

## IIRW Addressed Semiconductor Reliability Challenges

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The 2005 International Integrated Reliability Workshop (IIRW), sponsored by the IEEE Reliability Society and the IEEE Electron Devices Society, was held at the Stanford Sierra Camp on the shore of Fallen Leaf Lake near South Lake Tahoe, Calif., October 17–20, 2005. Chaired by Rolf Vollertsen of Infineon Technologies, the workshop provided a unique forum for open and frank discussions of all areas of reliability research and technology for present and future semiconductor applications.

The technical program for the 2005 workshop was organized by John F. Conley Jr. of Sharp Labs of America, and focused on designing-in-reliability (products, circuits, and processes), customer product reliability requirements, root-cause defects, physical mechanisms, simulations and modeling, identification and characterization of new reliability effects, and deep sub-micrometer transistor and circuit reliability.

Erwin Hammerl, head of the central reliability

department of Infineon, gave the keynote address, "Technology Reliability: Challenges and Affordability." Hammerl discussed many of the reliability challenges confronting the integrated-circuit industry, including new materials, faster product introductions, and liability costs, all of which result from the continued progression of transistor scaling. He discussed the need to balance reliability costs and risks, and stressed the importance of understanding customer requirements and use conditions.

In particular, Hammerl suggested that there is a great deal of work still to be done to extrapolate accelerated test results from the laboratory into the field, such as the need for new test structures that are designed to better mimic product architectures and improve failure-mode visibility.

All the papers presented at the workshop will be published in a final report. Selected papers will be published in a special proceedings issue of IEEE Transactions on Device and Material Reliability.

HIRSCH T. GOFFMAN  
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IIRW Communications Chair



Attendees of the 2005 International Integrated Reliability Workshop (IIRW) held October 17–20, 2005, in California.



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