

Electronic Supplementary Information

Preparation of magnetic composites of MIL-53(Fe) or MIL-100(Fe) via partial transformation of their framework into γ -Fe₂O₃

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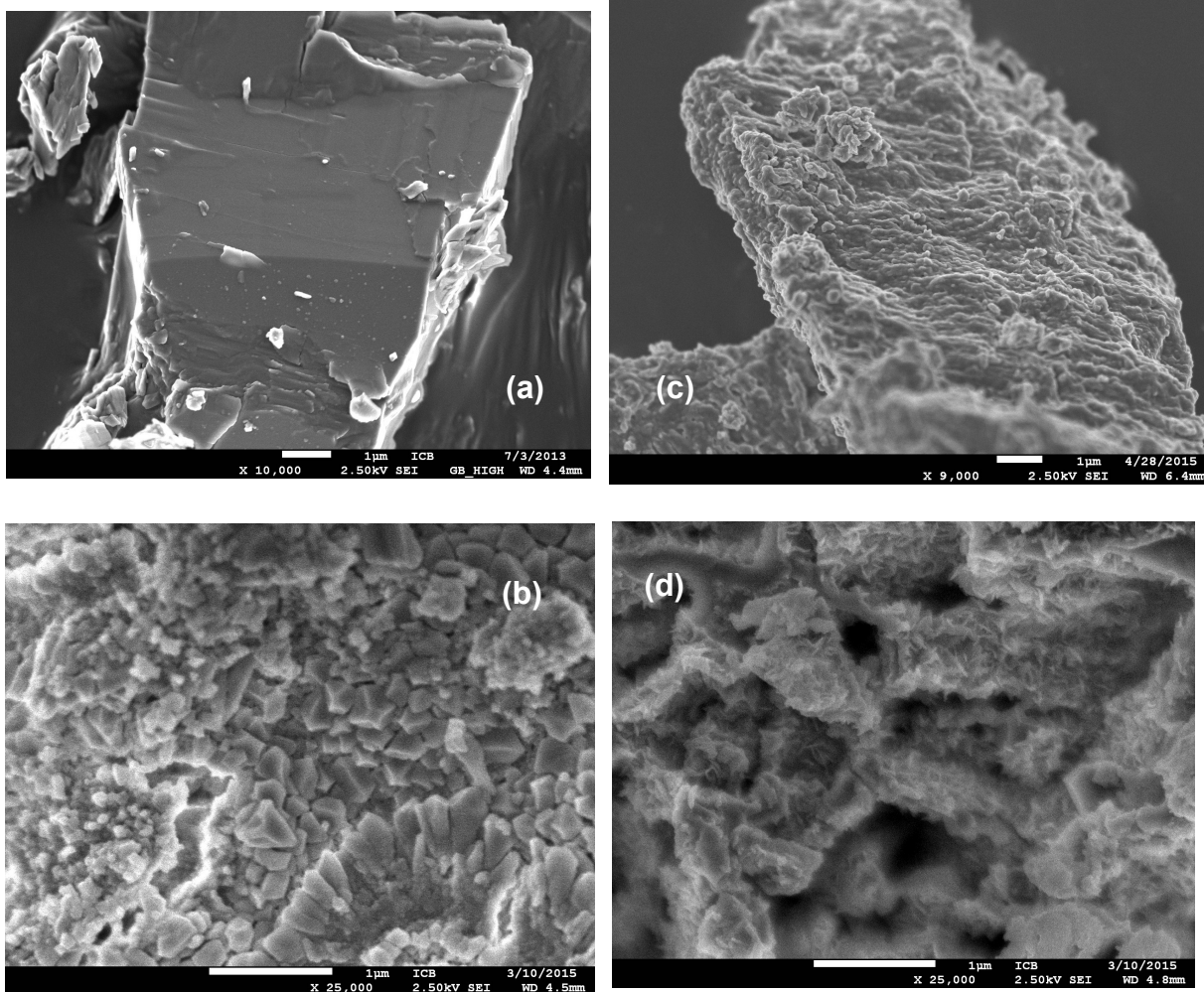


Figure S1 SEM images of pristine MOFs MIL-53(Fe) (a), MIL-100(Fe) (b) and of **53-H** (c) and **100-H** (d).

