Electronic Supplementary Information

Influence of high-pressure treatment on charge carrier transport in PbS colloidal quantum dot solids

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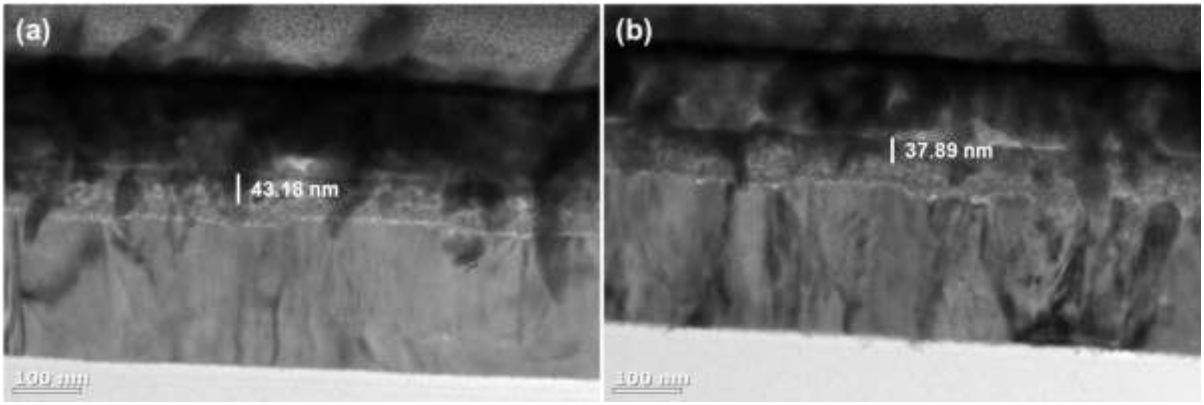

Fig. S1 Cross-sectional HR-TEM images of the Ag/MoO_3/PbS CQD solids/ZnO stack on an ITO substrate. The thicknesses of the (a) as-prepared and (b) high-pressure-treated PbS CQD solids are shown.

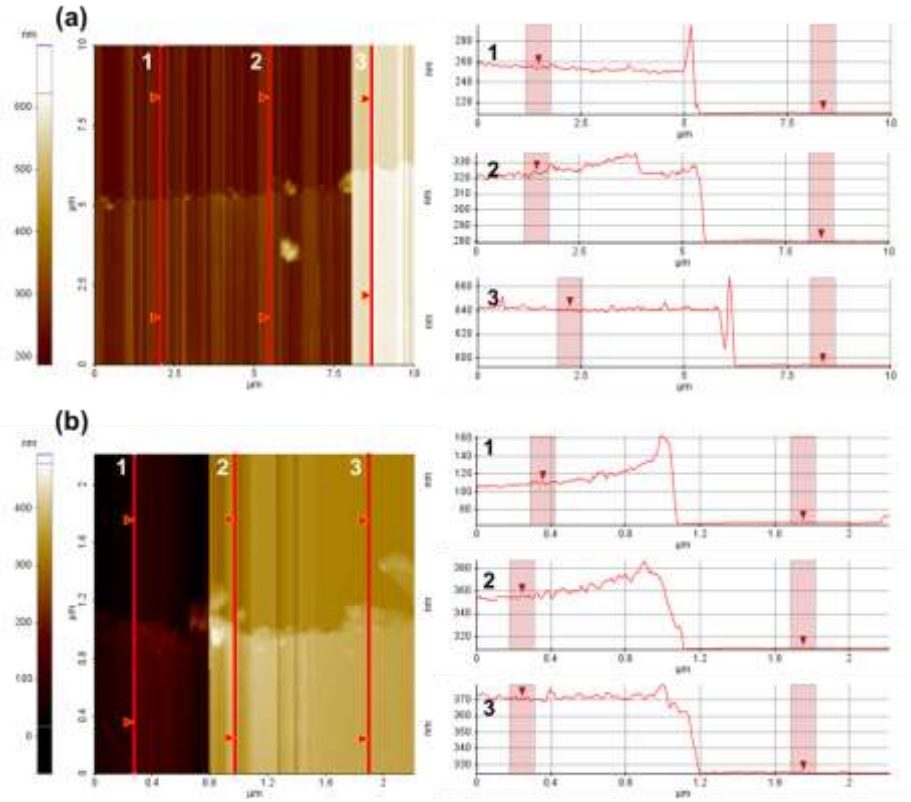

Fig. S2 Line profile of as-prepared PbS CQD solids scanned along red lines indicated in the AFM images at the left. Red arrow represents average cursor pair. (a) The scan size is 10 μm x 10 μm. (b) The size is 2.2 μm x 2.2 μm.

