



Second International  
Conference on  
Radiation and Dosimetry in  
Various Fields of Research



[www.rad2014.elfak.rs](http://www.rad2014.elfak.rs)

May 27 - 30, 2014 | Faculty of Electronic Engineering | Niš | Serbia

BOOK OF ABSTRACTS



**Second International  
Conference on  
Radiation and Dosimetry in  
Various Fields of Research**

[www.rad2014.elfak.rs](http://www.rad2014.elfak.rs)

May 27 - 30, 2014 | Faculty of Electronic Engineering | Niš | Serbia

# BOOK OF ABSTRACTS

**PUBLISHER:** University of Niš, Faculty of Electronic Engineering  
P.O.Box 73, 18000 Niš, Serbia  
www.elfak.ni.ac.rs

**FOR THE PUBLISHER:** Prof. Dr. Dragan Tasić

**EDITOR:** Prof. Dr. Goran Ristić

**COVER DESIGN:** Vladan Nikolić, M.Sc.

**TECHNICAL EDITING:** Sasa Trenčić and Vladan Nikolić

**PROOF-READING:** Saša Trenčić, MA

**PRINTED BY:** Nais Print, Niš

**PRINT RUN:** 350 copies

**ISBN** 978-86-6125-100-9

*The Second International Conference on Radiation and Dosymetry in Various Fields of Research (RAD 2014) and the Second East European Radon Symposium (SEERAS)* were financially supported by:

- Central European Initiative (CEI)
- International Union of Pure and Applied Physics (IUPAP)\*
- Ministry of Education, Science and Technological Development

\*To secure IUPAP sponsorship, the organisers have provided assurance that RAD 2014 Conference will be conducted in accordance with IUPAP principles as stated in the IUPAP resolution passed by the General Assembly in 2008. In particular, no bona fide scientist will be excluded from participation on the grounds of national origin, nationality, or political considerations unrelated to science.

CIP - Каталогизacija у публикацији  
Народна библиотека Србије, Београд

539.16(048)

INTERNATIONAL Conference on Radiation and  
Dosimetry in Various Fields of Research (2nd  
; 2014 ; Niš)

Book of Abstracts / The Second  
International Conference on Radiation and  
Dosimetry in Various Fields of Research, RAD  
2014, May 27-30, 2014, Niš, Serbia ; [editor  
Goran Ristić]. - Niš : Faculty of Electronic  
Engineering, 2014 (Niš : Nais Print). - 450  
str. ; 30 cm

Nasl. str. prištampanog teksta: Book of  
Abstracts / Second East European Radon  
Symposium SEERAS, May 27-30, 2014, Niš,  
Serbia. - Oba rada štampana u međusobno  
obrnutim smerovima. - Tiraž 350. -  
Bibliografija uz pojedine apstrakte.

ISBN 978-86-6125-100-9

a) Јонизујуће зрачење - Дозиметрија -  
Апстракти  
COBISS.SR-ID 207273996

**CONTENTS**

<b>00 INVITED LECTURES</b>		
Daniele Giuffrida	<b>NUCLEAR DECOMMISSIONING AND RADIOACTIVE WASTE MANAGEMENT AT THE JOINT RESEARCH CENTRE OF THE EUROPEAN COMMISSION</b>	3
Ahmed Meghzifene	<b>DOSIMETRY STANDARDS IN MEDICAL RADIATION DOSIMETRY: NEEDS AND CHALLENGES</b>	4
Jasna Mihailović	<b>RADIOACTIVE IODINE (<sup>131</sup>I) IN THE MANAGEMENT OF DIFFERENTIATED THYROID CARCINOMA</b>	5
D. Nesheva, N. Nedev, M. Curiel, V. Dzurkov, A. Arias, E. Manolov, D. Mateos, B. Valdez, I. Bineva, R. Herrera	<b>APPLICATION OF METAL-OXIDE-SEMICONDUCTOR STRUCTURES CONTAINING SILICON NANOCRYSTALS IN RADIATION DOSIMETRY</b>	6
Anatoly Rozenfeld on behalf of CMRP collaboration	<b>ADVANCED SEMICONDUCTOR DOSIMETRY IN RADIATION THERAPY - PROGRESS IN SEMICONDUCTOR DOSIMETRY FOR QUALITY ASSURANCE IN RADIATION THERAPY</b>	7
Iveta Waczulikova	<b>WHAT IS HYPOTHESIS TESTING? STATISTICAL VERSUS BIOLOGICAL SIGNIFICANCE</b>	8
B. Haley, W. Liu, T. Paunesku, G. E. Woloschak	<b>USING ARCHIVAL ANIMAL DATABASES TO RE-EVALUATE DOSE AND DOSE-RATE EFFECTIVENESS FACTOR (DDREF) ESTIMATES</b>	9
<b>01 BIOCHEMISTRY</b>		
B. Đorđević, D. Sokolović, A. Veljković, M. Despotović, J. Bašić, G. Ristić, D. Krstić	<b>THE ACTIVITY OF POLYAMINE OXIDASE AND DIAMINE OXIDASE IN THE THYMUS TISSUE OF RATS EXPOSED TO MICROWAVE RADIATION</b>	13
Dragoljub Dimitrijević, Tijana Cvetić Antić	<b>SPLITTING OF UVC RADIATION DOSE REDUCES OXIDATIVE STRESS BUT INCREASES DAMAGE IN PHOTOSYNTHETIC APPARATUS IN PEA (PISUM SATIVUM L.)</b>	14



Dražana Radonjić, Marijana Krivokapić, Mirjana Miloradov	<b>DISTRIBUTION OF PHYSIOLOGICAL GROUPS OF MICROORGANISMS IN THE WATER AT THE LOCALITY VUKOVCI AS AN INDICATOR OF THE PRESENCE OF EMERGENT IN WATER</b>	15
E. Dimitrieska-Stojkovic, B. Stojanovska-Dimzoska, G. Ilievska, K. Davceva, R. Uzunov, A. Angeleska, Z. Hajrulai-Musliu, A. Angelova	<b>IMPACT OF CLIMATE CHANGES ON INCREASED LEVELS OF AFLATOXINS IN FEEDSTUFFS AND RAW MILK FROM REPUBLIC OF MACEDONIA</b>	16
R. Pivić, A. Stanojković-Sebić, Z. Dinić, D. Jošić	<b>EXAMINATION OF THE HAZARDOUS AND HARMFUL SUBSTANCES CONTENT IN THE WATER USED FOR IRRIGATION OF AGRICULTURAL SOIL IN THE BASIN OF RIVER TIMOK</b>	17

