A water-based and high space-time yield synthetic route to MOF Ni_2(dhtp) and its linker 2,5-dihydroxyterephthalic acid.

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Supplementary information

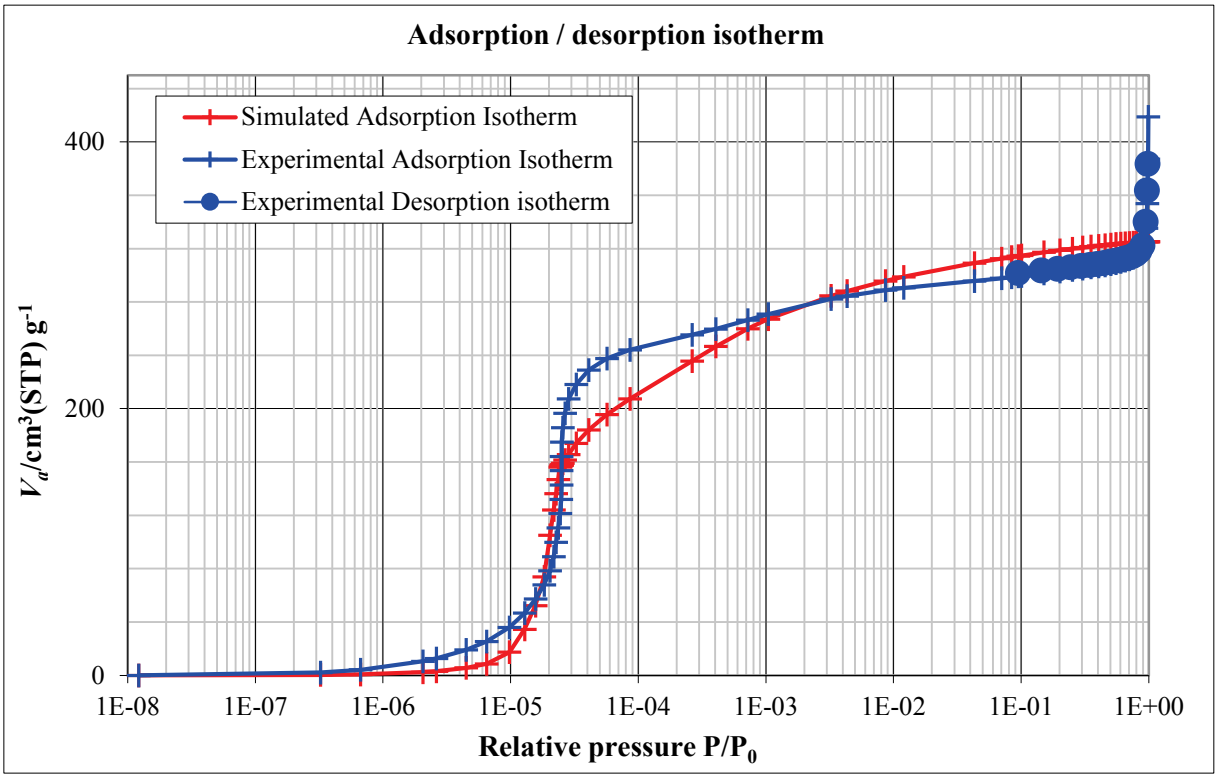

Figure S1: Experimental nitrogen adsorption (blue crosses) and desorption (blue dots) isotherms at 77K for MOF Ni_2(dhtp) synthetized in water, and simulated adsorption isotherm (red curve) obtained using the NLDFT simulation method[S1-S11].

