UNIVERSITAT DE BARCELONA

Departament de Química Inorgànica

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Notícies Inorgàniques

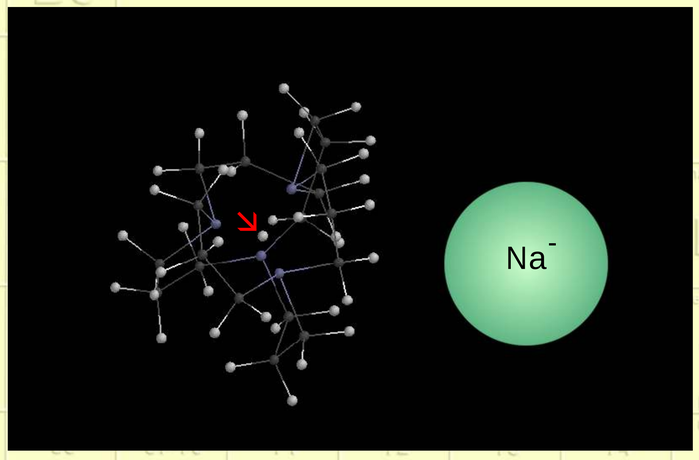
Any 1, Núm. 4, Juny de 2002

Anions metàl·lics *lliures*: Hidrur de sodi invers, H^+Na^-...

A crystalline salt containing H^+ and Na^- rather than the usual hydride oxidation states of H^- and Na^+ has been synthesised [M.Y. Redko *et al*., *J. Am. Chem Soc*. **124**, 5928 (2002)]. This has been achieved by the irreversible encapsulation of the H^+ species in 3^6adamanzane (Adz). This species is so kinetically resistant to deprotonation that it has allowed the isolation of the crystalline salt $AdzH^+Na^-$. The overall reaction is shown below:

$$AdzH^+HOCH_2CO_2^- + 3Na \rightarrow AdzH^+Na^- + NaOCH_2CO_2Na + 0.5H_2$$

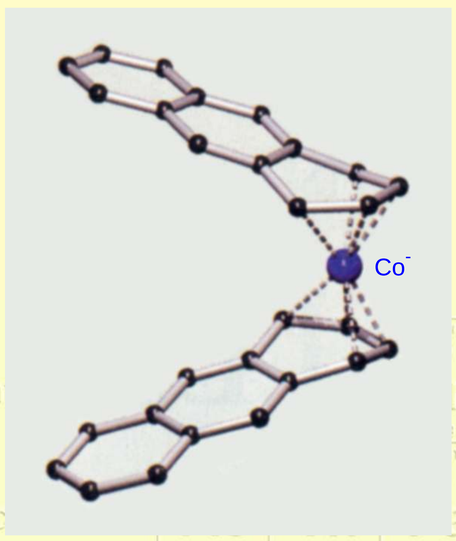
$AdzH^+Na^-$ has been characterised by ^{23}Na magic-angle spinning NMR spectroscopy: a peak at –61 ppm [relative to $Na^+(aq)$] is indicative of Na^-. In addition, the optical transmission spectrum exhibits an absorption peak at 810 nm that is also indicative of the Na^-.



Font: *The Alchemist*, 22 maig 2002.

… i transferència d'anions Co^-.

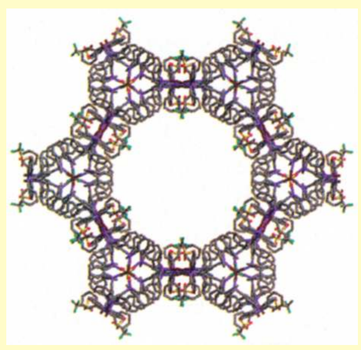
Professor John E. Ellis and coworkers (University of Minnesota) have prepared a bis(anthracene)cobaltate(-1) salt that functions as an effective and facile source of "naked" cobalt anions [*Angew. Chem. Int. Ed*., **41**, 1211 (2002)]. It reacts, for example, with 1,3,5,7-cyclooctatetraene (cot) to form the new low-valent complex $[Co(cot)_2]^-$.



