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Surface-enhanced Raman Scattering from Virus-like Particle Crystals CHRISTOPHER DUFORT, BOGDAN DRAGNEA, Indiana University, Department of Chemistry — Recently, a method for the encapsidation of gold nanoparticles by an icosahedral virus protein coat, termed a virus-like particle (VLP), has been developed. Of particular interest is in observing their spectroscopic properties upon arrangement into a three-dimensional crystal lattice. Here we present the surface-enhanced Raman scattering spectrum of such an assembly. This is made possible by the plasmonic coupling of adjacent gold nanoparticles when excited near their plasmon resonant frequency. To determine whether the SERS effect is arising from isolated hot spots or a large number of junctions acting in unison we employed scanning confocal Raman spectroscopy. This seems to indicate the latter, as a uniform Raman intensity is observed across entire crystals.

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