

# **CONTENTS / APRIL 2011—VOL. 174, NO. 1**

## **TECHNICAL PAPERS**

#### **ACCIDENT ANALYSIS AND CONSEQUENCES**

1 Enhanced Simmer Neutronics Tool for Studying Fast Reactor Distorted Core Configurations / Sandra Poumerouly, Gérald Rimpault

#### **ONE-PHASE FLUID FLOW**

- 18 Numerical Modeling of Flow in the Condensate Polisher Vessel of a Nuclear Reactor, with Applications to PVNGS / Ashish Sharma, Jeffrey Brown, Harindra J. S. Fernando
- 29 Safety Analysis for Hot Gas Duct Vessel in HTR-PM / Xiaotian Li, Xiaowei Li, Li Shi, Zhengming Zhang, Shuyan He

#### **HEAT TRANSFER**

41 Improved Simulations of Heat Transfer in Liquid-Metal Flows / Constantine P. Tzanos

#### THERMAL HYDRAULICS

51 Qualification of the RELAP5/PARCS Code for BWR Stability Events Prediction / Tomasz Kozlowski, Joanna Peltonen

#### INSTRUMENTATION AND CONTROL SYSTEMS

64 Observation of the Dynamics of Nuclear Systems Using Sliding Mode Observers / Günyaz Ablay, Tunc Aldemir

#### CHEMICAL REPROCESSING

77 Enhancement of Decontamination Performance of Impurities for Uranyl Nitrate Hexahydrate Crystalline Particles by Crystal Purification Operation / Masaumi Nakahara, Tsutomu Koizumi, Kazunori Nomura

#### REPROCESSING

85 Diffusion Model for Electrolytic Reduction of Uranium Oxides in a Molten LiCl-Li<sub>2</sub>O Salt / Supathorn Phongikaroon, Steven D. Herrmann, Michael F. Simpson

#### **GEOCHEMISTRY AND GROUND TRANSPORT OF RW**

94 Impacts of Elevated Temperatures on Bentonite Extrusion and Cesium Transport in the Excavated Damaged Zone / R. A. Borrelli, Olivier Thivent, Joonhong Ahn

(Continued)

# **CONTENTS / APRIL 2011—VOL. 174, NO. 1**

## (Continued)

#### **RADIOCHEMISTRY**

109 Behavior of Actinide Elements and Fission Products in Recovery of Uranyl Nitrate Hexahydrate Crystal by Cooling Crystallization Method / Masaumi Nakahara, Tsutomu Koizumi, Kazunori Nomura

#### **ENERGY CONVERSION SYSTEMS USING RADIOISOTOPES**

119 Development and Testing of a Nanotech Nuclear Battery for Powering MEMS Devices / Eric V. Steinfelds, James S. Tulenko