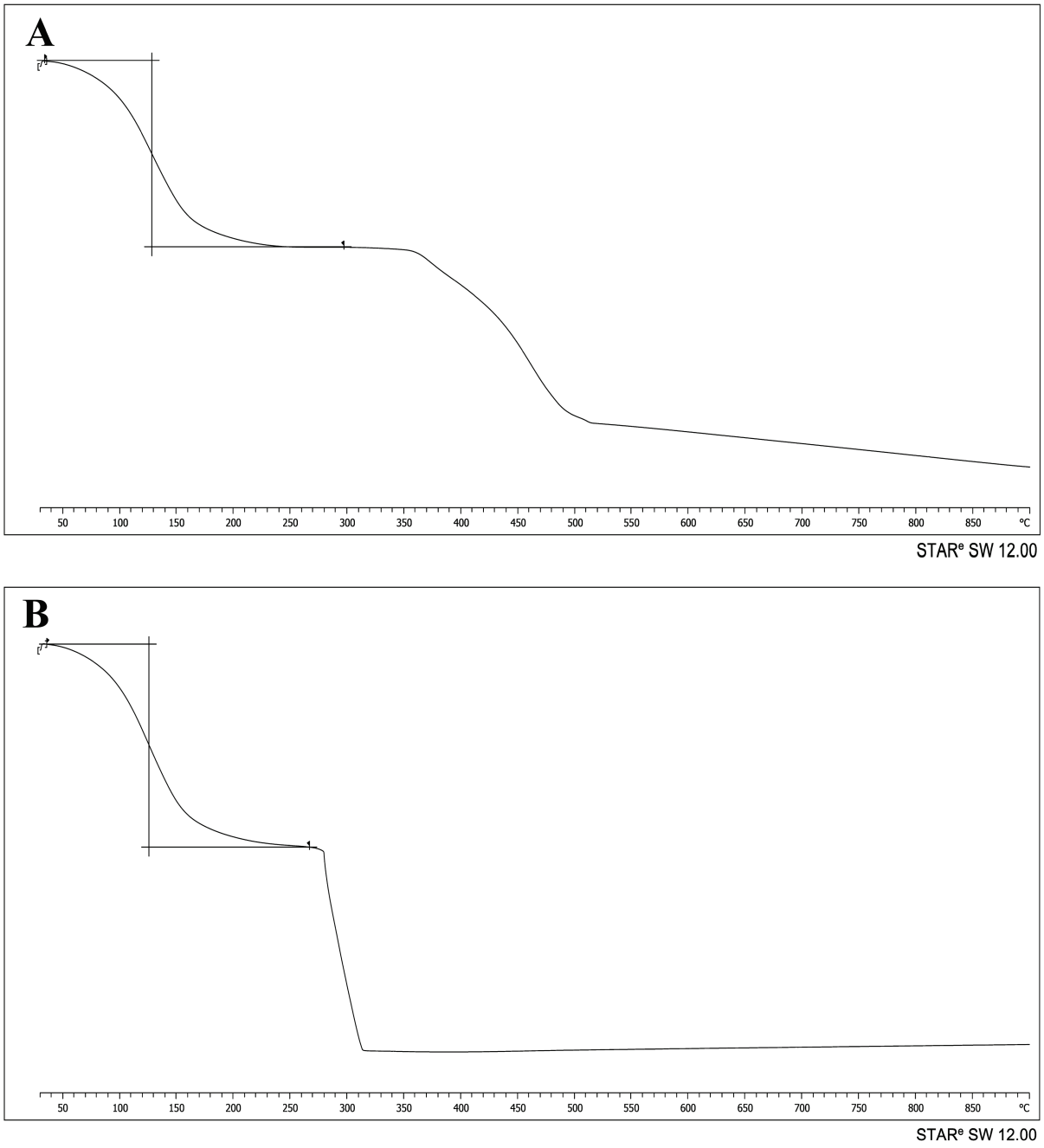

Figure S2: Thermogravimetric analysis of MOF Ni_2(dhtp) synthetized in water measured under N_2 (**A**) and under air (**B**).

