

Poster Presentation

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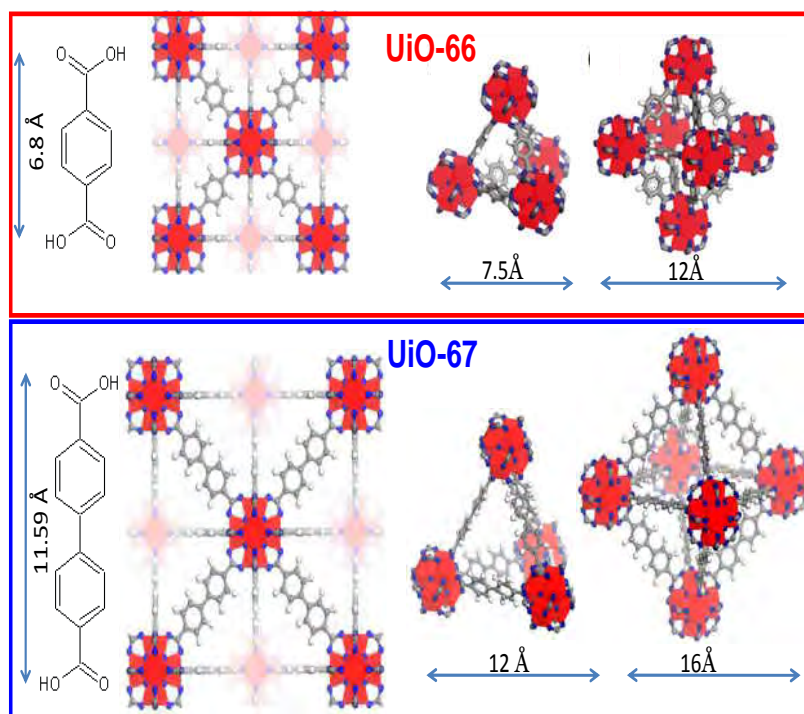
Combined XRD and EXAFS characterization of UiO-66 and functionalized UiO-67 MOFs

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The recently discovered UiO-66 (UiO-67) class of isostructural metallorganic frameworks (MOFs) are obtained connecting Zr₆O₄(OH)₄ inorganic cornerstones with 1,4-benzene-dicarboxylate (4,4' biphenyl-dicarboxylate) as linker resulting in a cubic framework [1]. This family of MOFs has attracted great interest because of its remarkable stability at high temperatures, high pressures and in presence of different solvents, acids and bases [2]. Industrial applications in the fields of catalysis, H₂ storage, gas purification and, for the isostructural Hf form, interim radioactive waste scavenging. For these potentialities UiO-66 is one of the very few MOFs that have already been successfully commercialized. In this presentation we will show how the synergic refinement of XRPD and EXAFS data resulted in the structural determination of UiO-66/67 [1-3] and we will report new combined synchrotron radiation single crystal XRD and EXAFS data allowing the structure determination of new metal-functionalized UiO-67 of potential high industrial impact because aimed in heterogenization of homogeneous catalytic reactions.

[1] J. Cavka, S. Jakobsen, U. Olsbye et al., *J. Am. Chem. Soc.*, 2008, 130, 13850-13851, [2] L. Valenzano, B. Civaleri, S. Chavan et al., *Chem. Mater.*, 2011, 23, 1700-1718, [3] S. Jakobsen, D. Gianolio, D. S. Wragg et al., *Phys. Rev. B*, 2012, 86, Art. n. 125429



Keywords: Metallorganic frameworks, XRD, EXAFS