

Supporting Information

Experimental Evidence of Icosahedral and Decahedral Packing in One-Dimensional Nanostructures

J. Jesus Velázquez-Salazar,¹ Rodrigo Esparza,¹ Sergio Mejía-Rosales,³ Rubén Estrada-Salas,¹ Arturo Ponce,¹ Francis Leonard Deepak,^{1,2} Carlos Castro¹ and Miguel José-Yacamán^{1,*}

¹Department of Physics and Astronomy, University of Texas at San Antonio, One UTSA Circle, San Antonio, Texas 78249, USA

²International Iberian Nanotechnology Laboratory, Avda Mestre Jose Veiga, Braga 4715, Portugal

³Center for Innovation and Research in Engineering and Technology, and CICEFIM-Facultad de Ciencias Físico-Matemáticas, Universidad Autónoma de Nuevo León, San Nicolás de los Garza, NL 66450, México

*Corresponding author: miguel.yacaman@utsa.edu, Phone: (210) 458-5451, Fax: (210) 458 4919

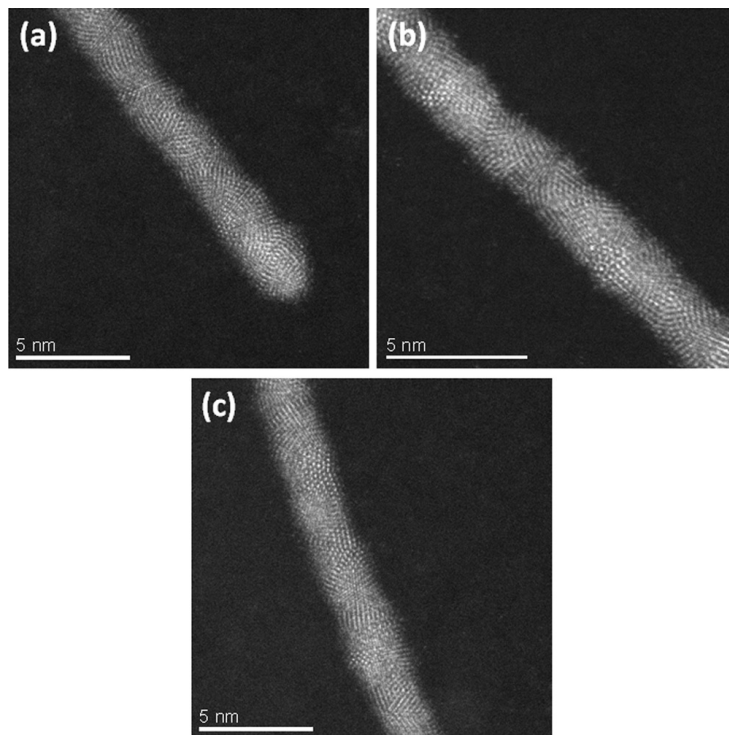


Figure S1. This figure show raw data of the HAADF-STEM images of icosahedral packing nanowires. The figures on the text were filtered to reduce the noise.

