

Abstract Submitted
for the MAR08 Meeting of
The American Physical Society

Characterization of p-InGaAsSb/n-GaSb and p-GaAs/n-GaAs Structures for the Fabrication of Fusion-Stacked Solar Cells¹ M.L. GOMEZ-HERRERA, J.L. HERRERA-PEREZ, CICATA-IPN. U. Legaria, P. RODRIGUEZ-FRAGOSO, J.G. MENDOZA-ALVAREZ, Physics Dept. Cinvestav-IPN, I. RIECH, Fac.Ing.Fisica. UAdeY, G. TORRES-DELGADO, U.Queretaro. Cinvestav-IPN — We are developing a two-stacked solar cell, using for the infrared portion a p-InGaAsSb/n-GaSb heterostructure, and a p-GaAs/n-GaAs for the visible part. Both structures were grown using the liquid phase epitaxy growth technique, and doping at different levels the p-type layers in order to obtain p-n junctions with different electrical characteristics and depletion layer depths. We present results on the characterization of both structures using the photoluminescence spectroscopy to characterize the layer crystalline quality, and the photoacoustic effect to characterize the layer-substrate interface for both structures. Also, we present the results on the I-V characterization and spectral response of both p-n structures for the different doping levels in the p-type layers used. Finally, details on the fusion process to stack the two solar cells are discussed.

¹We acknowledge financial support from Conacyt-Mexico.

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Date submitted: 02 Jan 2008

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