

Contents

Special Issue Featuring Papers from the 2023 NEA Rising Stars Workshop

v Foreword
William D. Magwood IV

vii Preface
Aditi Verma

REVIEW ARTICLES

511 Zombies, Superpowers, and Apocalyptic Narratives: Exploring Science Fiction as a Messy Space for Public Engagement on Radiation, Nuclear Power, and Solving Climate Change
Larissa Shasko, Margot Hurlbert

525 Implementation of an Innovative Continuous Magnetic Filter for the Reduction of Secondary Waste Produced from Water Jet Abrasive Suspension Cutting
Carla-Olivia Krauss

RESEARCH ARTICLES

535 Negotiating Nuclear Power Project Agreements in Emerging Economies—Safeguarding Local Community Interests
Aishwarya Saxena

557 Methods for Extending the Reactor Core Lifetime of the Canadian Thermal Battery™
E. Jolovic, P. Kriemadis, A. Buijs

567 Validating Fracture Networks for Radioactive Waste Repositories: A DFN Modeling Approach for Crystalline Rock
Sarah Weihmann, C. Gärtner, J. Mullins, C. Guevara Morel

587 Atomic Eve: Exploring Science Fiction and Social Media to Increase Interest in Nuclear Energy Among Women
Larissa Shasko

594 Thermal Stabilization and Cooling System for the TPC and ECAL Detectors of the MPD Experiment on the Collider Facility NICA
Youmna Ghoneim, Sergey Movchan, Aleksey Bazhazhin, Aleksandr Doroshkevich, Rafael Isayev, Pavel Kudryashov, Ilya Chepurchenko, Grygory Arzumanyan, Kahramon Mamatkulov, Vitali Shymanski

—continued—

Contents continued

VOLUME 212 · NUMBER 3 · MARCH 2026

NOTE

- 622** A Case for Nuclear Chemical Engineering in the Era of Fission and Fusion Reactors that Employ Molten Salts
Haley Williams, Raluca O. Scarlat

REGULAR RESEARCH ARTICLES

- 634** Comprehensive Study on Gamma-Ray, Neutron, and Charged Particle Shielding Properties of Glass Materials Using Analytical Methods and Monte Carlo Simulations
Ümit Kara, Turan Şahmaran, Nuray Yavuzkanat
- 654** Parametric Analysis of Radiological Impact from Hypothetical Accident Scenario at the Sanmen Nuclear Power Plant
Osamong Gideon Akou, Xuan Wang, Shuhuan Liu, Xinwei Liu, Guanghui Su, Ailing Zhang, Junfang Zhang, Minghua Lv, Lei Huang, Shanchao Yang
- 674** Rationally Designed Core-Shell Structured $\text{Fe}_3\text{O}_4@\text{NiFe-LDH}$ Using MIL-100(Fe) as an Intermediate Linker for Efficient Uranium Adsorption
Qianwen Wang, Dingcheng Wang, Jinfeng Li, Bo Tian, Zhigang Li, Jianwei Zhang, Wenze Li, Nan Zhang, Yunchen Du, Hongtao Zhao
- 691** Neutron Energy Spectrum Measurement and Unfolding Method Based on a Single Long Lithium- or Boron-Doped Scintillator
Junhan He, Jifeng Han, Hua Cai, Danping Chen, Yangmei Chen, Peng Hu, Weichang Li, Weiping Lin, Xingquan Liu, Shan Liu, Sen Qian, Guofeng Qu, Jing Ren, Peipei Ren, Ruiqiang Song, Xinyuan Sun, Gao Tang, Zhigang Wang, Chuqi Yi, Shenghua Yin, Minghui Zhang
- 703** Numerical Modeling of Selected Processes for the Geological Disposal of Different Categories of Radioactive Waste at the Same Site
Luca Urpi, Marie Voss, Gerhard Mayer, Andreas Poller
- 725** PCT and PCMI Uncertainty and Sensitivity Analysis of HWRR Fuel Rod During Limiting RIA
Djillali Saad, Amina Lyria Deghal Cheridi, Amel Dadda, Mohamed Bouaouina, Tahar Zidi
- 740** Informing Plant Asset Reliability and Availability Through AI-Driven Analysis of Operator Logs
Norman John Mapes Jr., Ahmad Y. Al Rashdan, Kellen Giraud, Brian M. Wilcken

—continued—

Contents continued

VOLUME 212 · NUMBER 3 · MARCH 2026

759 Hydride Transformations and Their Impact on Zirconium Alloy Cladding Embrittlement
During Spent Nuclear Fuel Storage
Young Suk Kim, Jong Yeob Jung, Sung Soo Kim

775 Optimization of the Thermal-Fluid Performance in the Core of a Liquid-Fueled Molten Salt
Reactor via Modified Geometry Design
Yuqing Dai, Maosong Cheng, Xueying Nie, Xiandi Zuo, Xiangzhou Cai

REGULAR NOTE

796 A Vision and Several Perspectives for Nuclear Fission Technology
F. D'Auria, E. Zio