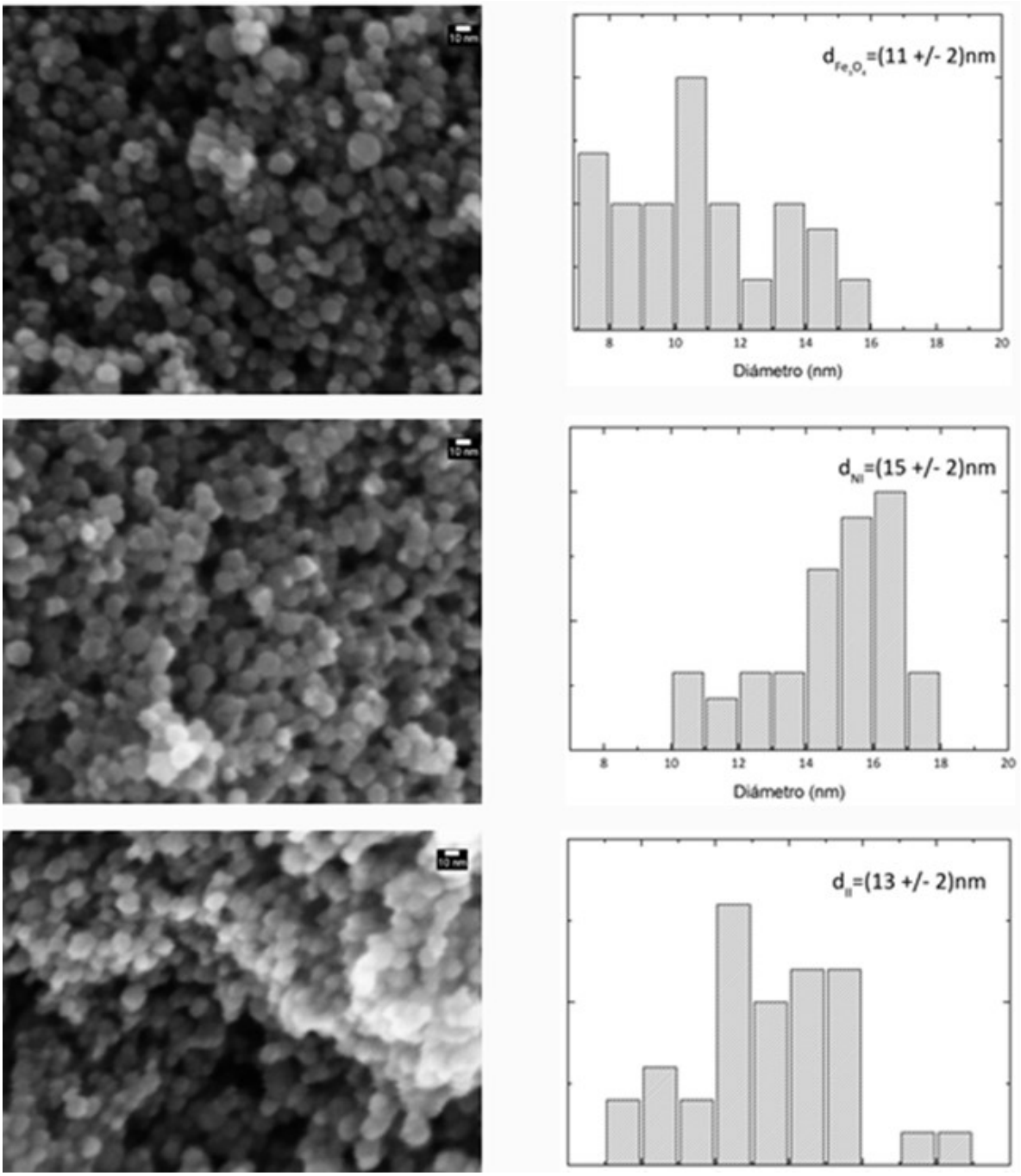


**Fig.S2** SEM images and histograms. From the top: $Fe_3O_4$, MNI and MNI.

Fig. S3 (A), (B), (C) and (D) clearly show how the proximity of the particles to the magnet leads to an uneven adhesion of the particles. In contrast, as can be seen in Fig. S3 (E), by placing the container (MC) in the centre of the circular magnet, the distribution of the magnetic particles around its walls is completely homogeneous.

