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**Raman Correlation Spectroscopy**[1] MAKI NISHIDA, EDWARD VAN KEUREN, Georgetown University — We have developed a simple method for measurement of diffusion coefficients of specific components in complex mixtures of nanoparticles in a suspension. As a variation of Dynamic Light Scattering (DLS), this method analyzes temporal fluctuations of Raman scattered light from particles caused by Brownian motion. Due to the coherent nature of Raman scattering, the time autocorrelation functions of Raman emission lines will yield similar information as that obtained by DLS. Because each Raman emission line arises from a specific type of a molecular bond, only the diffusion coefficient of the particles containing that specific chemical species is measured. We demonstrate that this method can isolate diffusion coefficients from individual components in mutlicomponent nanoparticle dispersions.

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