



Contents

Nuclear I&C

- MFM-based alarm root-cause analysis and ranking for nuclear power plants
Mengchu Song, Christopher Reinartz, Xinxin Zhang, Harald P.-J. Thunem, and Robert McDonald.....4408
- Analysis of signal cable noise currents in nuclear reactors under high neutron flux irradiation
Xiong Wu, Li Cai, Xiangju Zhang, Tingyu Wu, and Jieqiong Jiang4628
- PBIS: A Pre-Batched Inspection Strategy for spent nuclear fuel inspection robot
Bongsub Song, Jongwon Park, and Dongwon Yun.....4695

Nuclear Fuel Cycle and Radioactive Waste Management

- Experimental study on solidification of uranium tailings by microbial grouting combined with electroosmosis
Jinxiang Deng, Mengjie Li, Yakun Tian, Lingling Wu, Lin Hu, Zhijun Zhang, and Huaímiao Zheng4527
- Long-distance cutting of 10–30 mm thick stainless-steel with a 6-kW fiber laser for applications in nuclear decommissioning
Jae Sung Shin and Gwon Lim.....4637

Nuclear Policy, Economics, and Human Resource Development

- Online training and education from the VR-1 reactor—Lessons learned
Ondrej Novak, Tomas Bily, Ondrej Huml, Lubomir Sklenka, Filip Fejt, and Jan Rataj.....4465

Nuclear Physics, Fusion, and Laser Technology

- Non-iterative pulse tail extrapolation algorithms for correcting nuclear pulse pile-up
Mohammad-Reza Mohammadian-Behbahani4350

Nuclear Structural Analysis /Plant Management & Maintenance

- Definition and calculation method of modal effective mass of asymmetric fluid-structure interaction system for seismic analysis
Yong-Hwa Heo, Jong-Oh Sun, Gyeong Ho Kim, and Yeonseok Choo4307
- Remote-controlled micro locking mechanism for plate-type nuclear fuel used in upflow research reactors
Jin Haeng Lee, Yeong-Garp Cho, Hyokwang Lee, Chang-Gyu Park, Jong-Myeong Oh, Yeon-Sik Yoo, Min-Gu Won, and Hyung Huh4477
- Failure analysis of prestressed concrete containment vessels under internal pressure considering thermomechanical coupling
Yu-Xiao Wu, Zi-Jian Fei, De-Cheng Feng, and Meng-Yan Song.....4504
- Degradation analysis of horizontal steam generator tube bundles through crack growth due to two-phase flow induced vibration
Amir Hossein Kamalinia and Ataollah Rabiee.....4561
- Fracture mechanics analysis of multipurpose canister for spent nuclear fuels under horizontal/oblique drop accidents
Jae-Yoon Jeong, Cheol-Ho Kim, Hune-Tae Kim, Ji-Hye Kim, and Yun-Jae Kim.....4647





Contents

Nuclear Safety

- International case study comparing PSA modeling approaches for nuclear digital I&C – OECD/NEA task DIGMAP
Markus Porthin, Sung-Min Shin, Richard Quatrain, Tero Tyrväinen, Jiri Sedlak, Hans Brinkman, Christian Müller, Paolo Picca, Milan Jaros, Venkat Natarajan, Ewgenij Piljugin, and Jeanne Demgné4367
- Evaluation of hydrogen recombination characteristics of a PAR using SPARC PAR experimental results
Jongtae Kim and Jaehoon Jung4382
- Using a Lagrangian-Lagrangian approach for studying flow behavior inside a bubble column
YoungWoo Son, Cheol-O Ahn, and SangHwan Lee4395
- Effect of two way thermal hydraulic-fuel performance coupling on multicycle depletion
Awais Zahur, Muhammad Rizwan Ali, and Deokjung Lee4431
- Limiting conditions prediction using machine learning for loss of condenser vacuum event
Dong-Hun Shin, Moon-Ghu Park, Hae-Yong Jeong, Jae-Yong Lee, Jung-Uk Sohn, and Do-Yeon Kim4607

Radiation Application

- Design, construction, and characterization of a Prompt Gamma Neutron Activation Analysis (PGNAA) system at Isfahan MNSR
M.H. Choopan Dastjerdi, J. Mokhtari, and M. Toghyani4329
- Determination of buildup factors for some human tissues using both MCNP5 and Phy-X / PSD
Mohammad M. Alda'ajeh, J.M. Sharaf, H.H. Saleh, and Mefleh S. Hamideen4426
- Dose analysis of nearby residents and workers due to the emission accident of gaseous radioactive material at the spent resin mixture treatment facility
Jaehoon Byun, Seungbin Yoon, and Hee Reyoung Kim4543
- Study on the characteristics of airborne gross alpha and gross beta activities in the vicinity of nuclear facilities
Da-Young Gam, Chae-yeon Lee, Ji-Young Park, Hyuncheol Kim, and Jong-Myoung Lim4554
- Korean-specific iodine S values for use in internal dosimetry
Tae-Eun Kwon, Yoonsun Chung, and Choonsik Lee4659
- Production and investigation of 3D printer ABS filaments filled with some rare-earth elements for gamma-ray shielding
Batuhan Gultekin, Fatih Bulut, Hatice Yildiz, Hakan Us, and Hasan Ogul4664