## **02 BIOMEDICAL ENGINEERING**

Mihaela Ioana Baritz, Diana Laura Cotoros, Cristina Singer	<b>ERGOMETRIC ANALYSIS BY CORRELATIVE METHODS OF THE THERMAL RADIATION EMISSION DEVELOPED WITHIN HAND FOLLOWING A CONTROLLED EFFORT</b>	21
Alfred Hasanaj	<b>IMPORTANCE OF THE STRUCTURAL INTEGRITY OF PIPELINES TRANSPORTING GAS AND OIL: THEIR DEFECTS</b>	22
Elena Semdyankina, Sergei Ostanin	<b>METHOD AND PROGRAMMING TOOL FOR AUTOMATIC SEARCH OF DIAGNOSTIC PARAMETERS OF THE SPHYGMOGRAPHY SIGNAL</b>	23
Mahboobe Sharifmoghadam, Majid Mohamadbeigi	<b>DESIGNING AND FABRICATION OF AN IONTOPHORETIC TRANSDERMAL DRUG DELIVERY SYSTEM</b>	24
M. Ioana Baritz, D. Laura Cotoros, C. Singer, U. Loredana	<b>ANALYSIS OF VISUAL PARAMETERS VARIANCE UNDER THE INCIDENCE OF RADIATION PRODUCED BY COMPUTER MONITORS AND MEDICAL DEVICES UPON THE OPERATORS WORKING IN SPECIALIZED SURGERIES</b>	25
Mihaela Kalaidjieva, Stefan Karastanev, Radosveta Antonova	<b>SYSTEM FOR DATA ACQUISITION AND CONTROL OF ANKLE FOOT ORTHOSIS</b>	26
Spomenko J. Mihajlović	<b>THE SIGNAL CONTENT ANALYSIS SPECTRA INDUCED MAGNETIZATION OF BIOLOGICAL MATTER SAMPLES</b>	27

Flavia Teixeira

**APPLICATION OF FAILURE MODE AND EFFECTS ANALYSIS TO EVALUATE THE RADIOSURGERY PROCESS IN RIO DE JANEIRO**

28

### **03 BIOMEDICINE**

A. Hedrih, T. Jevtović-Stoimenov, O. Đorđević-Milošević, S. Najman

**POLYMORPHISM OF SOD1 GENE AND SPONTANEOUS CHROMOSOMAL INSTABILITY RELATED TO AGEING**

31

M. Hofer, M. Pospíšil, L. Dušek, Z. Hoferová, D. Komůrková

**COMBINED PHARMACOLOGICAL THERAPY OF THE ACUTE ADIATION DISEASE USING A CYCLOOXYGENASE-2 INHIBITOR AND AN ADENOSINE A<sub>3</sub> RECEPTOR AGONIST**

32

N. V. Kamanina, A. A. Kukharchik, P. V. Kuzhakov, Yu. A. Semeonov, P. Ya. Vasilyev, S. V. Serov, V. I. Studeonov, I. Kityk

**OPTICAL AND MECHANICAL PROPERTIES OF THE NANOSTRUCTURED MATERIALS MODIFIED WITH LASER-DEPOSITED ORIENTED CARBON NANOTUBES**

33

Smiljana Paraš, Milica Matavulj, Dejan Dmitrović

**EFFECTS ELECTROMAGNETIC FIELDS HIGH FREQUENCY ON BETA CELLS ENDOCRINE PANCREAS IN RATS**

34

Y. Gluhcheva, V. Atanasov, J. Ivanova, E. Pavlova

**CHRONIC EXPOSURE TO COBALT COMPOUNDS - AN *IN VIVO* STUDY**

35

Dina Nikulina, Natalya Sevortsova, Vladimir Jurišić

**SOME BLOOD PROTEIN IN PATIENTS WITH BREAST CANCER ON THE STAGES OF TREATMENT, INCLUDING RADIATION THERAPY**

36

L. Župunski, V. Spasić Jokić, V. Gordanić, I. Župunski, Z. Mitrović

**HEALTH RISK SENSITIVITY ANALYSIS DUE TO PROBABILITY DENSITY DISTRIBUTION VARIABILITY OF EXPOSURE PARAMETERS**

37

Tamara Krstić

**WHICH PART OF RASPBERRY FRUIT EXHIBITS ANTIMICROBIAL ACTIVITY?**

38

### **04 BIOPHYSICS**

Dora Krezhova, Svetla Maneva

**HYPERSPECTRAL REMOTE SENSING APPLICATIONS FOR ENVIRONMENTAL PROTECTION**

41

N. Kudryasheva, M. A. Selivanova, A. S. Petrova, O. A. Guseynov, T. V. Rozhko, A. V. Tugarova, A. A. Kamnev, A. N. Devyatlovskaya

**THE USE OF MARINE LUMINOUS BACTERIA FOR ASSESSING RADIATION HORMESIS AND TOXICITY**

42

R. Angelova, V. Groudeva, I. Nedkov, I. Sziklai-László, K. Krezhov	<b>INAA STUDY OF SYNTHETIC AND NATURAL IRON BACTERIA PRODUCTS</b>	43
T. Wysokinski, G. Okada, G. Belev, C. Koughia, A. Edgar, L. Dean Chapman, J. Ueda, S. Tanabe, S. Kasap	<b>QA DOSIMETRY FOR THE BIOMEDICAL IMAGING AND THERAPY FACILITY AT CLSI</b>	44
Á. Farkas, I. Balásházy	<b>THE ROLE OF MUCOCILIARY CLEARANCE IN THE MICRODOSIMETRY OF THE INHALED RADON DAUGHTERS</b>	45
T. Atsumi, E. Fujimoto, M. Furuta, M. Kato	<b>EFFECT OF GAMMA-RAY IRRADIATION ON THE SWIMMING SPEED OF <i>ESCHERICHIA COLI</i></b>	46
Yu. P. Chukova	<b>EXPERIMENTAL DATA PROCESSING FOR BIOEFFECTS OF ELECTROMAGNETIC RADIATION IN DIFFERENT FREQUENCY INTERVALS</b>	47

