

Electron and Hole Trap Signal with Similar Defect Parameters in Chalcopyrite Based Solar Cells

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Z. Naturforsch. **64a**, 658 – 664 (2009); received April 20, 2009 / revised June 12, 2009

Copper chalcopyrite based solar cells with different molar gallium to gallium plus indium ratio (GGI) are looked at, using deep level transient spectroscopy (DLTS) and admittance spectroscopy (AS). Depending on the respective measurement parameters, like reverse bias level, height and length of the voltage pulse applied, either a minority carrier or/and a majority carrier deep level signal is/are detected in the temperature range below 200 K. The AS investigations reveal only one trap signal. After a detailed description of the defect properties taking advantage of the two diode model, we discuss the origin of these trap signals in view of our experimental findings.

Key words: Thin Film Photovoltaic; Defect Spectroscopy.

PACS numbers: 73.61.Le, 71.55.Ht