# NUCLEAR

TECHNOLOGY

## RADIATION

PROTECTION

an international scientific journal

Vol. XXXV + No. 1

## Contents

#### In memoriam

Naim Afgan (1929-2019)

### Papers

Quentin Faure, Tatjana Jevremovic MOLECULAR DYNAMICS AND REACTION KINETICS ANALYSES OF GAMMA RADIATION IMPACT ON CONCRETE HYDRATION	1-15
Alejandro Antonio Reyes-Garcia, Eduardo Sainz-Mejia, Javier Ortiz-Villafuerte, Javier C. Palacios-Hernandez, Roberto Carlos Lopez-Solis STUDY OF HYDRODYNAMICS PERFORMANCE OF A MULTI-VENTURI FILTERING SYSTEM FOR BWR SEVERE ACCIDENT VENTING STRATEGIES	16-23

Quan Gan, Shengpeng Yu, Lijuan Hao, Jing Song, Pengcheng Long	
VERIFICATION AND VALIDATION OF SUPERMC3.2 WITH	
HEAVY WATER REACTOR MODEL DCA	24-29

30-35

36-41

42-49

50-55

56-63

64-73

74-81

82-86

warija D. Hadmilovic-Radjenovic, Branislav W. Hadjenovic	
SIMULATION STUDY OF DIRECT CURRENT VACUUM	
BREAKDOWN AND ITS APPLICATION TO HIGH-GRADIENT	
ACCELERATING STRUCTURES	

Nguyen Anh Tuan, Chau Van Tao
BREMSSTRAHLUNG CONVERSION EFFICIENCY AND
GAMMA – NEUTRON GENERATION FROM POLYPROPYLENE,
ALUMINUM, IRON, AND LEAD BOMBARDED BY
10 MeV ELECTRONS

l	Gharam A. Alharshan, Dalal A. Aloraini, Mohamed Abd Elzaher,
	Mohamed S. Badawi, Mahmoud T. Alabsy, Mahmoud I. Abbas,
	Ahmed M. El-Khatib
	A COMPARATIVE STUDY BETWEEN NANO-CADMIUM
l	OXIDE AND LEAD OXIDE BEINFORCED IN HIGH DENSITY

POLYETHYLENE AS GAMMA RAYS SHIELDING COMPOSITES

Fedor F. Bryukhan
ASSESSMENT OF ATMOSPHERIC DISPERSION STABILITY
BASED ON THE ATMOSPHERIC BOUNDARY LAYER MONITORING
AT THE BELORUSSIAN NUCLEAR POWER PLANT SITE

Bojan M. Ranković, Nikolina R. Nikolić, Slobodan B. Mašić, Ivica T. Vujčić
DOSE MAPPING OF PRODUCTS WITH DIFFERENT DENSITY
IRRADIATED IN 60Co IRRADIATION FACILITY OF THE
VINCA INSTITUTE, SERBIA

Ivana S. Vukanac, Marija M. Janković, Milica M. Rajačić,
Dragana J. Todorović, Predrag N. Ujić, Gordana K. Pantelić,
Nataša B. Sarap, Jelena D. Krneta Nikolić
ASSESSMENT OF NATURAL RADIOACTIVITY LEVELS AND
RADON EXHALATION RATE POTENTIAL FROM
VARIOUS BUILDING MATERIALS

Nedis J. Dautbašić, Adnan Z. Mujezinović TIME DOMAIN SOLUTION OF ELECTROMAGNETIC RADIATIO	NC
MODEL OF THE GROUNDING SYSTEM EXCITED BY PULSE CURRENT	

Marija Surič Mihič, Robert Bernat, Jerko Siško,
Maja Vojnić Kortmiš, Luka Pavelić, Ivica Prlić, Nikolina Mišak
HAND MONITORING IN NUCLEAR MEDICINE
DEPARTMENTS IN CROATIA – FIRST RESULTS