Ferroelectric Thin Films XII

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Ferroelectric Thin Films XII

Symposium held December 1–4, 2003, Boston, Massachusetts, U.S.A.

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CONTENTS

*Invited Paper

FUNDAMENTALS OF FERROELECTRIC THIN FILMS: EMPHASIS ON CHARACTERIZATION AND DOMAINS

OXIDE FILMS PROCESSING: EMPHASIS ON CVD AND PATTERN FORMATION

*Invited Paper

FERROELECTRIC FILMS: PROCESSING AND INTEGRATION

*Invited Paper

DIELECTRIC FILMS APPLICATIONS: LOW FREQUENCY TO MICROWAVE

FERROELECTRIC FILMS FOR MEMORIES: MATERIALS AND DOMAINS

*Invited Paper

GATE DIELECTRICS AND FUNCTIONAL OXIDES ON SILICON

PIEZOELECTRIC, OPTICAL AND PYROELECTRIC APPLICATIONS

*Invited Paper

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.

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Vikram Joshi
Angus I. Kingon
Ivo P. Koutsaroff

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J.S. Cross
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Y. Fujisaki
Y. Ishibashi
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H. Matsuda
B.-K. Moon
P. Muralt
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H. Schroeder
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J.S. Cross
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P. Muralt
H. Odagawa
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S.K. Streiffer
A.K. Tagantsev

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