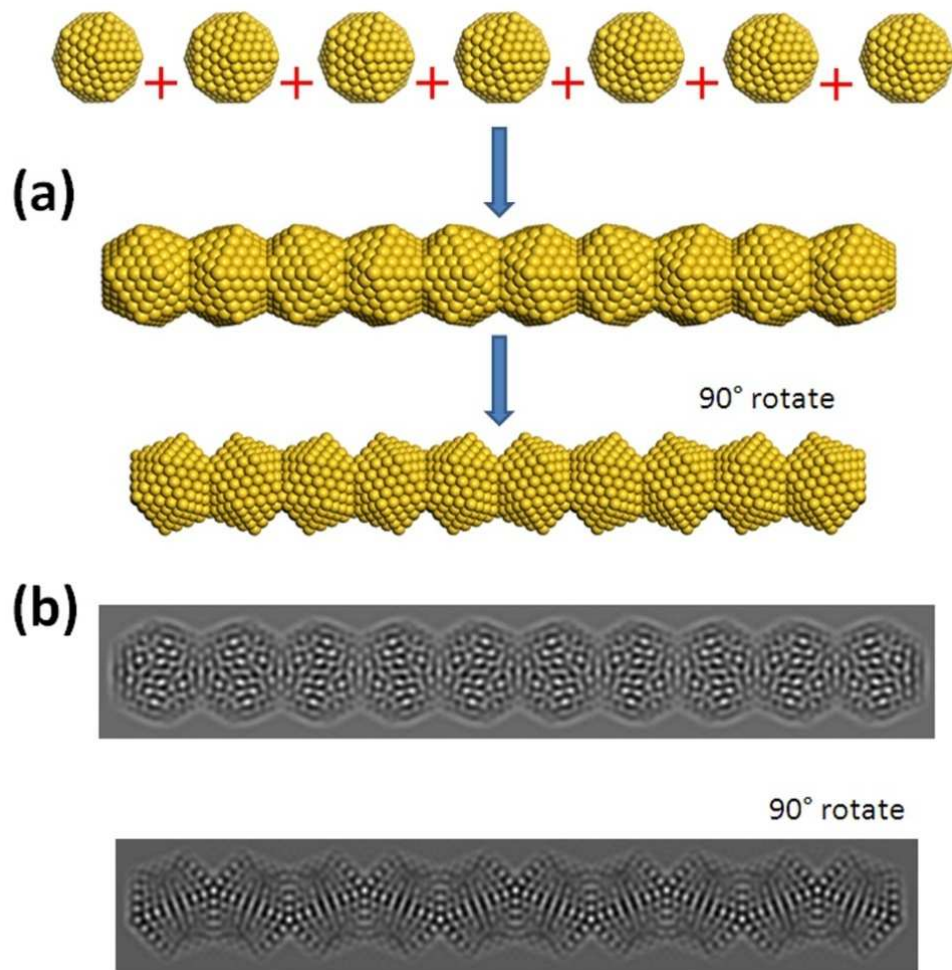


Figure S2. (a) Model of a nanowire obtained by stacking icosahedra by matching the (111) faces. This implies a rotation that eventually leads to a spiral structure. This however, do not reproduce the experimental observations as shown in the simulated TEM images (b) in which the “fan“ contrast observed on the experiments is not present.

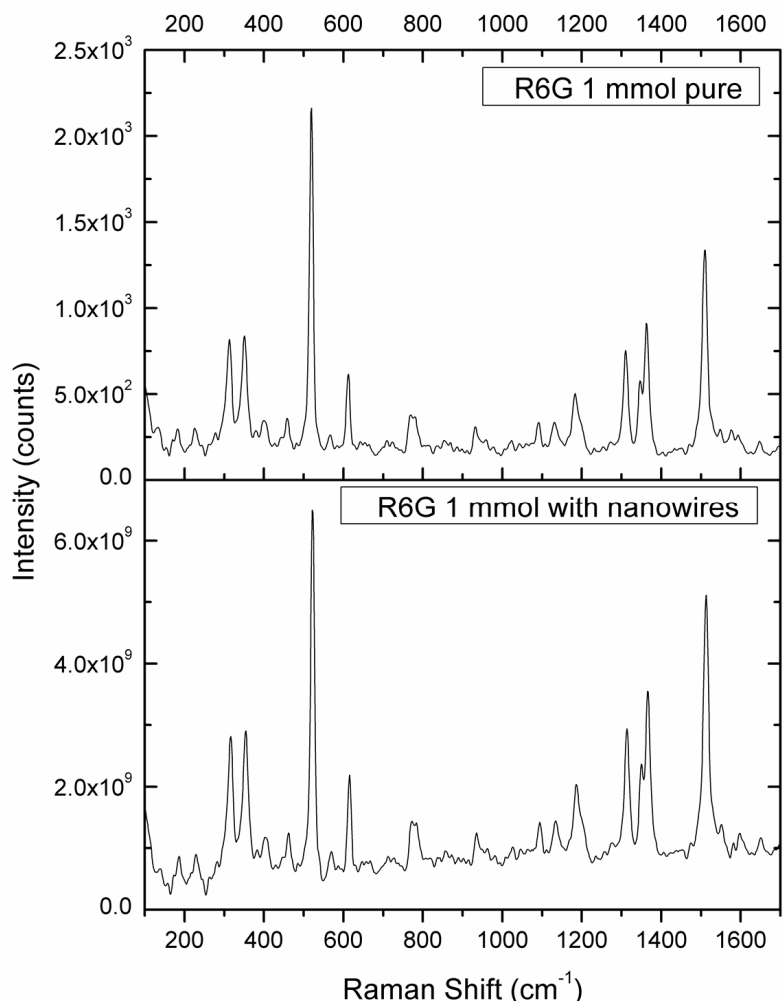


Figure S3. SERS spectra of standard rhodamine 6G (Rh6G) with Au/Ag nanowires compared with the same concentration of the rhodamine pure.

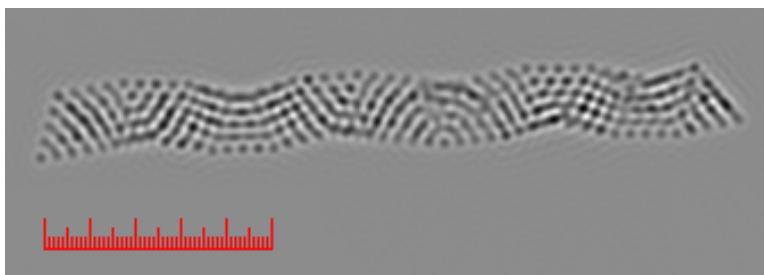


Figure S4. HRTEM image simulation (under optimum defocus condition) of an Ag/Au nanowire by using SimulaTEM software package (A. Gomez-Rodriguez, *et al. Ultramicroscopy* **110** (2010) 95-104), scale bar corresponds to 5 nm.