SUPPLEMENTARY INFORMATION

Time Dependence of Water-Induced Phase Transition in Nano- and Microcrystalline Eu^{3+}-Doped MOF-76(Y): Different Luminescence Response with Memory Effect

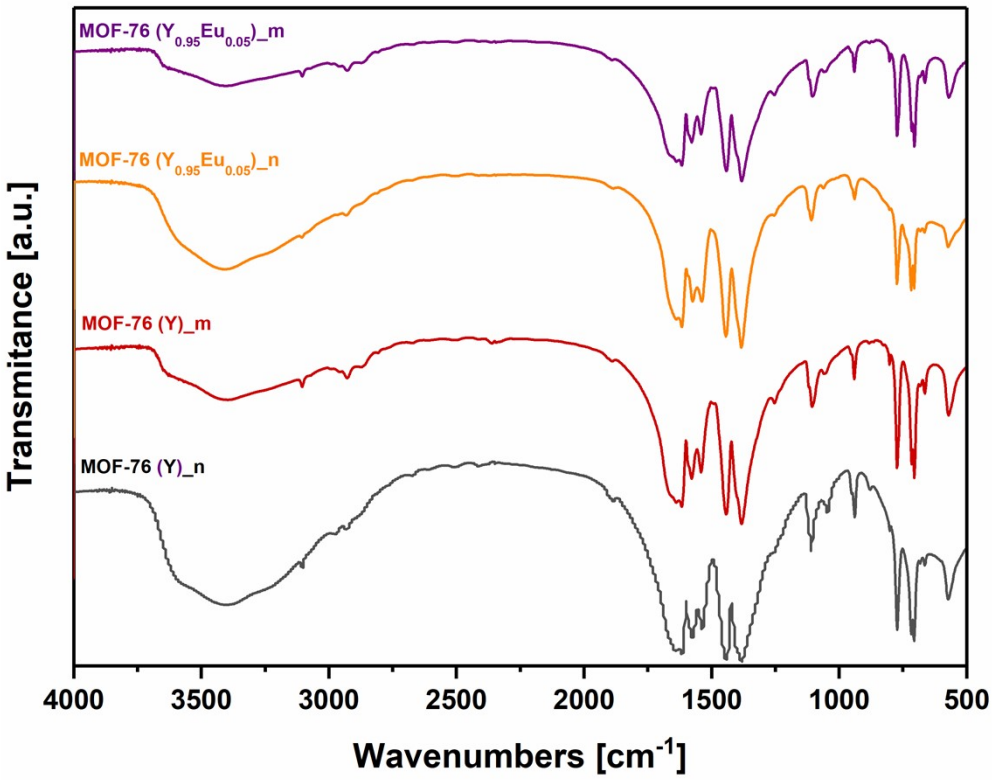


Figure S1. FTIR analysis of synthesized MOF-76($Y_{0.95}Eu_{0.05}$)_m, MOF-76($Y_{0.95}Eu_{0.05}$)_n, MOF-76(Y)_m and MOF-76(Y)_n.

