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Symposium Proceedings: Volume 1174

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**MATERIALS RESEARCH SOCIETY  
SYMPOSIUM PROCEEDINGS VOLUME 1174**

# Functional Metal-Oxide Nanostructures

Symposium held April 14–17, San Francisco, California, U.S.A.

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## PREFACE

These are the proceedings of Symposium V, "Functional Metal-Oxide Nanostructures," held April 14–17 at the 2009 MRS Spring Meeting in San Francisco, California.

Metal oxides and their nanostructures have emerged as an important class of materials with a rich spectrum of properties and great potential for device applications. These include transparent electrodes, high electron mobility transistors, gas sensors, photovoltaic and photonic devices, energy harvesting devices with multiferroic oxides, non-volatile memories with defective oxides, etc. The symposium provided a unique opportunity for the materials community to discuss the fundamental problems related to synthesis, characterization, assembly, and device applications of oxide nanostructures, as well as the most recent progress in these fields. Presentations in the symposium covered a wide range of topics such as physics and applications of phase transitions, strain and interfaces in complex oxide nanostructures, nano-ionics and resistance switching in oxides, assembly and processing of oxide nanostructures, zinc oxide, titanium dioxide, other oxide semiconductors and their applications.

The symposium attracted a large group of attendees from around the world, reflecting the great current excitement in this field. The symposium consisted of nine oral sessions and two poster sessions, with 14 invited talks, 120 contributed talks, and over 50 posters. For some of the invited talks, the large meeting room was fully crowded with over a hundred attendees. One of our posters won the best poster award.

We would like to acknowledge the funding support from IBM Almaden Research Center, JSR Micro Inc., Samsung Cheil Industries, Inc., and Samsung Electronics Co., Ltd.

Junqiao Wu  
Wei-Qiang Han  
Anderson Janotti  
Ho-Cheol Kim

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