

**Synthesis of Highly Ordered Mesoporous MCM-41: Selective External Functionalization by Time Control**

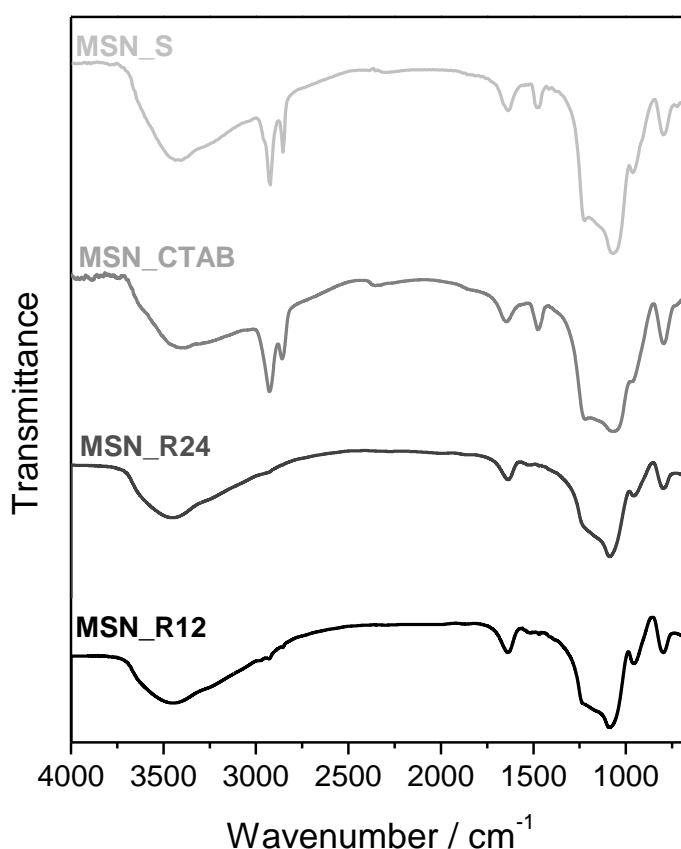
