

Abstract Submitted  
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**Size Dependence of Fluorescence Blinking Statistics from CdSe Nanorods**<sup>1</sup> SIYING WANG, CLAUDIA QUERNER, University of Pennsylvania, THOMAS EMMONS, Swarthmore College, MARIJA DRNDIC, University of Pennsylvania, CATHERINE CROUCH, Swarthmore College — We report fluorescence blinking statistics measured from single CdSe nanorods (NRs) of seven different sizes with aspect ratios ranging from 3 to 11. The off-times follow a power-law probability distribution; on-times follow a truncated power law distribution,  $P(\tau_{on}) \sim \tau_{on}^{-\alpha} e^{-\tau_{on}/\tau_c}$ . At fixed excitation intensity, the truncation rate  $1/\tau_c$  increases with increasing aspect ratio. For a particular sample,  $1/\tau_c$  increases gradually with increasing excitation intensity. Examining  $1/\tau_c$  vs. single-particle photon absorption rate for all samples indicates that the shape dependence of the absorption cross-section does not fully account for the observed variation in crossover time  $\tau_c$ . Surprisingly, we observe no significant difference between core and core/shell nanorods or core rods with different surface ligands. Our results suggest that NR internal structural defects or degree of quantum confinement may contribute to the shape dependence of the crossover time.

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