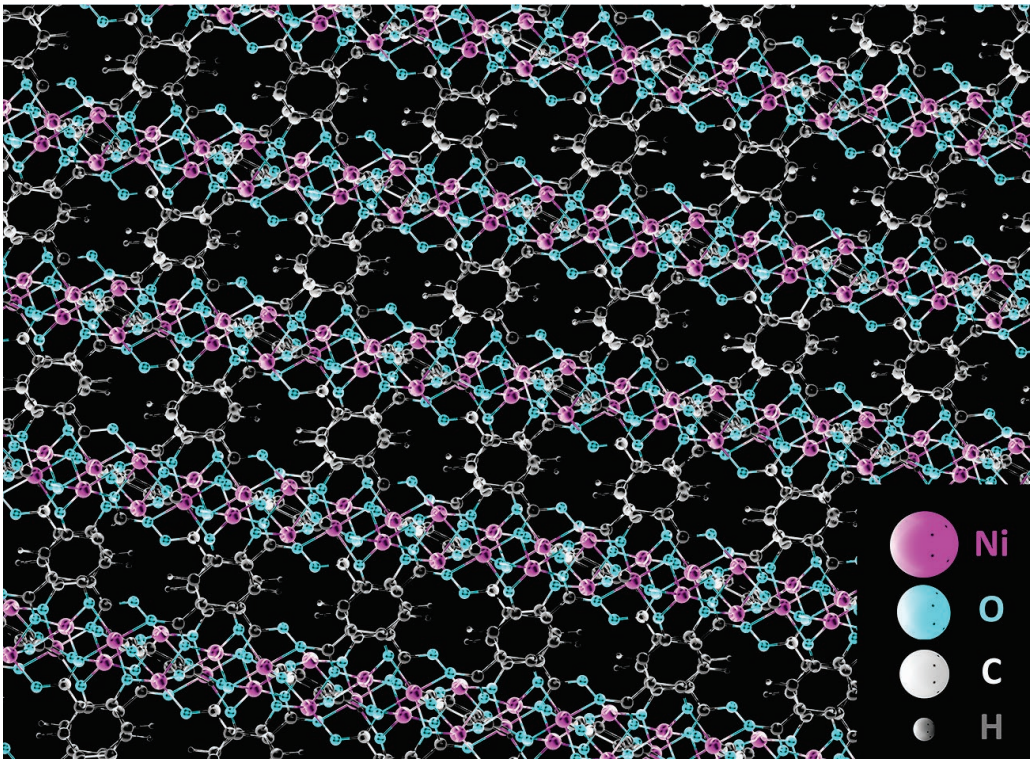

Figure S3: Chemical Structure of Ni_2(dhtp) drawn using the available crystallographic data[S12] and oriented toward the (-120) plane, matching the observed HRTEM micrograph reported in **Figure 4A**)

