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Fullerene-based anchoring groups for molecular electronics CHRISTIAN MARTIN, DAPENG DING, Leiden University and Delft University of Technology, The Netherlands, JAKOB SORENSEN, THOMAS BJORNHOLM, University of Copenhagen, Denmark, JAN VAN RUITENBEEK, Leiden University, The Netherlands, HERRE VAN DER ZANT, Delft University of Technology, The Netherlands — We present results on a new fullerene-based anchoring group for molecular electronics. Using lithographic mechanically controllable break junctions in vacuum and at RT we have studied the electrical properties of 1,4-bis(fullero[c]pyrrolidin-1-yl)benzene. The compound can be self-assembled from solution and forms molecular junctions with a low-bias conductance of $3 \cdot 10^{-4}$ G₀. Compared to 1,4-benzenedithiol it exhibits a considerably lower conductance spread. Statistical analyses of the breaking process confirm the stability of the fullerene-gold bond.

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