



Simposio Internacional: Zeoforum: Foro sobre la innovación en zeolitas y materiales porosos ordenados

International Symposium: Zeoforum: Forum on innovation in zeolites and ordered porous materials

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Open the blackbox ! Some mechanisms of formation of porous solids.

G rard F rey

Porous solids are strategic materials and a tremendous number of new solids with interesting properties and applications are now described. Before being characterized, most of them are obtained by a trial and errors solvo/hydrothermal chemistry, without any experimental mechanistic approach, thus preventing from a truly rational 'tailor-made' synthesis of these important materials.

Using a series of complementary *in situ* techniques (NMR, X-ray and diffraction EXAFS, computer simulation...) for following *in real time* the reaction, , allows to shed some light on the steps of the formation of these solids from a supramolecular approach. This strategy is applied to both purely inorganic (metal phosphates) and hybrid inorganic-organic frameworks (MOFs). This lecture will show that, from these experimental results, a structural prediction of new structures becomes possible.

Some references.

NMR of microporous compounds: from in situ reactions to solid paving.

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M. HAOUAS, C. VOLKRINGER, T. LOISEAU, G. FER Y, F. TAULELLE.
Chem. Mater. . **24**, 2462-2471 (2012).

Hybrid Porous Solids : Past, Present, Future.

G. FER Y.

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