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MoO_x modified ITO/a-Si:H(p) contact for silicon heterojunction solar cell application

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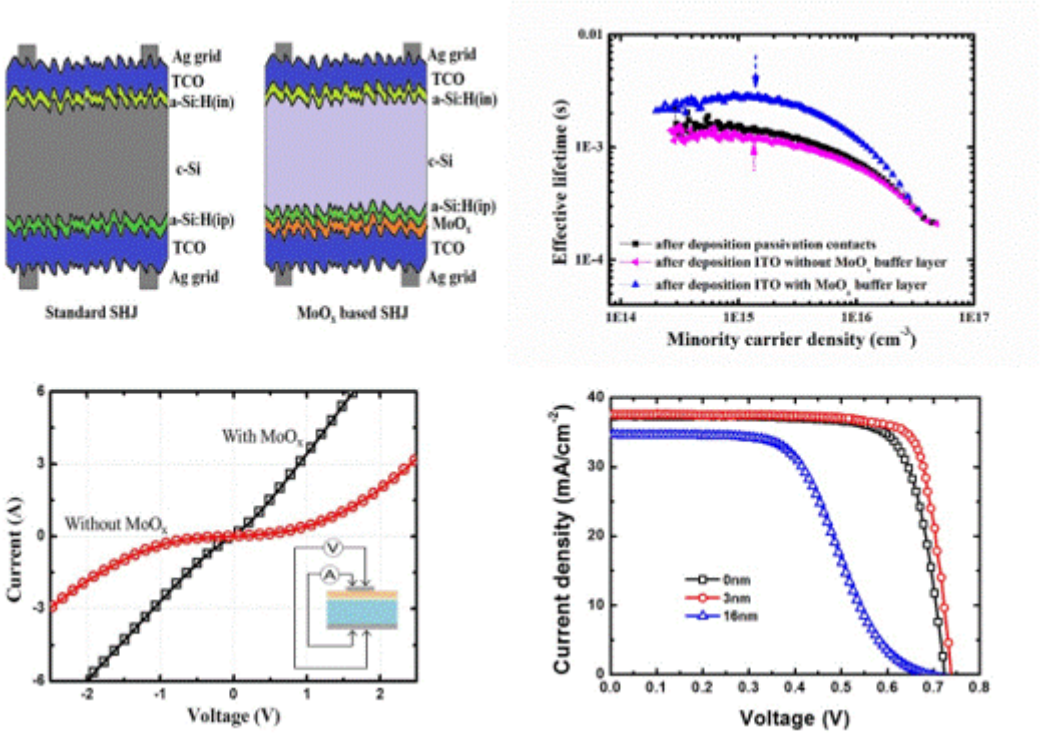
Graphical abstract:



Highlights:

- Effective carrier lifetime (τ_{eff}) and implied open-circuit voltage (implied V_{oc}) increased abruptly after incoporation MoO_x in SHJ precursor cell.
- Schottky barrier height at interface of ITO/a-Si:H(p) contact decreases after inserting MoO_x buffer layer.
- Absolute V_{oc} gains of 8mV and FF gains of 1.5% are achieved by modifying the ITO/a-Si:H(p) contact