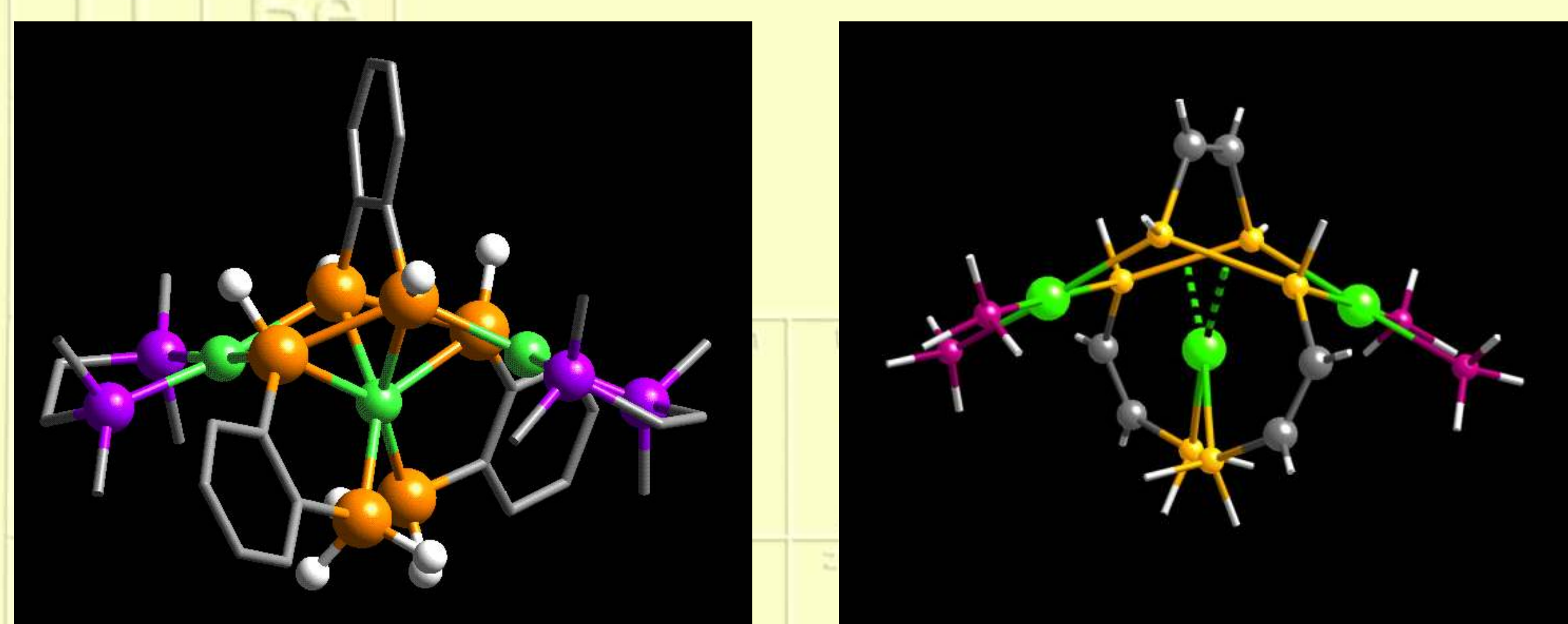


Existeix el pal·ladi (VI)?

Chemists in Japan claim the first isolation and structural characterization of two formally hexavalent palladium complexes [*Science* **295**, 308 (2002)]. The new formal Pd(VI) complexes are described by Wanzhi Chen, Shigeru Shimada, and Masato Tanaka of the National Institute of Advanced Industrial Science & Technology (AIST), in Tsukuba. In these complexes, the Pd(VI) center is surrounded by six silicon atoms. These complexes are "organometallic, at least in spirit, because silicon is the nearest chemical relative of carbon", states Yale University chemistry professor Robert H. Crabtree.

