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Performance control for amorphous silicon germanium alloys by
in situ optical emission spectroscopy

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Abstract

The relationship between processing conditions and specific chemical reactions led to film growth in plasma is identified by optical emission spectroscopy to simplify the optimization process of film properties. SiH* transient behavior after plasma ignition in parallel plate silane/germane/hydrogen plasma is investigated with the variation of germane, hydrogen flow rate and power. The effect on interface property between p layer and intrinsic layer in amorphous silicon germanium solar cell is obtained. H_α*, H_β*, SiH* and GeH* emission intensity is recorded when germane and silane/germane flow rate changes. Ge content is analyzed by optical band gap and Raman spectra of amorphous silicon germanium films. The results are expected to

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