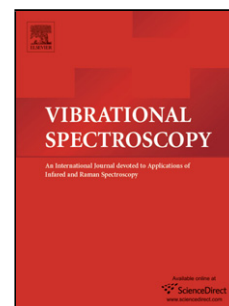


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Author: Adriana Santinom Mateus A. da Silva Javier E.L.  
Villa Ronei J. Poppi Italo O. Mazali Diego P. dos Santos



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# Surface-enhanced Raman scattering (SERS) as probe of plasmonic near-field resonances

Adriana Santinom, Mateus A. da Silva, Javier E. L. Villa, Ronei J. Poppi,  
Italo O. Mazali, Diego P. dos Santos\*

*Institute of Chemistry, University of Campinas, CP 6154, CEP 13083-970, Campinas, SP,  
Brazil*

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## Abstract

Near-field plasmonic properties are fundamental for the various applications of metal nanoparticles. In this sense, a characterization of such properties is essential for a better understanding of the electromagnetic interactions probed by the materials. In this manuscript we discuss the possibility of using surface-enhanced Raman scattering (SERS) as a possible experimental probe of near-field resonance properties of metal nanoparticles aggregates. In this specific case, we investigate both, theoretically and experimentally, the behavior of broad and narrow near-field enhancement resonances in the SERS spectra of adsorbed molecules. We believe the results presented here may open new possibilities and insights in plasmonic nanoparticle properties characterization for different applications.

*Keywords:* SERS, plasmon, near-field, Fano resonance

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\*Corresponding author

*Email address:* [diego.santos@iqm.unicamp.br](mailto:diego.santos@iqm.unicamp.br) (Diego P. dos Santos)

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