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Research Society Symposium Proceedings: Volume 1104

Editors: David K. Shuh, Brandon W. Chung, Thomas Albrecht-Schmitt,
Thomas Gouder and Joe D. Thompson

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PREFACE

Actinides are an important, if not sometimes unwanted part of highly technological societies. With the growing demand for affordable energy and concerns about the environment, there is a renaissance underway in fundamental actinide science underpinning the development of materials, fuels, waste forms, and separation technologies for nuclear energy. Actinide materials pose an extreme scientific challenge to the materials research community. The complex electronic structure of actinides results in many abnormal properties that even today are not well understood, if at all. The focus was on fundamental actinide science and its role resolving technical challenges posed by actinides materials. Both basic and applied experimental approaches, as well as theoretical modeling and computational simulation, were part of the symposium.

The fourth in the series of MRS actinides symposia, Symposium NN, "Actinides IV—Basic Science, Applications and Technology," held March 25–28 at the 2008 MRS Spring Meeting in San Francisco, California, was the first of the MRS actinides symposia to be held as part of an MRS Spring Meeting. The four-day symposium featured nine technical sessions and included an evening poster session. The scientific themes of the technical sessions centered on Phase Transformation and Metallurgy; Electron Correlations and Structure; Nuclear Fuel, Waste and Storage; Actinide Chemistry; Spectroscopy and Microscopy of Actinides; Atomistic Modeling; and Superconductivity and Complex Behavior. The scientific quality and breadth of the presentations were excellent, stimulating a large amount of audience participation from the very well-attended sessions.

We would like to thank the following organizations for their generous support of the MRS 2008 Spring actinides symposium:

Lawrence Livermore National Laboratory — The Weapons Complex Integration Directorate; Chemistry, Materials, Earth, and Life Science Directorate; Enhanced Surveillance Campaign; and Materials Science & Technology Division

Los Alamos National Laboratory — The Materials Physics and Applications Division; Materials Science & Technology Division; and Structure/Property Relations Group

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