

NUCLEAR SCIENCE AND TECHNOLOGY

Volume 10, Number 2, June 2020

Editorial Board

Editor-in-chief

Tran Huu Phat (VINATOM)

Executive Editors

Vuong Huu Tan (VARANS)

Tran Chi Thanh (VINATOM)

Cao Dinh Thanh (VINATOM)

Hoang Anh Tuan (VAEA)

Editors

Nguyen Kien Cuong (VINATOM)

Nguyen Nhi Dien (VINATOM)

Nguyen Thi Kim Dung (VINATOM)

Ho Manh Dung (VINATOM)

Nguyen Nam Giang (VINATOM)

Trinh Van Giap (VINATOM)

Le Ngoc Ha (108 Military Central Hospital)

Phan Son Hai (VINATOM)

Le Huy Ham (VAAS)

Nguyen Quoc Hien (VINATOM)

Le Van Hong (VINATOM)

Nguyen Tuan Khai (VINATOM)

Pham Dinh Khang (VINATOM)

Le Hong Khiem (IOP)

Dao Tien Khoa (VINATOM)

Tran Hoai Nam (Duy Tan University)

Dang Duc Nhan (VINATOM)

Nguyen Hao Quang (VINATOM)

Nguyen Mong Sinh (VINATOM)

Tran Duc Thiep (IOP)

Dang Quang Thieu (VINATOM)

Le Ba Thuan (VINATOM)

Nguyen Trung Tinh (VARANS)

Tran Ngoc Toan (VINATOM)

Duong Thanh Tung (VARANS)

Nguyen Nu Hoai Vi (VARANS)

Science Secretary

Hoang Sy Than (VINATOM)

Copyright: ©2008 by the Vietnam Atomic Energy Society (VAES), Vietnam Atomic Energy Institute (VINATOM).

Published by

Vietnam Atomic Energy Society, 59 Ly Thuong Kiet, Hanoi, Vietnam

Tel: 84-24-39420463 Fax: 84-24-39424133 Email: nuscitech@vinatom.gov.vn

Vietnam Atomic Energy Institute, 59 Ly Thuong Kiet, Hanoi, Vietnam

Tel: 84-24-39420463 Fax: 84-24-39422625 Email: infor.vinatom@hn.vnn.vn

Contents

Analysis of in-vessel accident progression in VVER1000 NPP during SBO accident with external reactor vessel cooling method <i>Doan Manh Long, Nguyen Van Thai, Tran Chi Thanh</i>	01
Numerical Investigation of Fluid – Structure Interaction (FSI) on Sodium Leakage Accident at Prototype Fast Breeder Reactor Monju <i>Hoang Tan Hung, Bui Thi Hoa, Hoang Minh Giang</i>	15
Study on the preparation of selenium nanoparticles by gamma Co-60 method and investigate the stability <i>Ngoc Duy Nguyen, Van Phu Dang, Anh Quoc Le, T. Kim Lan Nguyen, Quoc Hien Nguyen, T. Thu Ngan Tran</i>	26
Assessment of nitrogen nutrient sources in aquatic environment of Tuyen Lam sub-catchment based on it's stable isotopes ratio ($\delta^{15}\text{N-NO}_3$) combined with geochemical parameters <i>Nguyen Thi Huong Lan, Nguyen Minh Dao, Phan Quang Trung, Vo Thi Mong Tham, Le Xuan Thang, Phan Son Hai, Nguyen Van Phuc</i>	32
Radioactivity of some natural and artificial radionuclides in coastal seawater at Ninh Thuan, Ba Ria - Vung Tau and Ca Mau provinces in 2018 <i>Nguyen Dinh Tung, Le Nhu Sieu, Nguyen Van Phuc, Nguyen Van Phu, Tran Dinh Khoa, Vuong Thi Thu Hang, Nguyen Thi Thanh Nga, Le Thi Minh Tuyen</i>	44
Coupled reaction channels study of the $^{16}\text{O}(d,^6\text{Li})$ reaction <i>Do Cong Cuong, Nguyen Hoang Phuc, Nguyen Tri Toan Phuc</i>	52

INSTRUCTIONS FOR AUTHORS

GENERAL INFORMATION

Nuclear Science and Technology (NST), an international journal of the Vietnam Atomic Energy Society (VAES) and Vietnam Atomic Energy Institute (VINATOM), quarterly publishes articles related to theory and application of nuclear science and technology. All papers and technical notes will be refereed.

