

Fig.1 supp info: Scanning electron micrographs (A-D) showing the morphology and filling rate of the obtained radial structures. In particular, in B and D the MWCNTs filling-rate (bright regions) is investigated through backscattered electrons (second sample,  $\gamma$ -Fe/FeCo).

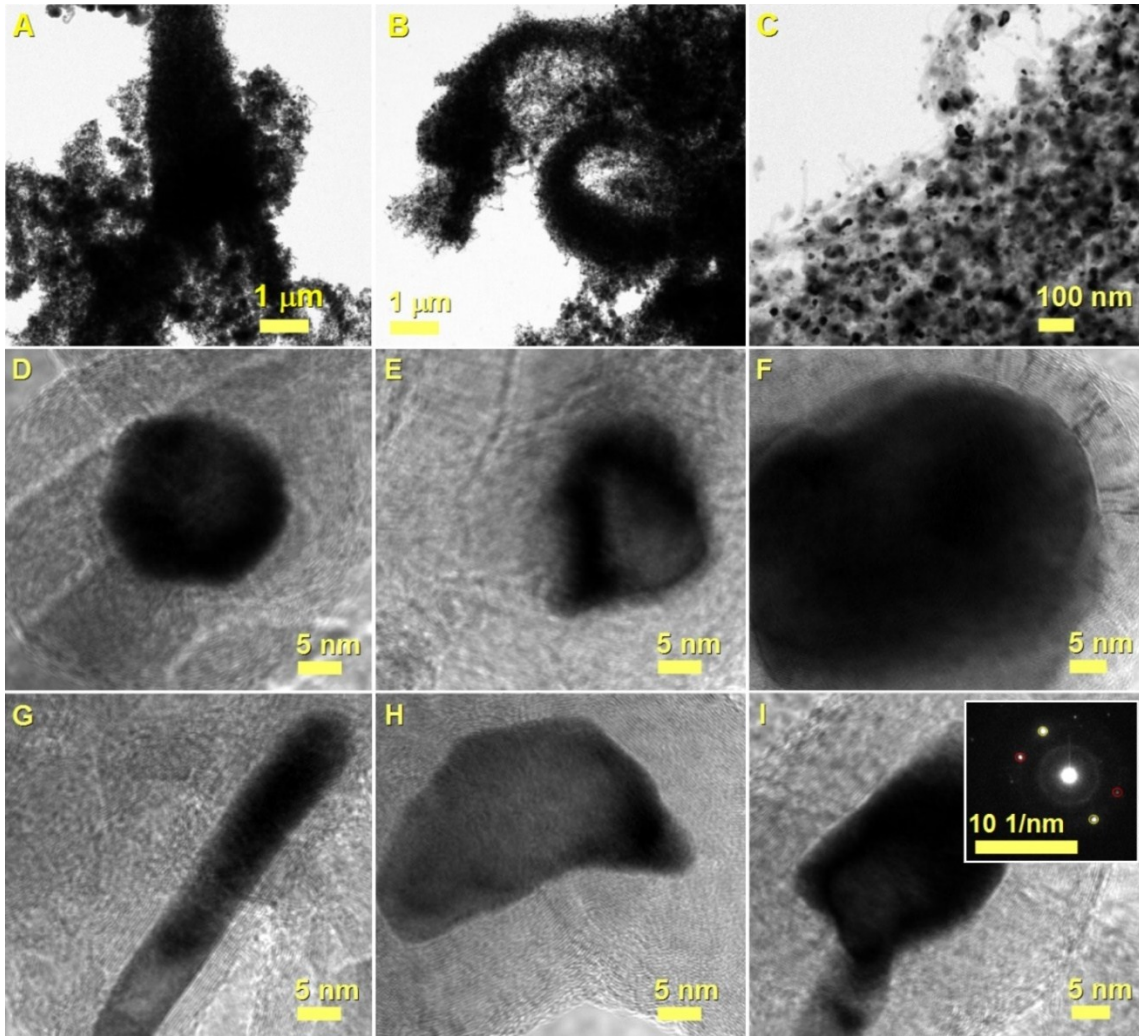


Fig.2 supp info: Transmission electron micrographs showing the cross-sectional morphology (A-B) of the radial structures comprising MWCNTs filled with large quantities of small FeCo particles and small quantities of  $\gamma$ -Fe particles (C). The size of the particles is shown in detail in the sequence D-I. An example of SAED is shown in the inset in I. As shown in the inset of I, the SAED analyses performed in individual particles revealed the presence of reflection spots typical of single-crystalline particles.

