

# Table of Contents

## Preface

### **Chapter 1: Materials for Nuclear Fission and Fusion Technologies**

#### **Indian Test Blanket Module in ITER - Development of RAFM Steel and Fabrication Technology**

T. Jayakumar and E.R. Kumar 1

#### **Study on the Creep and Fatigue Properties of CLAM Steel**

Y.Y. Zhao, S.J. Liu, C.J. Li, B.Y. Zhong, G. Xu, Q.Y. Huang and Y.C. Wu 12

#### **Behavior at High Temperature of Metallic Liners (Ta, Nb) Used in the Sandwich Cladding Material of the GFR**

L. Charpentier and M. Balat-Pichelin 17

#### **Utilization Research and Development of Hydride Materials in Fast Reactors**

K. Konashi, K. Itoh, T. Yokoyama and M. Yamawaki 23

#### **Depleted Uranium as Hydrogen Storage Material**

M. Yamawaki, Y. Arita, T. Yamamoto, F. Nakamori and K. Ohsawa 32

#### **Characterization of SiC Ceramic Tube Prepared by the Combined CVI and CVD Process**

J.Y. Park, D.J. Kim and W.J. Kim 38

#### **Status of the Low Enriched Uranium Fuel Development for High Performance Research Reactors**

L. Sannen, S. van den Berghe and A. Leenaers 43

#### **A Microfluidic-Assisted Fabrication of Size-Controlled Porose CeO<sub>2</sub> Microspheres as an Analog Production of Nuclear Fuel Beads**

X. Li, Y.T. Yang, C.F. Fu, Q.Y. Huang, L.S. Sheng, Z.Q. Chang and C.C. Serra 55

#### **Xenon Ion Irradiation Effects on a Ni-Base Ni-17Mo-7Cr Alloy**

H.F. Huang, D.H. Li and L. Yan 69

### **Chapter 2: Materials for Nuclear Waste Treatment and Disposal**

#### **Selective Decontamination and Stable Solidification of Cs-Insoluble Ferrocyanide by Zeolites**

H. Mimura, Y. Ikarashi, E. Ishizaki and M. Matsukura 75

#### **Fabrication and Chemical Durability of Ceramic Technetium-Based Pyrochlores and Perovskites as Potential Waste Forms**

T. Hartmann and I.J. Alaniz-Ortez 85

#### **Behavior of Fuel and Structural Materials in Severely Damaged Reactors**

N. Sato, A. Krishima and T. Sasaki 93

#### **A New Matrix for Conditioning Chloride Salt Wastes from the Electrorefining of Spent Nuclear Fuel**

G. de Angelis, M. Capone, C. Fedeli, G.A. Marzo, M. Mariani, E. Macerata and M. Giola 97

#### **Adsorption Materials Development for the Separation of Actinides and Specific Fission Products from High Level Waste**

Y.Z. Wei, S.Y. Ning, Q.L. Wang, Z. Chen, Y. Wu, R.Q. Liu and H. Mimura 103

#### **Progress at ANSTO on a Synroc Plant for Intermediate-Level Waste from Reactor Production of <sup>99</sup>Mo**

E.R. Vance, S.A. Moricca and M.W.A. Stewart 111

#### **Review of the Development of the Proposed Yucca Mountain Geologic Repository**

C.E. Sanders 115

#### **RADON Operational Experience in High-Temperature Treatment of Radioactive Wastes**

S.V. Stefanovsky, Y.V. Myshkin, D.V. Adamovich and M.D. Belyi 121

#### **Leaching Behavior of Salt Wastes Conditioned with Sodalite Blended with Two Different Glass Powders**

M. Capone, G. de Angelis, C. Fedeli, F. Giacobbo, M. da Ros, E. Macerata and M. Mariani 131