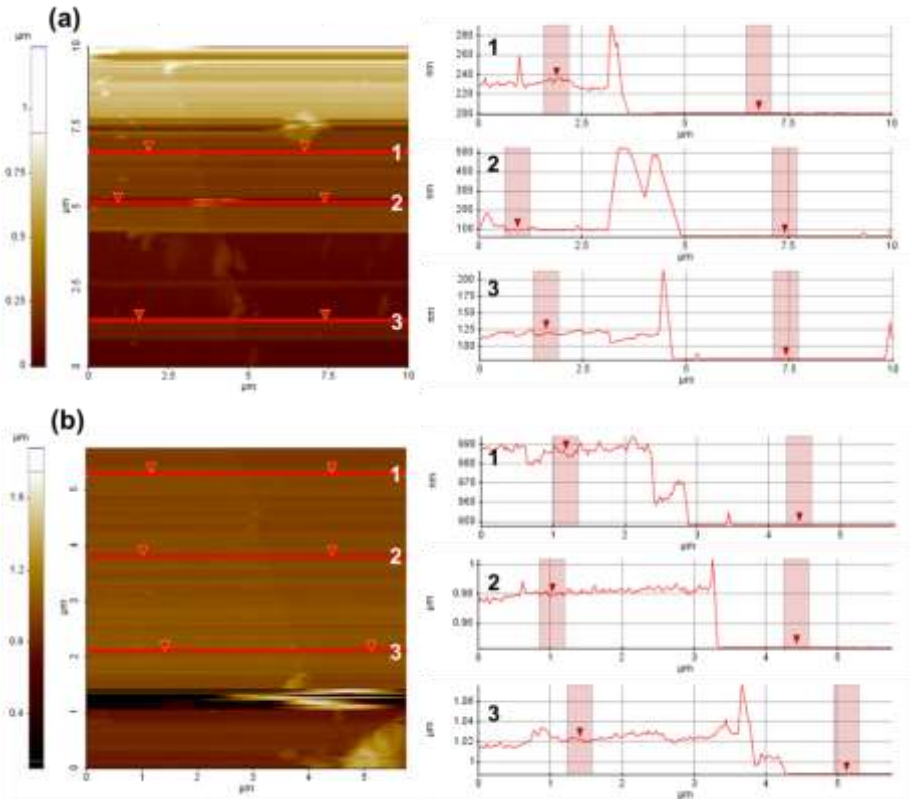

Fig. S3 Line profile of high-pressure-treated PbS CQD solids scanned along red lines indicated in the AFM images at the left. Red arrow represents average cursor pair. (a) The scan size is 10 μm x 10 μm. (b) The size is 5.7 μm x 5.7 μm.

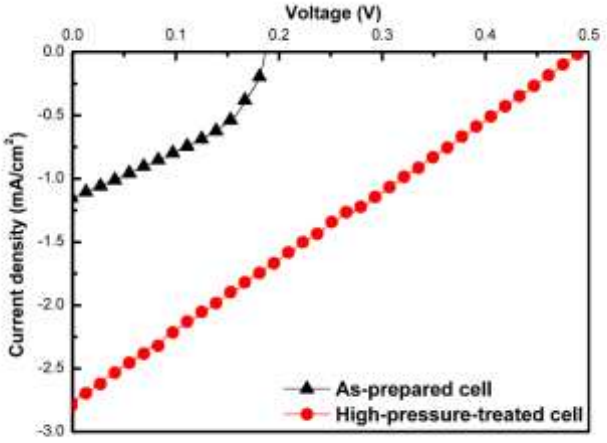

Fig. S4 *J-V* curves of as-prepared and the high-pressure-treated cell.

