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PREFACE

The present volume with proceedings from Symposium C, “Ferroelectric Thin Films XII,” is a partial record of the symposium held December 1–4 at the 2003 MRS Fall Meeting in Boston, Massachusetts. This year’s symposium was the twelfth in a series, and continues to be one of the most highly regarded conferences in the field. Indeed, over 200 abstracts were submitted. The four days of oral presentations and three nights of poster sessions were very well attended and well received. Scientists came from universities, national laboratories, and industry from North America, Europe and Asia. Additionally, a tutorial session was held prior to the start of the symposium with more than 64 participants.

The symposium “Ferroelectric Thin Films XII” highlighted the latest technological and scientific advances in ferroelectric thin films. Presentations discussed the expanding scientific understanding and significant progress in ferroelectric device technology along with continuing developments in novel oxide materials, their properties, characterization techniques, and the fundamental understanding of ferroelectricity in thin films. The advances presented on high-density ferroelectric non-volatile memories (FeRAMs) include issues of materials integration, metal oxide electrodes utilization, the effect of stress on capacitors, and long term reliability. Impressive developments in the integration of ferroelectric thin films on silicon were shown during a joint session on “Gate Dielectrics and Functional Oxides on Silicon” with Symposium E, “Fundamentals of Novel Oxide/Semiconductor Interfaces.” Special emphasis was placed on heterostructures of silicon substrates and oxide thin films, and on the thermal stability of these interfaces. Another emerging field addressed the use of high-permittivity materials for a variety of capacitor applications, with particular interest in decoupling capacitors, as well as the integration of such films into high-frequency applications, e.g., RF voltage-tunable devices.

The symposium took place at a time when there is a new surge of interest in both the fundamentals of ferroelectric films, as well as new applications. This proceedings presents the latest scientific and technological information from scientists and engineers worldwide. While it highlights the current state of the art, it also provides insight into the emerging trends of this exciting technology.

Susanne Hoffmann-Eifert
Hiroshi Funakubo
Vikram Joshi
Angus I. Kingon
Ivo P. Koutsaroff

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The symposium organizers would like to acknowledge all of the contributing authors for the outstanding quality of their presentations and proceedings manuscripts. We would especially like to thank the invited speakers for their presentations which added greatly to the symposium. Invited speakers included:

J.S. Cross	Y. Noguchi
J. Dawley	H. Odagawa
Y. Fujisaki	M. Osada
Y. Ishibashi	H. Schroeder
P.C. McIntyre	M. Shimizu
H. Matsuda	K. Suu
B.-K. Moon	B. Vincent
P. Muralt	P.A. Williams

We are sincerely grateful for the excellent efforts of the session chairs in overseeing the sessions and guiding the subsequent discussions. Session chairs included:

J.S. Cross	H. Odagawa
Y. Fujisaki	M. Shimizu
P.C. McIntyre	S.K. Streiffer
P. Muralt	A.K. Tagantsev

We thank all those who promptly and thoroughly reviewed the proceedings manuscripts.

We are also indebted to the tutorial instructors:

P. Muralt	S.K. Streiffer
S. Hoffmann-Eifert	A.K. Tagantsev

for their excellent tutorial syllabus, notes, and presentations.

The chairs would also like to express their gratitude to the following organizations that provided financial support and enabled us to present this symposium:

AIXTRON AG, Germany
Gennum Corporation, Canada
Kojundo Chemical Laboratory Co., Ltd., Japan
Symetrix Corporation, USA
Tegal Corporation, USA
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Finally, we extend a special thanks to the staff of the Materials Research Society for providing continuous support of the symposium and this proceedings. We also thank the Chairs of the 2003 MRS Fall Meeting for yet another outstanding conference.

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