## **Supporting Information for**

Core-Shell Heterostructured Metal Oxide Arrays Enable Superior Light-Harvesting and Hysteresis-Free Mesoscopic Perovskite Solar Cells

Khalid Mahmood, Bhabani Sankar Swain and Aram Amassian

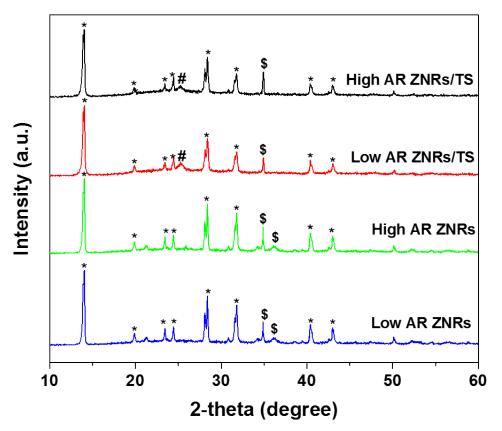


Figure S1. XRD patterns of perovskite coated four different ETMs. Peaks related to the ZnO, TiO<sub>2</sub> and perovskite are marked (\$ is for ZnO, # is for TiO<sub>2</sub> and \* is for perovskite structure).

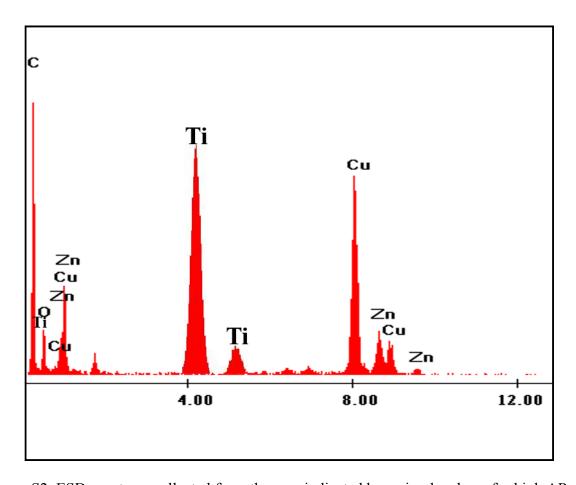


Figure S2. ESD spectrum collected from the area indicated by a circular shape for high AR ZNRs/TS heterostructured hybrid ETM, respectively.