

## **Supplementary Information**

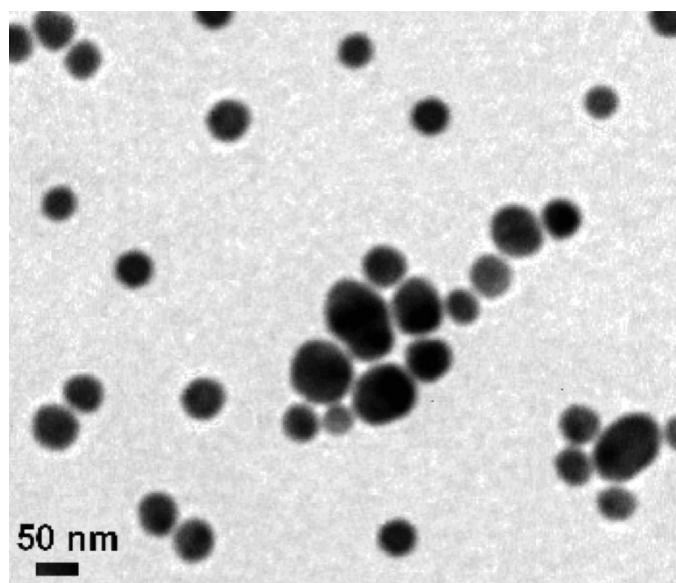
### **Deciphering Near-field response with the Far-field Wavelength-scanned SERS spectra of 4- Mercaptopyridine adsorbed on nanocolloidal gold entrapped in Langmuir Reverse Schaefer film of 5CB liquid crystal molecules**

Sumit Kumar Das<sup>a</sup>, Tara Shankar Bhattacharya<sup>b</sup>, Joydeep Chowdhury<sup>a\*</sup>

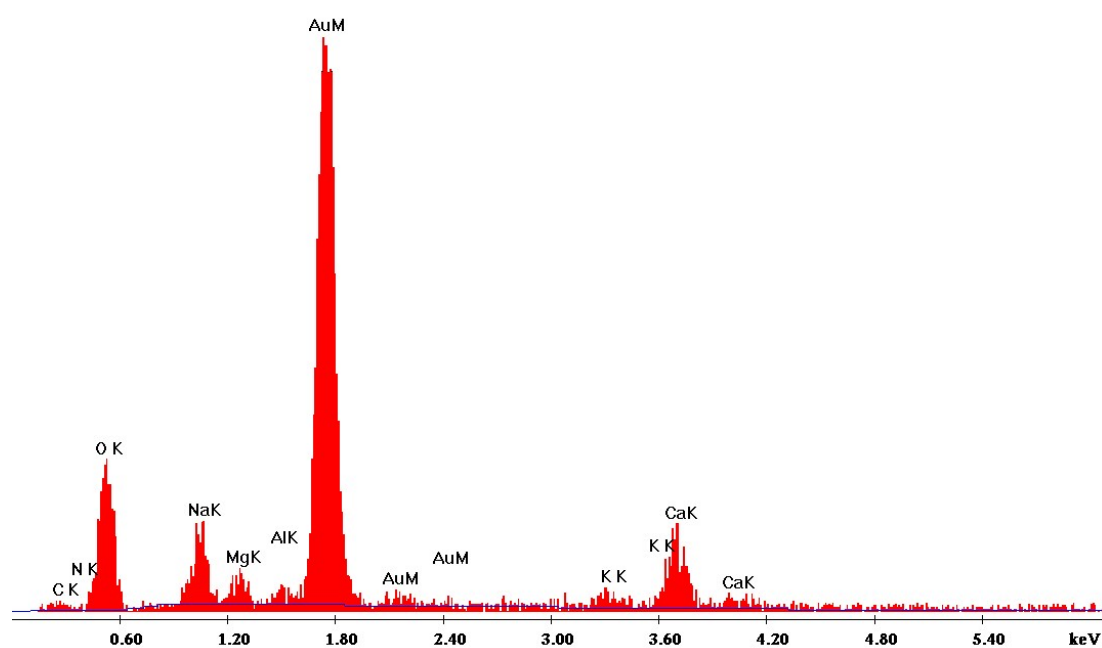
<sup>a</sup>Department of Physics, Jadavpur University, 188, Raja S.C. Mallick Rd, Kolkata 700032, India.

<sup>b</sup>Department of Physics, Bose Institute, 93/1 APC Road, Kolkata-700009, India

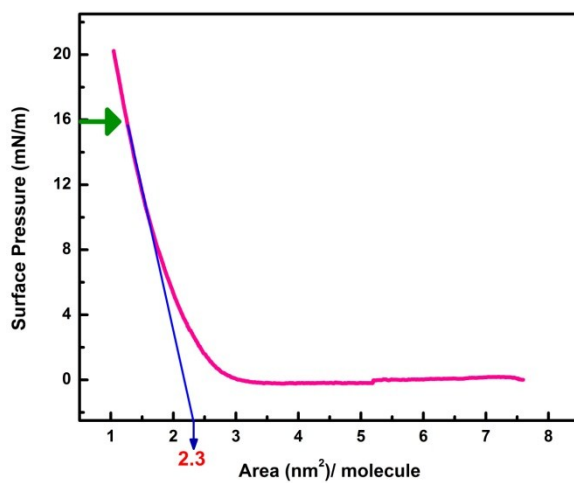
\*Corresponding Author: [joydeep72\\_c@rediffmail.com](mailto:joydeep72_c@rediffmail.com) / [joydeepc@phys.jdvu.ac.in](mailto:joydeepc@phys.jdvu.ac.in)



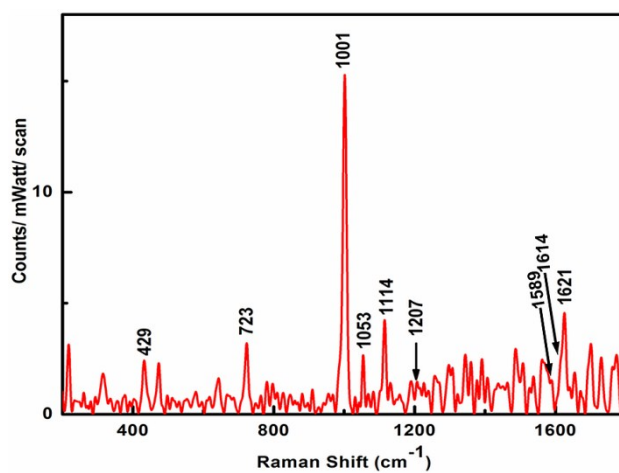
**Fig. S1** HR TEM image of as synthesized AuNC.



**Fig. S2** Representative EDX analyses of the substrate recorded from FESEM image.



**Fig. S3** Room temperature surface pressure ( $\pi$ ) – area ( $A$ ) compression isotherm of Langmuir monolayer of 5-CB LC molecule in water subspace (pH  $\sim$  6.8)



**Fig. S4** Normal Raman spectra of 4-Mpy at 1 M aqueous solution.