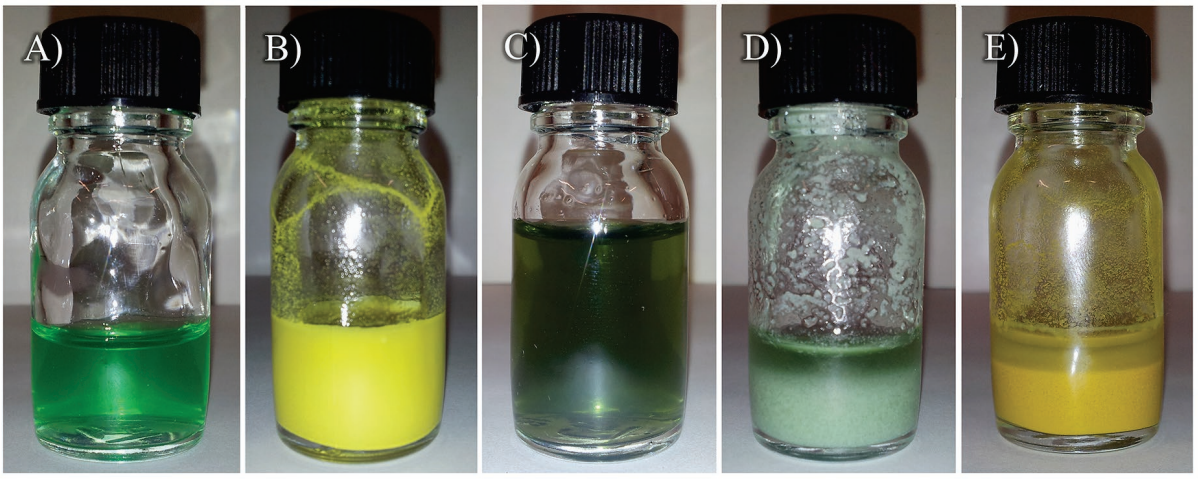

Figure S4: Photographs of samples taken at different steps of the Ni_2(dhtp) synthesis in water (**A**: 1M aqueous solution of nickel (II) acetate; **B**: suspension of 2,5-dihydroxyterephthalic acid in water; **C**: homogeneous solution obtained by mixing A and B; **D**: precipitate obtained from solution C at room temperature; **E**: Ni_2(dhtp) obtained from solution C after 1h under reflux.

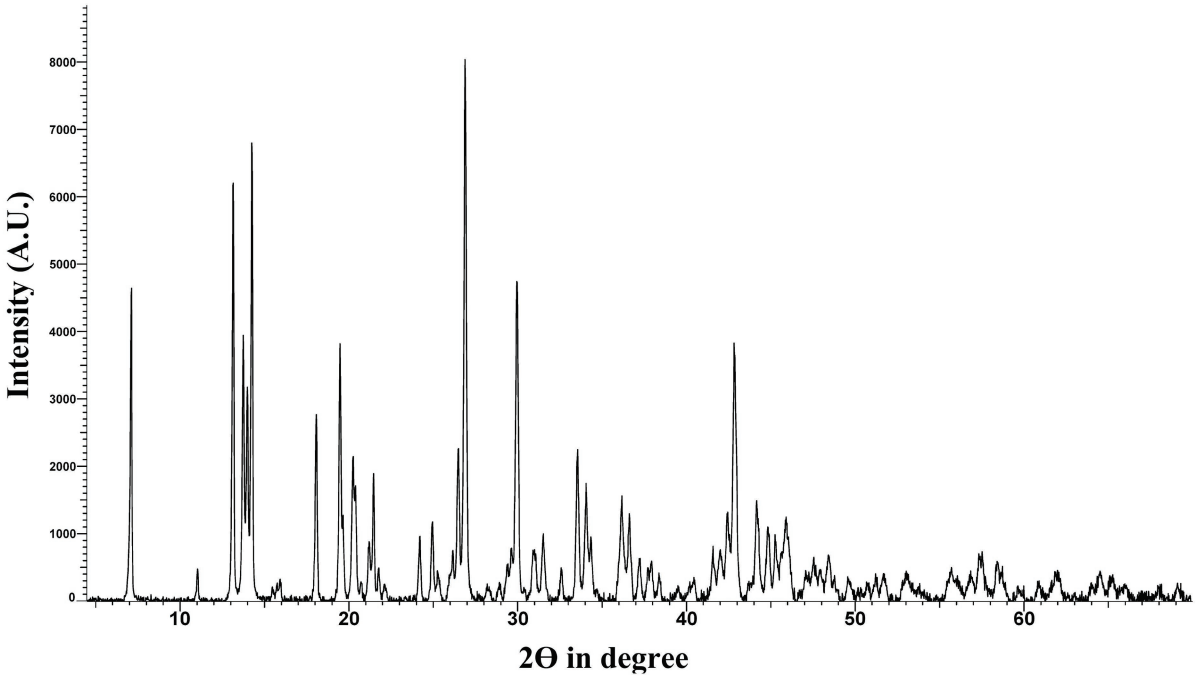

Figure S5: X-ray diffraction pattern of the intermediate which precipitate at room temperature from the solution obtained by mixing nickel acetate and 2,5-dihydroxyterephthalic acid in water (corresponding to **Figure S4 D**).