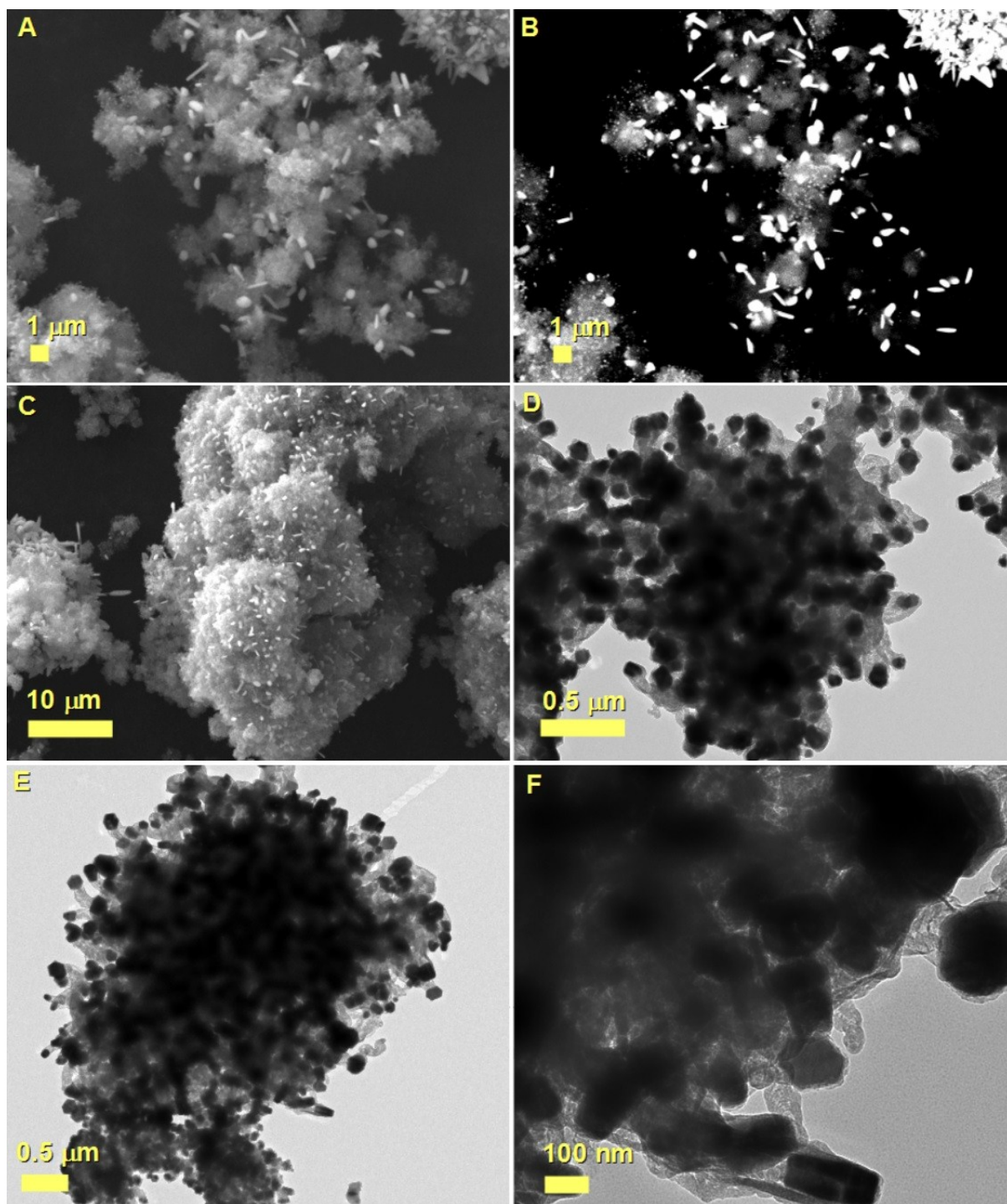


Fig.3 supp info: SEM and TEM morphological analyses of the structures obtained when Cl radicals are introduced in the viscous boundary layer between the ferrocene vapour and the rough substrate elements.

