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Modification of Tips for Use With Tip-Enhanced Raman Spectroscopy (TERS) SCOTT HAMILTON, NAM-HEUI LEE, DISHA MEHTANI, RYAN HARTSCHUH, ALEXEI SOKOLOV, MARK FOSTER, Maurice Morton Institute of Polymer Science, University of Akron — In tip-enhanced Raman spectroscopy (TERS) the Raman signal is enhanced only in the vicinity of a probe tip that can be positioned near the surface of a sample. TERS tips were made by vapor-depositing gold onto AFM tips. These tips create plasmon resonances in the focal spot of the incident laser beam. Variation in the enhancement provided by the tips with the morphology of the metal surface was studied. Enhancement was found to be a function of film thickness and roughness. Deposition of metal nanoparticles on the tip surface was also studied as an alternative method of modification. Optical properties of various nanoparticles are being determined experimentally, allowing comparison with theoretical calculations.

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