

Electronic Supplementary Information

Morphological modulation of Graphene-mediated hybridization in plasmonic systems

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In Fig. S1 we report two Raman Spectra recorded with exciting radiation polarized either along (blue line) or transverse (red line) with respect to the Au-NP chains orientation. The data were recorded with an InVia Raman microscope with $\lambda=532$ nm excitation, 1mW incident power and 50x objective. The intensity of the graphene peaks for the two polarizations is extremely similar.

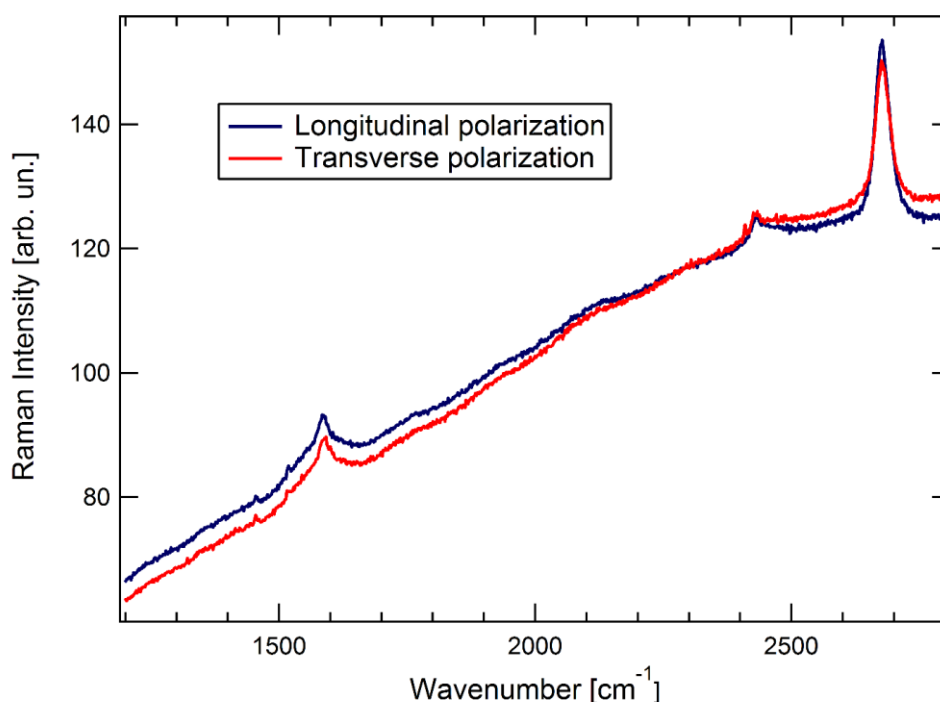


Figure S1: Raman Spectra recorded with exciting radiation polarized either along (blue line) or transverse (red line) with respect to the Au-NP chains orientation. The data were recorded with an InVia Raman microscope with $\lambda=532$ nm excitation, 1mW incident power and 50x objective.

Electronic Supplementary Information

In Fig. S2 we report a scanning electron microscopy (SEM) of the graphene/Au/CaF₂ system at 50k magnification. A square region of the image, represented by the red box, was cut and analyzed to extract the autocorrelation of particle-particle distance. The particles were initially recognized, thus forming a digital black/white mask, reported in Fig. S3. The autocorrelation extracted from such a mask is reported in Fig. S4. The arrows in each image represent the direction of the CaF₂ nanoridges.

