

Abstract Submitted  
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**Transport measurements in semiconductor nanocrystals capped with electroactive ligands** CLAUDIA QUERNER, University of Pennsylvania, USA, PETER REISS, CEA Grenoble, France, MICHAEL D. FISCHBEIN, University of Pennsylvania, PATRICE RANNOU, CEA Grenoble, JOEL BLEUSE, CEA Grenoble, ADAM PRON, CEA Grenoble, MARIJA DRNDIC, University of Pennsylvania — Organic-inorganic hybrid materials based on semiconductor nanocrystals and  $\pi$ -conjugated oligomers or polymers have seen an increasing interest over the past years mainly because of their possible applications in optoelectronic devices, such as solar cells. We report here the preparation of organic-inorganic hybrids by chemical grafting of tetraaniline onto the surface of semiconductor nanocrystals, such as CdSe and PbSe. We proved by spectroscopic and spectroelectrochemical studies that the grafting reaction does not influence in a significant way the electroactivity of both systems nor does it modify the doping mechanism of the grafted ligands. By cyclic voltammetry we were able to estimate the position of the energy levels in the hybrid, which are aligned such that a charge separation can occur at the organic-inorganic interface after photo-excitation. Highly efficient photoluminescence quenching confirmed such a process. Finally, we studied photoconductivity in these materials.

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