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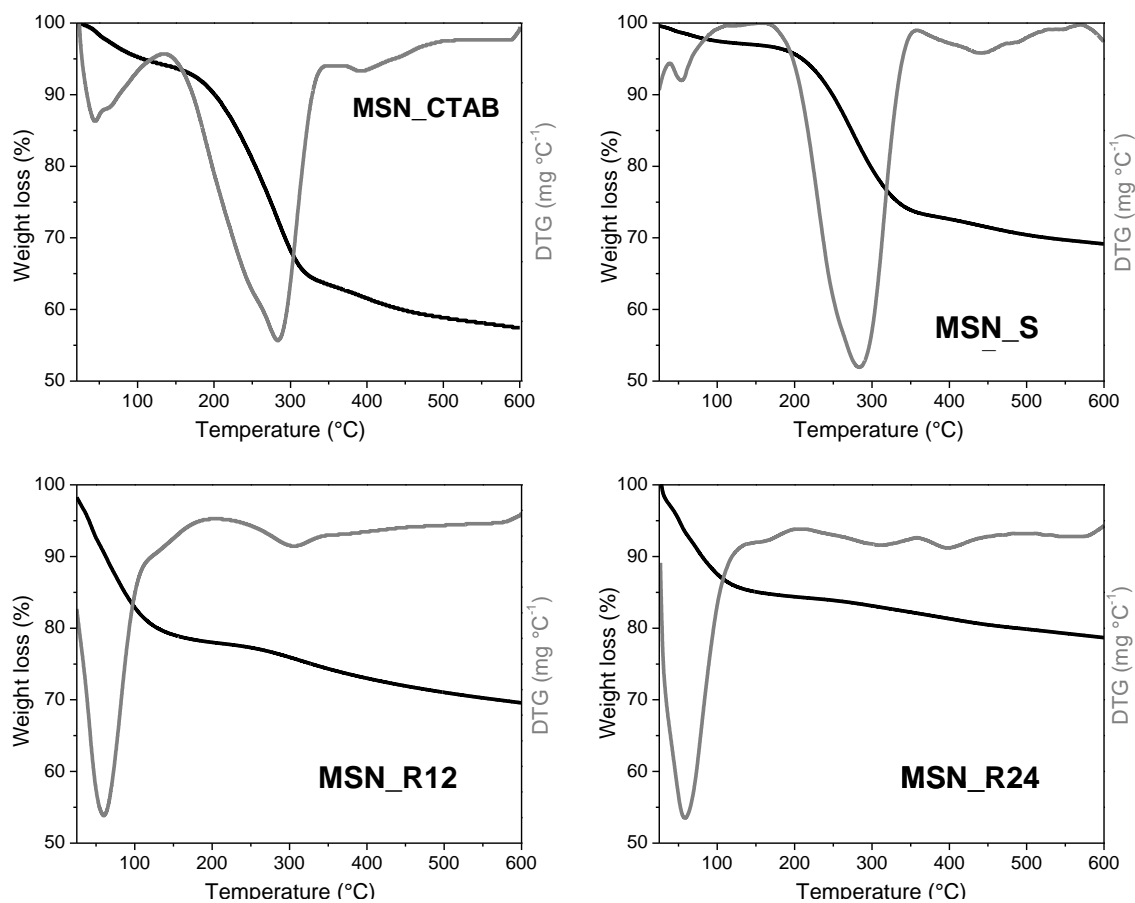
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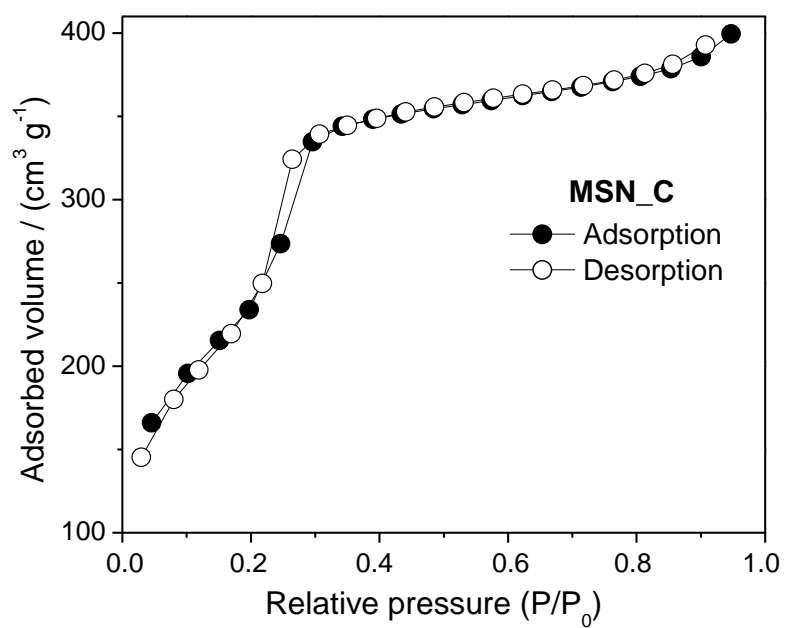