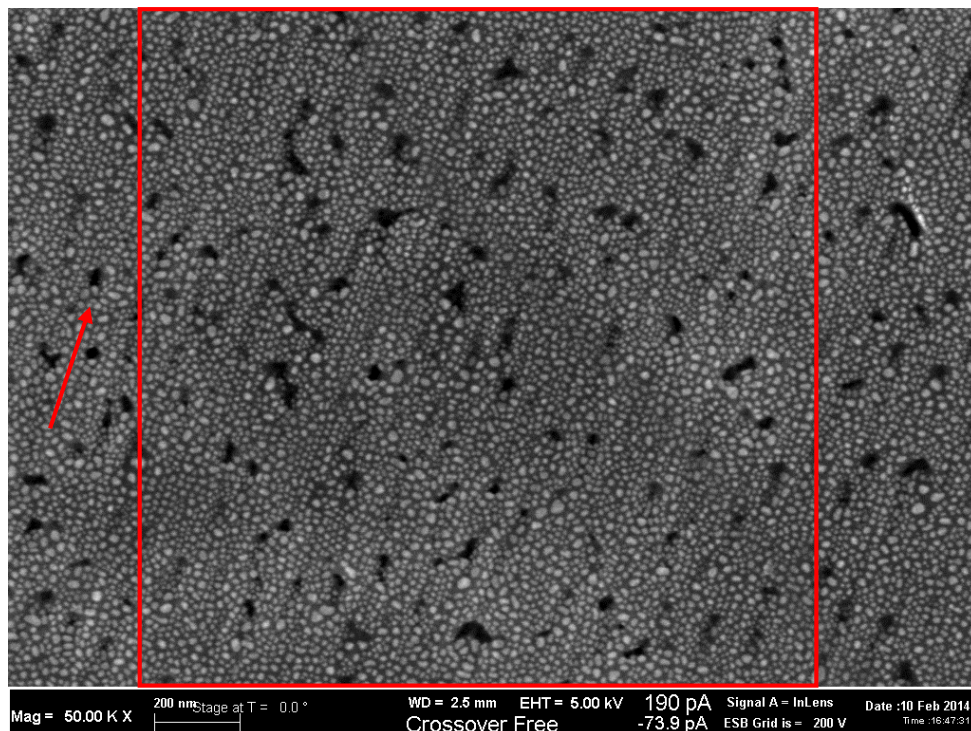


Figure S2: SEM image of the graphene/Au/CaF₂ system.

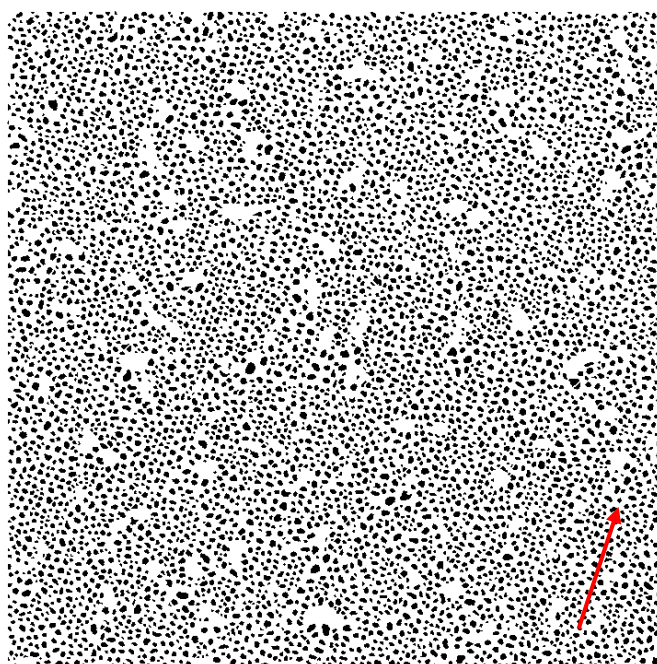


Figure S3: digital mask extracted from the red-boxed area of Fig. S2. Black areas represent the identified nanoparticles. Image size 1500x1500 nm².

Electronic Supplementary Information

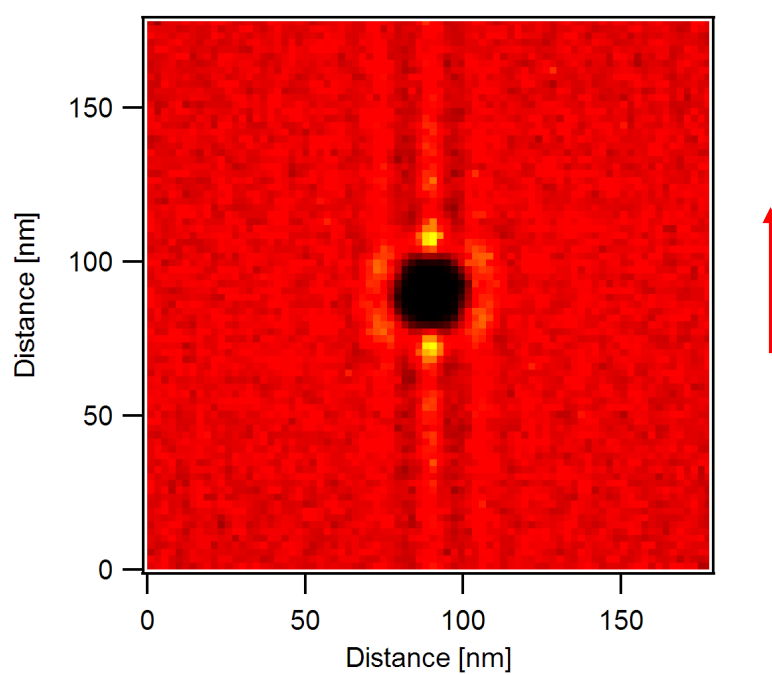


Figure S4: autocorrelation of the relative positions of nanoparticles calculated from the mask of Fig. S3. Yellow/red/black colours correspond to decreasing autocorrelation values.