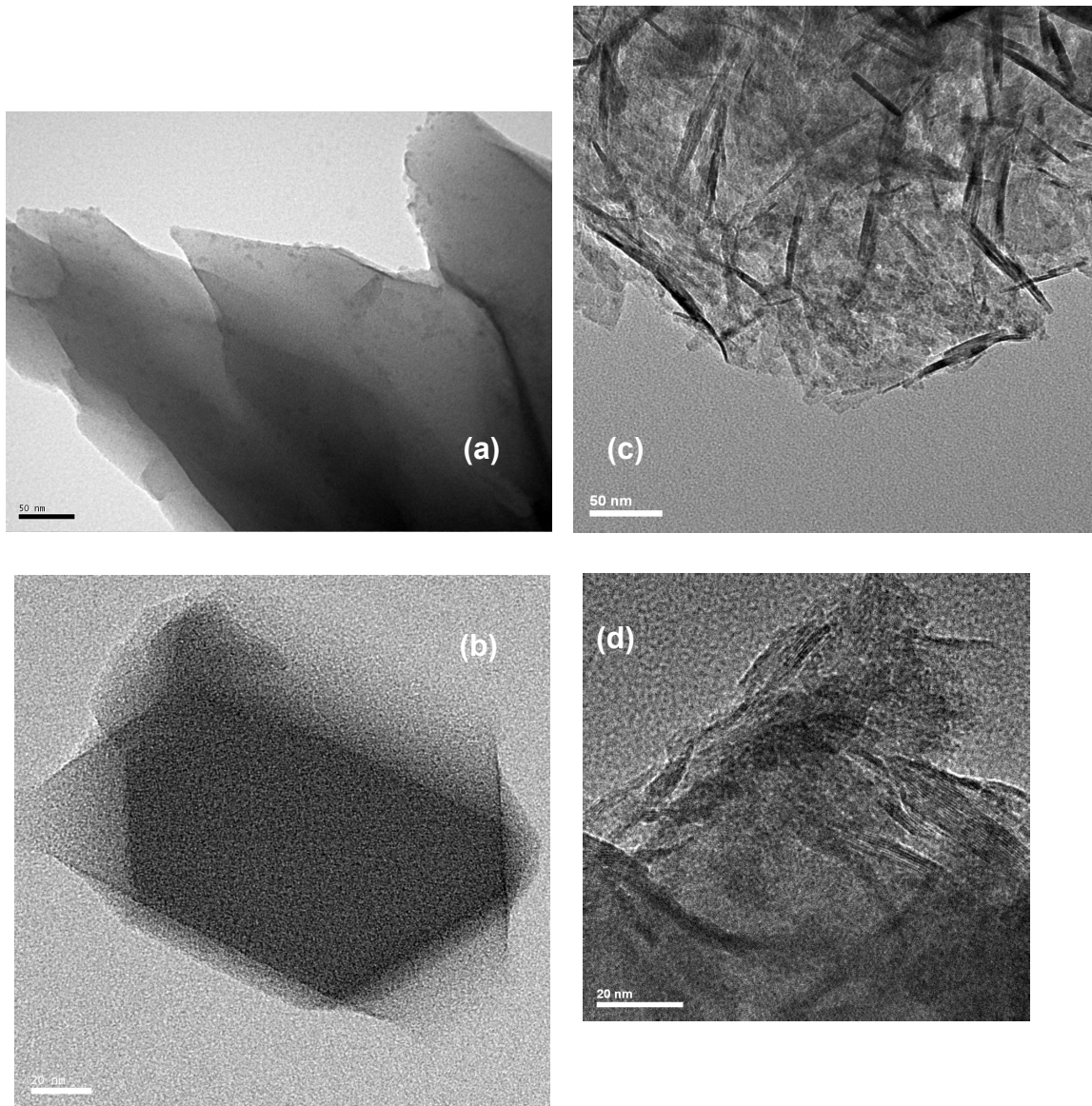


Figure S2 TEM images of pristine MOFs MIL-53(Fe) (a), MIL-100(Fe) (b) and of 53-H (c) and 100-H (d).

