

**Surface Enhanced Raman Spectroscopy Studies of
1,4-Phenylene Diisocyanide Adsorption on
Platinum-Group Transition Metal Surfaces**

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Conjugate diisocyanide compounds are potential candidates for molecular electronics. To understand their electron transport properties, it is important to know the adsorption of these molecules on metal electrodes. In this presentation, we will discuss our recent findings on adsorption of 1,4-phenylene diisocyanide on Pt-group transition metal surfaces. Based on surface-enhanced Raman (SER) spectra, the molecule was found to bind to the surfaces through one of the isocyanide groups with the benzene ring pendant. The adsorption sites are different on different metals. The second isocyanide group is free and can bind to metal particles, as revealed by SERS and atomic force microscopy (AFM).

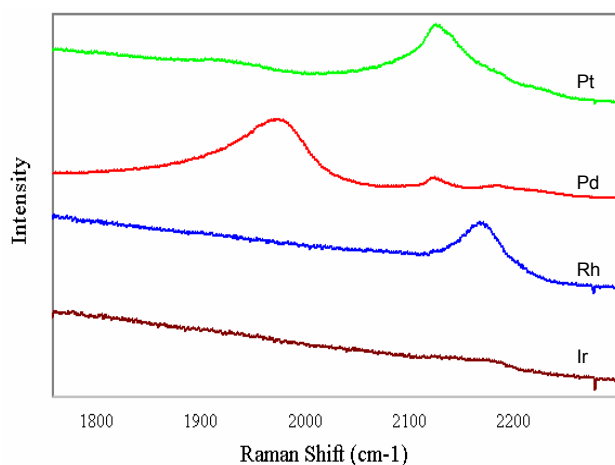


Fig. 1 SER spectra of 1,4-phenylene diisocyanide on Pt-group transition metals in 0.1 M HClO₄ at 0.0 V.

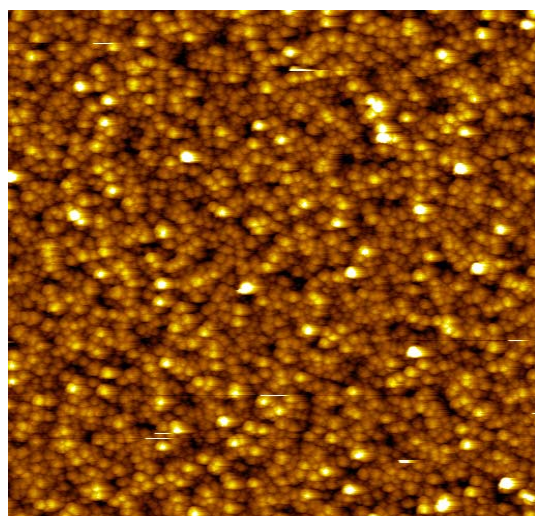


Fig. 2 AFM image of Au nanoparticles attached to 1,4-phenylene diisocyanide covered Au surface.