Long Range Order in Nanocrystal Assemblies Determines NCs Films' Charge Transport

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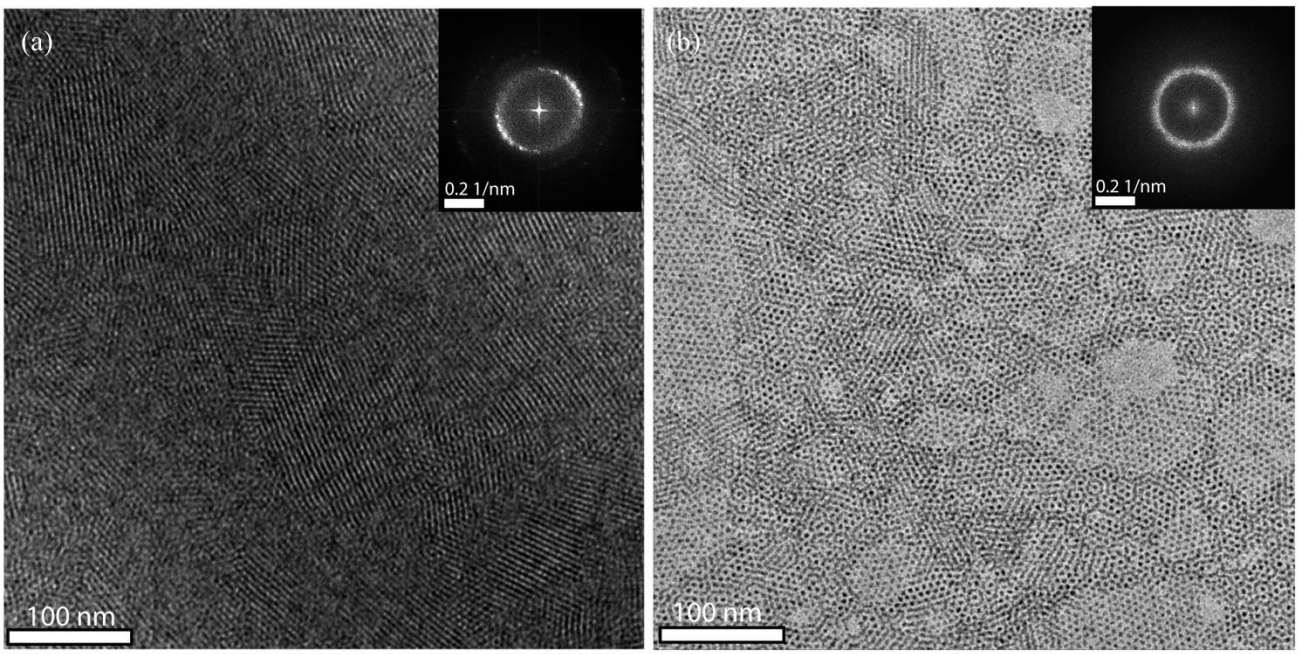

Figure S1. Morphological analysis of PbS Superlattice membranes (long-range order) and Glassy film (short-range order). Transmission electron microscopy (TEM) of typical PbS SL membrane. (a) Inset: FFT The intensity peaks of the FFT (corresponding to SL domains) shows preferential ordering directions in the SL membranes. Transmission electron microscopy (TEM) of typical PbS glassy thin film by spin coating technique. (b) Inset: FFT. The homogeneous intensity of the ring in the FFT (corresponding to the mean inter-particle spacing) shows no preferential direction for ordering in the glassy solid films.

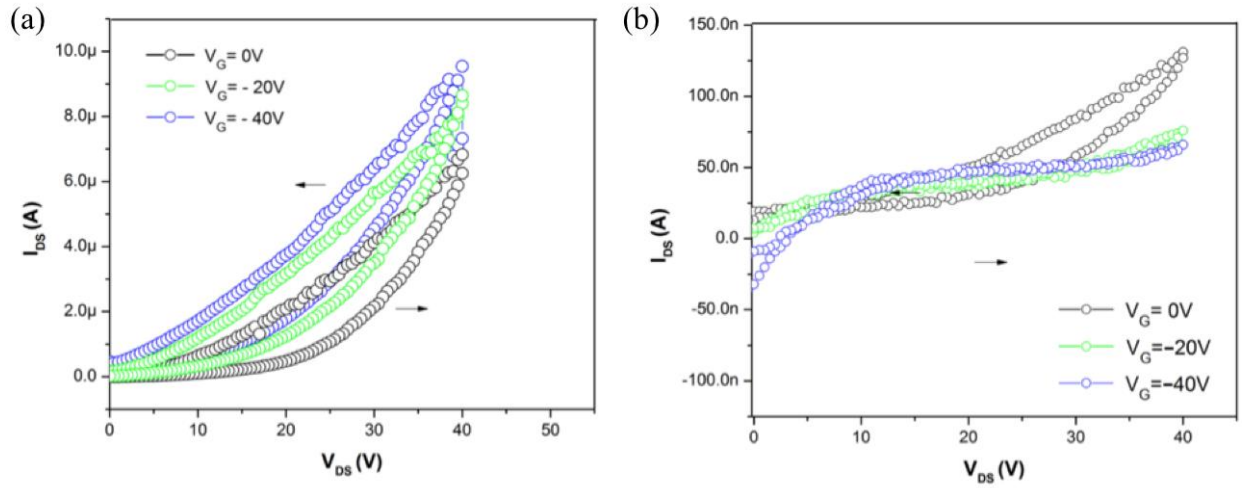

Figure S2. Electrical characterization of PbS superlattice and glassy thin film solids. (a) Drain-Source IV curves for positive bias obtained at different gate voltages from a device using a PbS superlattice conduction channel (width and length of the channels were 1 mm and 100 μm, respectively). (b) Drain-Source IV curves for positive bias obtained at different gate voltages from a device using a PbS glassy thin film conduction channel (width and length of the channels were 1 mm and 100 μm, respectively).