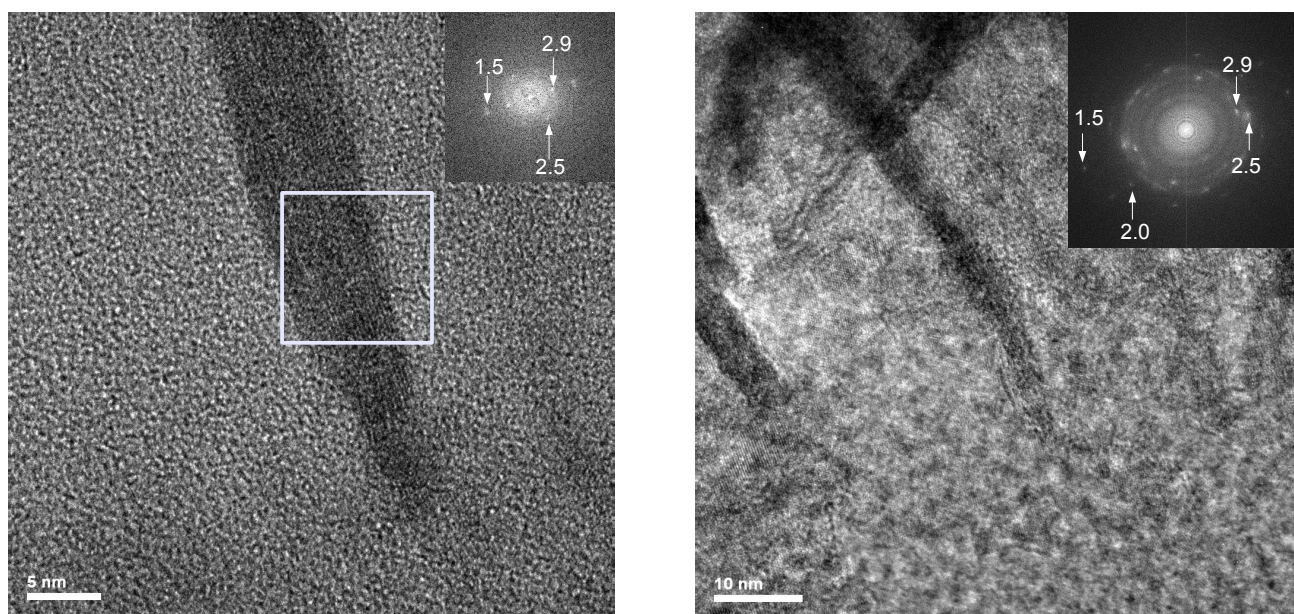


Figure S3 HRTEM images of **100-Hc** (left) and **53-Hc** (right). Inserts – Fourier transforms of the region in the square (**100-Hc**) and of the whole image (**53-Hc**) with the corresponding lattice distances in Å.

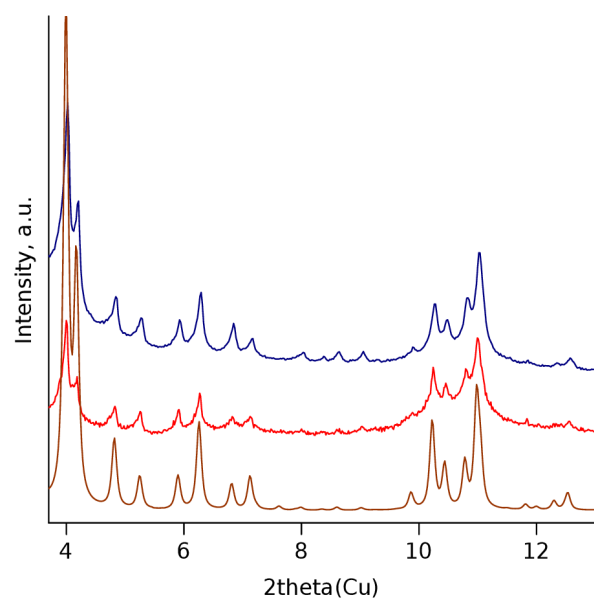


Figure S4 Low-angle range of XRD patterns of MIL-100(Fe) (red), **100-Hc** (blue) and calculated MIL-100(Fe) (brown).