**Figure S1.** FTIR spectra of samples.

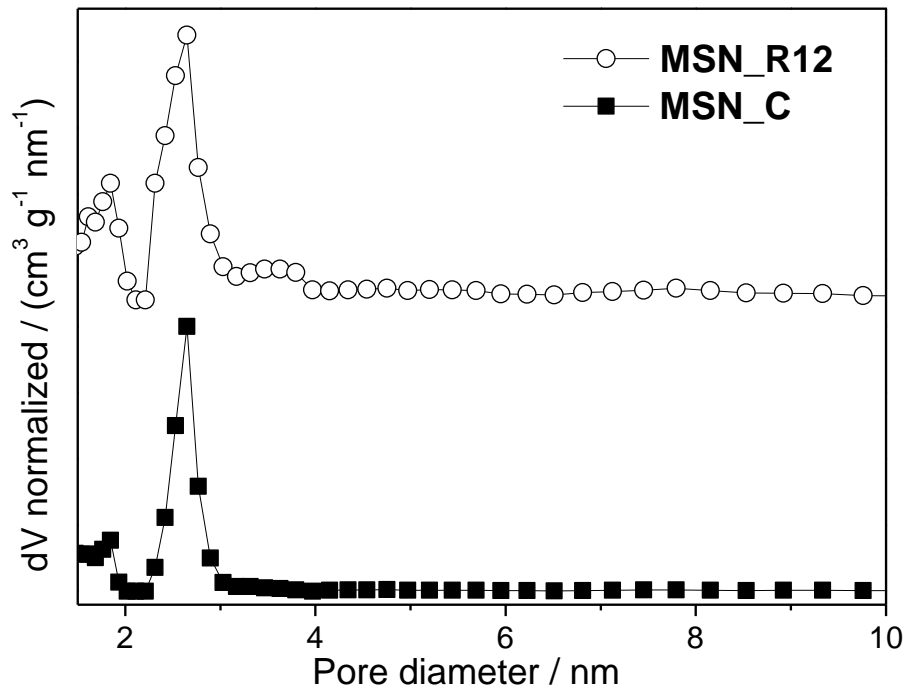
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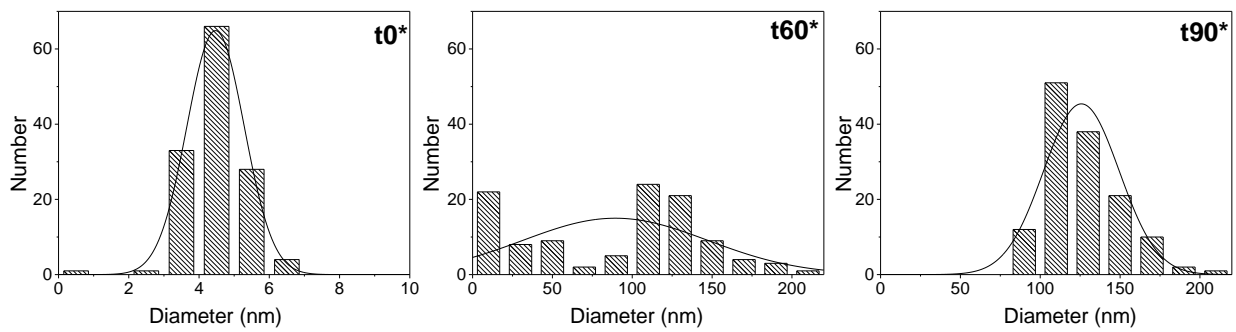
**Figure S2.** TGA and DTG curves for pre and post-extraction samples.



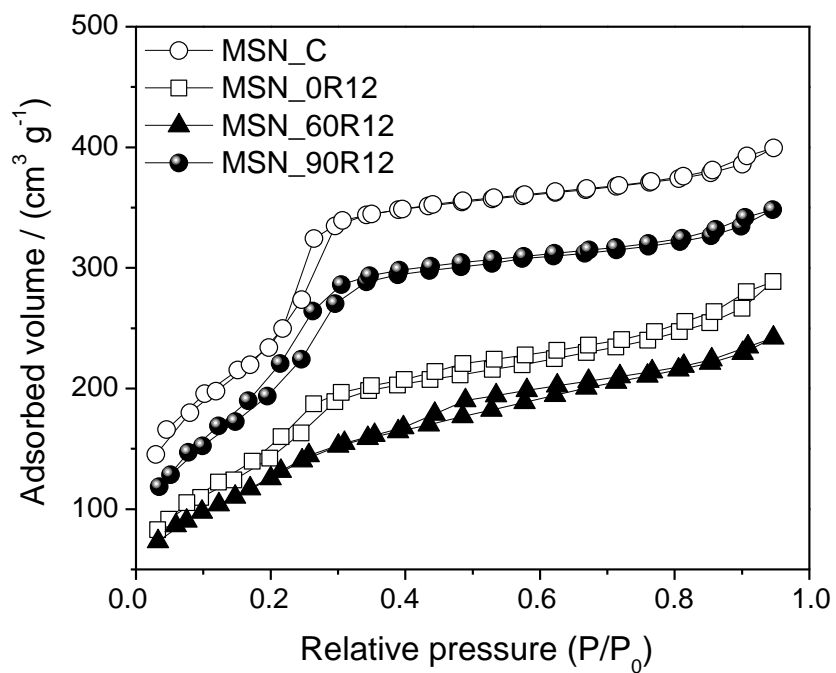
**Figure S3.** Adsorption and desorption isotherms of N<sub>2</sub> at 77 K for MSN<sub>C</sub>.