## 05 MEDICAL IMAGING

A. Yurt Kilcar, F. Zumrut Biber Muftuler, H. Enginar, E. Ilker Medine, V. Tekin, P. Unak	<b>A NOVEL BRAIN IMAGING AGENT INCLUDING ALZHEIMER'S DISEASE DIAGNOSIS POTENTIAL: <sup>99m</sup>Tc-BIOQUIN-HMPAO</b>	51
Elisaveta Petrova	<b>INFLUENCE OF SOME RISK FACTORS ON CHEST X-RAY FINDS IN PATIENTS WITH INITIAL PNEUMOCONIOSES</b>	52
M. Lyra, M. Michalitsi, S. Synefia, I. Floros, M. Argyrou, A. Valassi, S. Triantopoulou, M. Bella	<b>THYROID VOLUME QUANTIFICATION BY SPECT IMAGES</b>	53
Md Naimuddin	<b>DESIGN OF THE NEXT GENERATION PROTON COMPUTED TOMOGRAPHY (PCT)</b>	54
L. V. Messa, C. Paradiso, E. M. Messa, GL. Messa, U. Arrigucci	<b>IS IT POSSIBLE THAT GET CLOSER TO GOLDEN RATIO MEANS TO BE MORE HEALTHY? A STUDY OF PROPORTIONS OF THE HUMAN BODY THROUGH MAGNETIC RESONANCE IMAGING</b>	55
A. Karimian, B. Shokuohian, M. Mohammadzadeh	<b>DESIGN AND FABRICATION OF A NEW NMR SPIRAL PLANAR MICROCOIL</b>	56
A. Mladenović, Ž. Marković, S. Radenković, B. Orbović, V. Mirčetić, G. Tomasek	<b>LOW DOSE COMPUTERIZED TOMOGRAPHY EXAMINATIONS OF THE HEART, PREVENTION AND SCREENING OF THE CORONARY OCCLUSIVE DISEASE</b>	57

B. Çekiç, F. Zumrut Biber Muftuler, A. Yurt Kilcar, Ç. İçhedef, P. Unak	<b>INTERACTION BETWEEN BROCCOLI EXTRACT AND <sup>99m</sup>Tc-GH ON <i>IN VIVO</i> DISTRIBUTION AND LABELING OF BLOOD COMPONENTS</b>	58
B. Sabuncu, F. Zumrut Biber Muftuler, A. Yurt Kilcar, B. Çekiç, E. Uçar	<b>EFFECTS OF GREEN TEA EXTRACT ON THE RADIOLABELED BLOOD CELLS AND ON THE BIODISTRIBUTION OF RADIOPHARMACEUTICAL SODIUM PERTECHNETATE</b>	59
A. Yurt Kilcar, F. Zumrut Biber Muftuler, E. Ilker Medine, P. Unak	<b>EXTRACTION OF HYDROXYTYROSOL FROM OLIVE LEAVES, RADIOLABELING WITH I-131 AND EVALUATION BIOAFFINITY OF THE RADIOIODINATED HYDROXYTYROSOL</b>	60
M. Stević, M. Vlajković, M. Rajić, G. Koračević, S. Ilić	<b>AVOIDING OF FALSE POSITIVE FINDING IN SPECT PERFUSION MYOCARDIAL SCINTIGRAPHY WITH ITERATIVE IMAGES RECONSTRUCTION</b>	61
O. Büyükkök, S. Teksöz, Ç. İçhedef, E. Uçar, B. Çekiç Bozkayalar	<b>EVALUATION OF RADIOLABELED AMINOACID COATED MAGNETIC NANOPARTICLES</b>	62
V. Riversi, A. Giansanti, A. Belba, L. V. Messa, F. Vigni, G. L. Messa, R. Ponchietti	<b>IMPORTANCE OF ULTRASOUND ELASTOGRAPHY PRIOR TO TESTICULAR SURGERY: CLINICAL EVIDENCE</b>	63
S. Radenković, G. Konjević, Z. Milošević, P. Stevanović, R. Šćepanović, A. Isaković, K. Gopčević, V. Jurišić	<b>HER2 POSITIVE BREAST CANCER PATIENTS: CORRELATION BETWEEN MAMMOGRAPHIC AND PATHOLOGICAL FINDINGS</b>	64
Ş. Altan Alan, S. Teksöz, Ç. İçhedef, E. Uçar, Ö. Kozguş Güldü	<b>RADIOLABELING OF A NITROJEN MUSTARD DERIVATIVE</b>	65
Seyjoon Park, Chiyoung Jeong, Se Byeong Lee	<b>A NOVEL METHOD FOR WATER EQUIVALENT PATH LENGTH MEASUREMENT IN PROTON RADIOGRAPHY</b>	66
A. N. Solovyev, V. I. Kharlov, U. A. Stepanova, V. V. Federov	<b>MEDICAL IMAGES PROCESSING FOR MONTE-CARLO BASED TREATMENT PLANNING SIMULATION</b>	67
Stoyanka Dineva, Krasimira Prodanova, Borislav Vladimirov	<b>FREQUENCY OF PERIAMPULLARY DUODENAL DIVERTICULA AND ITS ASSOCIATION WITH BILIARY DISORDERS /RETROSPECTIVE ANALYSIS OF THE BULGARIAN POPULATION/</b>	68
V. Serban, G. Stanescu, S. Serban, D. Stanescu, E. Leon Grigorescu	<b>CONTRAST VERSUS PATIENT DOSE IN MODERN DIAGNOSTIC RADIOLOGY</b>	69



V. D. Živković, I. Stanković,  
L. Dimitrijević, M. Kocić,  
H. Čolović, M. Spalević,  
M. Vlajković, M. Stević,  
A. Slavković, I. Đorđević

**SCINTIGRAPHY MEASUREMENT OF SEGMENTAL  
COLONIC TRANSIT IN CHILDREN  
WITH BOWEL BLADDER DYSFUNCTION**

70

**06 MEDICAL PHYSICS**

A. Esposito, B. Caccia,  
C. Andenna

**GEANT4 SIMULATION OF A HELICAL  
TOMOTHERAPY UNIT**

73

Ahmed Meghzifene,  
John Le Heron

**THE MEDICAL PHYSICS PRACTICE IN THE LIGHT  
OF THE NEW INTERNATIONAL BASIC SAFETY  
STANDARDS**

74

G. Kulabdullaev,  
G. A. Abdullaeva,  
G.T. Djuraeva, A. A. Kim,  
Yu. N. Koblik, T. T. Rakhmonov,  
Sh. Saytjanov

**EVALUATION OF ABSORBED DOSE  
IN GADOLINIUM NEUTRON CAPTURE THERAPY**

75

Evgeniia Sukhikh,  
Evgeniy Malikov,  
Maxim Rychkov

**DOSIMETRY OF ELECTRON BEAM EXTRACTED FROM  
BETATRON BY POLYMER FILMS GAFCHROMIC EBT 3**

76

Mahdi Sadeghi,  
Asgar Hadadi,  
Dariush Sardari

**MONTE CARLO DOSIMETRIC COMPARISON  
OF FOUR BETA-EMITTING GLASS SEEDS  
FOR BRACHYTHERAPY APPLICATIONS**

77

Aurora Gajta, Iosif Malaescu,  
Catalin N. Marin

**PHOTOKERATOCONJUNCTIVITIS  
CAUSED BY DIFFERENT LIGHT SOURCES**

78

B. Caccia, C. Andenna,  
G. Iaccarino, V. Landoni,  
A. Occhigrossi, A. Esposito,  
E. Petetti, A. Soriani,  
S. Valentini, L. Strigari