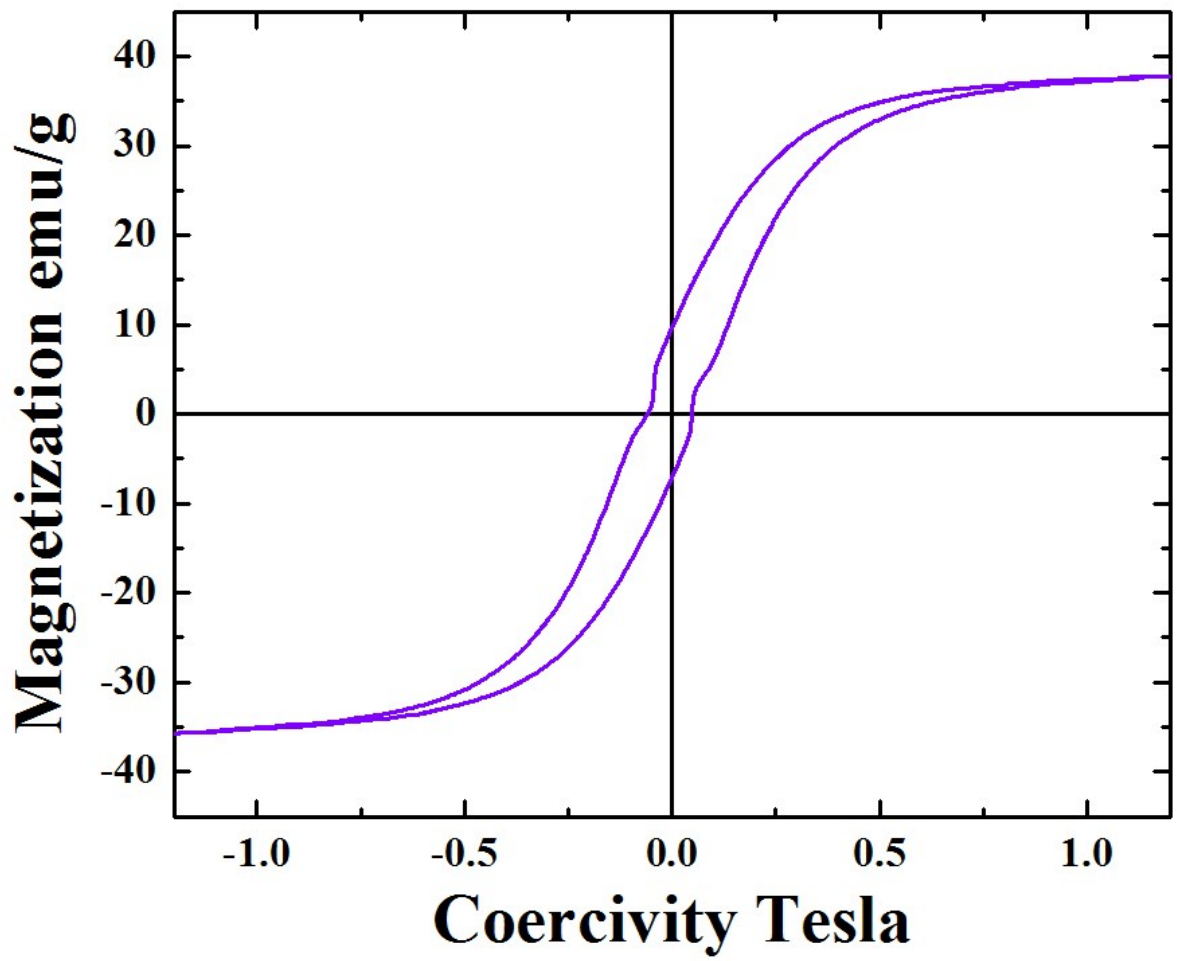


Fig.4 supp info: Hysteresis loop of the structures obtained when Cl radicals are introduced in the viscous boundary layer between the ferrocene vapour