

Abstract Submitted
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Hydrogen in multi-crystalline Si used for the fabrication of solar cells¹ CHAO PENG, MICHAEL STAVOLA, W. BEALL FOWLER, Lehigh University, LODÉ CARNEL, REC Scanwafer AS — The multicrystalline Si materials that are used by industry to fabricate solar cells often contain a high concentration of carbon impurities. Furthermore, hydrogen is also commonly introduced during processing to improve solar-cell performance.[1,2] At present, the H- and C-related defect reactions that occur and what their effect might be remain poorly understood. We have performed a series of experiments in which IR spectroscopy has been used to study a family of defect complexes that are formed when H is trapped by substitutional carbon impurities in multi-crystalline Si. The structures, concentrations, and thermal stabilities of these defects have been investigated. 1. F. Duerinckx and J. Szlufcik, *Sol. Energy Mater. Sol. Cells* **72**, 231 (2002). 2. H. Dekkers, Dissertation, Catholic Univ. of Leuven, 2008.

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