

Supporting Information for:

Sensing Capacity in Dysprosium Metal–Organic Frameworks Based on 5-Aminoisophthalic Acid Ligand

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S1. PXRD data for compounds 1 and 2.

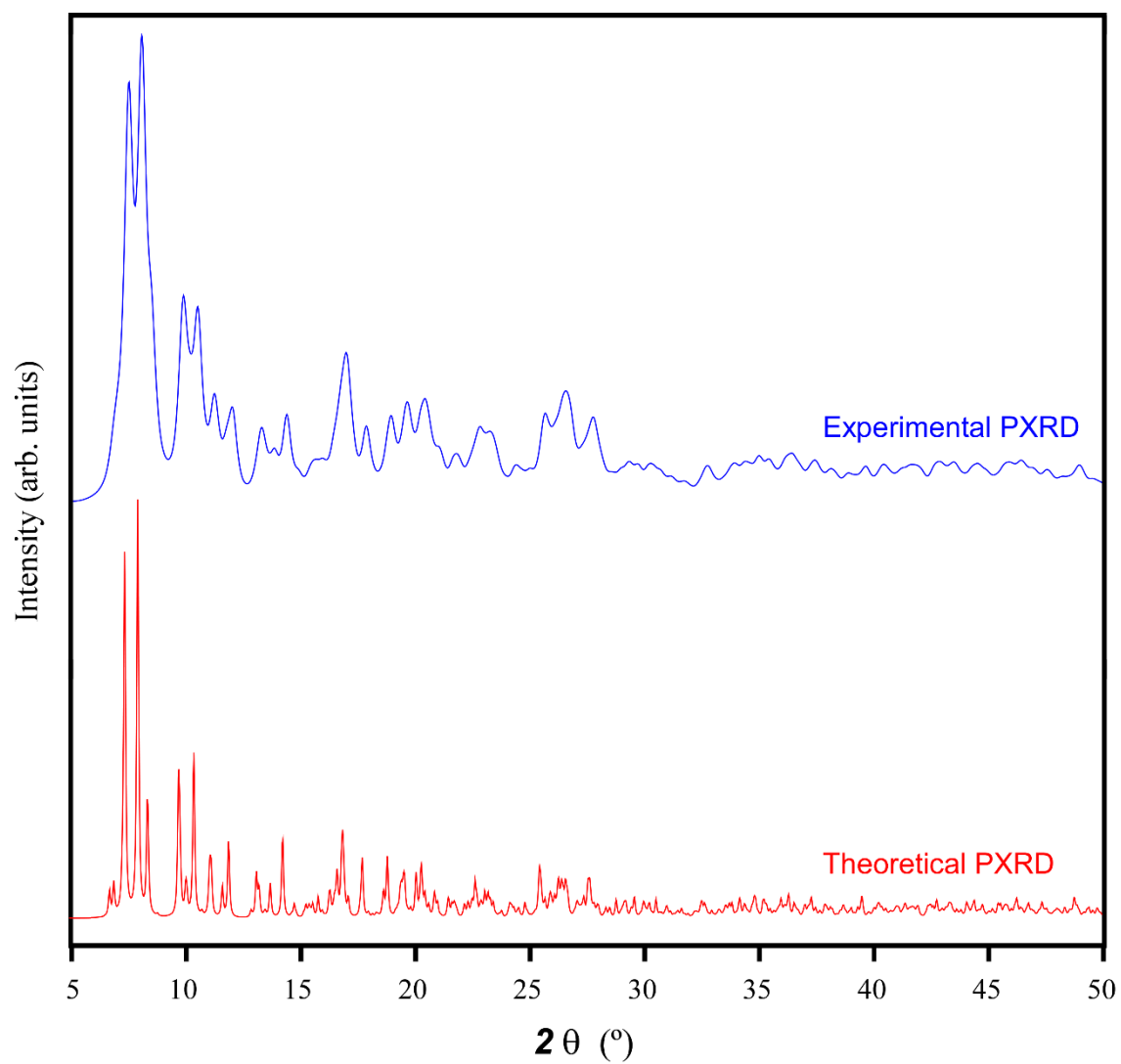


Figure S1. Comparison of the PXRD data of compound 1.