and the rough substrate elements.

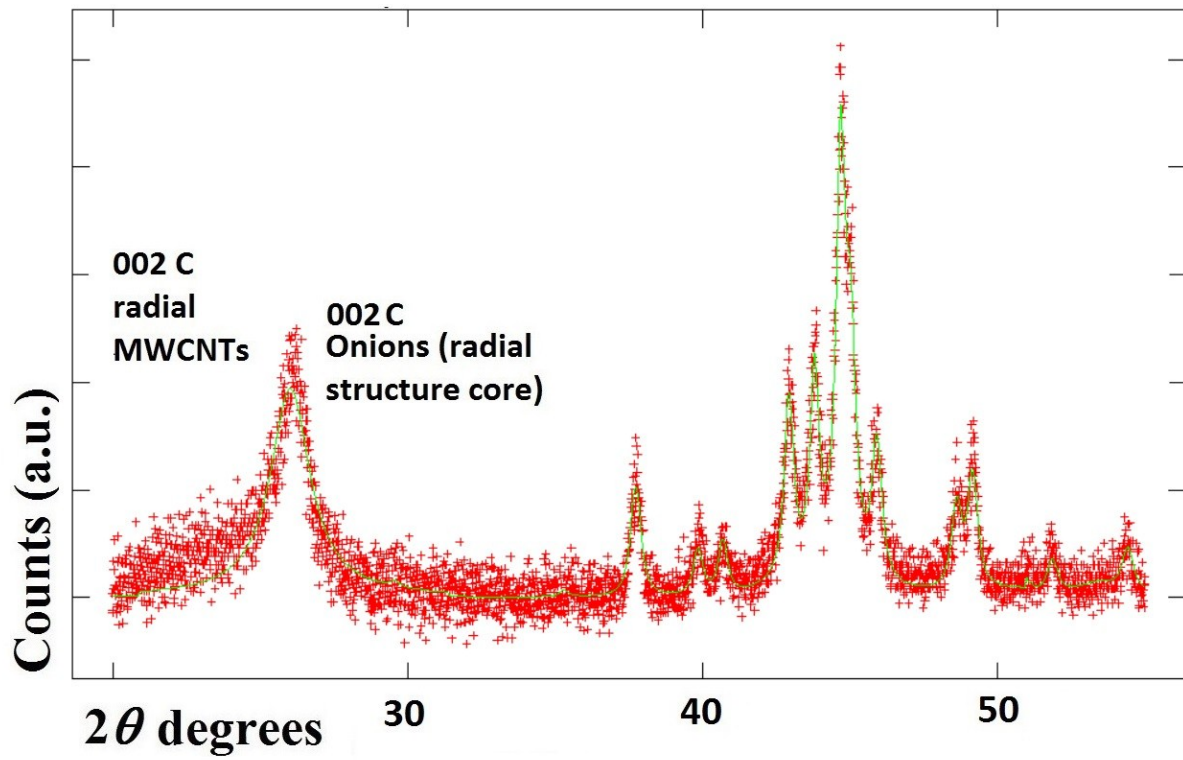


Fig.5 supp. Info.: XRD analyses and Rietveld Refinement of the radial structures obtained by pyrolysis of ferrocene.