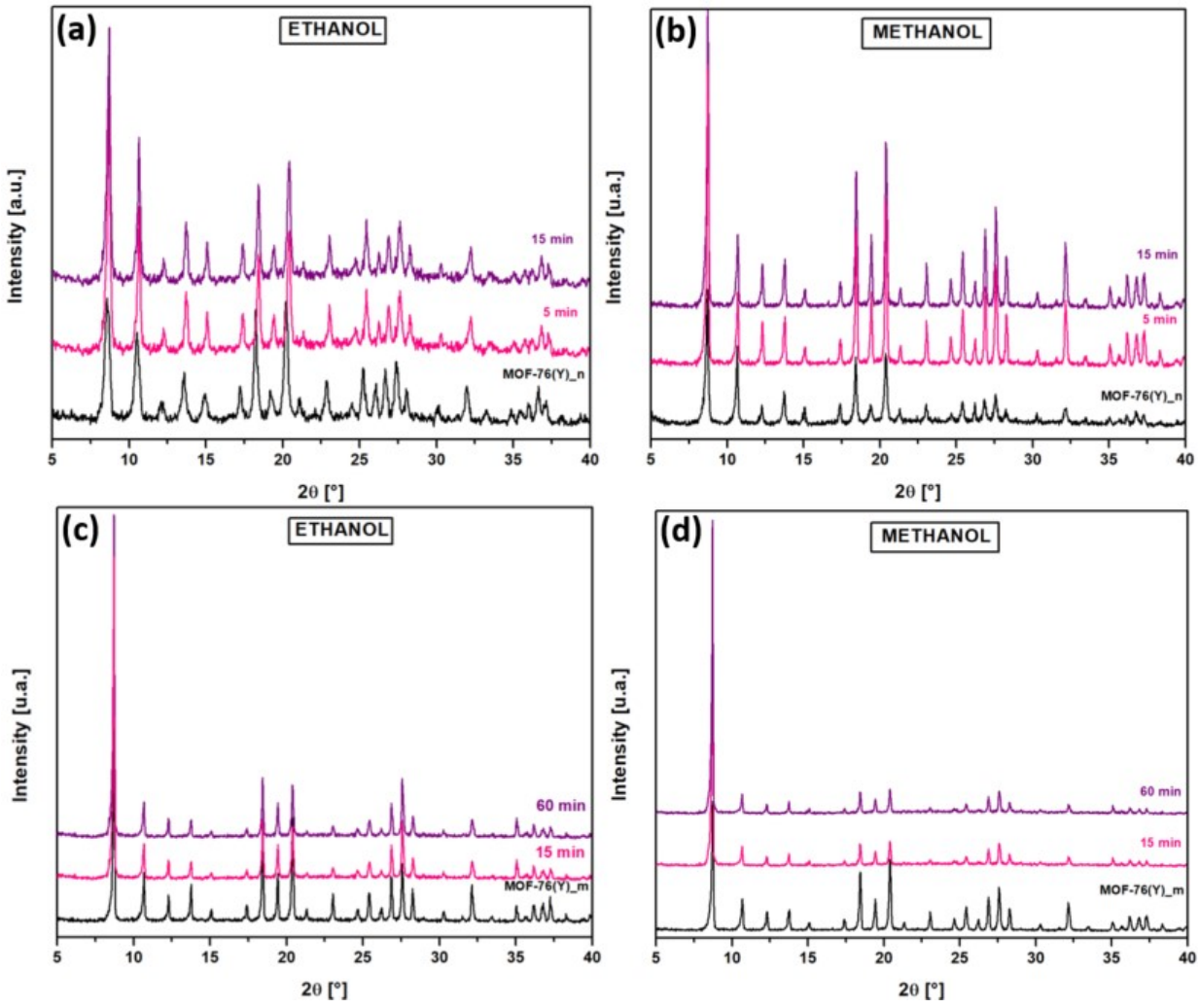


Figure S2. MOF-76(Y)_n sonicated in: (a) ethanol, (b) methanol. MOF-76(Y)_m sonicated in: (c) ethanol, (b) methanol.