**GEANT4 MONTE CARLO AS A TOOL TO EVALUATE  
THE EFFECT OF DIFFERENT LUNG DENSITIES  
ON RADIOTHERAPY DOSE DISTRIBUTION**

79

I. Curta, R. Ileana, M. Zoltan,  
A. C. Micu, I. Moharta

**CONSIDERATIONS ON THE INFLUENCE OF COLLOIDAL  
SOLUTIONS ON THE ENERGY-INFORMATIONAL FIELD  
OF THE HUMAN BODY. STATISTICALLY RELEVANT  
STUDY**

80

I. Curta, I. Rosca, Z. Marosi,  
A. C. Micu, I. Moharta

**SUMMARY OF THE METHODS USED TO LOWER THE  
ANXIETY PARAMETER - STRESS INDEX (T) /  
ACCORDING TO THE MEASUREMENTS MADE WITH THE  
GDV CAMERA**

81

Kwo-Ping Chang, Lu-Yu Chen,  
Yu-Huang Chien

**MONTE CARLO SIMULATION  
OF LINAC IRRADIATION WITH DYNAMIC WEDGES**

82

M. Sadeghi, Z. Fazli, S. Rabi Mahdavi, M. H. Zahmatkesh, C. Tenreiro	<b>DOSIMETRIC COMPARISON BETWEEN 3D TPS (TREATMENT PLANNING SYSTEM) AND MONTE CARLO SIMULATION IN NASOPHARYNX PHANTOM FOR <sup>192</sup>IR HDR BRACHYTHERAPY SOURCE</b>	83
Michael Akpochafor Aweda, Moalosi Tumelo	<b>PRECISION COMPARISON OF DIFFERENT MONITOR UNIT ALGORITHMS USING AN IN-HOUSE DESIGNED PHANTOM</b>	84
Pavel Kazantsev	<b>CLINICAL NARROW PHOTON BEAM PROFILE RECONSTRUCTION FROM MEASUREMENT DATA WITH IONIZATION CHAMBER</b>	85
V. I. Kharlov, V. I. Potetnya, A. A. Lichagin	<b>EFFECTIVE AND EQUIVALENT DOSE EVALUATION FOR BREAST CANCER RADIATION TREATMENT ON NG-24 NEUTRON GENERATOR</b>	86
Vanja Gracanin, Anatoly Rosenfeld, Michael Lerch	<b>NEUTRON DOSIMETRY FOR AN 18MV MEDICAL LINEAR ACCELERATOR USING SILICON PIN DIODES</b>	87
Mahdi Sadeghi, Marzieh Anjomrouz, Mohamadreza K. Bakht	<b>FEASIBILITY STUDY OF FLUKA MONTE CARLO SIMULATION FOR A BETA-EMITTING BRACHYTHERAPY SOURCE: DOSIMETRIC PARAMETERS OF <sup>142</sup>PR GLASS SEED</b>	88
Mahdi Sadeghi, Zahra Khanmohammadi	<b>MONTE CARLO CALCULATIONS OF DOSIMETRIC PARAMETERS FOR A NEW DESIGN <sup>125</sup>I SOURCE</b>	89
Ziyafer Gizem Portakal, Candas Tunali	<b>A COMPARATIVE TREATMENT PLANNING STUDY OF INTENSITY MODULATED RADIOTHERAPY AND 3-D CONFORMAL ADIOTHERAPY FOR HEAD &amp; NECK CANCER</b>	90
R. Tzoneva, I. Ugrinova, V. Uzunova, M. R. Berger	<b>COMBINED ACTION OF ELECTRICAL FIELD AND ERUFOSINE ON BREAST CANCER CELLS</b>	91

## **07 MEDICAL USE OF RADIATION**

Georgi Tchernev, Stanislav Philipov	<b>ANORECTAL MALIGNANT MELANOMAIN A HAEMORRHOIDAL NODULE</b>	95
Georgi Tchernev, Kristina Semkova	<b>SUPERFICIAL SPREADING MALIGNANT MELANOMA - COMPLETE REMISSION AFTER SURGICAL EXCISION</b>	96
Georgi Tchernev	<b>HEMATOMA OR MELANOMA?</b>	97

Georgi Tehernev, Stanislav Philipov	<b>PENILE PIGMENTED TUMOUR - UNCOMMON CLINICAL PRESENTATION: A CASE REPORT</b>	98
Slavica Shubeska Stratrova	<b>DUAL ENERGY X-RAY ABSORPTIOMETRY GOLD STANDARD FOR BONE HEALTH AND BODY COMPOSITION ASSESSMENT</b>	99
Alireza Karimian, Maryam Ramezani	<b>SKIN CANCER ASSESSMENT IN UROLITHIASIS PATIENTS DURING URETEROSCOPIC TREATMENT</b>	100
Bao-Yuan Wang, Hsien-Hsin Chen, Hui-Yu Tsai, Chien-Yi Yeh	<b>DOSE DISTRIBUTION AND RELATIVE BIOLOGICAL EFFECT FOR INTRAOPERATIVE RADIOTHERAPY</b>	101
D. Stanojević, S. Apostolović, R. Janković-Tomašević, S. Salinger-Martinović, M. Pavlović, D. Đorđević- Radojković, T. Kostić, N. Božinović, M. Živković, S. Dakić, D. Kutlešić-Kurtović	<b>RADIOLOGY INTERVENTIONS IN CARDIOVASCULAR DISEASES DURING PREGNANCY - IGNORE TABOOS TO SAVE LIVES</b>	102
D. Jablanović, O. Ciraj- Bjelac, R. Maksimović, S. Šerić	<b>COMPARISON OF RADIATION DOSE AND IMAGE QUALITY IN SCREEN-FILM AND DIGITAL RADIOGRAPHY</b>	103
Michael Akpochafor, Aweda Moses	<b>ENTRANCE RADIATION DOSE DETERMINATION FOR SELECTED CANCER PATIENTS AT THE LAGOS UNIVERSITY TEACHING HOSPITAL, NIGERIA</b>	104
Mostafa Laoues	<b>VALIDATION OF GATE SIMULATION CODE FOR DOSIMETRY IN GYNECOLOGICAL BRACHY THERAPY BY CÉSIIUM-137: INTERCOMPARISON SYSTEM MANCHESTER AND ICRU-38</b>	105
Olivera Ciraj-Bjelac, Danijela Arandić, Predrag Božović	<b>QUALITY CONTROL IN INTERVENTIONAL RADIOLOGY AND RADIOLOGY</b>	106
Slavica Shubeska Stratrova	<b>CENTRAL OBESITY INDEX DETERMINED WITH DXA</b>	107
V. Sekulić, M. Rajić, M. Vlajković, S. Ilić, M. Stević	<b>INFLUENCE OF LITHIUM CARBONATE ON EFFICACY OF RADIOIODINE THERAPY IN PATIENTS WITH GRAVES' HYPERTHYROIDISM - OUR PRELIMINARY RESULTS</b>	108
M. Vlajković, M. Rajić, M. Stević, S. Ilić, V. Petronijević, M. Matović	<b>THE INFLUENCE OF PROLIFERATION INDEX ON SOMATOSTATIN RECEPTOR SCAN IN PATIENTS WITH CARCINOID TUMORS</b>	109
Y. N. Kim, S. K. Kim, K. Jeong, C. Geol Lee, I. Jae Lee, J. Seong, S. Ho Park	<b>EVALUATION OF THE SCATTERED DOSE BY BLANKETS FOR HELICAL TOMOTHERAPY</b>	110

