Nuclear Science and Engineering



VOLUME 198 · NUMBER 3 · MARCH 2024

Contents

RESEARCH ARTICLES

- **527** Generational Variance Reduction in Monte Carlo Criticality Simulations as a Way of Mitigating Unwanted Correlations
 - Kévin Fröhlicher, Eric Dumonteil, Loïc Thulliez, Julien Taforeau, Mariya Brovchenko
- 545 High-Fidelity Transient Analysis with STREAM Based on the Predictor-Corrector Quasi-Static Method
 - Anisur Rahman, Hyun Chul Lee, Deokjung Lee
- **565** Continuous-Energy Time-Dependent Coarse Mesh Transport (COMET) Method for Kinetics Calculations
 - Dingkang Zhang, Farzad Rahnema
- 578 Statistical Methods for the Study of Computer Experiment Failures: Application to a Fuel-Coolant-Interaction Simulation Code
 - Faouzi Hakimi, Claude Brayer, Amandine Marrel, Fabrice Gamboa, Benoît Habert
- 592 A Novel Hybrid Deterministic and Monte Carlo Neutron Transport Formulation and Algorithm (tRAPID) for Accurate and Fast 3-D Reactor Kinetics

 Valerio Mascolino, Alireza Haghighat
- **628** High-Order Perturbation Method for Updating Response Functions for Time-Dependent Transport Calculations
 - Farzad Rahnema, Dingkang Zhang
- **640** Propagation of Uncertainties due to Nuclear Data for the LCT086 Reactor System *G. P. Nyalunga, V. V. Naicker*
- **658** Experimental Analyses of Capture Reaction Rates for Epithermal and Resonance Neutrons in Source-Driven Subcritical Cores

 Naoto Aizawa, Cheol Ho Pyeon
- 673 Comparative Analysis of Standard and Advanced USL Methodologies for Nuclear Criticality Safety

Jeongwon Seo, Hany S. Abdel-Khalik, Ugur Mertyurek, Goran Arbanas, William Marshall, William Wieselquist

—continued—

https://www.ans.org i

Contents continued

VOLUME 198 · NUMBER 3 · MARCH 2024

- **702** Resonance Scattering Treatment with the Windowed Multipole Formalism Gavin Ridley, Benoit Forget, Timothy Burke
- 727 Rapid Quenching of Molten Salts as an Approach for the Coordination Characterization of Corrosion Products

Juho Lehmusto, J. Matthew Kurley III, Ercan Cakmak, James R. Keiser, Daniel Lindberg, Markus Engblom, Bruce A. Pint, Stephen S. Raiman

735 CFD Simulation of Melt Pool Coolability in a Simulated Core Catcher Model Samyak S. Munot, Arun K. Nayak

NOTE

749 A Method for Inhibiting Corrosion of Type 316L Stainless Steel in High-Temperature Molten Chloride Salt

Brendan D'Souza, Amanda Leong, Jinsuo Zhang

