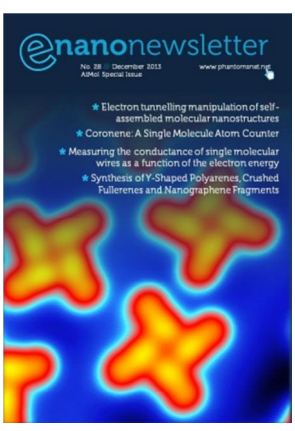
AtMol newsletter

No 4 - December 2014

www.atmol.eu

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.

Enanonewsletter nº 28 AtMol Special Issue



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.

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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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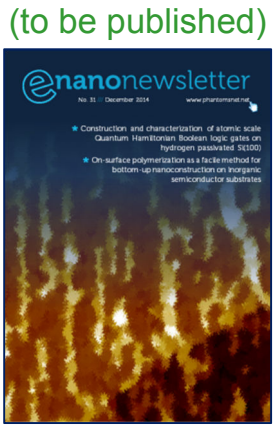
(to be published)



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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No 4. December 2014. Published by Phantoms Foundation (Spain)

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