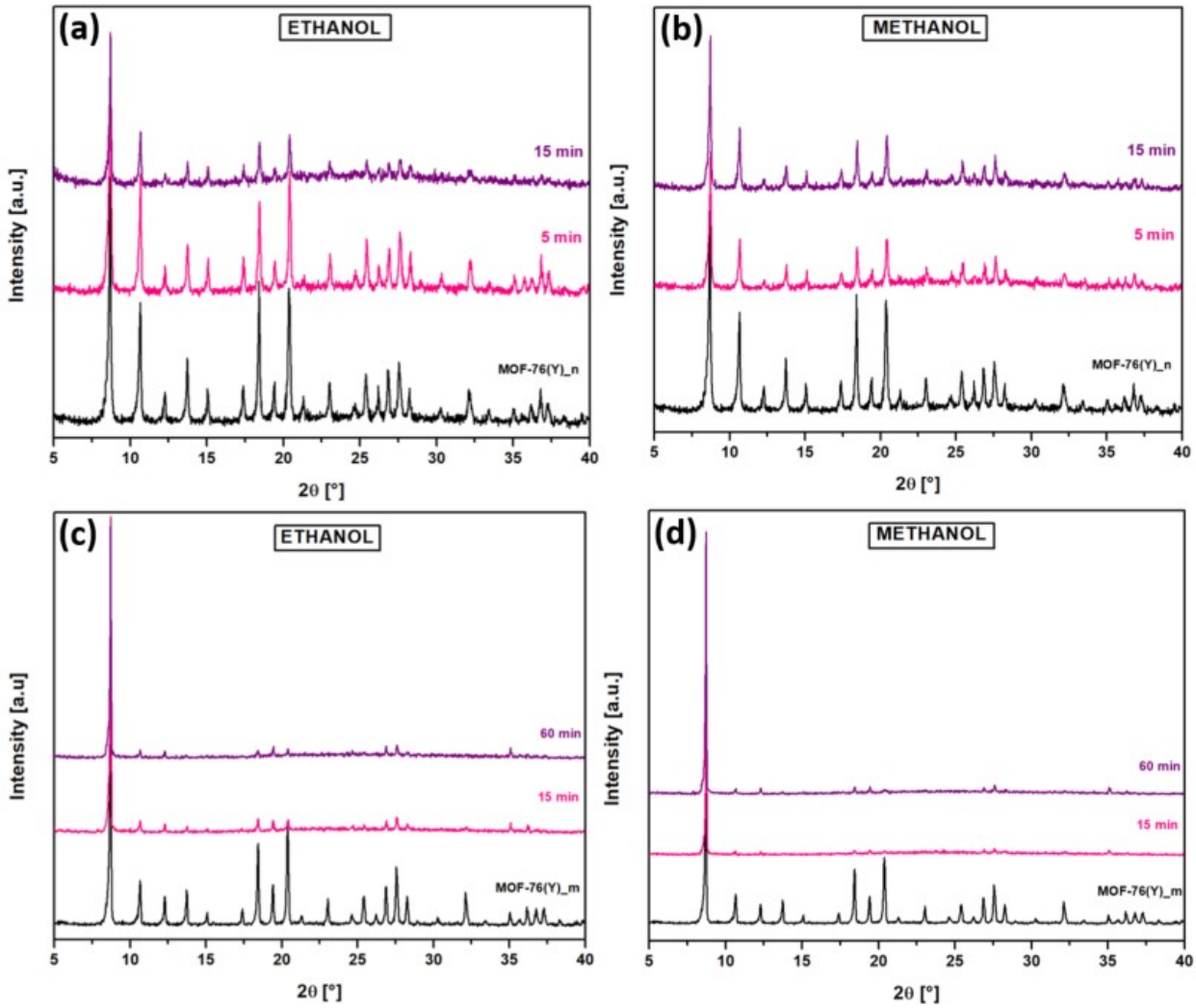