Radiation protection

- True coincidence summing correction factor for point source geometry with PHITS
Esra Uyar4472
- Real-time ^{14}N NQR-based sodium nitrite analysis in a noisy field
Mohammad Saleh Sharifi, Ho Seung Song, Hossein Afarideh, Mitra Ghergherehchi, and Mehdi Simiari4570





Contents

Second intercomparison on electron paramagnetic resonance (EPR) retrospective dosimetry in Korea using hydroxyapatite Hyojin Kim, Jae Seok Kim, Byeong Ryong Park, Seongjae Jang, Han-Ki Jang, Ki-Taek Han, Hoon Choi, Jeongin Kim, In Jung Kim, Yunho Kim, Wi-Ho Ha, Jungil Lee, and Yeong-Rok Kang	4576
Newly-designed adaptive non-blind deconvolution with structural similarity index in single-photon emission computed tomography Kyuseok Kim and Youngjin Lee	4591
An empirical study of the risk-benefit perceptions between the nuclear and non-nuclear groups towards the nuclear power plant in Bangladesh Md Shafiqul Islam, Swapnil Roy, Sadia Lena Alfee, and Animesh Pal	4617
The luminescence properties of Eu^{3+} or Tb^{3+} doped $\text{Lu}_2\text{Gd}_1\text{Ga}_2\text{Al}_3\text{O}_{12}$ phosphors for X-ray imaging M.J. Oh, Sudipta Saha, and H.J. Kim	4642
Green synthesis of Lead-Nickel-Copper nanocomposite for radiation shielding B.M. Chandrika, Holaly Chandrashekara Shastry Manjunatha, R. Munirathnam, K.N. Sridhar, L. Seenappa, S. Manjunatha, and A.J. Clement Lourduraj	4671
Characterization of the 2.5 MeV ELV electron accelerator electron source angular distribution using 3-D dose measurement and Monte Carlo simulations Chang M. Kang, Seung-Tae Jung, Seong-Hwan Pyo, Youjung Seo, Won-Gu Kang, Jin-Kyu Kim, Young-Chang Nho, Jong-Seok Park, and Jae-Hak Choi	4678

Reactor Physics

Evaluation of the CNESTEN's TRIGA Mark II research reactor physical parameters with TRIPOLI-4® and MCNP H. Ghninou, A. Gruel, A. Lyoussi, C. Reynard-Carette, C. El Younoussi, B. El Bakkari, and Y. Boulaich	4447
CEFR control rod drop transient simulation using RAST-F code system Tuan Quoc Tran, Xingkai Huo, Emil Fridman, and Deokjung Lee	4491
The applicability study and validation of TULIP code for full energy range spectrum Wenjie Chen, Xianan Du, Rong Wang, Youqi Zheng, Yongping Wang, and Hongchun Wu	4518
Modeling and characterization of beryllium reflector elements under irradiation conditions Ahmed H. Elhefnawy, Mohamed A. Gaheen, Hanaa H. Abou Gabal, and Mohamed E. Nagy	4583
Research on the calculation method of sensitivity coefficients of reactor power to material density based on Monte Carlo perturbation theory Wu Wang, Kaiwen Li, Yuchuan Guo, Conglong Jia, Zeguang Li, and Kan Wang	4685

Thermal Hydraulics

Experimental verification and improvement of heat transfer tube local wall temperature measurement method Jiabao Liu, Xiaxin Cao, and Peixun Yang	4317
Design and transient analysis of a compact and long-term-operable passive residual heat removal system Wooseong Park, Yong Hwan Yoo, Kyung Jun Kang, and Yong Hoon Jeong	4335



Contents

Improvement of crossflow model of MULTID component in MARS-KS with inter-channel mixing model for enhancing analysis performance in rod bundle <i>Yunseok Lee and Taewan Kim</i>	4357
Realistic thermal analysis of the CANDU spent fuel dry storage canister <i>Tae Gang Lee, Taehyeon Kim, Taehyung Na, Byongjo Yun, and Jae Jun Jeong</i>	4597
Technical reviewers for Nuclear Engineering and Technology, 2023.....	4703

This journal was supported by the Korean Federation of Science and Technology Societies Grant funded by the Korean Government (Ministry of Education).