

Scientific recognition for Dr. Omid Faizy

A paper by Dr. Omid Faizy and his collaborators (Pico-Lab CEMES-CNRS in France and Institute for Materials Science, Max Bergmann Center of Biomaterials, and Center for Advancing Electronics Dresden, TU Dresden in Germany) on “ *Unimolecular NAND gate with classical single Au atom logical inputs* ” has been accepted for publication in *ACS NANO* (IF: 13.942). The School of Nano Science congratulates this achievement to Dr. Faizy, our Post-Doctoral Research Fellow, and his colleagues.

Description:

The working principle of this unimolecular NAND logic gate is demonstrated by selectively contacting single gold atoms to the input branches of an asymmetric starphene molecule. The logical input "1" ("0") is defined by the interaction (non-interaction) of a gold atom with one of the input branches. Synthesized by a combination of solution and on-surface chemistry, this quantum Hamiltonian computing NAND starphene has been designed with two long anthracenyl input branches for suppressing the logical positive answer of the (0,1) and (1,0) inputs of the symmetric starphene leading to a NOR. The output of the NAND logic gate is measured by following the shift in energy of the electronic ground state tunneling resonance at the end of the third short naphthyl branch of the molecule using low temperature scanning tunneling spectroscopy.

Dr. Omid Faizy contributed this paper during his stay at Pico-Lab CEMES-CNRS (France).

[1] Dmitry Skidin , Omid Faizy, Justus Kruger, Frank Eisenhut, Andrej Jancarik, Khanh-Hung Nguyen, Gianaurelio Cuniberti, Andre Gourdon, Francesca Moresco, Christian Joachim; Unimolecular NAND gate with classical single Au atom logical inputs; *ACS NANO* (2017) (in press)