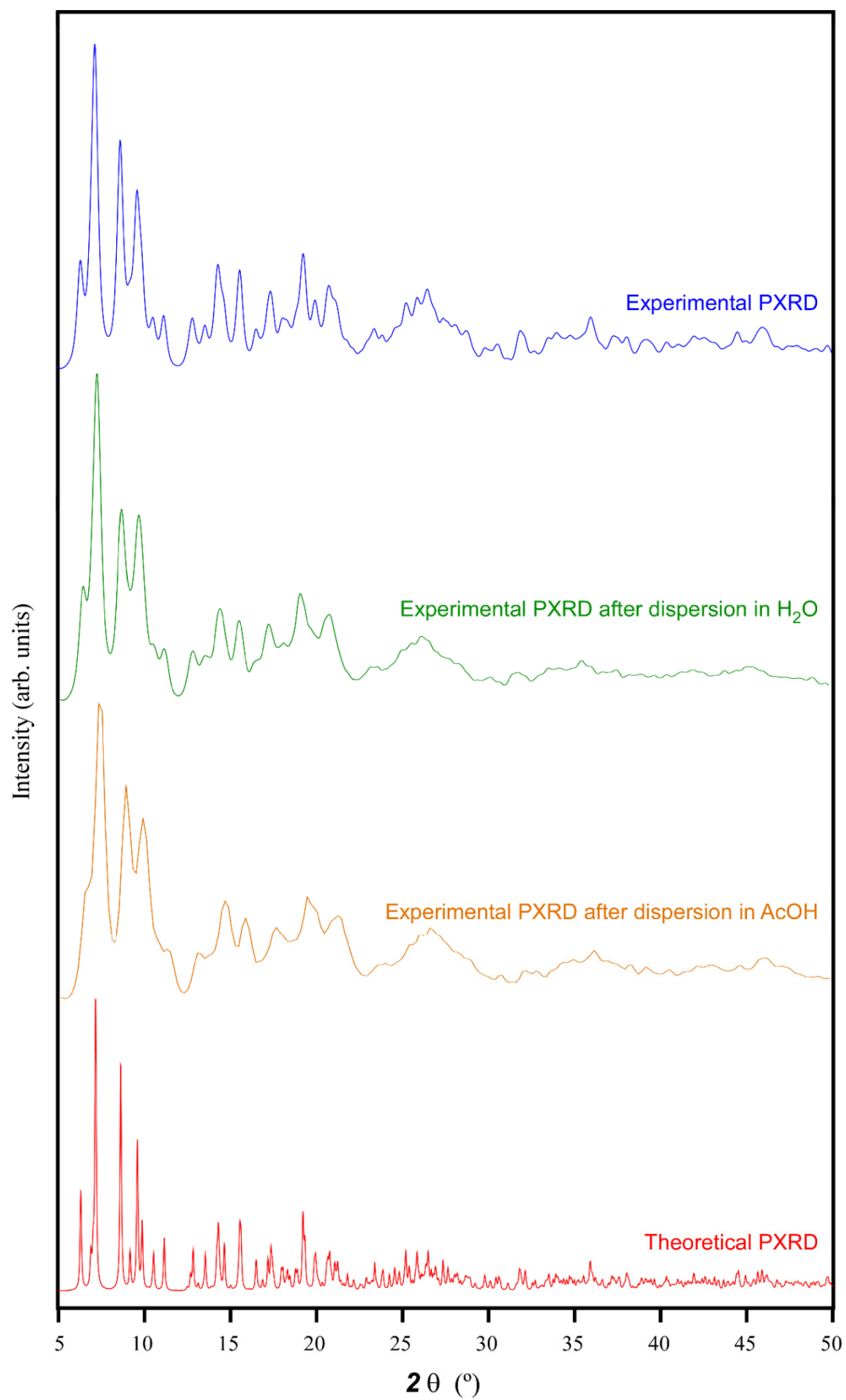


Figure S2. Comparison of the PXRD data of compound 2.

