

Abstract Submitted  
for the NEF07 Meeting of  
The American Physical Society

**Photophysics of single colloidal quantum dots embedded in organic semiconductor optoelectronic devices** AUGUST DORN, MIT — We investigated individual CdSe/ZnS colloidal nanocrystals embedded in sandwiched optoelectronic devices made of the molecular organic semiconductors aluminum *tris*(8-hydroxyquinoline) (Alq<sub>3</sub>) and N,N'-diphenyl-N,N'-bis(3-methylphenyl)-(1,1'-biphenyl)-4,4'-diamine (TPD). Spectral diffusion and blinking from individual quantum dots were observed both in electro- and photoluminescence. In addition we analyze field dependant fluorescence quenching under high bias. Our study helps elucidate the elementary interactions between quantum dots and organics, knowledge needed for designing efficient quantum dot organic optoelectronic devices.

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Date submitted: 21 Sep 2007

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