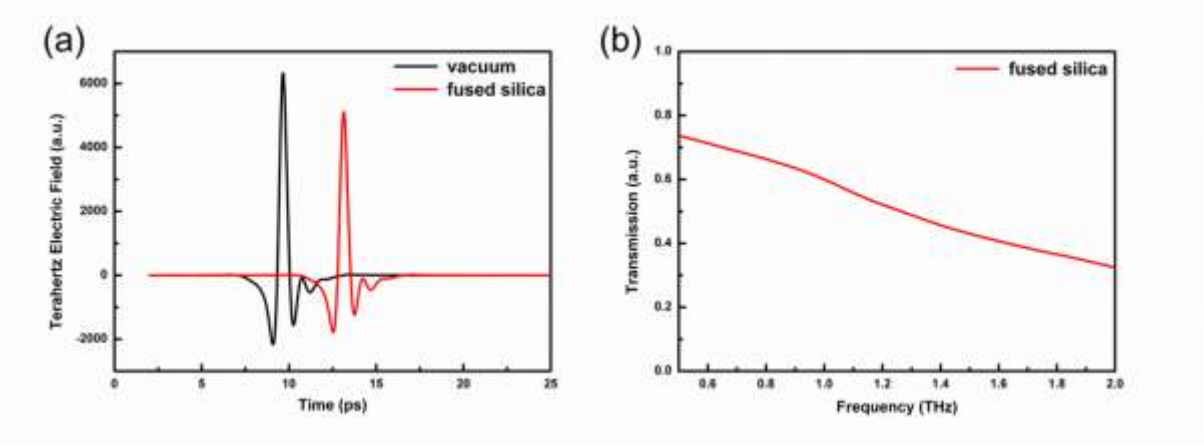

Fig. S5 (a) The THz electric field transmitted through vacuum and fused silica. (b) The transmission spectra of fused silica.

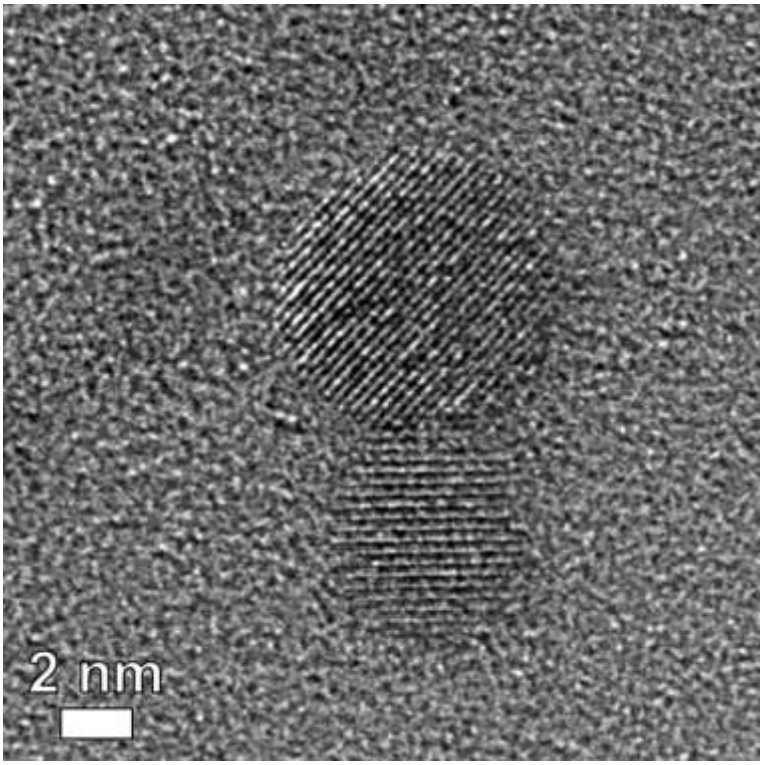

Fig. S6 HR-TEM image showing the spherical shape of the synthesized PbS CQDs.

