**SUPPORTING INFORMATION for**

# Cluster Beam Deposition of Lead Sulfide Nanocrystals into Organic Matrices

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Figure S1. Beam current and kinetic energy distribution for negative PbS clusters. $(PbS)_n^-$ beam current as a function of applied retarding potential V (hollow points). Beam energy was determined by the first derivative of the current with respect to V (dI/dV, solid points). Beam energy distribution shown here peaks at ~30 eV under 1:1 $H_2S$:Ar ratio in the cluster beam deposition (CBD) source.

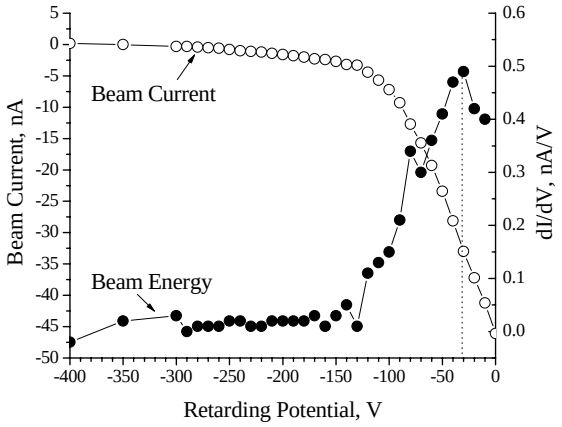

Figure S2. (a) Effect of the $H_2S$:Ar gas flow ratio in the cluster beam deposition (CBD) source on the PbS nanocrystal (NC) deposition rate at a fixed source path length of 35 cm. (b) Effect of varying the magnetron path length on PbS NC deposition rate in the CBD source at fixed $H_2S$:Ar ratio of 1:1.

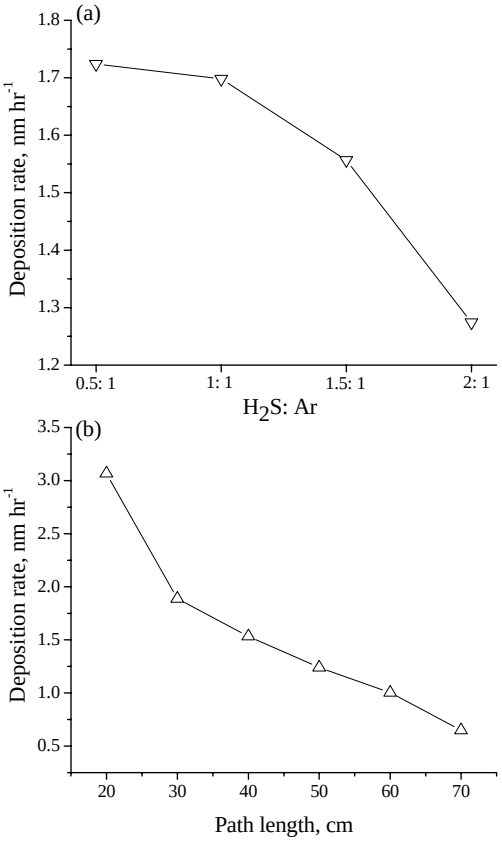

Figure S3. Density and size distribution of PbS NCs deposited into α-sexithiophene (6T) as a function of varying magnetron path length in CBD source as measured by transmission electron microscopy (TEM, bottom). Particle size distributions displayed beneath TEM micrographs. Path length was varied from 20 to 40 cm during the TEM measurements and the mean PbS NC size range was 3.5 ± 0.9 nm. Darkfield scanning transmission electron microscopy (top) is shown for 30 cm magnetron path length.

