

Improvement of Grain Boundary for high efficiency Cu(In,Ga)Se₂ Solar Cells

Background

So far, our group revealed that minority carrier recombination at the grain boundary (GB) can be suppressed by formation of valence band offset (ΔE_V), and then it is possible to realize Cu(In,Ga)Se₂ (CIGS) solar cells with the highest efficiency.

Objective

Valence band maximum (E_V) fall down with decreasing Cu contents in CIGS. Therefore solar cell performance can be improved by formation of Cu-poor layer at the GB owing to suppression of carrier recombination by ΔE_V .

Future Plan

- Development of new technique for controlling composition at the GB.



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