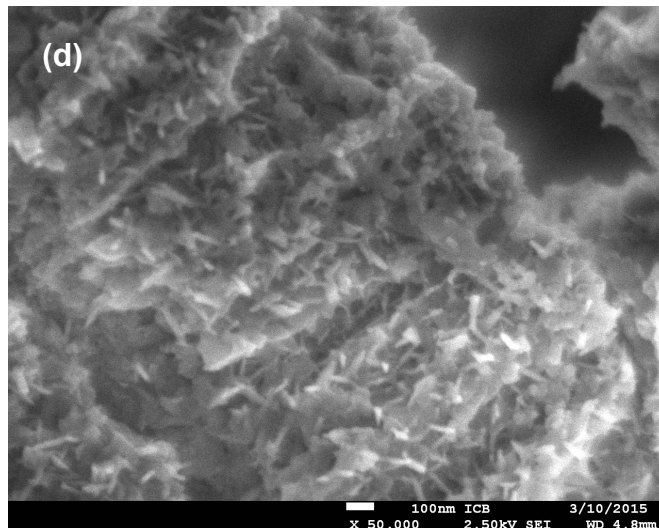
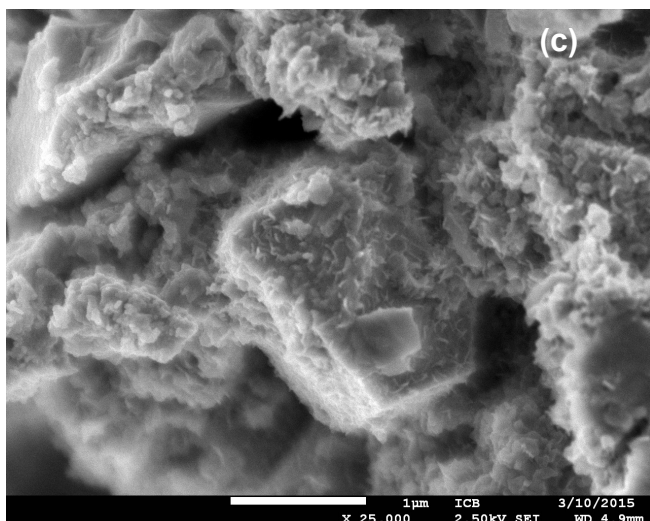
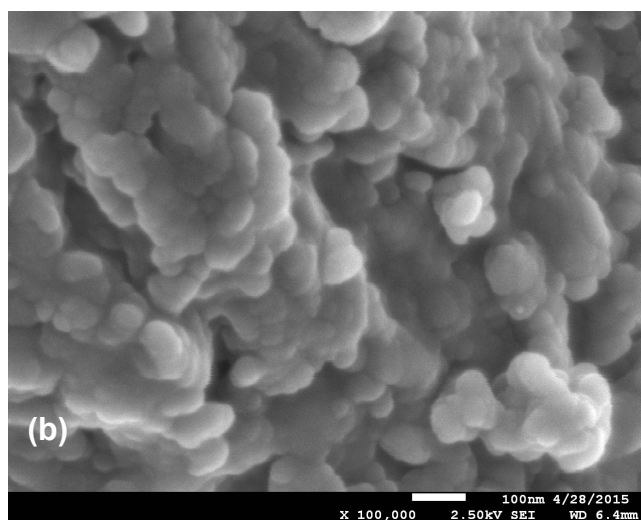
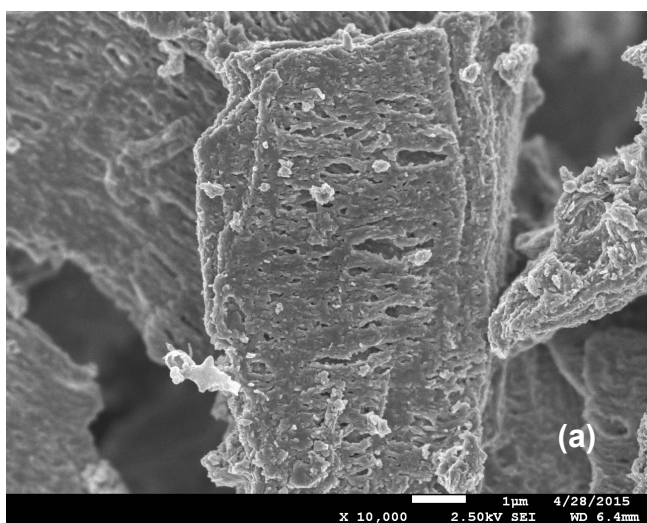


Figure S5 SEM images of **53-Hc** (a),(b) and **100-Hc** (c), (d).