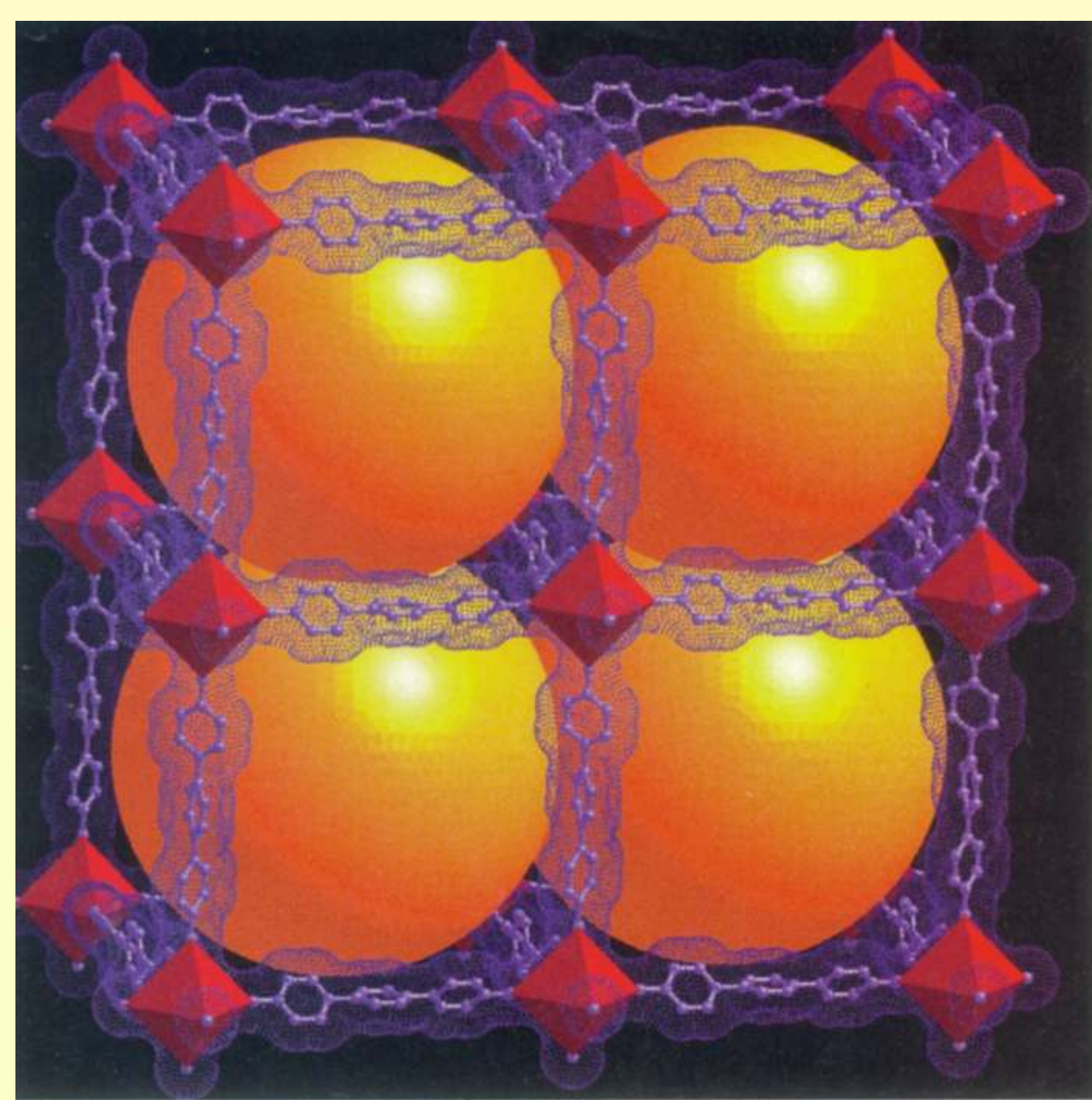
However, Santiago Alvarez and Gabriel Aullón at the **Departament de Química Inorgànica, Universitat de Barcelona**, and Agustí Lledós at the Universitat Autònoma de Barcelona, have presented [*Angew. Chem. Int. Ed.*, Hot Paper, in press] six different reasons based on structural, symmetry and theoretical analysis, in favor of a formulation of such compound as a Pd(II) species with two h^2 -coordinated Si-Si single bonds.