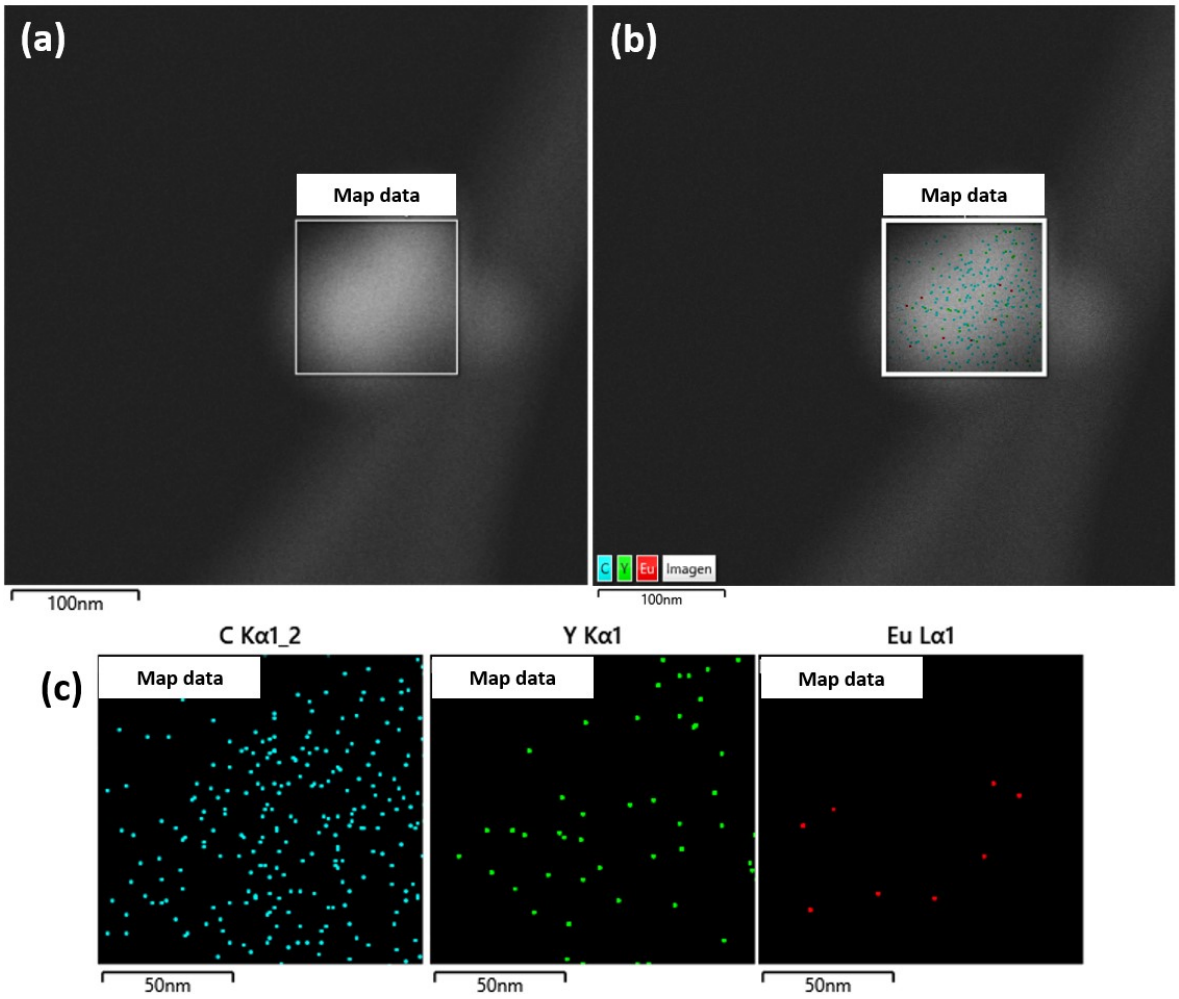


