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Devices and Materials: Symposium held November 29 - December 3, Boston, Massachusetts, U.S.A.
Edited by Osamu Ueda, Mitsuo Fukuda, Stephen J. Pearton, Edwin L. Finer and Paolo Montangero
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**MATERIALS RESEARCH SOCIETY
SYMPOSIUM PROCEEDINGS VOLUME 1195**

**Reliability and Materials Issues
of Semiconductor Optical
and Electrical Devices and Materials**

Symposium held November 29 – December 3, Boston, Massachusetts, U.S.A.

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PREFACE

Symposium B, “Reliability and Materials Issues of Semiconductor Optical and Electrical Devices,” was held November 30 – December 3 at the 2009 MRS Fall Meeting in Boston, Massachusetts.

Achieving high reliability is a key issue for semiconductor optical and electrical devices and is as important as device performance for commercial application. Degradation of both optical and electrical devices is strongly related to the materials issues. A variety of material defects can occur during the device fabrication processes, i.e., crystal growth, impurity diffusion, ion-implantation, wet/dry etching, metallization, bonding, packaging, etc.

This symposium presented the state-of-the-art results on reliability and degradation of various semiconductor, optical and electrical devices as well as their materials issues in thin-film growth, wafer processing, and device fabrication processes.

This proceedings volume includes papers presented in the following sessions of the Symposium B during the meeting:

- Laser Reliability
- Degradation Mechanisms
- Optical Devices and Reliability
- Electronic Device Reliability
- Wide Bandgap Devices
- Compound Semiconductors
- Characterization
- Characterization Methods
- Strain Effects
- Defects and Growth
- Diffusion Barriers
- Organic and Other Materials
- Novel Structures

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Mitsuo Fukuda
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Aland K. Chin	Tatsuya Takeshita
Russell D. Dupuis	Piotr Perlin
Shigetaka Tomiya	Koji Maeda
Yuzo Shinozuka	Yoshino Fukai
Kurt V. Smith	Christopher Bozada
Samuel Graham	Brent P. Gila
Don Gajewski	Koichiro Honda

The symposium organizers also thank the session chairs for their efforts in overseeing the sessions and leading subsequent discussions:

Aland K. Chin	Russell D. Dupuis
Tatsuya Takeshita	Shigetaka Tomiya
Koji Maeda	Yuzo Shinozuka
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Christopher Bozada	Samuel Graham
Brent P. Gila	Wayne Johnson
David Cheney	Erica Douglas

The symposium organizers also express their gratitude to University of Florida for financial support, enabling us to present this Symposium B, “Reliability and Materials Issues of Semiconductor Optical and Electrical Devices.”

Finally, we are deeply indebted to the Materials Research Society staff, as well as the Fall Meeting chairs, for the development of an outstanding conference.

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