Font: *Chem. Eng. News*, 14 gener 2002, 34

Esponges cristal·lines: magatzems de gasos

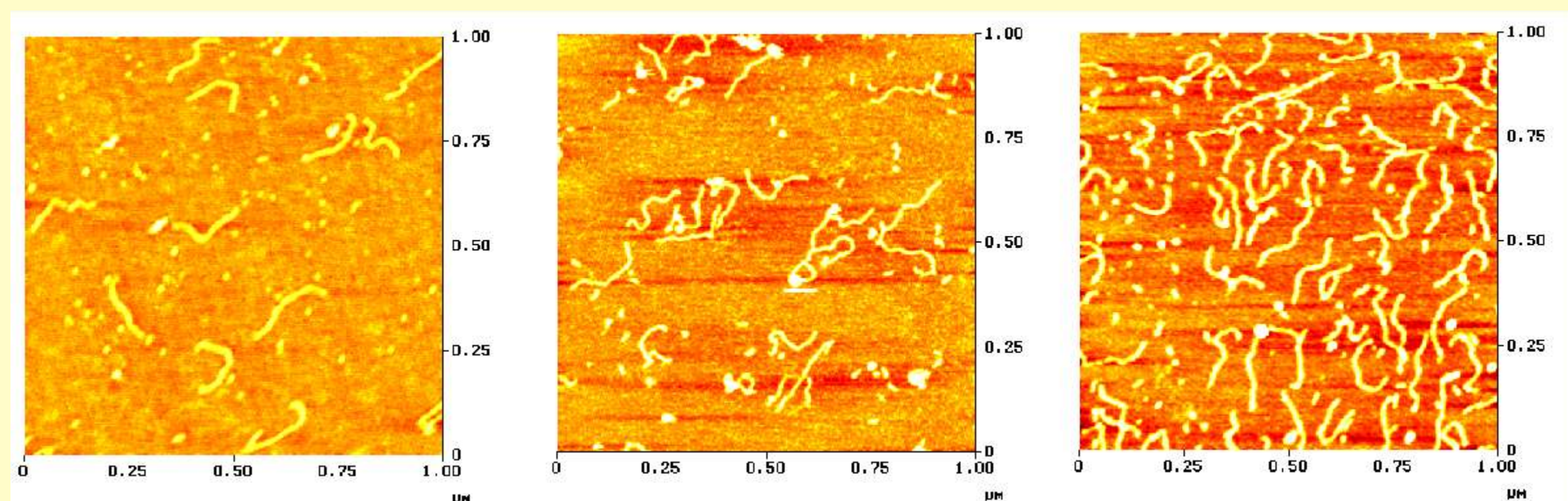
A new family of highly crystalline, porous materials in which the size and chemical functionality of the pores can be tailored systematically shows promise for gas-storage applications. Omar M. Yaghi and his coworkers (University of Michigan, Ann Arbor) call the materials IRMOFs--which stands for isoreticular metal-organic frameworks. They consist of cubical 3-D networks of zinc-oxygen clusters connected by molecular struts such as 1,4-benzenedicarboxylate. By choosing connectors based on longer molecules such as terphenyl, the chemists have shown that they can expand the pore size in increments from 3.8 to 28.8 Å [*Science*, **295**, 469 (2002)].