Figure S3. MOF-76(Y)_n immersed in: (a) ethanol, (b) methanol. MOF-76(Y)_m immersed in: (c) ethanol, (b) methanol.



Element	At%
Y	7.559
Eu	0.4101
Eu/Y ratio	0.054

Figure S4. STEM-EDS mapping results, and chemical compositions of a separated nanocrystal of MOF-76($Y_{0.95}Eu_{0.05}$)_n.

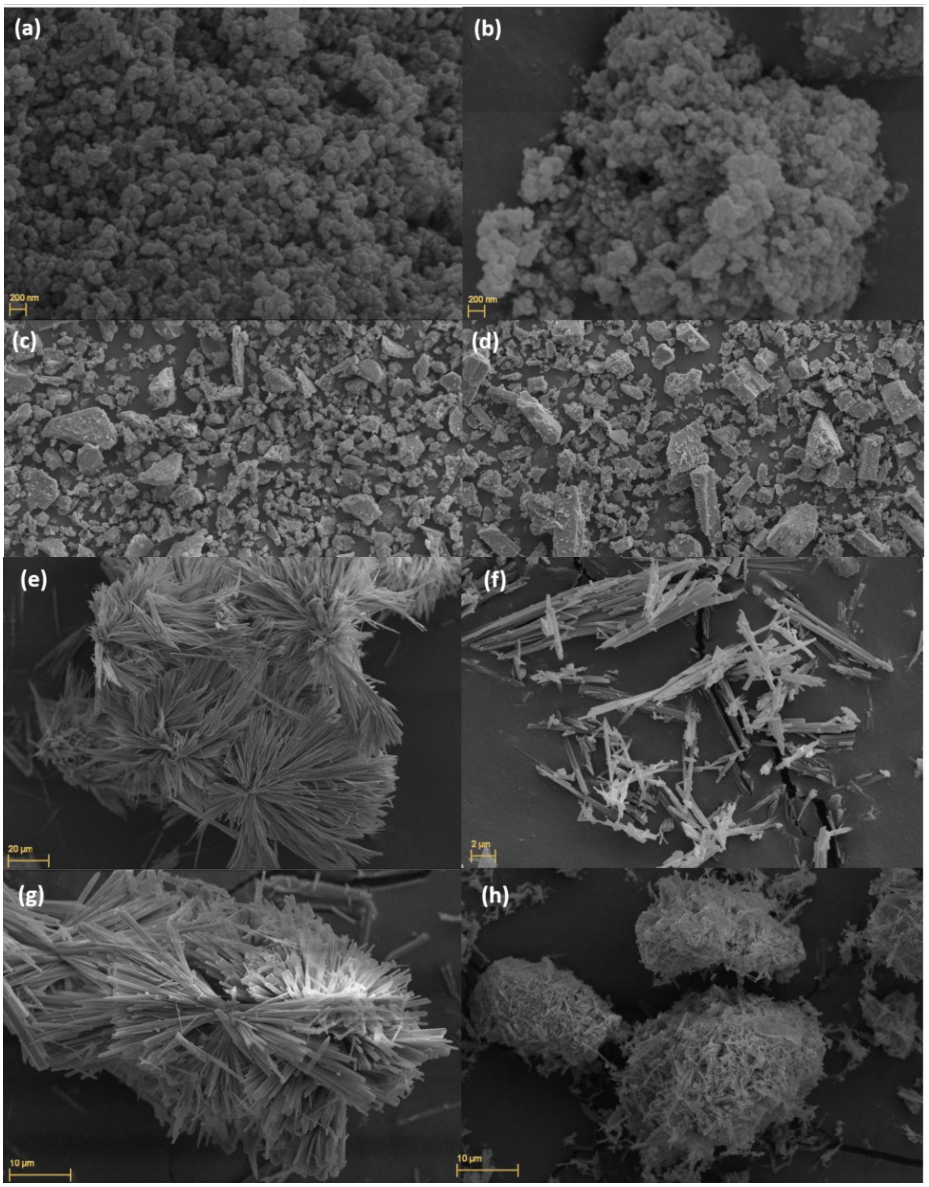


Figure S5. SEM images: (a) MOF-76(Y)_n 15 min, ultrasound in EtOH. (b) MOF-76(Y)_n 15 min, ultrasound in Methanol. (c) MOF-76(Y)_m 60 min, ultrasound in EtOH. (d) MOF-76(Y)_m 60 min, ultrasound in Methanol. (e) MOF-76(Y)_n 15 min, without ultrasound in H_2O. (f) MOF-76(Y)_n 15 min, ultrasound in H_2O. (g) MOF-76(Y)_m 60 min, without ultrasound in H_2O. (h) MOF-76(Y)_m 60 min, ultrasound in H_2O.

