Showcasing collaborative research from the laboratories of Latha Venkataraman (Columbia University, United States), Gemma Solomon (University of Copenhagen, Denmark), Shengxiong Xiao (Shanghai Normal University, China), and Colin Nuckolls (Columbia University, United States).

Conformations of cyclopentasilane stereoisomers control molecular junction conductance

The dramatic scaling of silicon based devices has sparked a lot of interest in understanding the electronic properties of single-molecule devices created with silane derivatives. In this work, we show that the vast conformational flexibility of *cis* and *trans* isomers of functionalized cyclopentasilanes alters their electronic transport characteristics. Through a combined experimental and theoretical effort, we demonstrate that geometrically constrained cyclic pentasilanes are poor conductors when compared with their linear counterparts due to weak σ-conjugation in Si-Si bonds.

As featured in:

See Shengxiong Xiao, Colin Nuckolls, Gemma C. Solomon, Latha Venkataraman *et al.*, *Chem. Sci.*, 2016, **7**, 5657.

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