Y. N. Kim, S. K. Kim, K. Jeong, S. H. Park	<b>APPLICATION OF RESPIRATION DATA TO EVALUATE THE RADIATION DOSE FOR 4-DIMENSIONAL RADIOTHERAPY</b>	111
Ying-Lan Liao, Sheng-Min Su, Nan-Ku Lai, Yu-Shen Tyan, Hui-Yu Tsai	<b>OFF-CENTER EFFECTS ON RADIATION DOSE REDUCTION TO SUPERFICIAL ORGANS IN CT EXAMINATIONS: COMPARISON OF ORGAN-BASED TUBE CURRENT MODULATION (OBTCM), IN-PLANE BISMUTH SHIELD, AND COPPER FOIL BEAM FILTRATION</b>	112
Uousif M. Uousif, Alsadig Badawi	<b>CORRECTION OF SPLITTED RADIOTHERAPY COURSE FOR CANCER PATIENTS</b>	113
G. Pavlovski, M. Nikolova, V. Poposka, A. Stankov, R. Jankova-Ajanovska, Lj. Cakar	<b>THE ROLE OF FORENSIC RADIOLOGY IN THE PROCESS OF FORENSIC EXPERTISE AND INVESTIGATION</b>	114

## 08 NEUTRON RADIATION

C. Oprea, A. Oprea, A. Mihul	<b>PHOTONUCLEAR CROSS SECTION AND ISOMER RATIO IN PHOTONEUTRON REACTIONS ON NATURAL SN</b>	117
G. Gambarini, E. Artuso, M. Felisi, V. Regazzoni, S. Agosteo, L. Barcaglioni, F. Campi, L. Garlati, F. d'Errico, M. Borroni, M. Carrara, J. Burian, V. Klupak, L. Viererbl, M. Marek	<b>MEASUREMENTS AT NEUTRON BEAMS OF LVR-15 RESEARCH REACTOR WITH FRICKE GEL AND THERMOLUMINESCENCE DOSIMETERS</b>	118
Maria Angela de B. C. Menezes, Elene C. P. Maia, Radojko Jaćimović	<b>NEUTRON ACTIVATION ANALYSIS ON DETERMINATION OF ARSENIC IN BIOLOGICAL MATRIXES GIVING SUPPORT TO THE WORKER'S HEALTH AWARENESS PROGRAM</b>	119
Şamil Osman Gürdal, Ömer Gündüz, Mehmet Tombakoğlu	<b>ANALYSIS OF NEUTRON RESPONSE OF BEO-OSL PERSONAL DOSIMETERS</b>	120
B. Milenković, D. Krstić, D. Nikezić, N. Stevanović	<b>MONTE CARLO CALCULATIONS OF THE NEUTRON DOSE EQUIVALENT IN THE ICRU SLAB</b>	121
C. Oprea, A. Oprea	<b>NEUTRON CAPTURE CROSS SECTIONS AND STRENGTH FUNCTIONS IN NEUTRON REACTIONS ON <sup>147</sup>SM NUCLEUS</b>	122
C. Oprea, A. Oprea	<b>MONTE CARLO SIMULATION OF THE NEUTRON SHIELDING FOR <sup>99</sup>MO PHOTONEUTRON SOURCE</b>	123



C. Oprea, I. A. Oprea, I. Gruia, M. Petre	<b>NUMERICAL CALCULATION OF THE DOUBLE DIFFERENTIAL NEUTRON PRODUCTION CROSS- SECTION IN REACTIONS INDUCED BY HIGH ENERGY IONS</b>	124
Iwona Pacyniak, Krzysztof Fornalski, Maria Kowalska	<b>EMPLOYMENT OF BAYESIAN AND MONTE CARLO METHODS FOR BIOLOGICAL DOSE ASSESSMENT FOLLOWING ACCIDENTAL OVEREXPOSURES OF PEOPLE TO NUCLEAR REACTOR RADIATION</b>	125
Maria Angela de B. C. Menezes, Radojko Jaćimović	<b>THE K<sub>0</sub> IAEA SOFTWARE VALIDATION AT THE CDTN/CNEN, BRAZIL, USING CERTIFIED REFERENCE MATERIALS</b>	126
R. Plukienė, E. Lagzdina, A. Stirke, A. Plukis, V. Pašukonienė, B. Marcinkevičius, J. Garankin	<b>POSSIBILITY OF THE NEUTRON DOSE ENHANCEMENT IN THE CELL VIA BORON CARBIDE PARTICLES USING PUBE NEUTRON SOURCE</b>	127
S. Domański, M. Gryziński, P. Tulik, M. Maciak	<b>RECENT IMPROVEMENTS OF THE NEUTRON CALIBRATION FACILITY WITH OLD RADIONUCLIDE NEUTRON SOURCES</b>	128
V. V. Kadilin, A. A. Taraskin, V. I. Muhin, G.L. Dedenko, A. A. Kaplun, E. M. Tyurin	<b>A NEUTRON DETECTOR FOR THE “GAMMA-400” SPACE OBSERVATORY</b>	129

## 09 NON-IONIZING RADIATION

A. Osipov, N. Smetanina, M. Pustovalova, D. Klovov	<b>MECHANISMS OF DNA SINGLE-STRAND BREAKS AND ALKALI-LABILE SITES FORMATION IN HUMAN BLOOD LYMPHOCYTES EXPOSED TO 365 NM UVA RADIATION</b>	133
Sergei Voychuk, Elena Gromozova, Andriy Ostapchuk	<b>EFFECTS OF RADIOFREQUENCY ELECTROMAGNETIC FIELD AND FUNGICIDAL ANTIBIOTIC ON THE <i>SACCHAROMYCES CEREVISIAE</i> FATTY ACID COMPOSITION</b>	134
Zorana Banovački, Igor Srečković, Milica Matavulj	<b>EXTREMELY LOW FREQUENCY ELECTROMAGNETIC FIELD (ELF EMF) EXPOSURE INFLUENCES MORPHOMETRIC CHARACTERISTICS OF NEUROSECRETORY NEURONS AND ALTERS SALINITY STRESS RESPONSE IN EARTHWORM <i>EISENIA FOETIDA</i> (LUMBRICIDAE)</b>	135
G. Žauhar, S. Jurković, Đ. Smilović Radojčić, D. Dobravec	<b>TESTING OF ULTRASOUND TRASDUCERS BY USE OF THERMOCROMIC TILE</b>	136

