

Abstract Submitted
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Three Dimensional Rotational Motion of Colloidal Clusters

JUSTIN CARAM, Harvard University, Department of Chemistry and Chemical Biology, VINOOTHAN MANOHARAN, Harvard University, Department of Physics and School of Engineering and Applied Sciences — We will present the results of a study into the three dimensional rotational and translational diffusion of colloidal clusters, especially dimers and trimers. We will have accomplished this study using both diffraction pattern and holograph analysis, as well as depolarized dynamic light scattering. We believe that trimers break into discrete rotational diffusion constants dependent on their geometries. These findings can be matched to the results for the rotational decay in the correlation function generated by DDLS. Understanding these diffusion constants is important to the understanding of protein and liquid crystal dynamics in solution. Furthermore, developing depolarized dynamic light scattering experimental strategy for non ellipsoidal systems may help to determine 3-dimensional hydrodynamic extent of such systems in solution.

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