New Coefficients of the Minority Carrier Lifetime and Bandgap Narrowing Models in the Transparent Emitter of Th in Film Silicon Solar Cells

http://www.firstlight.cn 2001-05-19

In this study we have determined new coefficients for the physical model describing the band-gap narrowing and the minority carrier s lifetime. This was accomplished according to the doping level of the thin emitter. This model allows us to take into account both the effect s of the heavy doping and the majority carrier degeneration for the very high level of doping. The results we obtain by the corrected model ar e in good agreement with those reported in the literature and in different experiments. They show us the possibility of accurately evaluating t he performances for the n+p silicon solar cell. This model is then used to introduce a new concept for the thin layer emitter, called transpare nt emitter.

存档文本