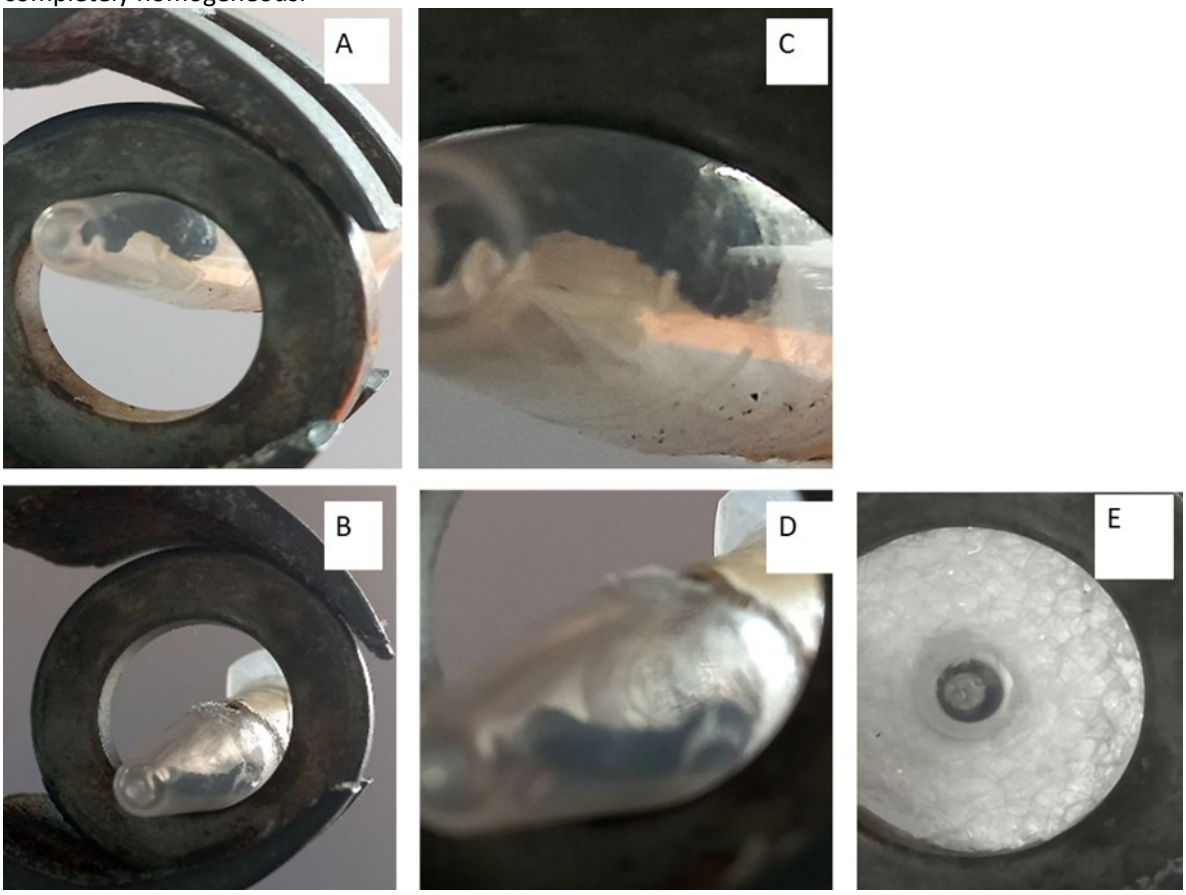


Fig.S3. Conteiner with synthesised magnetic material attached to one wall of the circular magnet: (A) top and (B) bottom.(C) and (D) zoom of (A) and (B) respectively. (E)Zoom of the bottom of the container placed in the midle of the circular magnet.

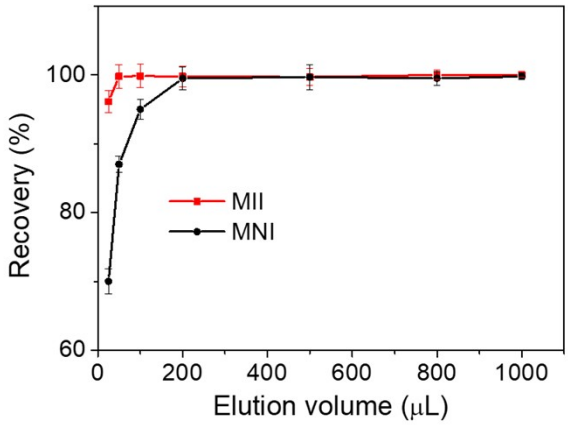


Fig. S4 Optimization of elution volume. [HCl]: 1 mol $L^{-1}$, [Cd(II)]:0.02 ng $mL^{-1}$, sample volume: 10 mL, adsorption flow rate: MNI: 1.5 mL $min^{-1}$,MII: 2 mL $min^{-1}$, and desorption flow rate: 0.5mL $min^{-1}$ for both.

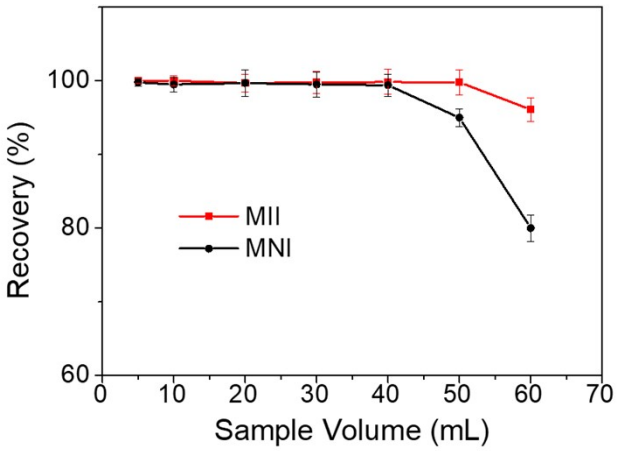


Fig. S5 Percentage recovery with sample volume under optimised conditions for MII and MNI (See 3.5).

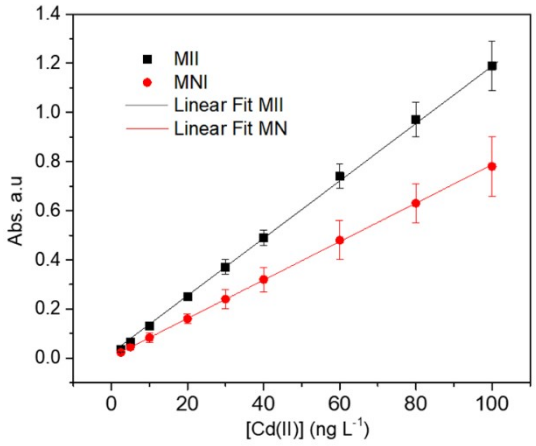


Fig. S6 Preconcentration curves for MII and MNI with the corresponding linear fit.

Note that, the last two point in the MII preconcentration curve were checked with 10 measures of a proper dilution.