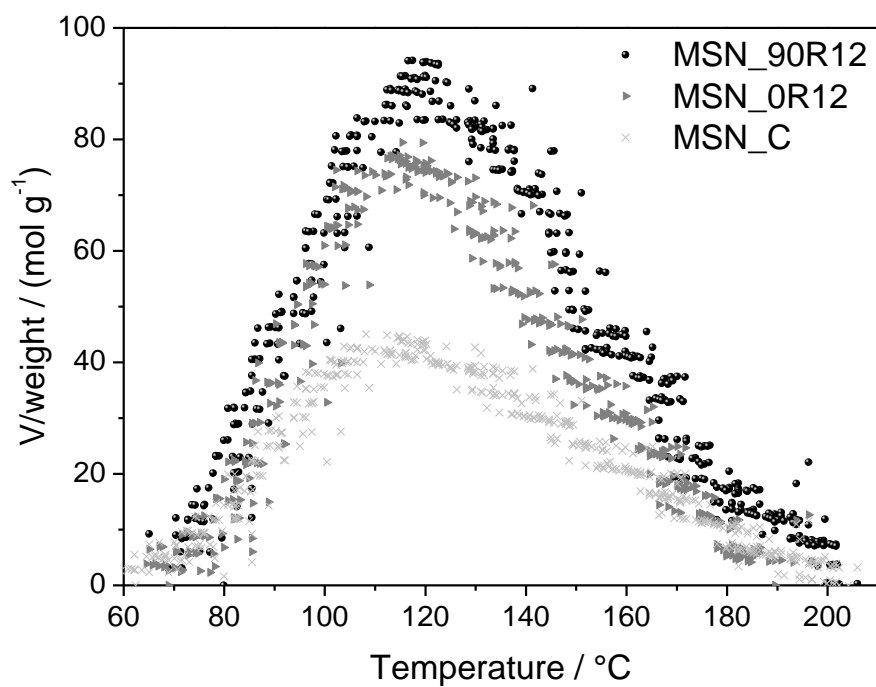
**Figure S4.** Pore size distribution curve (NLDFT method).



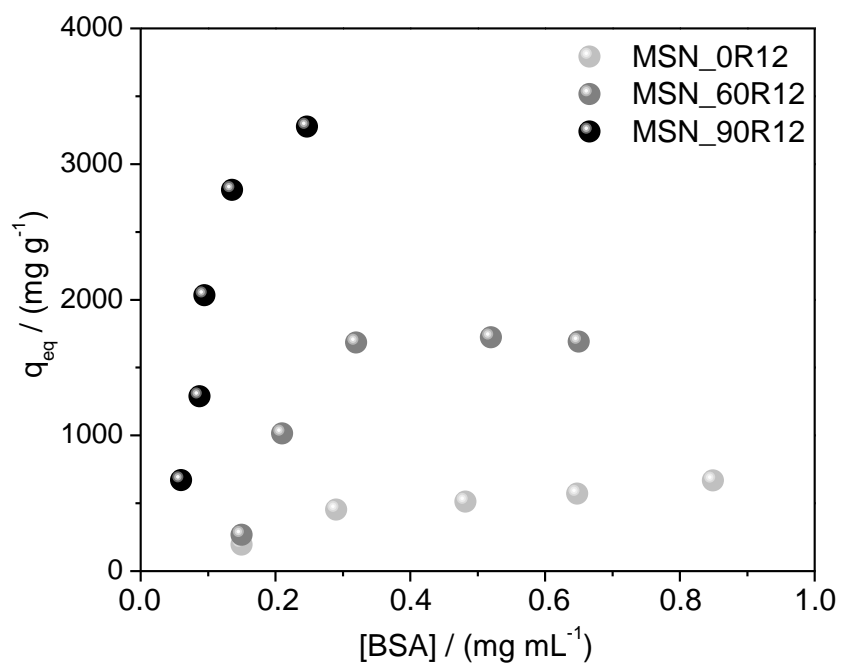
**Figure S5.** Size distribution for  $t0^*$ ,  $t60^*$  and  $t90^*$ . Populations with 100 samples.



**Figure S6.** Adsorption and desorption isotherms of N<sub>2</sub> at 77 K for the samples MSN\_C, MSN\_0R12, MSN\_60R12 and MSN\_90R12.



**Figure S7.** TPD profiles of CO<sub>2</sub> on MSN\_90R12, MSN\_0R12 and MSN\_C.



**Figure S8.** BSA adsorption isotherms on amino-functionalized samples (PBS pH 7.4).