Ana Marija Marjanović, Ivan Pavičić, Ivančica Trošić	<b>STUDY ON CELL OXIDATION-REDUCTION EQUILIBRIUM AFTER MODULATED RADIOFREQUENCY RADIATION</b>	137
Andrew Gapeyev, Nina Romanova, Sergey Gudkov	<b>RADIATION PROTECTIVE EFFECTS OF MODULATED EXTREMELY-HIGH FREQUENCY ELECTROMAGNETIC RADIATION</b>	138
B. Srđenović Conić, J. Mrđanović, A. Jovanović- Galović, N. Kladar, B. Božin, M. Plančić, G. Bogdanović	<b>EFFECTS OF EXTREMELY LOW FREQUENCY ELECTROMAGNETIC FIELDS ON THE ANTIOXIDATIVE ENZYME ACTIVITIES IN HUMAN CANCER CELL LINE AND MICRONUCLEI IN HUMAN LYMPHOCYTES</b>	139
D. Dana, S. Emanoil, S. Didi, S. Vasile	<b>OCCUPATIONAL HEALTH RISK STUDY: POSSIBLE INTERPLAY OF BIOLOGICAL EFFECTS OF RF EMF AND SMOKING HABITS</b>	140
Daniil Petrenyov	<b>THE DELAYED ACTIVATION OF TISSUE MACROPHAGES IS AN UNTARGETED EFFECT OF EXPOSURE TO IONIZING AND NON-IONIZING RADIATION</b>	141
Daniil Petrenyov, Natalia Timokhina, Alexandr Naumau	<b>THE PECULIARITIES OF HUMAN KERATINOCYTE (HACAT) RESPONSES TO EXPOSURE TO UV RADIATION <i>IN VITRO</i></b>	142
Igor Gretsky, Lyubov Zelena, Elena Gromozova	<b>INFLUENCE OF ULTRA-HIGH FREQUENCY IRRADIATION ON <i>PHOTOBACTERIUM PHOSPHOREUM LUX</i> GENE EXPRESSION</b>	143
L. Oprica, G. Vochita, D. E. Creanga, E. Ungureanu, Z. Olteanu, S. Miclaus	<b>NON-IONIZING RADIATION IMPACT ON CELLULOLYTIC FUNGUS ENZYMES</b>	144
Liubov Zelena, Igor Gretsky, Elena Gromozova	<b>THE IMPACT OF UHF EMR ON YEAST COLONY DEVELOPMENT AND SPATIO-TEMPORAL <i>FLO</i>-GENES EXPRESSION</b>	145
Maja Grbić, Aleksandar Pavlović, Branislav Vulević	<b>INTERLABORATORY COMPARISON OF MEASURING AND CALCULATION RESULTS OF ELECTRIC FIELD STRENGTH NEAR 35 KV OVERHEAD POWER LINE</b>	146
S. Ćirković, A. Ž. Ilić, J. L. Ristić-Djurović, R. Radiša	<b>EXPERIMENTAL ELECTROMAGNET FOR <i>IN VIVO</i> EXPOSURE OF SMALL ANIMALS TO ELF ELECTROMAGNETIC FIELDS</b>	147
Z. Mijatović, Z. Podrašćanin, A. Firanj, R. Kobilarov	<b>SUN'S UV RADIATION AND OZONE LAYER THICKNESS OVER THE REGION OF NOVI SAD, SERBIA</b>	148

Zuzanna Kabacińska, Ryszard Krzyminiewski	<b>EPR STUDIES OF UV-VIS AND GAMMA RADIATION EFFECT ON CALCIUM CARBONATE NANO- AND MICROPARTICLES</b>	149
I. Luminosu, A. De Sabata, S. Ilie, D. Jovanović, D. Krstić	<b>CHARACTERISTICS OF SOLAR RADIATION IN REGION CLOSE TO TIMISOARA</b>	150
D. Krstić, D. Zigar, M. Dunjić, D. Petković, N. Cvetković, D. Sokolović	<b>ELECTROMAGNETIC MODELING OF TOOTH WITH DENTAL AMALGAM FILLINGS EXPOSED TO MOBILE PHONE</b>	151
M. Israel, M. Ivanova, V. Zaryabova, P. Ivanova, I. Topalova, H. Petkova	<b>NEW ASPECTS OF LEGISLATION CONCERNINGEMF EXPOSURE TO MEDICAL PERSONNEL IN MRI</b>	152
M. Ivanova, M. Israel, I. Topalova, T. Shalamanova	<b>UV EXPOSURE TO PERSONNEL IN MEDICINE, SCIENCE AND INDUSTRY</b>	153
Valma Prifti, Ledina Karteri	<b>MEASUREMENTS OF WAVEGUIDES PARAMETERS</b>	154
Luan Ruçi	<b>NOKIA WINDOWS MOBILE'S POWER CONSUMPTION MEASUREMENTS AND ANALYSIS</b>	155

## 10 PHARMACOLOGICAL ASPECTS OF RADIATION

Dana Niculae, Ioana Esanu, Filip Daniel Puicea	<b>SYNTHESIS AND BIOLOGICAL EVALUATION OF NOTA/DOTA CYCLO-RGD DIMERS LABELLED WITH GA-68 AS RADIOTRACER FOR CANCER DIAGNOSIS AND THERAPY FOLLOW-UP</b>	159
D. Niculae, I. Ursu, L. Craciun, R. Leonte, A. Silisteanu, F. Puicea	<b>A NEW FACILITY FOR RADIOPHARMACEUTICALS RESEARCH AT IFIN-HH</b>	160
S. Koryakin, V. Yadrovskaya, S. Uspenskiy, S. Ulyanenko, E. Isaeva, E. Beketov, P. Ivanov, A. Zelenetskii, V. Khabarov, M. Selyanin	<b>THE STUDY OF NEW COMPOUNDS BASED ON HYALURONIC ACID FOR NEUTRON AND PHOTON CAPTURE THERAPIES</b>	161

## 11 RADIATION CHEMISTRY

Katarzyna Kosno, Ireneusz Janik, Dariusz Pogocki	<b>ESTIMATION OF ANTIOXIDATIVE PROPERTIES OF NICOTINE USING PULSE RADIOLYSIS</b>	165
N. Vrinceanu, M. Iorgoaeia Guignard, M. Petruta Sucheana, D. Coman	<b>RESEARCH ONTO BAMBOO KNITTED FABRIC IRRADIATED WITH AIR-PLASMA FOR THE ENHANCEMENT OF SURFACE ATTRIBUTES</b>	166

