PHYSICAL CHEMISTRY SEMINAR



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"Few-Body Decay Dynamics in Colloidal Perovskite"

Colloidal perovskite quantum dots combine bright emission with the ability to self-assemble into closely spaced structures, enabling radiative dynamics to be studied from isolated emitters to few-dot clusters. In this talk, I discuss the properties of single quantum dots and their optical characterization via a combination of emission, lifetime, autocorrelation, blinking, and photon correlation Fourier spectroscopy measurements. I apply this methodology to small clusters of perovskites, using a combination of blinking, brightness, and antibunching in the autocorrelation function to estimate cluster size. Lastly, I use lifetime measurements to explore the decay dynamics of various cluster sizes and discuss potential origins of the enhanced decay observed in clusters.