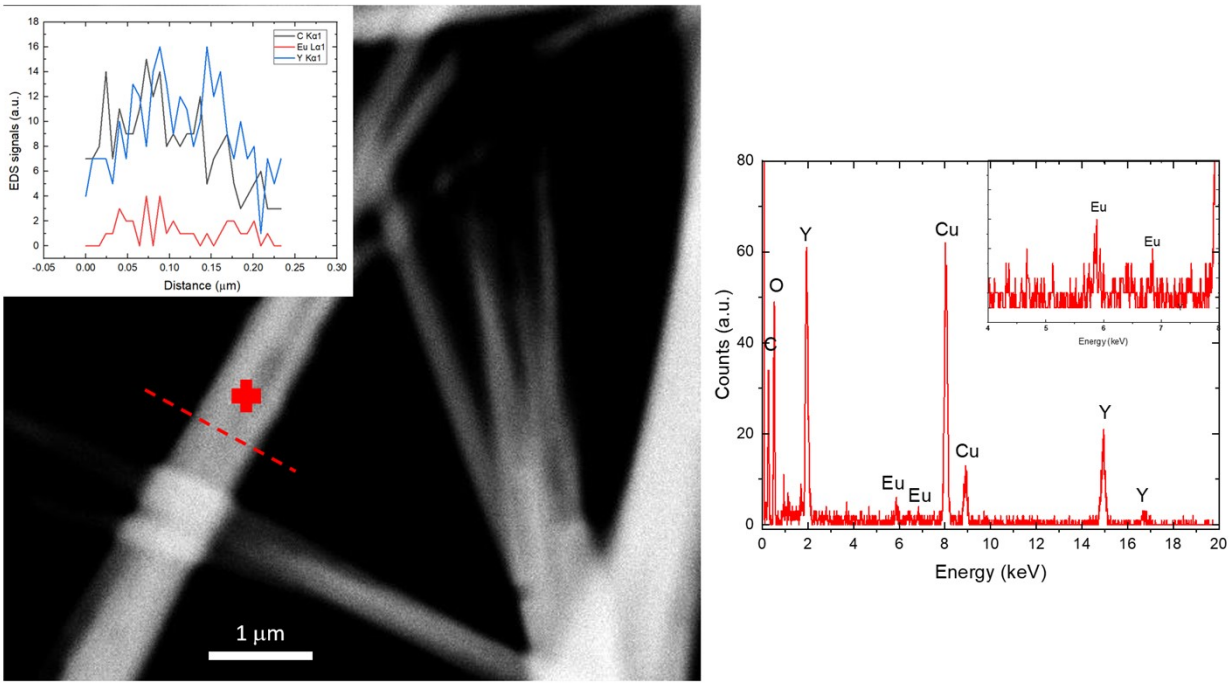


Figure S6. STEM-EDS spectra, line scanning profiles, and chemical compositions of a separated nanocrystal of MOF-76($Y_{0.95}Eu_{0.05}$)_n sonicated for 15 min in H2O. *Copper signal comes from the TEM grid.

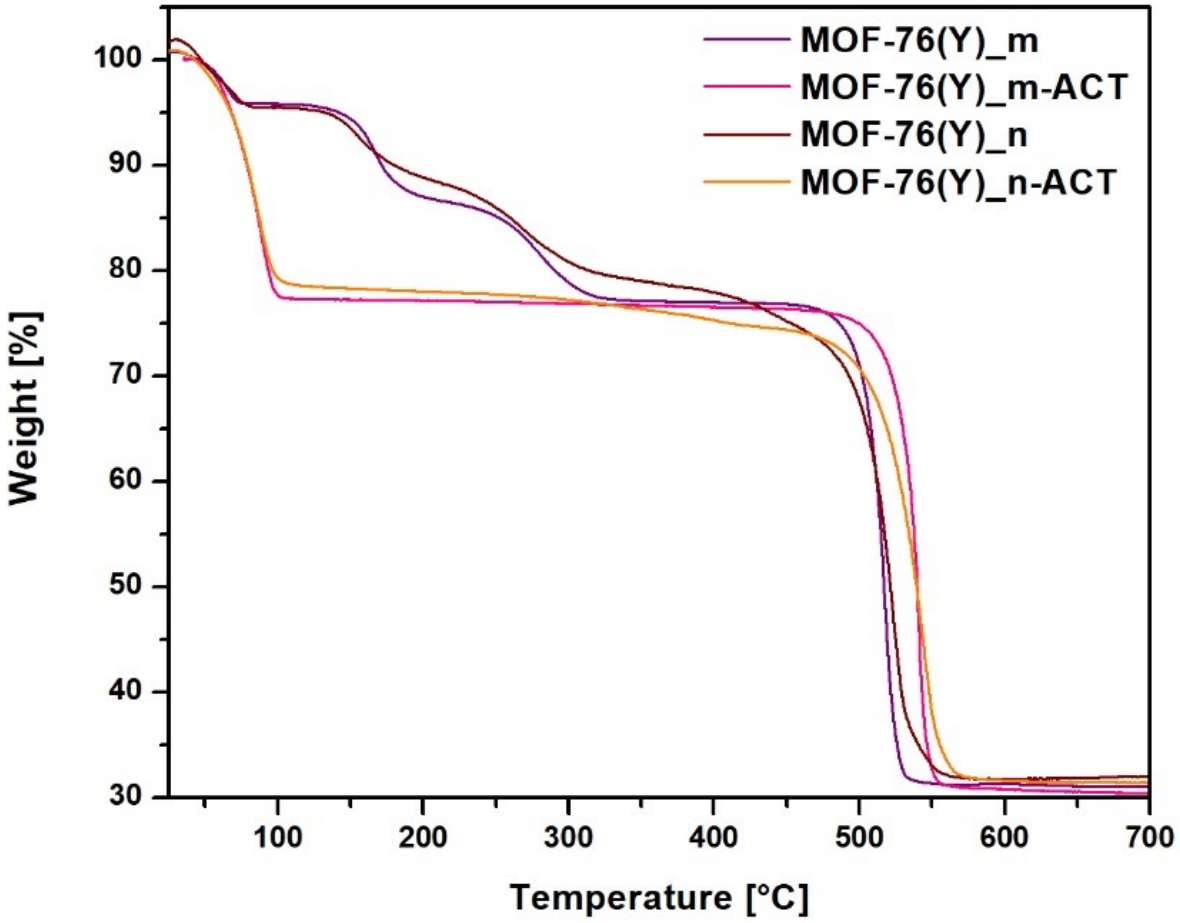


Figure S7. Thermogravimetric analysis of nanocrystalline MOF-76(Y)_n and microcrystalline MOF-76(Y)_m before and after activation.

