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SAND2016-11896
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September 2016

Novel Techniques for Silicon Doping Profiling

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Novel Techniques for Silicon Doping Profiling (U)

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Microsystems Assessments

Stephen Montague
Microsystems Assessments

Jeffry J. Sniegowski
Microsystems Assessments I

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Abstract

The purpose of this one-year LDRD was to investigate the use of the helium ion microscope (HeIM) for imaging dopant profiles in silicon relevant to integrated circuit technologies. HeIM is a new technology that offers improved spatial resolution over scanning electron microscopy and different beam-solid interaction physics which leads to unique contrast mechanisms. Two parallel thrusts were pursued: 1) traditional imaging via the secondary electron signal and 2) a novel topographical approach. To obtain the experimental details and results, please refer to the classified report from the project manager, Ed Cole, or the Cyber IA lead, Justin Ford.

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