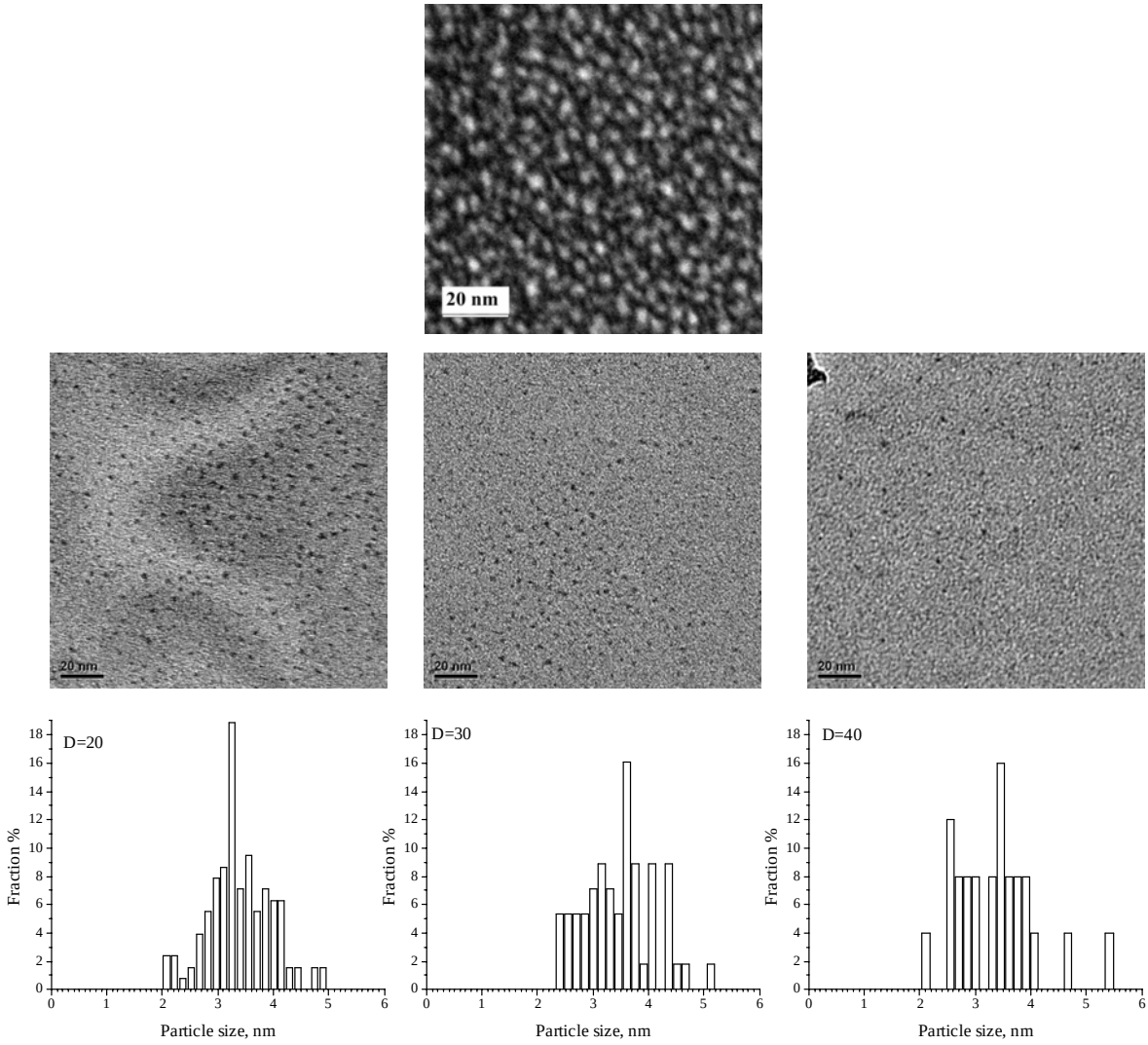

Figure S4. X-ray energy spectra of PbS nanocrystals in (a) 6T and (b) TiOPc deposited on TEM carbon grids.

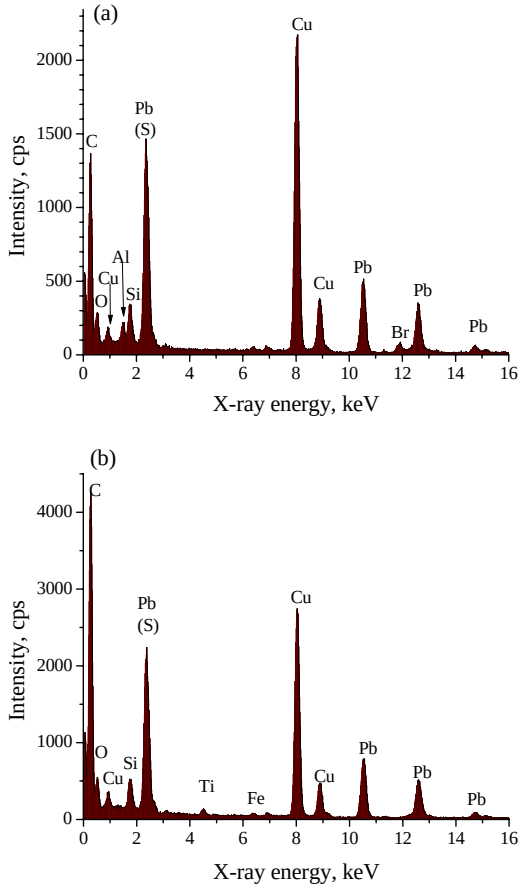

Figure S5. (a) Pb*4f* and (b) S*2p* core level X-ray photoelectron spectra for PbS NCs deposited into 6T at $H_2S$:Ar gas flow ratio of 1:1 in the CBD source. (b) S*2p* shows sulfur contributions from both 6T and PbS NCs.