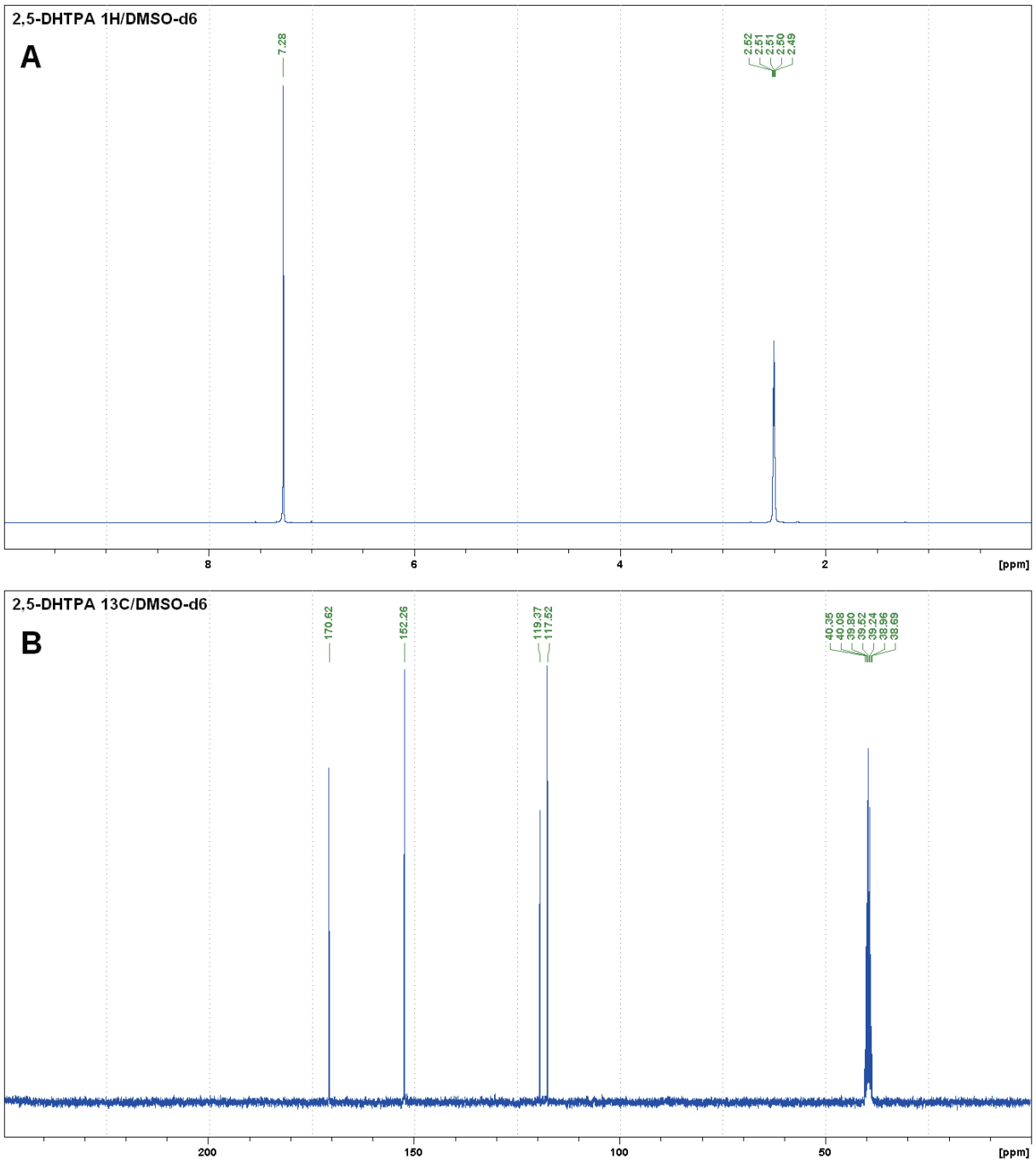

Figure S6: A: ^{1}H NMR and **B:** ^{13}C NMR spectra (in DMSO-d^6) of the 2,5-dihydroxyterephthalic acid synthetized by hydroquinone dicarboxylation (see **Scheme 2**).

Notes and references

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