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Energy Beam-Solid Interactions and Transient Thermal Processing

EDITORS
John C. C. Fan
Noble M. Johnson

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Energy Beam-Solid Interactions and Transient Thermal Processing

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Preface

This volume contains papers presented at the symposium on "Energy Beam-Solid Interactions and Transient Thermal Processing," held in Boston, Massachusetts, November 14-17, 1983. This symposium was the sixth in a series of Materials Research Society symposia devoted to energy-beam interactions with solids and transient thermal processing of materials and devices.

The symposium was very well attended, and the international participation was especially strong. Progress in this topical area is outstanding, both in terms of fundamental understanding and increasingly in the area of practical applications. They are reflected in the more than one hundred papers that were presented in oral and poster sessions, and these papers have been incorporated into different parts of the book according to their topical content.

There were three plenary talks to highlight the critical issues of beam-solid interactions. They were: "Fundamentals of Energy-Beam Interactions with Solids" (W. L. Brown); "Applications of Energy Beams for Material Processing" (J. W. Mayer), and "Device Applications of Rapid Thermal Processing" (J. F. Gibbons). In addition, seventeen well-known international scientists were invited to give papers on a large variety of topics, ranging from femtosecond spectroscopy, rapid thermal annealing of Si and GaAs, defects in rapidly thermally annealed solids, crystal growth, to laser synthesis of compounds. In response to the strong interest in beam crystallization of semiconductors on insulators (SOI), special emphasis was placed on the emerging SOI technologies and their applications. There were invited and contributed papers on beam recrystallization of semiconductors (Si, GaAs, and InSb) on insulators. Furthermore, other SOI technologies such as CVD, oxygen implantation, and porous oxide formation were reviewed. Techological aspects of 3-D circuits were also discussed. An evening panel session on SOI technologies was well attended, and many important issues were brought out in this discussion. The issues as well as the answers from the panelists have been tabulated and described in the volume.

Symposium Co-Chairmen

John C. C. Fan Noble M. Johnson

February 1984

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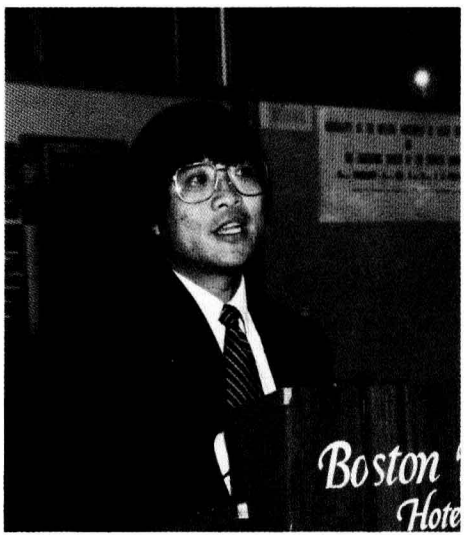

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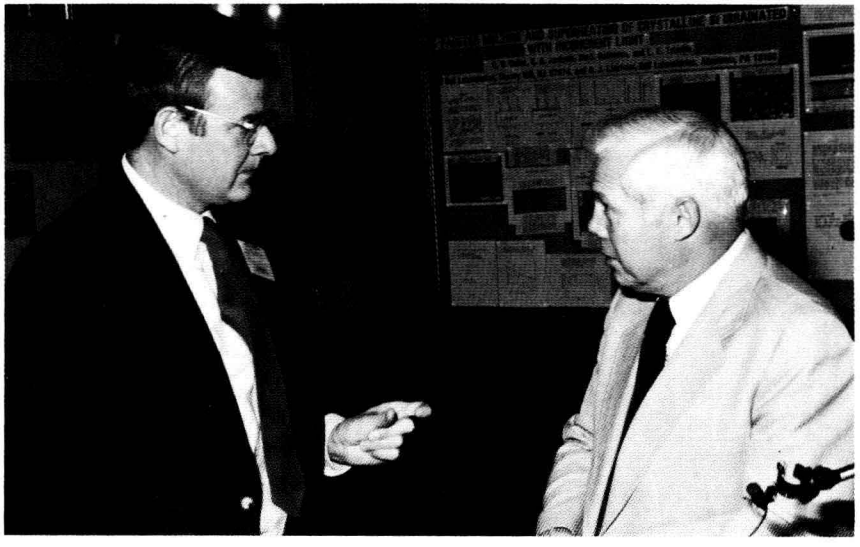
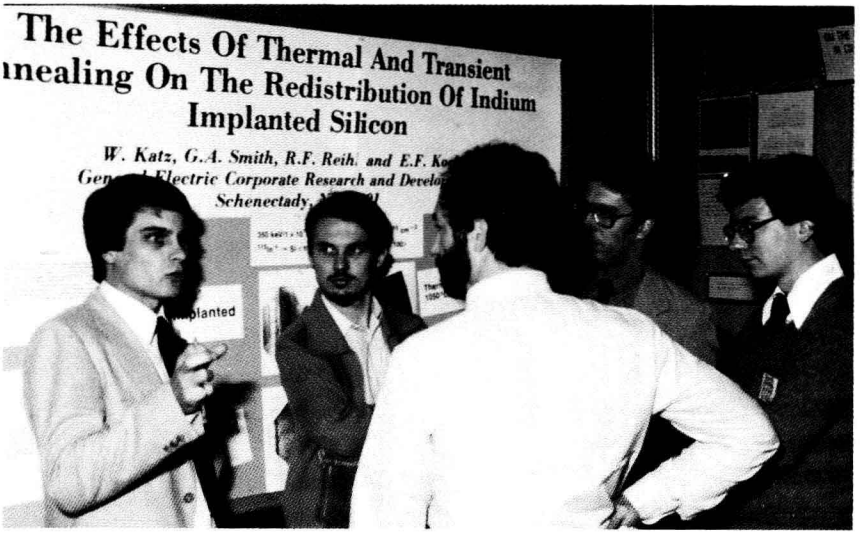


J. M. Poate and W. L. Brown



Lively discussion in the poster session

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