S2. Thermogravimetric measurements.

The thermogravimetric data of compounds **1** and **2** reveal a distinct decomposition behavior that is in agreement with their crystal structure. On the one hand, compound **1** presents a first mass loss, corresponding to the lattice solvent molecules, between 40 and 250 °C. Thereafter, a small plateau appears up to 420 °C, above which the 2D-layered structure starts to decompose, giving rise to Dy_2O_3 as the final residue. Despite the fact that the 2D-layered structure retains its integrity (referred to as the mass percentage) between 250 and 420 °C of temperature range, the partially desolvated compound is completely amorphous, meaning that the ordered structure of the MOF is lost upon heating, a fact that precludes its further activity as a gas adsorbent. On the other hand, compound **2** shows two steps corresponding to the loss of the lattice water molecules (in the 30–120 °C range) and to the release of the lattice DMF and coordination water molecules (in the 130–420 °C range). In this case, the temperature at which the structure could be activated (when voids would be empty) is not clear given the absence of a plateau. All efforts to correctly activate the MOF by heating it gave rise to amorphous solids; therefore, no further analysis of its porosity was performed.

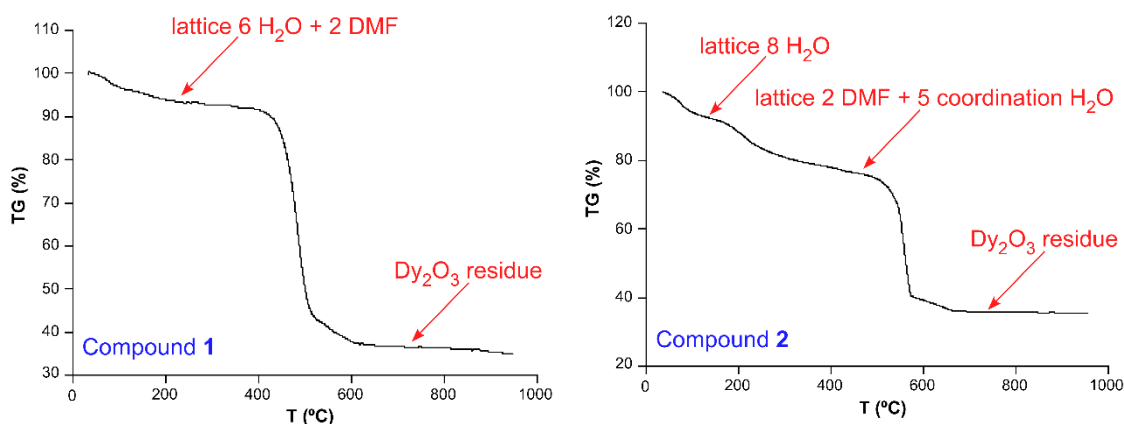
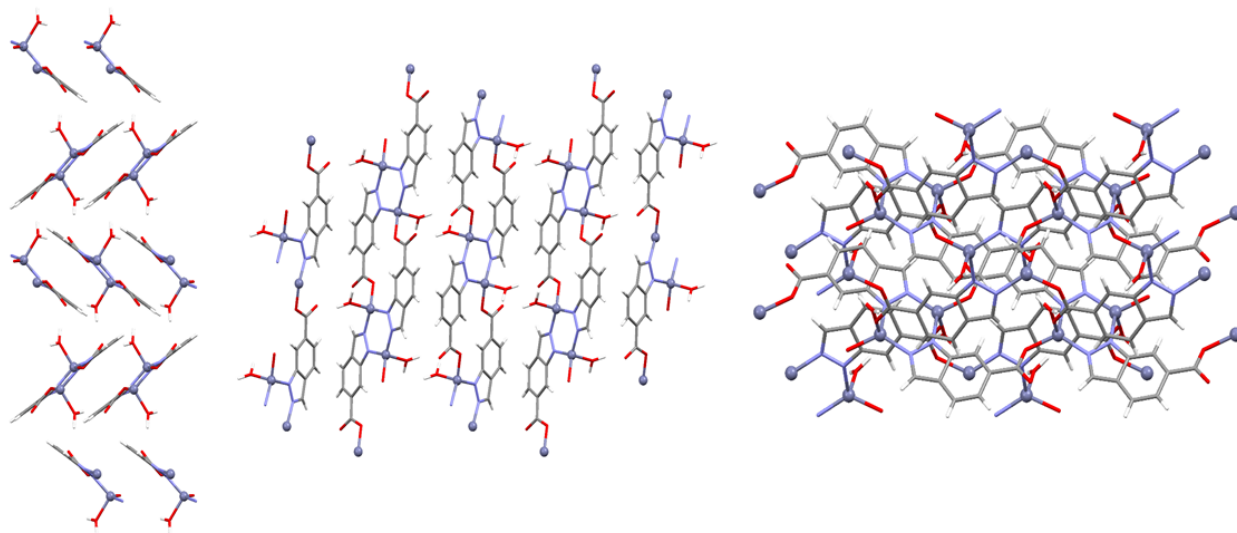
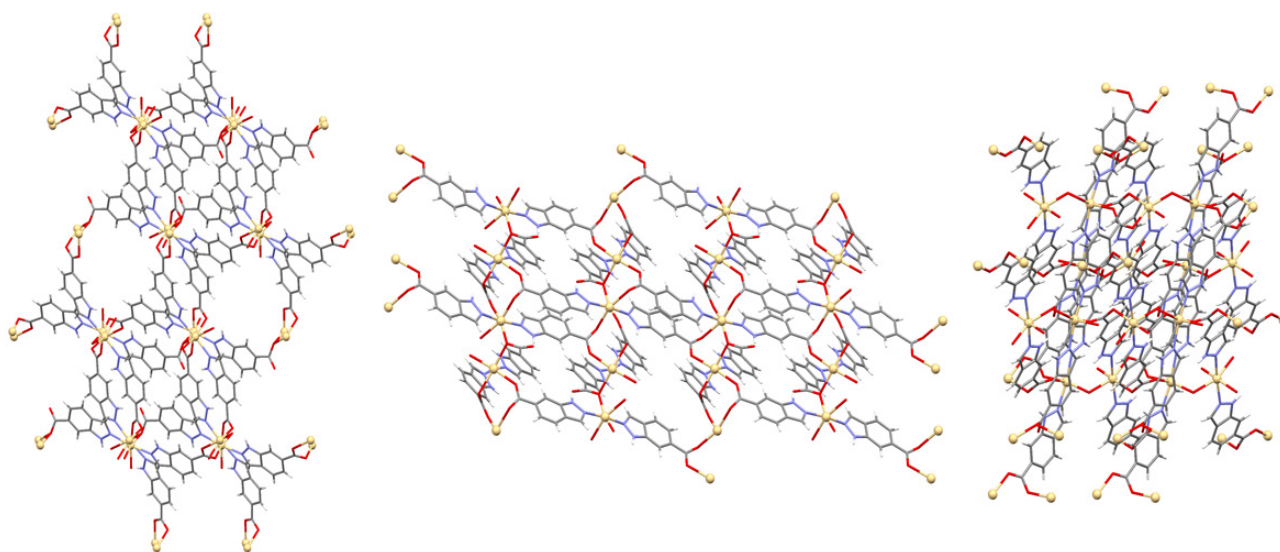


Figure S3. Thermogravimetric profiles of compounds **1** and **2**.

View along the a, b and c axes.



Compound 1



Compound 2

Figure S4. View along a (left), b (middle) and c (right) axis of compound 1 (above) and compound 2 (below).



