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Implications: Materials Research Society Symposium Proceedings: Volume 1155

Editors: Alexander A. Demkov, Bill Taylor, H. Rusty Harris, Jeffery W. Butterbaugh
and Willy Rachmady

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**MATERIALS RESEARCH SOCIETY
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CMOS Gate-Stack Scaling — Materials, Interfaces and Reliability Implications

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PREFACE

This proceedings volume contains a selection of papers presented at Symposium C, “CMOS Gate-Stack Scaling — Materials, Interfaces and Reliability Implications,” held April 14–16 at the 2009 MRS Spring Meeting in San Francisco, California. To address the demands of device scaling, new materials are being introduced into conventional Si CMOS processing at an unprecedented rate. Articles collected in this book focus on understanding, from a chemistry and materials perspective, the mechanism of interface formation and defects at interfaces, for both conventional Si and alternative channel (Ge or III-V) systems. Several papers address reliability concerns for HiK/metal gate (basic physical models, charge trapping, etc.), while others cover characterization of the thin films and interfaces which comprise the gate stack.

As symposium organizers, we are indebted to all the participants who made the symposium an exciting event, and in particular, to all the authors who contributed papers to this volume. We would like to acknowledge the generous financial support of DCA Instruments, FSI International and one anonymous donor.

Alexander A. Demkov
Bill Taylor
H. Rusty Harris
Jeffery W. Butterbaugh
Willy Rachmady

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