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## Scientific Basis for Nuclear Waste Management XXXVIII

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**Scientific Basis for Nuclear Waste Management  
XXXVIII**

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# **Scientific Basis for Nuclear Waste Management XXXVIII**

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## PREFACE

The Materials Research Society's Symposium EE, entitled "Scientific Basis for Nuclear Waste Management XXXVIII," was held November 30<sup>th</sup> through December 5<sup>th</sup>, 2014, at the MRS Fall Meeting in Boston, Massachusetts. The symposium discussed the key scientific challenges for the safe and effective management of spent nuclear fuel and radioactive waste and provided an overview of the international research and waste management programs around the world. Waste forms and engineered barrier system properties, interactions between engineered and geological systems, radiation effects, chemistry and transport of radionuclides, and long-term predictions of repository performance were just some of the topics presented at the symposium by internationally renowned speakers and leading researchers in the field.

The symposium attracted 85 abstracts. This proceedings volume contains 31 papers from the meeting. The papers were divided into four sections: (1) Capture and Immobilization of Radionuclides, (2) Development and Characterization of Waste Forms, (3) Corrosion Behavior of Materials, and (4) Storage and Disposal of Nuclear Waste. Each paper provides a glimpse of the recent advances in nuclear waste management, which presents a global challenge for further development of the nuclear power industry. In spite of significant opposition worldwide after the accident at the Fukushima Daiichi nuclear power plant, we hope that over the next few decades, current and future generations of scientists and technologists will design, implement, and communicate an integrated understanding of the multi-scale processes involved in the processing, packaging, disposal, and regulation of the wide variety of materials designated as nuclear waste.

Josef Matyáš  
Stéphane Gin  
Robert Jubin  
Eric Vance

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