

Abstract Submitted
for the MAR12 Meeting of
The American Physical Society

Vibrational spectroscopy of cast Si used to fabricate solar cells: microscopic properties of nitrogen and oxygen impurities¹ HAOXIANG ZHANG, MICHAEL STAVOLA, Lehigh University, MIKE SEACRIST, MEMC Electronic Materials — Cast Si with grain sizes from a few mm to a few cm is commonly used for the fabrication of solar cells. Nitrogen impurities are introduced into cast Si by the SiN_x coating of the crucible used for casting. Much is known about N and O centers in single-crystal Si used in microelectronics [1]. We have used vibrational; spectroscopy to probe the concentration and defect configurations of nitrogen centers in cast Si used to fabricate solar cells. The interaction of N with O impurities that are present has also been investigated. The dominant N center in cast Si is a N-N interstitial pair. N-O complexes are also formed. Which defect complexes are present depends on the impurity content of the multi-crystalline Si sample, which can vary widely, and its thermal history. [1] H. Ch. Alt and H. E. Wagner, J. Appl. Phys. **106**, 103511 (2009) and the references contained therein..

¹Supported by the Silicon Solar Research Center SiSoC Members through NCSU Subaward No. 2008-0519-02 and NSF Grant DMR 0802278

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None

Date submitted: 09 Nov 2011

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