

Abstract Submitted
for the MAR10 Meeting of
The American Physical Society

Tuning vibrations in single-molecule junctions: inelastic electron tunneling spectroscopy of an alkanedithiol NICOLAS AGRAIT¹, Univ. Autonoma Madrid , CARLOS R. ARROYO, Univ Autonoma Madrid, THOMAS FREDERIKSEN, Donostia International Physics Center (DIPC), GABINO RUBIO-BOLLINGER, MARISELA VELEZ, Univ Autonoma Madrid, ANDRES ARNAU², Donostia International Physics Center (DIPC), DANIEL SANCHEZ-PORTAL, UPV/EHU — We study pentanedithiol molecular junctions formed by means of the break-junction technique with a scanning tunneling microscope at low temperatures. Using inelastic electron tunneling spectroscopy and first-principles calculations, the response of the junction to elastic deformation is examined. We show that this procedure makes a detailed characterization of the molecular junction possible. In particular, our results show unequivocally that tunneling takes place through just a single molecule.

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Date submitted: 20 Nov 2009

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