

Modified liquid-liquid interfaces for SERS spectroelectrochemistry

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Gold nanoparticles (AuNPs) assemblies have been formed at liquid-liquid interfaces to serve as substrates for Surface Enhanced Raman Spectroscopy (SERS). Plasmonic soft interfaces provide opportunities to create highly reproducible, scalable and low-cost SERS substrate with high Raman enhancement factor. We have investigated the use of AuNP films floating at liquid-liquid interface, highlighting the impact of interfacial polarization on the Raman signal.

SERS of several organic ions were recorded at varying interfacial potential differences (methylene blue, tolmetin, norfloxacin). Using Raman 2D correlation analysis, we will show how the potential difference impacts the SERS signal of the targeted molecules and how the chemical environment contributes to the SERS signal.