

Electronic supplementary Information

Gold nanoparticle superlattices as functional solids for concomitant conductivity and SERS tuning

Edakkattuparambil Sidharth Shibu^f, Jobin Cyriac^{ft}, Thalappil Pradeep^{f*}

and J. Chakrabarti^{†*}

^f*DST Unit on Nanoscience (DST UNS)*

Department of Chemistry and Sophisticated Analytical Instrument Facility,

Indian Institute of Technology, Madras, Chennai 600 036, India.

[†]*S. N. Bose National Centre for*

Basic Sciences, Block-JD, Sector-III, Salt Lake, Kolkata 700091, India

Corresponding author. Fax: + 91-44 2257-0545.

E-mail: pradeep@iitm.ac.in (T.P), jaydeb@bose.res.in (J.C)

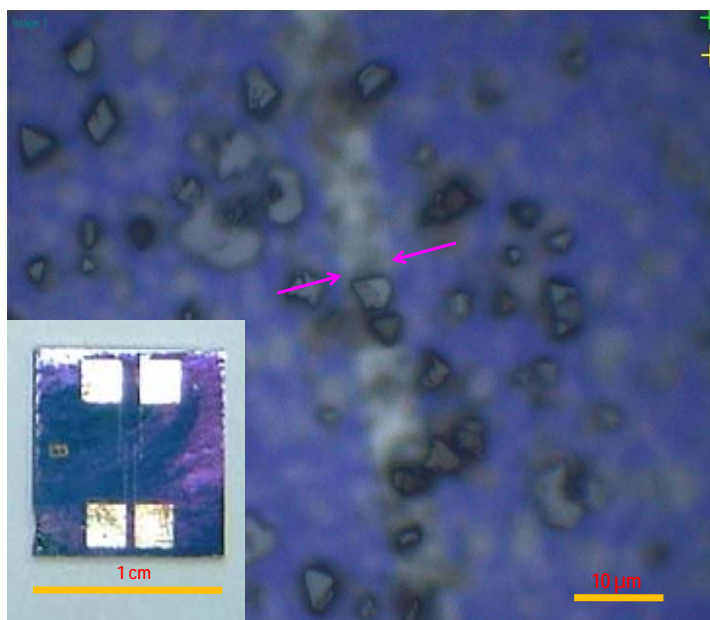


Figure S1. Optical microscopic image of the SL film sitting on the electrode. A single gold electrode with SL crystals spread on the SL film is seen. As the SL film covers the electrode, the metallic surface of the electrode is only faintly visible. Photograph of the 1 cm x 1 cm electrode with the gold pads (appears as white squares) is given in the inset.

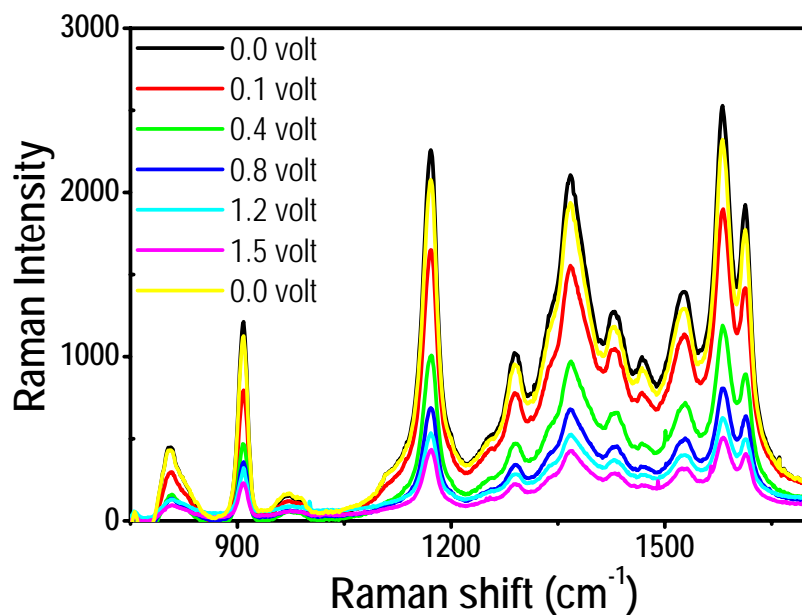


Figure S2. Change in Raman spectrum with applied potential. The spectra recover completely upon removing the applied potential.

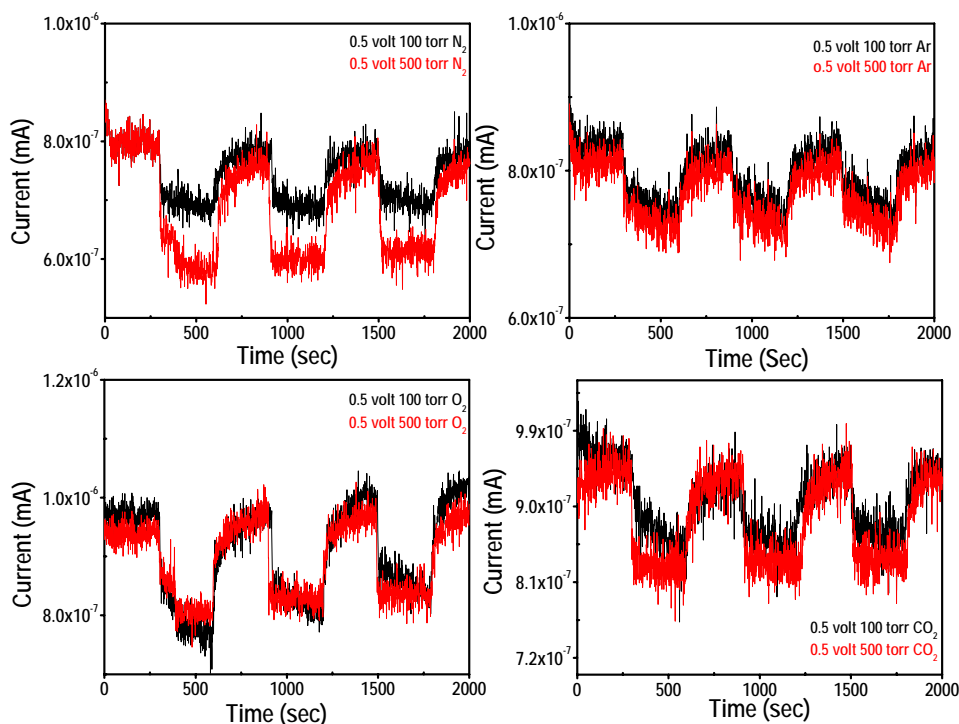


Figure S3. Conductance changes of SLs (0.5 volt) under the exposure of 100 and 500 torr of N₂, Ar, O₂ and CO₂, respectively.

†currently at the Aston Labs for Mass Spectrometry, Department of Chemistry, Purdue University, West Lafayette, IN 47907, USA.