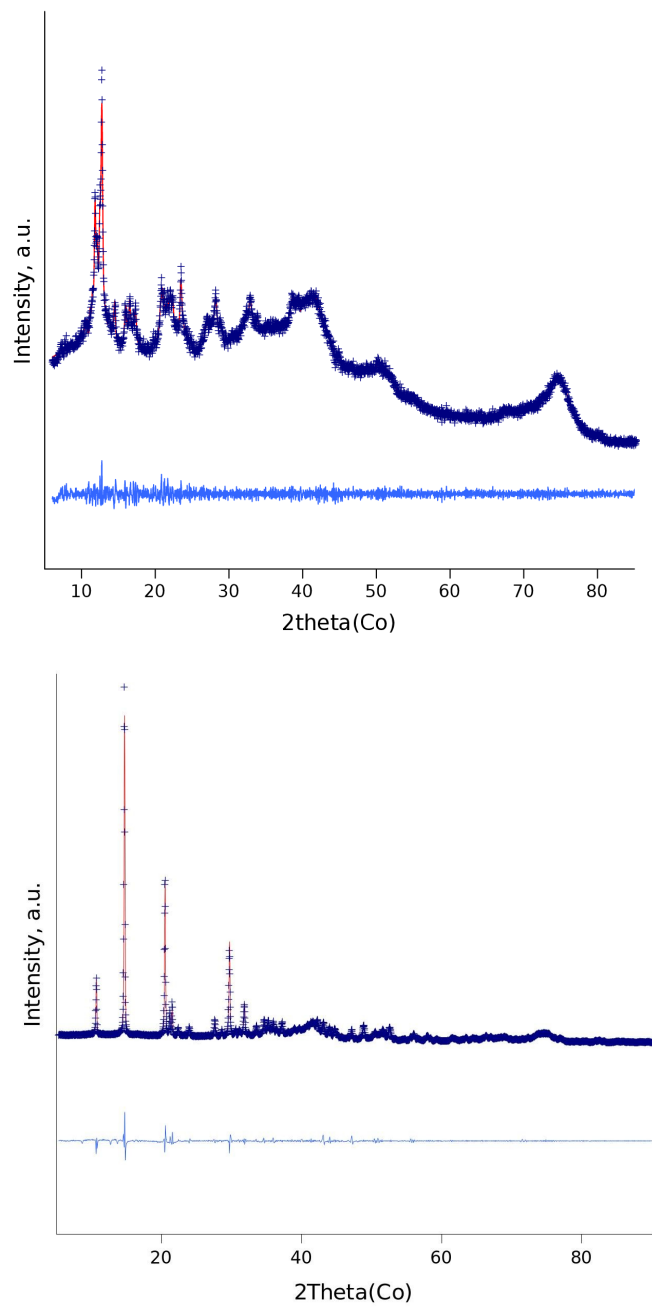


Figure S6 Full profile Le Bail fits of the XRD patterns of **100-Hc** (top) and **53-Hc** (bottom). Crosses – experimental data, red line – fit, blue line – difference.

