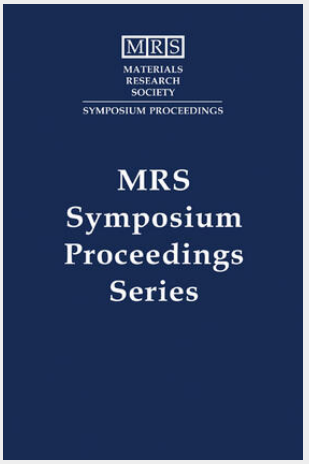
Baldinozzi / Zhang / Smith

# Materials Research Needs to Advance Nuclear Energy

Rising global energy demand and the adverse environmental impact of energy use have led to renewed interest in nuclear power. Novel materials and approaches are needed to advance the utilization of nuclear energy in a manner consistent with the goals of proliferation resistance, energy security and waste reduction. This book brings together experimenters, theoreticians and modelers to discuss the innovations needed to develop the next generation of nuclear materials, and to understand the performance of existing materials under extreme operating conditions. Presentations explore the fabrication (melting, rolling sol gel, sintering, hot-pressing), characterization (microscopy, diffraction, thermal and electrical property measurements), modeling (ranging from nano- to mesoscale, and spanning timeframes ranging from fractions of femtoseconds to hundreds or millions of years), and performance predictions of various nuclear fuel cycle materials.

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