Alicia Negrón-Mendoza	<b>GAMMA RADIOLYSIS OF ACONITIC ACID IN AQUEOUS SOLUTION</b>	167
B. Slavchev, B. Veleva, L. Dobrev, D. Dimitrova, A. Nikiforova	<b>ALPHA AND ICP-MS SPECTROMETRY APPLICATION IN ANALIZING VARIETY OF MATRICES AND ACTIVITY CONCENTRATIONS</b>	168
A. E. Cruz-Hernández, M. Colín-García, A. Heredia-Barbero, A. Negrón-Mendoza, S. Ramos	<b>HETEROGENEOUS RADIOLYSIS OF UREA. IMPLICATIONS FOR ASTROBIOLOGY AND PREBIOTIC CHEMISTRY</b>	169
D. Niculae, F. Puicea, I. Esanu, C. Tuta	<b>RADIOLABELLING OF PEPTIDES WITH <sup>68</sup>GA FROM TIN OXIDE BASED <sup>68</sup>GE/<sup>68</sup>GA GENERATOR: POSTPRECESSING, CHELATORS, AUTOMATION AND QUALITY CONTROL</b>	170
Irina Pucić, Katja Kavkler, Branka Mihaljević	<b>RADIATION TREATMENT OF AGED MODEL TEXTILE SAMPLES</b>	171
K. Markov, B. Mihaljević, A. M. Domijan, J. Pleadin	<b><i>IN SITU</i>REDUCTION OF AFLATOXIN B<sub>1</sub> LEVEL BY GAMMA IRRADIATION</b>	172
Irina Pucić, Vesna Borjanović	<b>THERMAL ANALYSIS OF SOME IRRADIATED POLY(ETHYLENE-TEREPHTALATE)NANOCOMPOSITES</b>	173
T. Jurkin, M. Gotić	<b>SYNTHESIS OF GOLD NANOPARTICLES USING <math>\gamma</math>- IRRADIATED WATER-IN-OIL MICROEMULSION</b>	174

## 12 RADIATION DETECTORS

J. Burger, V. Cindro, A. Gorišek, G. Kramberger, I. Mandić, M. Zavrtanik, M. Mikuž	<b>DEVELOPMENT OF <i>IN-VIVO</i>DIAMOND DOSIMETRY FOR BRACHYTHERAPY</b>	177
Angela Gligorova	<b>DEVELOPMENT OF A SEGMENTED SILICON DETECTOR FOR ON-SENSOR ANTI-PROTON ANNIHILATIONS</b>	178
V.V. Kadilin, E.V. Ryabeva, E.M.Tyurin, V.T.Samossadny, S.V.Kolesnikov, V.O.Nebolsin	<b>DETECTORS OF IONIZING RADIATION BASED ON CRYSTAL SCINTILLATOR STRUCTURES</b>	179
L. Sukhikh, E. Sukhikh, E. Shuvalov, F. Pak, M. Rychkov	<b>DEVELOPMENT OF THE FAST RADIATION DETECTOR FOR ONLINE MONITORING OF BETATRON BREMSSTRAHLUNG BEAM STABILITY</b>	180



M. S. Martínez-García, J. Torres del Río, A. J. Palma, A. B. Jakšić, J. Banqueri, M. A. Carvajal	<b>MULTIPLE CURRENT METHOD APPLIED TO CHARACTERIZATION OF RADFETs</b>	181
R. Radu, E. Fretwurst, G. Lindstroem, L. Cristin Nistor, V. Sergiu Nistor, I. Pintilie	<b>COMPREHENSIVE INVESTIGATIONS OF POINT AND CLUSTER RADIATION INDUCED DEFECTS IN SILICON</b>	182
S. Chiriotti, D. Moro, V. Conte, P. Colautti, B. Grosswendt, E. Sterpin, S. Vynckier	<b>GENERAL ASPECTS TO CALIBRATE TEPCs IN TERMS OF LINEAL ENERGY</b>	183
Volodymyr Antonyuk, Nataliia Stetsyk	<b>X-RAYS DETECTORS BASED ON THE CRYSTALS OF CALCIUM IODIDE</b>	184
Brahim Moreno, Marc Million	<b>DEVELOPMENT BY LANDAUER OF A NEW PASSIVE DOSIMETER BASED ON THE OPTICALLY STIMULATED LUMINESCENCE TECHNOLOGY FOR IEC 62387 COMPLIANCE</b>	185
G. Kramberger on behalf of CERN-RD50 collaboration	<b>REVIEW OF RECENT RESULTS FROM RD50 COLLABORATION ON DEVELOPMENT OF RADIATION HARD PARTICLE DETECTORS</b>	186
S. V. Nikiforov, V. S. Kortov	<b>DOSIMETRIC RESPONSE FOR CRYSTALLINE AND NANOSTRUCTURED ALUMINIUM OXIDE TO HIGH CURRENT PULSE ELECTRON BEAM</b>	187
Catalin Ivascu, Alida Timar-Gabor, Onuc Cozar	<b>RAMAN AND THERMOLUMINESCENCE DOSIMETRIC INVESTIGATIONS ON P<sub>2</sub>O<sub>5</sub>-BAO-K<sub>2</sub>O GLASS SYSTEM</b>	188
E. Ekdal Karali, T. Karali, A. Kelemen, V. Holovey, C. Harmansah	<b>DOSIMETRIC CHARACTERISTICS OF Li<sub>2</sub>B<sub>4</sub>O<sub>7</sub>: Mn SINGLE CRYSTAL</b>	189
E. Ekdal Karali, Z. Kotan, C. Harmansah, T. Karali, A. Kelemen, V. Holovey	<b>EFFECT OF THERMAL QUENCHING ON THERMOLUMINESCENCE PARAMETERS OF Li<sub>2</sub>B<sub>4</sub>O<sub>7</sub>:Ag SINGLE CRYSTAL</b>	190
G. Gambarini, V. Regazzoni, S. Grisotto, E. Artuso, M. Borroni, M. Carrara, E. Pignoli, A. Mirandola, M. Ciocca	<b>MEASUREMENTS WITH RADIOCHROMIC DOSIMETERS IN PROTON BEAMS OF VARIOUS ENERGIES</b>	191
J. Nikolić, M. Rajačić, D. Todorović, V. Tim	<b>ESTIMATION OF UNCERTAINTY OF HPGe EFFICIENCY CALCULATED BY EFTRAN USING VIRTUAL POINT DETECTOR MODEL</b>	192

