

# SWITCHABLE AND BISTABLE SELF-ASSEMBLED MONOLAYERS OF ELECTROACTIVE ORGANIC RADICALS. A JOURNEY TO MOLECULAR MEMORIES

Jaume Veciana

*Institut de Ciència de Materials de Barcelona (CSIC), Bellaterra, E-08193, Spain and  
Networking Research Center on Bioengineering, Biomaterials and Nanomedicine (CIBER-  
BBN), Bellaterra, E-08193, Spain.*

*E-mail: [vecianaj@icmab.es](mailto:vecianaj@icmab.es)*

The increasing interest in miniaturizing electronic devices to achieve denser circuits and memories will eventually entail the utilization of molecules as active components. In particular, self-assembled monolayers attached to substrates appear as suitable candidates in Molecular Electronics for the development of switchable and bistable memory systems based on electroactive molecules grafted on surfaces.

Here, we describe the functionalization of Au, SiO<sub>2</sub> and ITO surfaces with appropriately polychlorotriphenylmethyl radicals. Such functionalized hybrid surfaces can be used as chemical and electrochemical redox switches with optical (absorption and fluorescence) and magnetic responses exhibiting an exceptionally high long-term stability and excellent reversibility and reproducibility, making them as very promising platforms for nonvolatile molecular memory devices.