결정질 실리콘 태양전지의 n+ emitter층 형성에 관한 특성연구

The investigation of forming the n+ emitter layer for crystalline silicon solar cells

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Abstract : It is important to form the n+ emitter layer for generating electric potential collecting EHP(Electron-Hole Pair). In this paper the formation on the n+ emitter layer of silicon wafer has been made with respect to uniformity of shallow diffusion from a liquid source. The starting material was crystalline silicon wafers of resistivity 0.5~3Ω·㎝, p-type, thickness 200μm, direction[100]. The formation of n+ emitter layer from the liquid $POCl_3$ source was carried out for 890℃ in an ambient of N_2:O_2::10:1 by volume. And than each conditions are pre-deposition and drive-in time. It has been made uniformity of at least. so, the average of sheet resistance was about 0.12%. In this study, sheet resistance was measured by 4-point prove.

Key Words : Crystalline silicon solar cells, Sheet resistance, Diffusion, n+ emitter layer, EHP(electron-hole pair)

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