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## **Supporting Information**

# $2D\text{-}MoS_2$ nanosheets as effective hole transport materials for colloidal PbS quantum dot solar cells

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#### Figure S1:

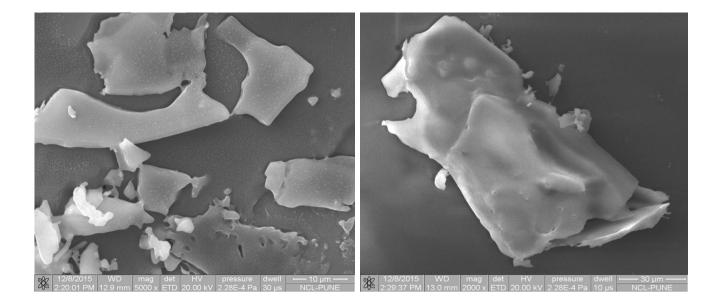
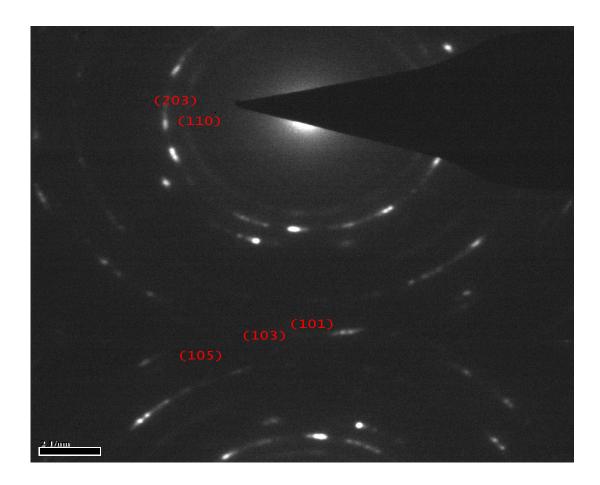


Figure S1. SEM images of  $MoS_2$  nanosheets showing lateral dimension of the sheet between 10 to 100  $\mu m$ 

# Figure S2:



**Figure S2**. Typical SAED pattern of MoS<sub>2</sub> nanosheets.

## Figure S3:

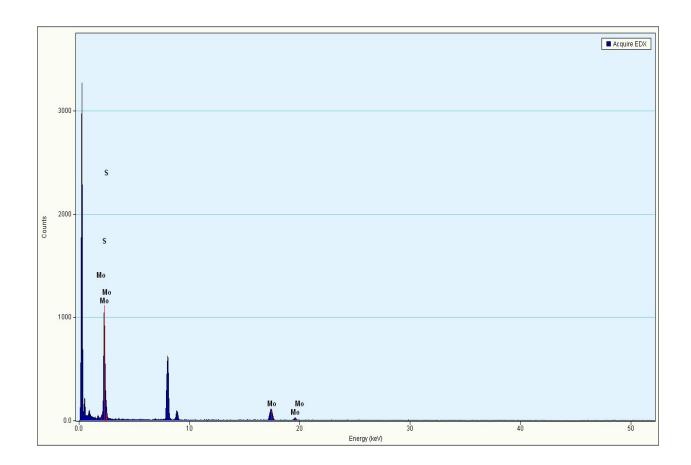
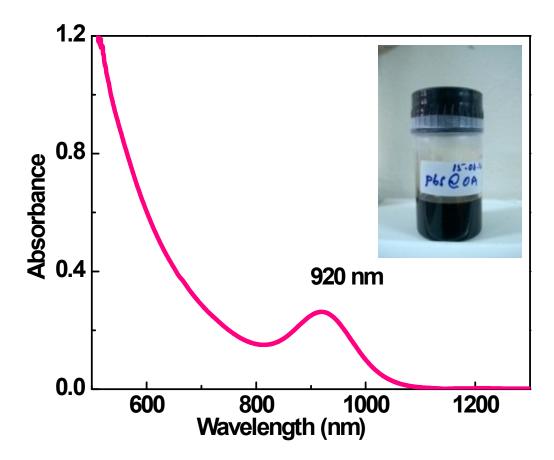


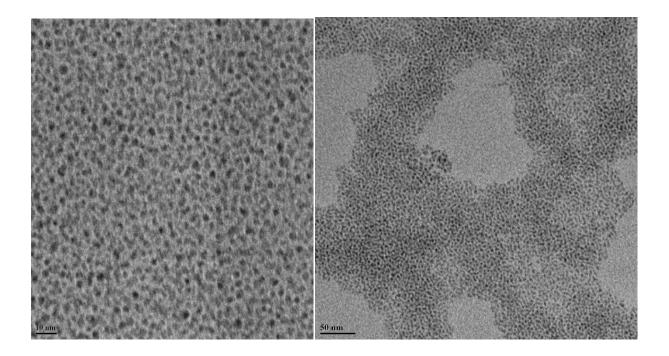
Figure S3. Energy Dispersive X-Ray Analysis (EDAX) of  $MoS_2$  nanosheets.

#### Figure S4:



**Figure S4.** Absorption spectra of oleic acid capped PbS quantum dots; inset picture shows dispersed quantum dots in toluene.

## Figure S5:



**Figure S5**. Typical TEM images of PbS quantum dots.