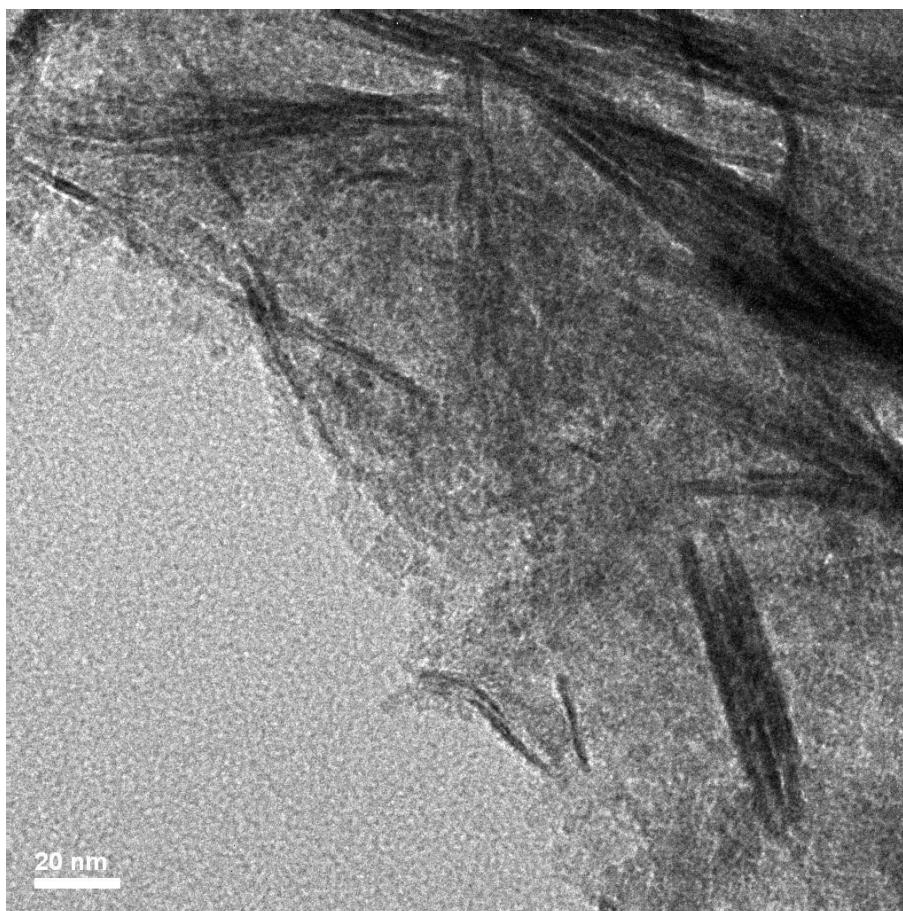
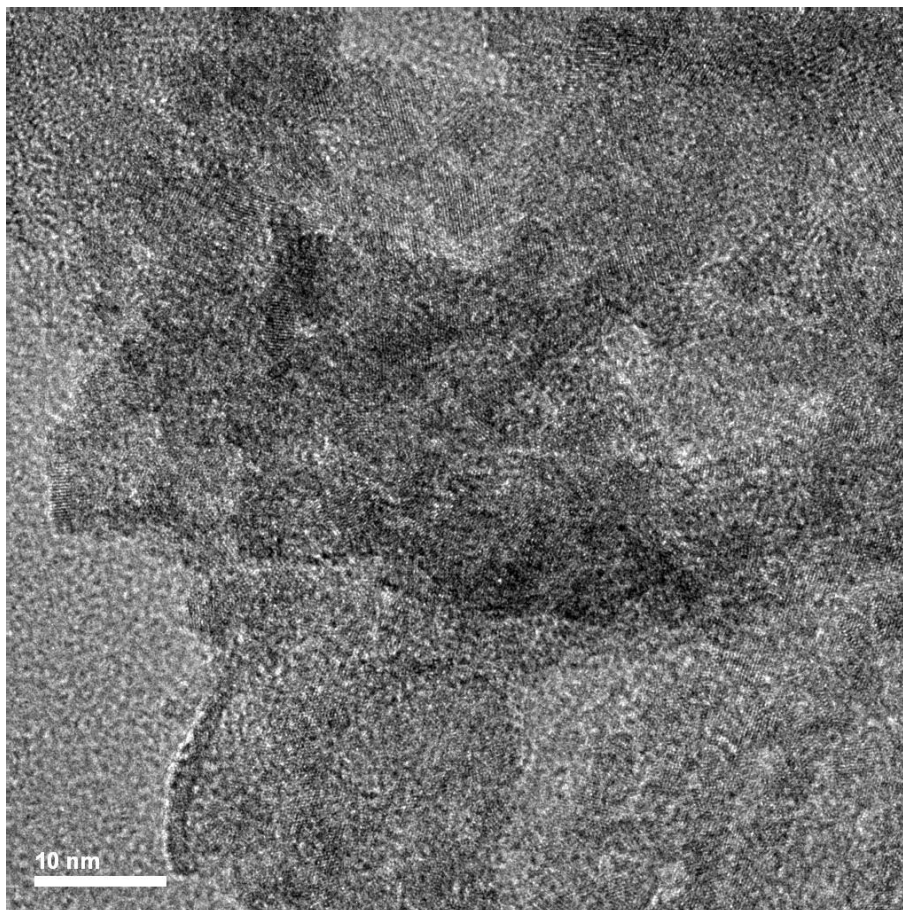


Figure S7 TEM images of **100-Hc** (top) and **53-Hc** (bottom).

