

metal diphosphonates and found to bind strongly to numerous metal ions.

Following with our line of work, we have synthesized one new member of this family, $[H_3N(CH_2)_4NH_3]Y[hedpH][hedpH_2]$, with Y as central atom, being found, as expected, that this new compound is isostructural to all the other members.

Here we present the synthesis, structural studies by single crystal and synchrotron powder x-ray diffraction, and characterization studies by SEM-EDX and TG-MS and DSC techniques.

Now, we are trying to obtain similar compounds with the other elements of Y group, to compare their structures.

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Keywords: yttrium phosphonates, crystal structure, thermal characterization.

MS66.P09

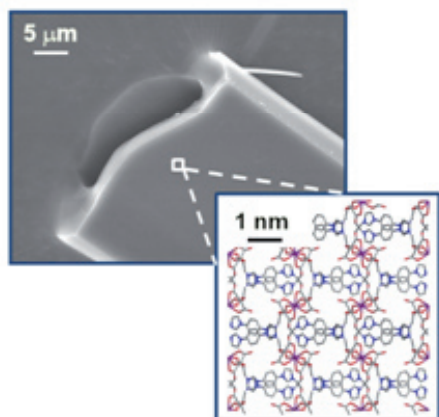
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Elaboration of nanoporous hydrogen-bonded Metal-Organic frameworks (MOF)

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During the last decade, the synthesis and the characterization of porous metal-organic frameworks (MOFs) have attracted much attention owing to their potential applications in gas storage, sensing, catalysis or as functional materials. MOFs reported in the literature are classically obtained through solvothermal synthesis, and result from the direct assembly of metal ions and bridging ligands yielding, during the association process, secondary building units that govern the final network topology.

Alternatively, an emerging trend towards the development of MOFs consists in using preformed complexes as building-blocks to assemble *via* coordination chemistry and/or charge assisted H-Bonding. These building units, which possess given geometries and linking abilities, form the nodes of the network, and contribute to govern the net topology in association with linkers such as metal ions or organic molecules. We have shown charge assisted H-Bonding to be valuable to design open-framework architectures [1,2]. These compounds were characterized by single crystal X-ray crystallography. In this communication, recent striking results obtained using this



approach will be presented: supramolecular architectures with interesting sorption properties [3] and crystal morphology control to afford supramolecular materials showing hierarchical porosity [4].

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Keywords: MOF, X-Ray, structure

MS66.P10

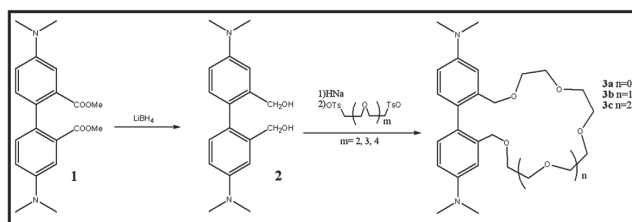
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Electrochemical and Photophysical Sensors derived from biphenyl. Structural Studies

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Chemosensors containing in their structures biphenyl moieties have demonstrated to be useful systems for both anion and cation sensing. First of all, modifications in the dihedral angle between the aromatic rings in the biphenyl structure have strong influence on the photophysical properties of the compound [1]. Secondly, appropriately substituted biphenyls present interesting electrochemical properties that can be modulated by the presence of different analytes [2]. In order to connect the recognition event with the transduction mechanism (modification of the dihedral angle), coronands directly bond to the 2,2' position of the 4,4'-Bis(dimethylamino)phenyl have been prepared. Varying the number of oxygens in the crown ether, changes the size of the cavity enabling a selective answer by the sensor between different cations [3]. As there is a clear relationship between ligand and complex conformations and their photophysical or electrochemical properties [4], a comparative crystallography study between different related compounds has been carried out. Dihedral angle between planar aromatics was 81.7°, 72.7° and 83.6° for **3a**, **3b** and **3c** respectively. For compound **1**, dihedral angles between aryl groups was 56.5° 56.2°, and 88.7° for compound **2**.

Moreover, a structural study with quantum chemical calculations of these sensors using density functional methods will be done.



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Keywords: sensor, crystallography, angle.