Font: *Chem. Eng. News*, 1 abril 2002, 52

Polimer inorgànic constituït per fosfines

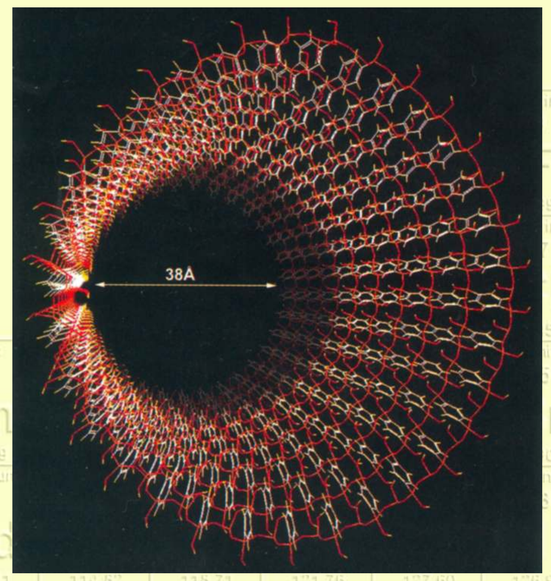
A novel type of metal-organic coordination framework material with unusually large pores has potential applications in catalysis, according to chemists in Northern Ireland [*Angew. Chem. Int. Ed.*, **41**, 764 (2002)]. Lecturer Stuart L. James and coworkers at Queen's University of Belfast synthesized a polymer consisting of trifluoromethane-sulfonate (O_3SCF_3) anions and silver cations connected by bridging triphosphine ligands [1,3,5-tris(diphenylphosphanyl)benzene]. The pores consist of hexagonal rings (shown), each of which contains 18 silver atoms and 12 triphosphine units.



Font: *Chem. Eng. News*, 4 març 2002, 35

Nous materials híbrids inorgànics-orgànics

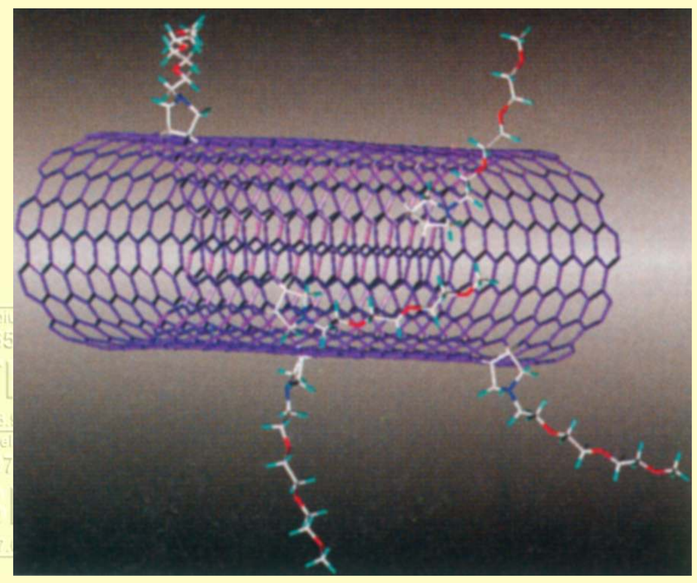
Benzene-silica hybrid assembles into a framework with crystalline pore walls. The new material exhibits the periodic array of medium-sized pores that have made inorganic mesoporous molecular sieves so useful. Most striking, the pore walls themselves are completely regular, composed of orderly layers of benzene rings linked to alternating layers of silicate chains. The benzene rings can be functionalized, opening the door to the vast range of organic transformations that can lead to specially tailored properties [*Nature*, **416,** 304 (2002)]. This material has a great potential as a solid acid catalyst for eco-friendly chemical processes and as an electrolyte for fuel cells.



Font: *Chem. Eng. News*, 25 març 2002, 8.

Els nanotubs de carboni ja són solubles

Maurizio Prato and colleagues at the University of Trieste, the University of Notre Dame, and the University of Erlangen-Nürnberg, report that a method they've developed for attaching organic groups to carbon nanotubes makes the tubes soluble to the tune of 50 mg per mL--much higher than previously reported. In addition, the tubes remain in solution in water and a number of organic solvents indefinitely [*J. Am. Chem. Soc.*, **124,** 760 (2002)].



Font: *Chem. Eng. News*, 4 febrer 2002, 12

Breus

- Set de les deu revistes que aporten més estructures cristal·lines a la base de dades de Cambridge són de l'àrea de la Química Inorgànica.
- S´ha preparat el compost Ag_2NiO_2, que conté espècies de Ni^{III}, $[NiO_2]^-$, i de $Ag^{1/2}$, $[Ag_2]^+$. [*Angew. Chem. Int. Ed.*, **41**, 643 (2002)]
- La Universitat de Massachussets ofereix un doctorat en Química Verda: **http://green.chem.umb.edu/**.
- Aquest número recomanem la pàgina web **http://www.molecularuniverse.com**

L'element número **4**, **beril·li**, va ser descobert l'any 1797 per N.L. Vauquelin (França, 1763-1829). El seu nom prové del mot grec bhr ul l oz, que designa el mineral beril, $[Be_3Al_2(SiO_3)_6]$.