Font: *Chem. Eng. News*, 21 gener 2002, 9

La Química Supramolecular s'acosta a les biomolècules

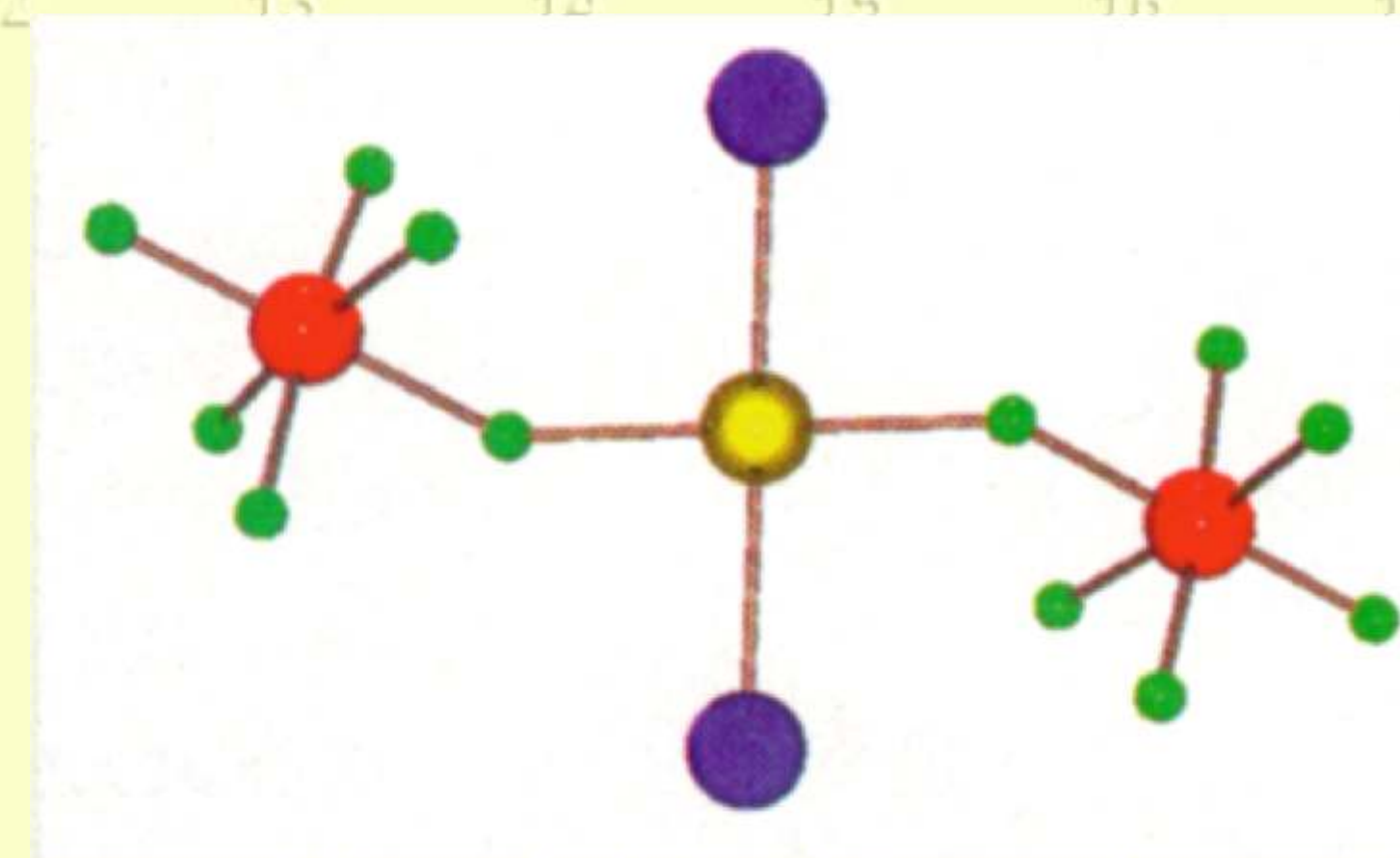
Professor M. J. Hannon and colleagues at the University of Warwick, in collaboration with E. Moldrheim and E. Sletten at the University of Bergen, and Virtudes Moreno and M.J. Prieto at the **Departament de Química Inorgànica, Universitat de Barcelona**, have studied the intramolecular DNA coiling mediated by supramolecular systems [*Proc. Natl. Acad. Sci., USA*, **99**, 6069 (2002)]. The two enantiomers of the tetracationic metallo-supramolecular cylinder (with a triple helical architecture) bind differently to DNA and have different structural effects. The M helical cylinder binds to the major groove and induces dramatic intramolecular coiling. The DNA bending is less dramatic for the Penantiomer.



