

Supplementary information for:

**Band Alignment and Interface Properties Enhancement for
Heterojunction Solar Cell by Employing Amorphous-
Nanocrystalline Hierarchical Emitter Layer**

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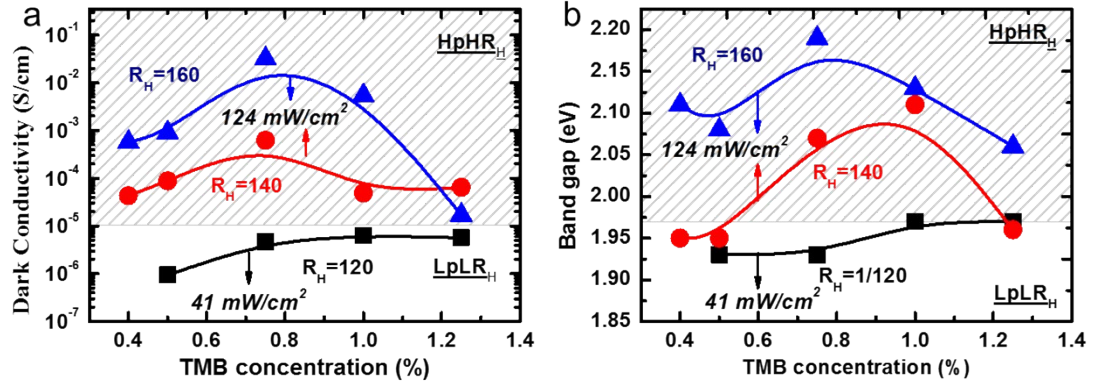


Fig. S1. (a) Dark conductivity and (b) band gap of p-type Si films deposited with various TMB concentrations.

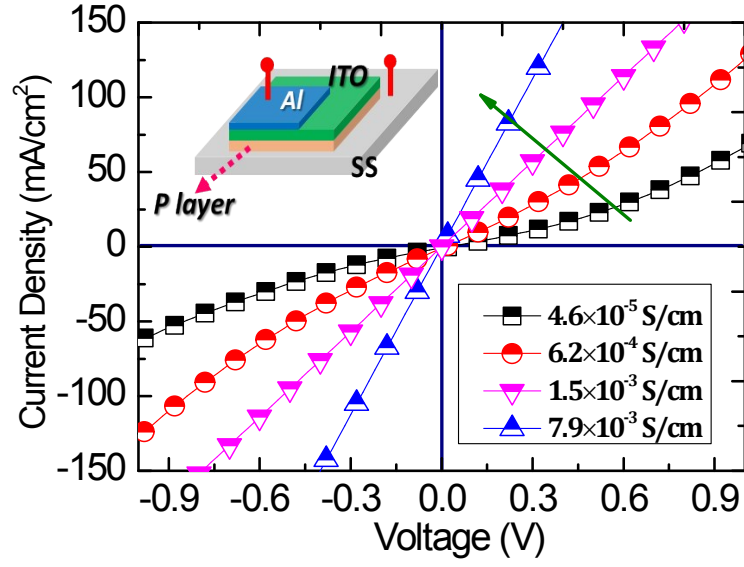


Fig. S2. J-V measurement results of the samples with SS / p layer / ITO / Al architecture. The conductivity of p layer was increased from $4.6 \times 10^{-5} \text{ S/cm}$ to $7.9 \times 10^{-3} \text{ S/cm}$.