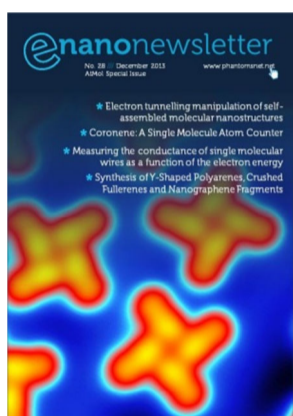




**AtMol** will establish comprehensive process flow for fabricating a molecular chip, i.e. a molecular processing unit comprising a single molecule connected to external mesoscopic electrodes with atomic scale precision and preserving the integrity of the gates down to the atomic level after the encapsulation. Logic functions will be incorporated in a single molecule gate, or performed by a single surface atomic scale circuit, via either a quantum Hamiltonian or a semi-classical design approach. AtMol will explore and demonstrate how the combination of classical and quantum information inside the same atomic scale circuit increases the computing power of the final logic circuit. Atomic scale logic gates will be constructed using atom-by-atom manipulation, on-surface chemistry, and unique UHV transfer printing technology.

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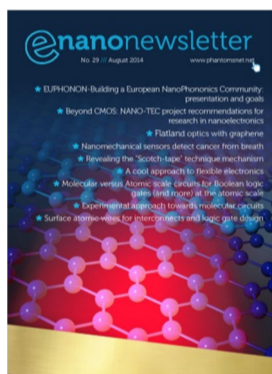


**Electron Tunnelling Manipulation of Self-assembled Molecular Nanostructures** F. Moresco, A. Nickel, R. Ohmann, J. Meyer, M. Grisolia, C. Joachim and G. Cuniberti

**Coronene: A Single Molecule Atom Counter** C. Manzano, W. H. Soe, M. Hliwa, M. Grisolia, H. S. Wong and C. Joachim.

**Synthesis of Y-Shaped Polyarenes, Crushed Fullerenes and Nanographene Fragments** P. Calleja, R. Dorel, P. Mc Gonigal, P. de Mendoza and A. M. Echavarren.

## Enanonewsletter n° 29



**Experimental approach towards molecular circuits** C. Nacci, C. Joachim and L. Grill.

**Surface atomic wires for interconnects and logic gate design** M. Kepenekian, R. Robles, C. Joachim and N. Lorente.

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(to be published)



**Construction and characterization of atomic scale Quantum Hamiltonian Boolean logic gates on hydrogen passivated Si(100)** M. Kolmer, R.I Zuzak, S. Godlewski, G. Dridi, C. Joachim and M. Szymonski.

**On-surface polymerization as a facile method for bottom-up nanoconstruction on inorganic semiconductor substrates** M. Kolmer, R. Zuzak, A. A. Zebari, S. Godlewski, J. S. Prauzner-Bechcicki, M. Szymonski, W. Piskorz, F. Zasada, Z. Sojka, D. Bléger and S. Hecht.

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### Phantoms Foundation

c/ Alfonso Gomez 17,  
planta 2, loft 16  
28037 Madrid, Spain



## Contact

**Questions regarding the ATMOL Project, please contact:**

**Prof. Christian Joachim** > Project Coordinator

CEMES/CNRS - GNS  
29, rue Jeanne Marvig, BP 94347  
31055 Toulouse Cedex 4; France

[joachim@cemes.fr](mailto:joachim@cemes.fr)

**Antonio Correia** > Unit 05 Coordinator (Dissemination)

Phantoms Foundation  
C/ Alfonso Gomez 17 / Planta 2 - Loft 16  
28037 - Madrid , Spain

[antonio@phantomsnet.net](mailto:antonio@phantomsnet.net)