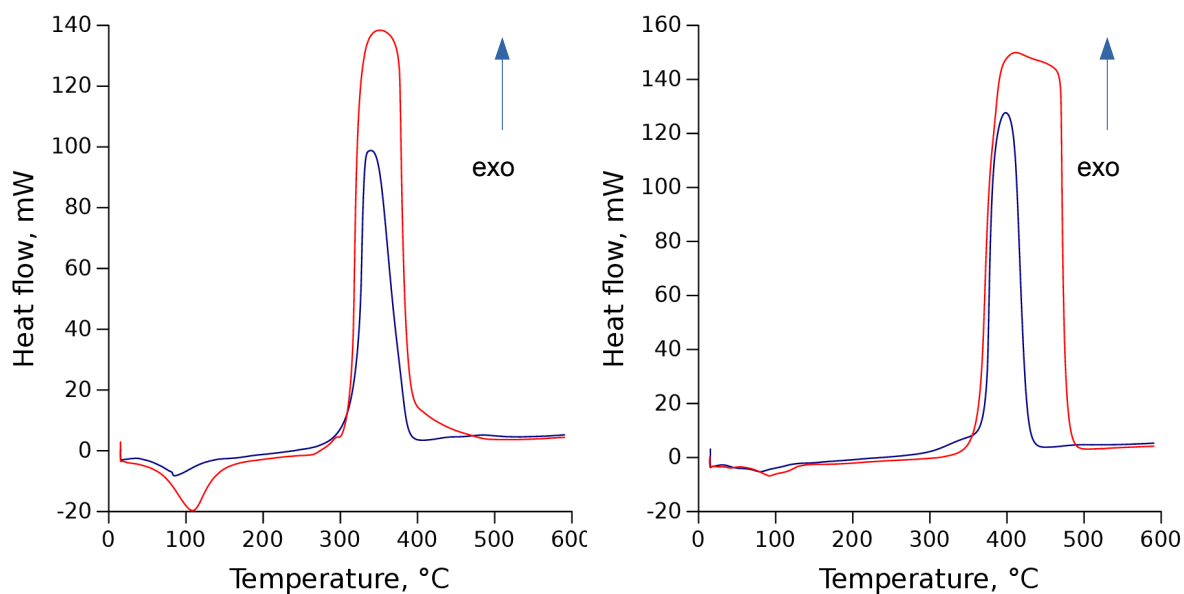


Figure S8 Differential scanning calorimetry (DSC) plots for **100-Hc** (left) and **53-Hc** (right). Red line – initial MOFs, blue line – magnetic composites.