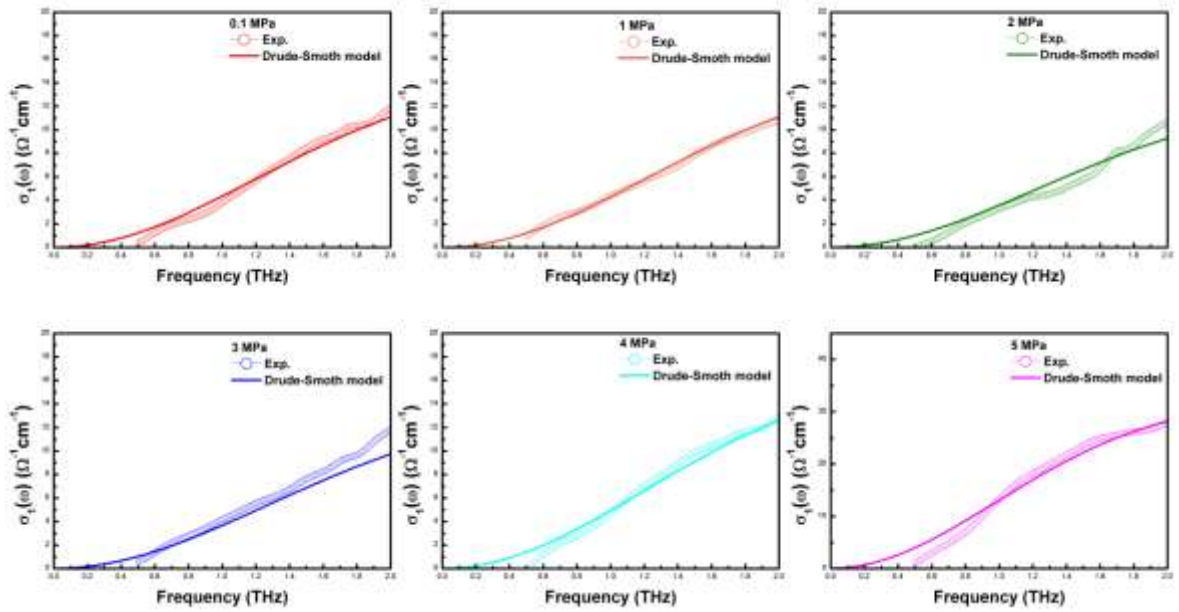

Fig. S7a The real part of the complex conductivity function under each pressure condition. Solid lines and open circles represent experimental and theoretical (Drude-Smith model) values, respectively.

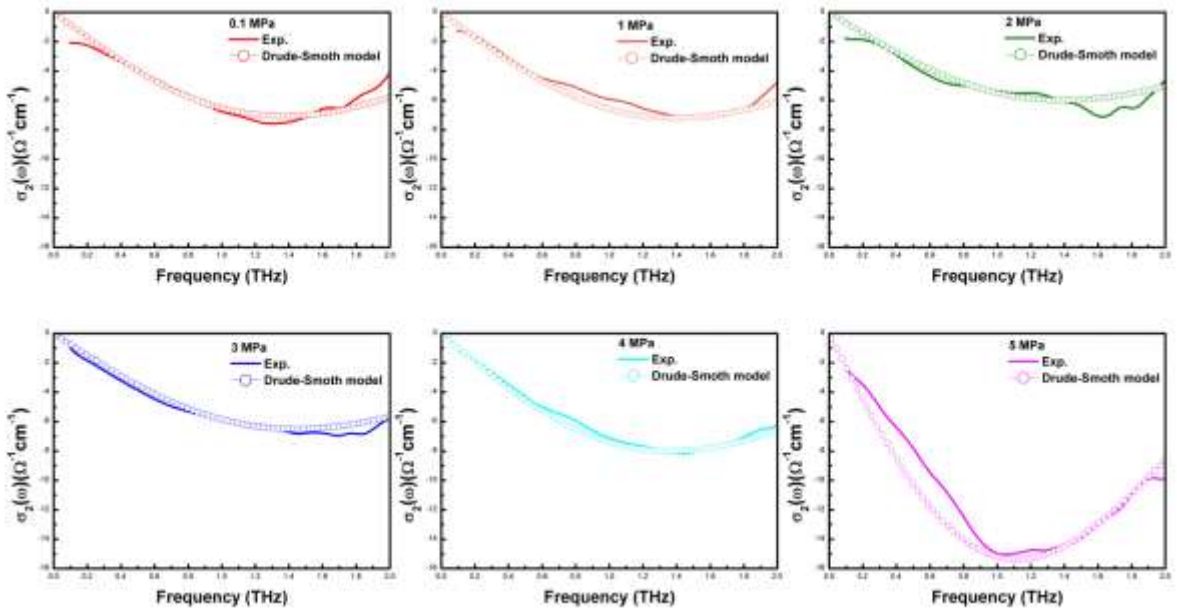

Fig. S7b The imaginary part of the complex conductivity function under each pressure condition. Solid lines and open circles represent experimental and theoretical (Drude-Smith model) values, respectively.