It is understood that the paper has been neither published nor currently submitted for publication elsewhere. The copyright of all published papers and notes will be transferred in VAES.

DETAILED FIELDS

NST covers all fields of nuclear science and technology for peaceful utilization of nuclear energy and radiation. Authors should choose one of the following fields at the time they submit their manuscript: 1) Nuclear Physics, 2) Nuclear Data, 3) Reactor Physics, 4) Thermal Hydraulics, 5) Nuclear Safety, 6) Nuclear I&C, 7) Nuclear Fuel and Materials, 8) Radioactive Waste Management, 9) Radiation Protection, 10) Radiation Technology, 11) Nuclear Techniques in Food and Agriculture, 12) Nuclear Medicine and Radiotherapy, 13) Nuclear Techniques in Industries, 14) Environment Radioactivity, 15) Isotope Hydrology, 16) Nuclear Analytical Methods, 17) Health Physics, 18) Fusion and Laser Technology.

MANUSCRIPT SUBMISSION

Manuscript for publication should be submitted to the Editorial Office in triplicate by postal mail. For electronical submission use nuscitech@vinatom.gov.vn.

Submission Address

Department of Planning, R&D Management
Vietnam Atomic Energy Institute, 59 Ly Thuong
Kiet Street, Hanoi, Vietnam
E-mail: nuscitech@vinatom.gov.vn.

MANUSCRIPT PREPARATION

Manuscripts must be written in English with adequate margins and indented paragraph. All manuscript must use SI (metric) units in text, figures, and tables. Manuscripts should in general be organized in the following order: title, names of authors and their complete affiliation including zip code, abstract (not exceeding 200 words), keywords (up to 7), introduction, main body of a paper, acknowledgments, references, appendices, table & figure captions, tables and figures. Unnecessary sections may be omitted.

Headings: Use I, II, ... for major headings and A, B, ... for secondary headings.

Mathematical formulas: All mathematical formulas should be clearly written, with special consideration to distinctive legibility of sub- and superscripts. Equation (at least the principal ones) should be numbered consecutively using Arabic numerals in parentheses in the right hand margin.

Tables and Figures: Tables should be numbered with Roman numerals. Figures should be numbered consecutively with Arabic numerals in order of their first appearance and have a complete descriptive title. They should be typed on separate sheets. Tables should not repeat data which are available elsewhere in the paper. Figures should be original ink drawing or computer drawn figures in the original and of high quality, ready for direct reproduction. Figures should be referred to in the text as, for example, Fig. 1., or Fig. 2. .

Reference: References should be listed at the end of the text and presented as follows:

- [1] C. Y. Fu et al., *Nuclear Data for Science and Technology*, S. M. Qaim (Ed.), p. 587 (1991).
- [2] C. Kalbach, *Z. Phys*, A283, 401 (1977).
- [3] S. Shibata, M. Imamura, T. Miyachi and M. Mutou, "Photonuclear spallation reactions in Cu", *Phys. Rev. C* 35, 254 (1987).

KHOA HỌC VÀ CÔNG NGHỆ HẠT NHÂN

Chịu trách nhiệm xuất bản

TRẦN HỮU PHÁT

Chịu trách nhiệm nội dung

TRẦN HỮU PHÁT

TRẦN CHÍ THÀNH

Trình bày

LÊ THÚY MAI

In 200 cuốn, khổ 19x26,5cm tại Công ty TNHH Trần Công
Địa chỉ: số 12 ngách 155/176 Đường Trường Chinh, Hà Nội
Giấy đăng ký kế hoạch xuất bản số: 770/GP-BTTTT cấp ngày 20 tháng 5 năm 2011
In xong và nộp lưu chiểu Quý II năm 2020

25000đ