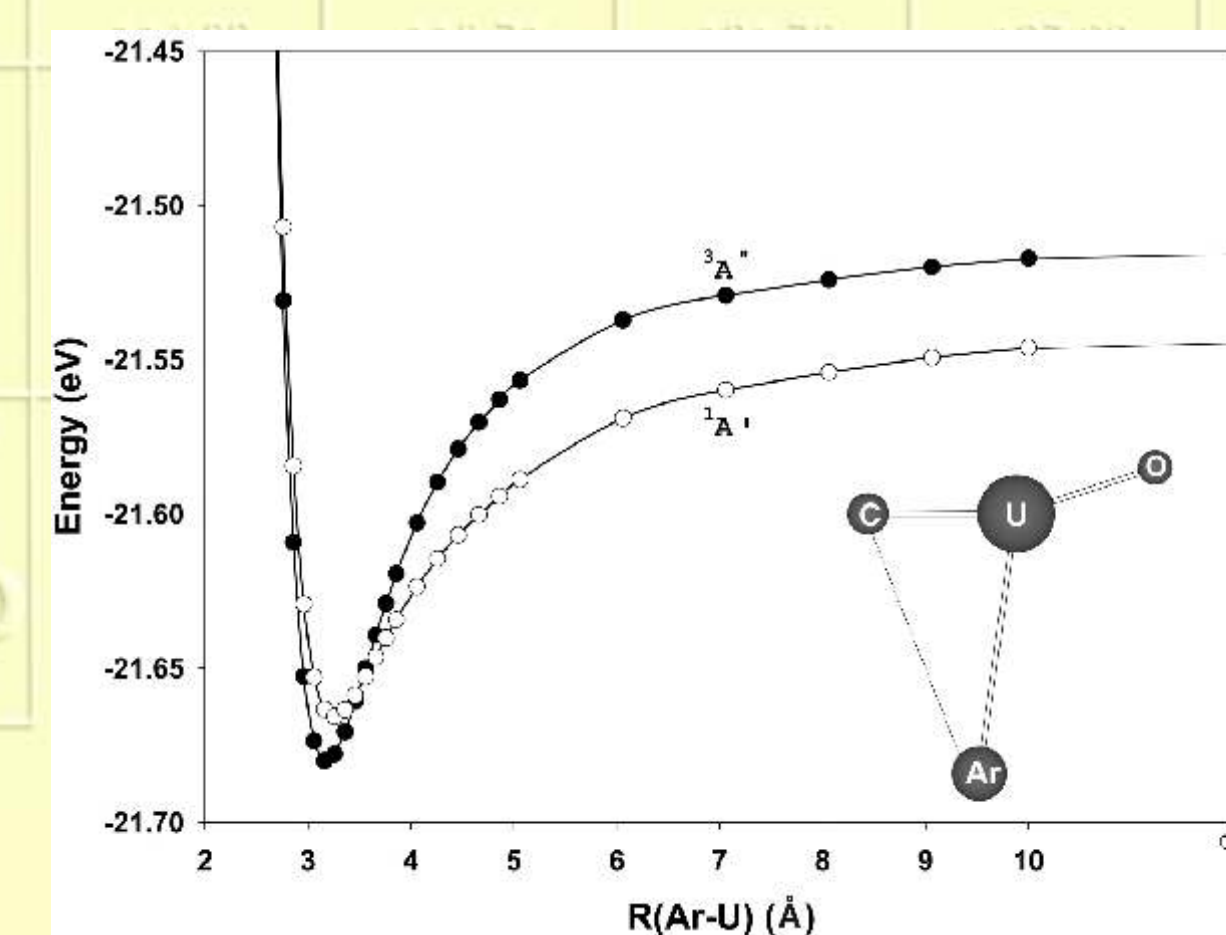
Atomic Force Microscopy images

Els gasos nobles, cada cop més reactius...

Professor Konrad Seppelt and coworkers Thomas Drews and Stefan Seidel (Free University, Berlin) have succeeded in preparing and isolating several gold-xenon complexes [*Angew. Chem. Int. Ed.*, **41**, 454 (2002)]. These include $[SbF_6]^-$ or $[Sb_2F_{11}]^-$ salts of *cis*- and *trans*- $[AuXe_2]^{2+}$, $[Xe-Au-F-Au-Xe]^{3+}$ (a Z-shaped ion), and *trans*- $[AuXe_2F]^{2+}$. The *trans*- $[AuXe_2]^{2+}$ salt is shown, with Au in yellow, Xe in blue, Sb in red, and F in green. Seppelt and coworkers also have tried to convert gold-xenon complexes into gold-krypton complexes, without success thus far.



On the other hand, argon, krypton, and xenon interact with the uranium atom forming the first noble gas-actinide complexes, according to spectroscopic studies and supercomputer simulations [*Science*, **295**, 2242 (2002)]. Professor Lester Andrews and graduate student Binyong Liang at the University of Virginia find that CUO--formed from the reaction of laser-ablated uranium atoms with carbon monoxide in a frozen noble-gas matrix--exhibits very different stretching frequencies in solid argon than in solid neon.

