**Poster Presentation**

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*Crystalline versus amourphos 1D to 3D Coordination Polymer transformations*

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We have reported several 1D, 2D and 3D coordination polymers based on diphosphinic acid (pcp= P,P'-diphenylmethylenediphosphate or pc2p= P,P'-diphenylethylenediphosphate) and in some cases we have described crystal-crystal transformation induced by temperature and by water [1]. For instance the Metal Organic NanoTube (MONT) [[Cu2(bpye)(pcp)2] 2.5H2O]n (bpye = 1,2-bis(4-pyridyl)ethane)) is converted in the 1D slab[Cu2(bpye)(pc2p)2](H2O)]n in water while the isostructural MONT [[Cu2(bipy)(pcp)2] 5H2O]n (bipy = (4, 4' bi- pyridine)) remain unaltered.[2]
In this work, we report the different behaviour, under heating, of three 1D coordination polymers, namely [Ni(H2O)4(bipy)•pc2p]n, 1, [Ni(H2O)4(bpye)•pc2p]n, 2, and [Ni(H2O)4(bpe)•pc2p]n, 3 (bpe = 1,2-bis(4-pyridyl)ethene)). For 1, only an amorphous phase was obtained, while in case of 2 an anhydrous crystalline 3D coordination polymer was detected. Finally for 3, we have obtained a monohydrated [Ni(H2O)(bpe)pc2p]n and an anhydrous [Ni(bpe)pc2p]n phase. An interpretation based on the length of the bipyridine as well as on the role of supramolecular interactions will be given.
[1] Costantino, F., Ienco, A., Taddei, M. (2015) Tailored Organic–Inorganic Materials edited by Ernesto Brunet, Jorge L. Colón and Abraham Clearfield , Wiley, .
[2] Taddei, M., Ienco A., Costantino, F., Guerri, A., (2013), RSC Adv, 3, 26177-26183.
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