

Abstract Submitted
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Addressing the Challenges of Using Pulse Induced Fluorescence to Obtain Accurate Surface Recombination Coefficients¹ KRISTOPHER FORD, JOEL BRANDON, North Carolina State University, SANG KI NAM, Samsung Electronics Co., STEVEN SHANNON, North Carolina State University — Pulse Induced Fluorescence is a fast and easily implemented technique for obtaining surface recombination coefficients from optical emission spectroscopy data. However, the traditionally implemented extraction of these coefficients from PIF data is reliant on an accurate fixed gas temperature. Here, the resulting temperature dependent uncertainty is discussed and addressed through rotational temperature measurement in conjunction with PIF measurements. In these experiments, a trace amount of nitrogen is introduced to estimate gas temperature from the second positive nitrogen band. The modified method has been demonstrated in an inductively coupled oxygen plasma over quartz, which is meant to be easily translatable to other dielectric/electronegative gas combinations similar to those found in semiconductor manufacturing equipment.

¹Samsung Electronics Co.

Kristopher Ford
North Carolina State University

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