Figure S5. Paper analytical device development

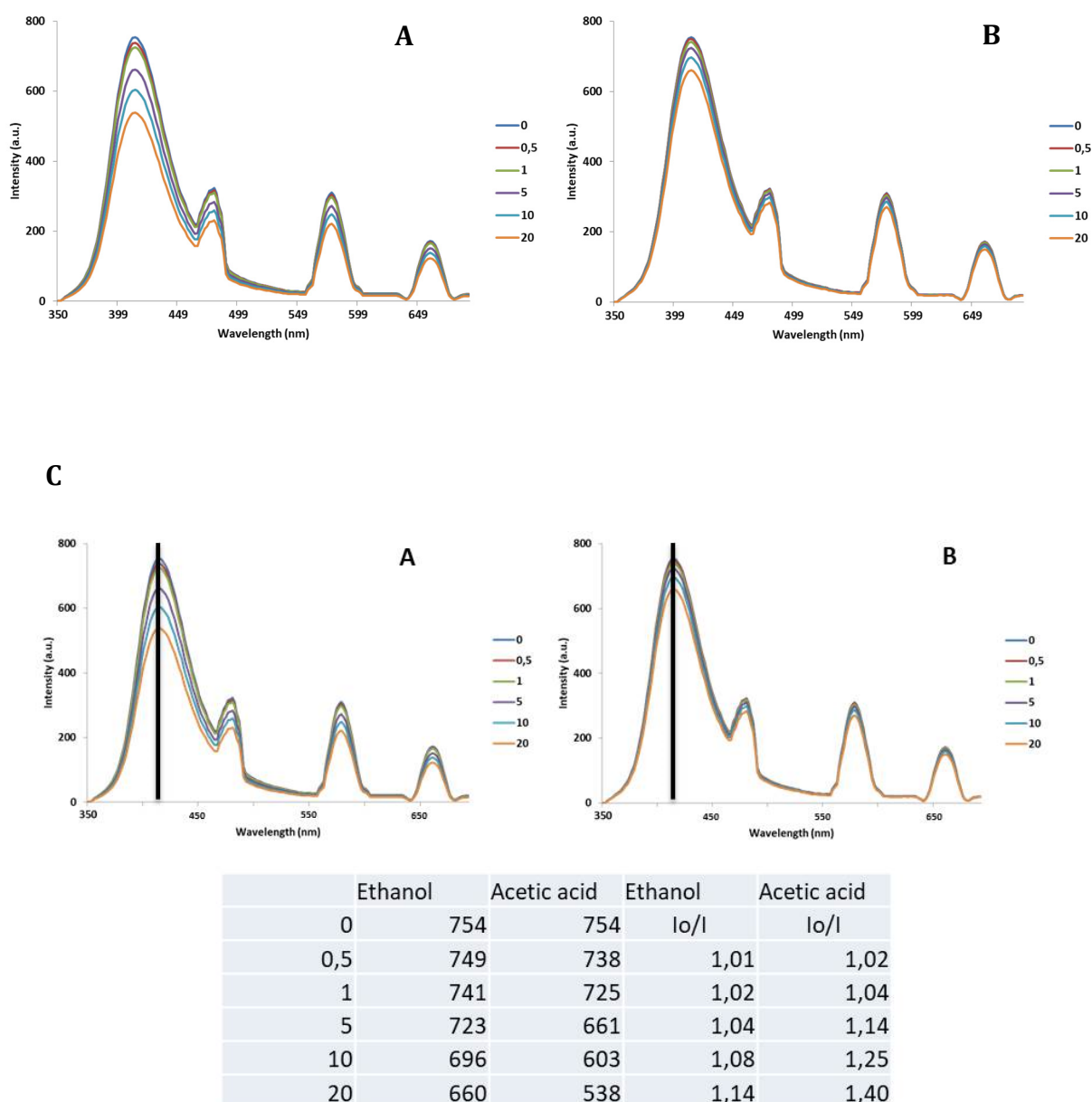


Figure S6. Spectrum emission using the test paper, with compound **2** for acetic acid (A) and ethanol (B). Conditions for fluorescence excitation at 325 nm, with intensity based (Io/I) at a maximum peak emission of 410 nm (C).