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Oxide Semiconductors and Thin Films

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Oxide Semiconductors and Thin Films

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Oxide Semiconductors and Thin Films

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PREFACE

Symposium Z, “Oxide Semiconductors,” and Symposium F, “Oxide Thin Films for Renewable Energy Applications,” were held Nov. 25–Nov. 30 at the 2012 MRS Fall Meeting in Boston, Massachusetts.

Oxide materials are attracting considerable attention both as semiconductors for a wide range of potential device applications but also in energy research spanning from photo- and electro-catalysis, to electrolytes and electrodes used in batteries or fuel cells. This symposium proceedings volume collects recent reports from the meeting aimed at providing a fundamental understanding of bulk oxide materials as well as thin films and nano-structures. The topics covered in this volume are quite broad and include such areas as growth and doping, defects and characterization, and device applications. For convenience, the papers are divided into three sections: (1) ZnO and Related Materials, (2) Non-ZnO Oxides, and (3) Devices and Applications.

All the contributions to the symposia focused on solving pressing issues and providing scientific insight. We hope that the reader finds this collection of papers to convey the multidisciplinary approach of physics, chemistry, materials science, and engineering needed to advance this field.

André Schleife
Martin Allen
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Steven M. Durbin
Nini Pryds
Christof W. Schneider
Tim Veal

June 2013

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