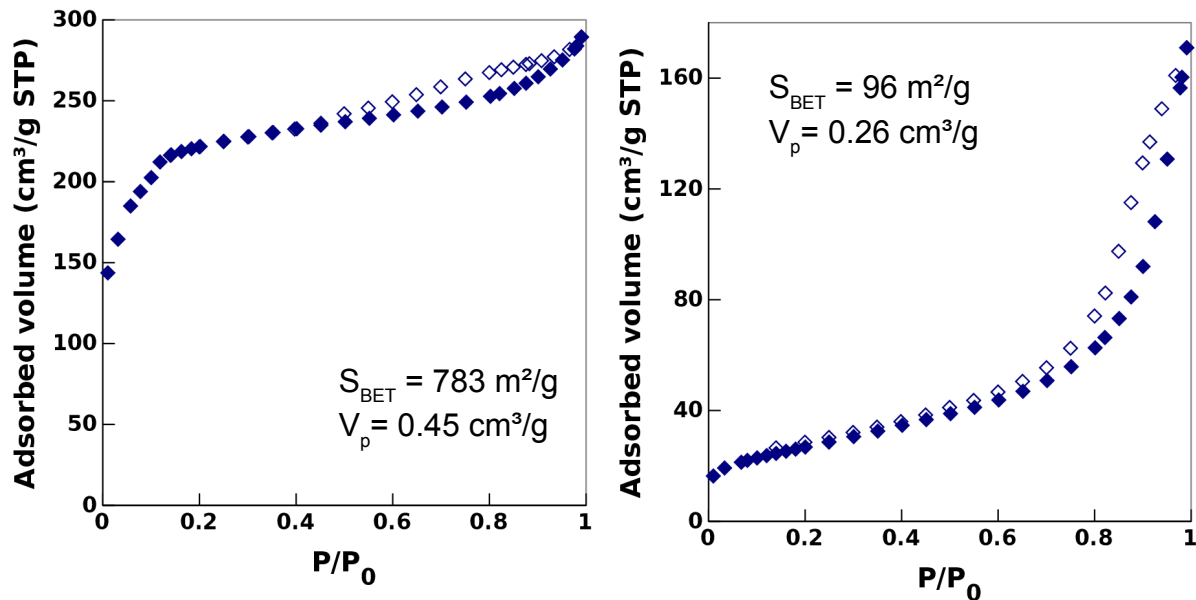


Figure S9 Textural properties and N₂ adsorption-desorption isotherms measured at -196°C for **100-H** (left) and **53-H** (right). Full symbols- adsorption, empty symbols – desorption.

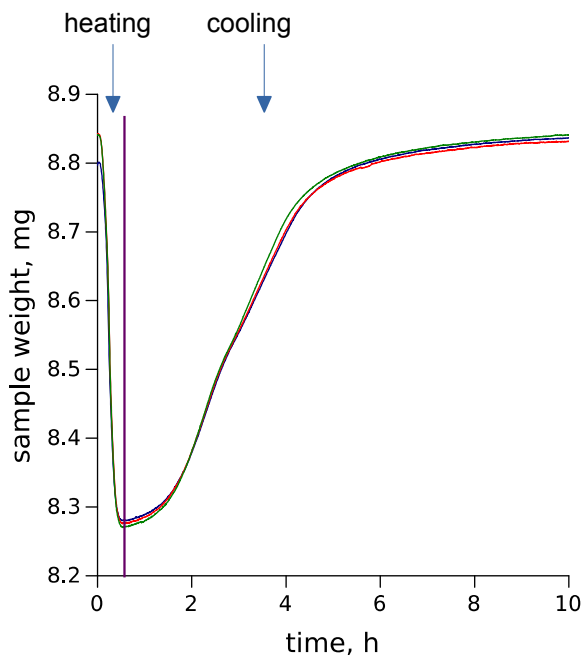


Figure S10 Variation of the weight of **53-Hc** during three successive dehydration – hydration cycles realized through heating to 150°C followed by cooling to 15°C under ambient air (relative humidity ~ 30%). Different curve colors correspond to different cycles.

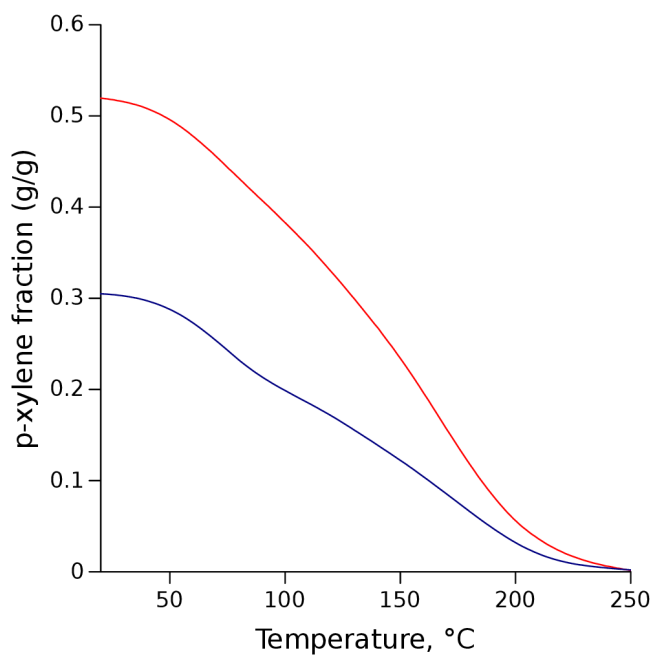


Figure S11 Desorption profiles of p-xylene from MIL-100(Fe) (red) and from **100-Hc** composite (blue).