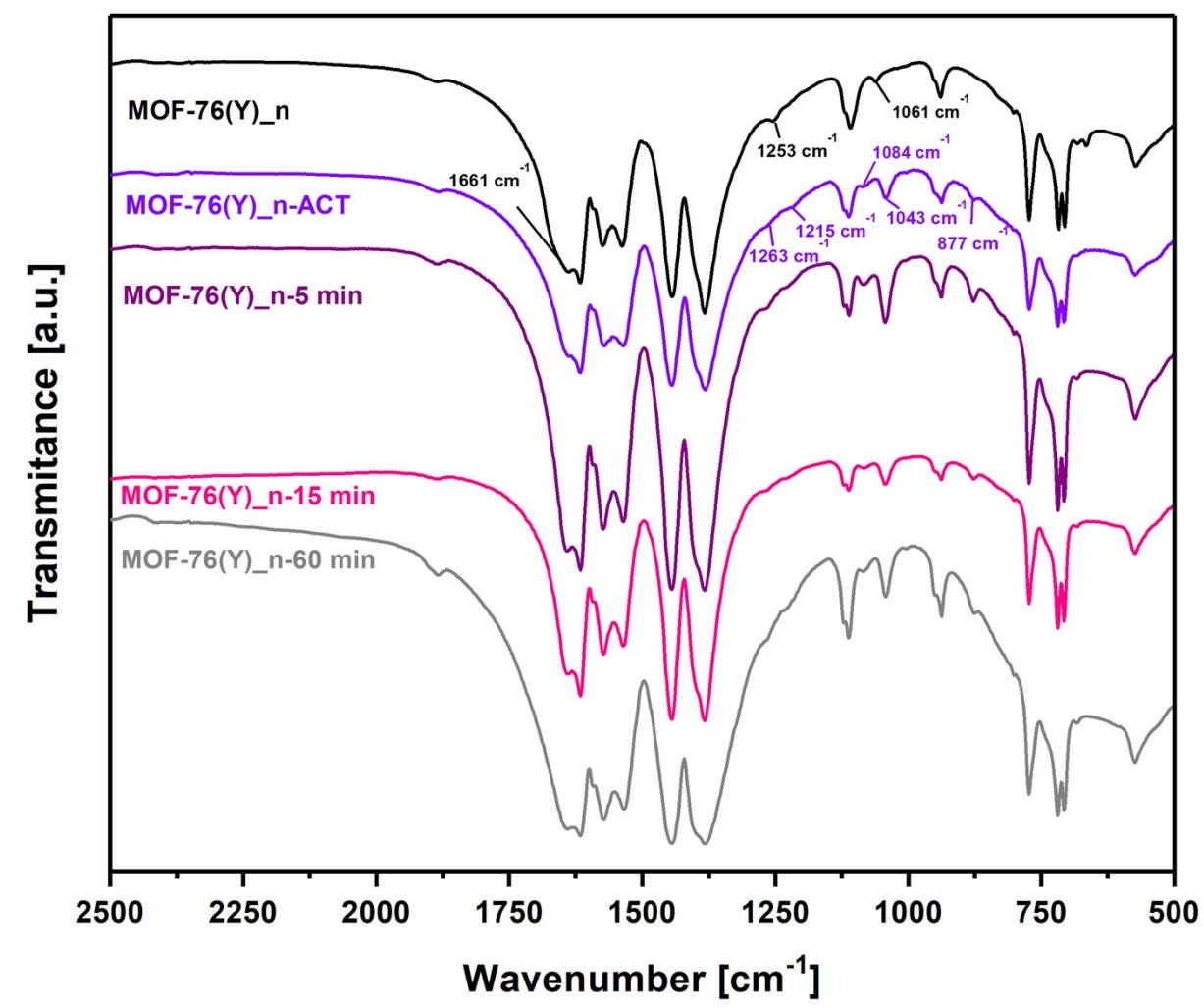


Figure S7. FTIR analysis of nanocrystalline MOF-76(Y)_n before and after activation, and of the same activated material at different treatment times in water and ultrasound.