

Intermediate-band optoelectronic transitions in ZnTeO for high-efficiency solar energy conversion

- ZnTe:O provides intermediate states and bandgap at near optimal energy
- Intermediate band behavior observed in ZnTe:O, with long carrier lifetime
- High efficiency requires good junction, demonstrated using a ZnS/ZnSe/ZnTe structure

Absorption bands for Intermediate states

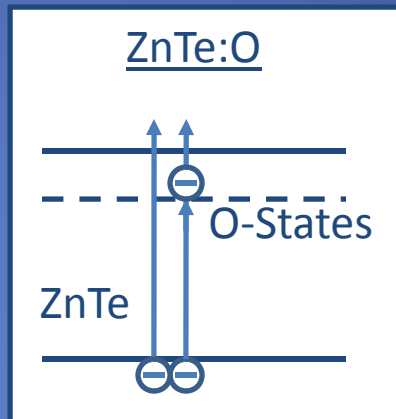
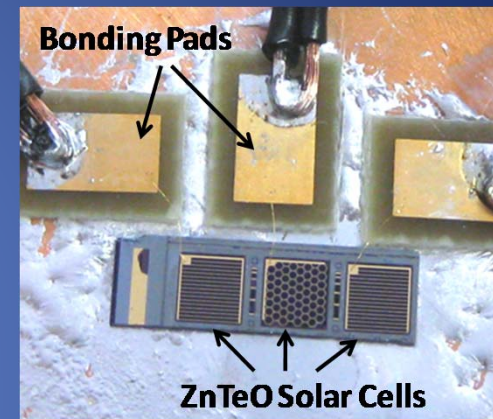
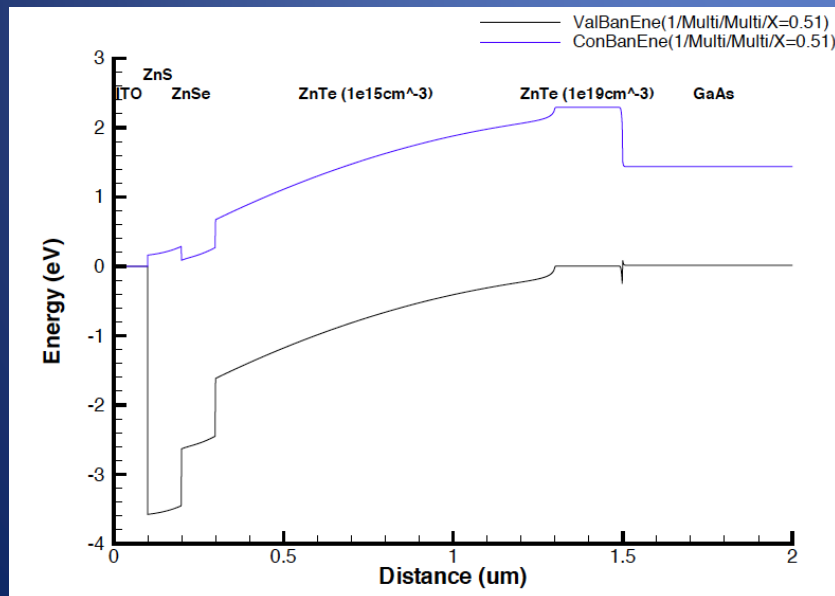


Photo of prototype ZnTe:O solar cell



Calculated energy band diagram of ZnS/ZnSe/ZnTeO/ZnTe solar cell



Current-voltage characteristics under illumination

