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Diffusion of H in In2O3 single crystals[1] YING QIN, WEIKAI YIN, MIKE STAVOLA, BEALL FOWLER, Lehigh University, LYNN BOATNER, Oak Ridge National Laboratory — An IR absorption line observed at 3306 cm^{-1} for In_2O_3 single crystals annealed in an H_2 ambient has been assigned to an interstitial hydrogen center that acts as a shallow donor [1]. Experiments have been performed to determine the indiffusion depth of interstitial H into In_2O_3 at temperatures near 400 C. We have also performed annealing experiments in which the outdiffusion of interstitial H is monitored by IR spectroscopy. The goal of these studies is to determine the diffusion constant of interstitial H in In_2O_3 over a range of temperatures so that the activation energy for diffusion can be determined. [1] W. Yin et al., Phys. Rev. B 91, 075208 (2015).

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