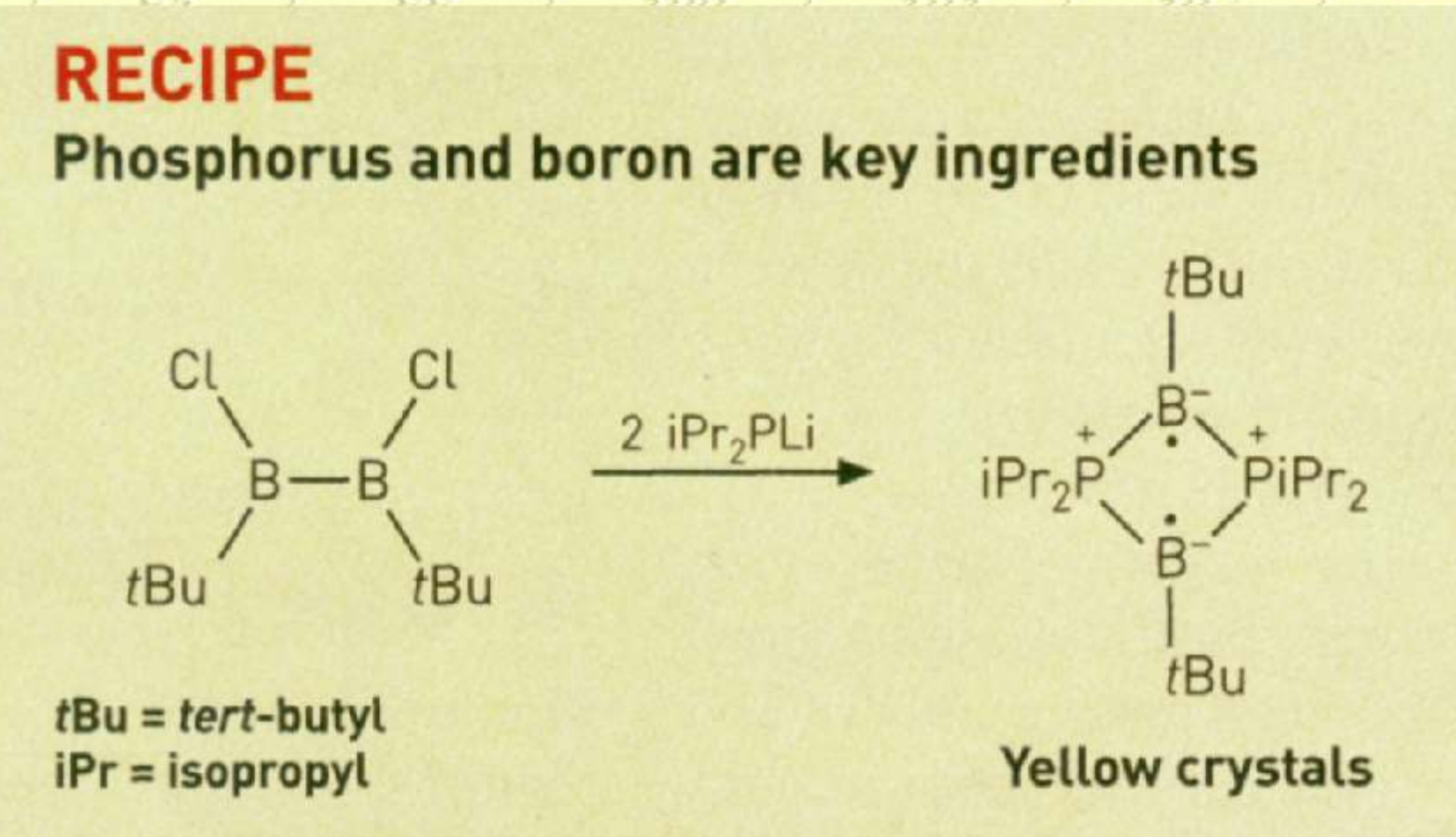


Font: *Chem. Eng. News*, 4 febrer 2002, 25.
Chem. Eng. News, 4 març 2002, 35.

... i els radicals, cada cop més estables

A singlet diradical designed by an international team of chemists (David Scheschkewitz, Hideki Amii, Heinz Gornitzka, Wolfgang W. Schoeller, Didier Bourissou, and Guy Bertrand from the University of California, Université Paul Sabatier and Universität Bielefeld) is stable for months at room temperature [*Science*, **295**, 1880 (2002)]. It consists of alternating phosphorus and boron atoms in a planar, four-membered ring in which all phosphorus-boron bonds are equal. Antiparallel free electrons are borne by the boron atoms.

Molecules containing many nonbonding electrons could lead to new superconducting materials or compounds with magnetic properties.



Font: *Chem. Eng. News*, 11 març 2002, 12

Breus

- Dels cent anys de premis Nobel, només en dotze ocasions s'han atorgat a químics sintètics.
- L'*American Chemical Society* ha penjat a Internet totes les seves revistes des del primer número (1879): <http://pubs.acs.org/archives/index.html>
- La quiralitat pot veure's a partir d'un test de color [*Chem. Commun.*, 2002, 174].
- Les llibretes de laboratori de Linus Pauling ara són a l'abast de tothom: <http://osulibrary.orst.edu/specialcollections/rmb/index.html>