Leonardo De Holanda Mencarini, Claudio A. Federico, Linda V. E. Caldas	<b>PERFORMANCE STUDY OF A PASSIVE RADIATION DETECTOR FOR AVIATION PURPOSES USING THE MONTE CARLO METHOD</b>	193
Łukasz Murawski, Michał Gryziński	<b>SIMPLE DETECTORS FOR CRITICALITY ACCIDENT DOSIMETRY</b>	194
M. A. Sharaf, G. M. Hassan, E. Aboelezz, A. El-Khodary	<b>GAMMA-RAY DOSIMETRIC PROPERTIES OF (Ba<sub>0.88</sub>Sr<sub>0.12</sub>SO<sub>4</sub>)<sub>99.8%</sub>:EU<sub>0.2%</sub> NANOPHOSPHOR USING THERMOLUMINESCENCE TECHNIQUE</b>	195
M. S. Martínez-García, F. Simancas, A. J. Palma, M. Lallena, J. Banqueri, M. A. Carvajal	<b>COMMERCIAL pMOS AS RADIATION SENSOR FOR IORT</b>	196
Michael Akpochafor, Adeneye Samuel, Aweda Moses	<b>THERMOLUMINESCENT DOSIMETRY IN CLINICAL KILOVOLTAGE BEAMS</b>	197
G. Redin, D. Feld, M. Casal, P. Portillo, J. Lipovetzky, M. García Inza, L. Sambuco Salomone, S. Carbonetto, A. Faigon	<b>REUSABLE MOS DOSIMETERS FOR RADIO-THERAPY REAL TIME MONITORING. CALIBRATION AND FIRST IN-VIVO MEASUREMENTS</b>	198
E. V. Ryabeva, V. V. Kadilin, E. M. Tyurin, V. I. Mukhin, G. L. Didenko, V. O. Nebolsin	<b>ADVANCED TECHNOLOGY FOR NEUTRON REGISTRATION TO REPLACE WIDELY USED HELIUM DETECTORS IN PARTICULAR WITH SCINTILLATOR DETECTORS</b>	199
Victor Ivanov, Anatoli Loutchanski, Sergey Gushchin	<b>ROOM-TEMPERATURE SEMICONDUCTOR CDZnTE DETECTORS FOR VARIOUS APPLICATIONS</b>	200
S. Ceklic, O. Ciraj-Bjelac, I. Nikolovski, D. Arandjic	<b>INVESTIGATION OF RADIATION SURVEY METERS IN X AND GAMA RADIATION FIELDS</b>	201
A. Osman Cetinkaya, S. Kaya, E. Yilmaz, N. Vasović, A. Jakšić, C. Jackson, R. Duane	<b>MINIATURE SILICON PHOTOMULTIPLIER (SIPM) BASED SCINTILLATOR SYSTEM FOR LOW POWER HIGH PERFORMANCE DETECTION APPLICATIONS</b>	202

### 13 RADIATION MEASUREMENTS

Bulski Wojciech, Krzysztof Chełmiński	<b>RADIOCHROMIC DOSIMETRY FILMS IN RADIOTHERAPY</b>	205
--	---	-----

A. Jevremović, P. Ujić, F. de Oliveira Santos, N. L. Achouri, B. Bastin, F. Boulay, J. B. Briand, A. M. S. Benitez, H. Bouzomita, C. Borcea, R. Borcea, B. Blank, B. Carniol, P. Delahaye, F. Delaunay, D. Durand, D. Etasse, G. Fremont, G. de France, J. M. Fontbonne, C. Fontbonne, X. Flechard, G. Grinyer, J. Hommet, M. Lewitowicz, J. Mrazek, I. Martel, M. Parlog, F. Rotaru, D. Ramos, C. Spitaels, M. Stanoiu, J. C. Thomas, D. Toprek	<b>HIGH PRECISION MEASUREMENT OF THE HALF - LIFE OF <sup>19</sup>NE</b>	206
B. Obryk, P. Bilski, K. Hodyr, P. Mika	<b>HIGH-LEVEL TL DOSIMETRY FOR HIGH-TEMPERATURE ENVIRONMENT</b>	207
B. Capoen, H. El Hamazaoui, L. Bigot, G. Bouwmans, Y. Ouerdane, A. Boukenter, S. Girard, G. Chadeyron, R. Mahiou, F. Crop, T. Sarrazin, M. Bouazaoui	<b>SOL-GEL DERIVED IONIC COPPER-DOPED GLASSES AND MICROSTRUCTURED OPTICAL FIBERS: A POTENTIAL RADIATION DOSIMETER</b>	208
E. Bogacheva, S. Perov, Q. Balzano, N. Kuster, V. Alabovskiy	<b>VHF PORTABLE RADIO TRANSMITTERS: THEORETICAL AND EXPERIMENTAL DOSIMETRY</b>	209
Ines Krajcar Bronić, Jadranka Barešić, Nada Horvatinčić	<b>DETERMINATION OF BIOGENIC FRACTION IN SOLID AND LIQUID FUEL BY THE <sup>14</sup>C METHOD</b>	210
I. Iorga, A. Octavian Pavelescu, M. Dragusin, D. Gurau	<b>RADIOLOGICAL CHARACTERIZATION OF THE DECOMMISSIONED UNDERGROUND RADIOACTIVE EFFLUENTS PIPES FROM THE IFIN-HH VVR-S NUCLEAR RESEARCH REACTOR</b>	211
I. Jakonić, N. Todorović, J. Nikolov, I. Krajcar-Bronić, B. Tenjović, M. Vesković	<b>RAPID METHOD FOR TRITIUM MEASUREMENTS WITH LIQUID SCINTILLATION COUNTING ON QUANTULUS 1220</b>	212
Jeong-In Kim, Kang Seo-Kon, Lee Byoung-Il	<b>MEASUREMENT OF GAMMA SPECTRUM AT PWR REACTOR COOLANT SYSTEM WITH CZT SEMICONDUCTOR DETECTOR</b>	213
João Pedro de Carvalho Saraiva, Markus Brugger	<b>MONTE CARLO SIMULATIONS AND BENCHMARK STUDIES OF RADIATION ENVIRONMENTS AT CERN'S INJECTOR CHAIN AND RESPECTIVE CONSTRAINTS FOR INSTALLED ELECTRONIC SYSTEMS</b>	214
K. Krefft, B. Drogoszewska, J. Kamińska, M. Juniewicz, G. Wołakiewicz, I. Jakacka, B. Ciesielski	<b>APPLICATION OF EPR DOSIMETRY IN BONE FOR VERIFICATION OF DOSES IN RADIOTHERAPY PATIENTS</b>	215

Katsunori Ueno, Tominaga, Okada, Tadokoro, Sasaki, Kuwabara	<b>RADIATION MEASUREMENT TECHNOLOGY USING AN OPTICAL FIBER AND OPTICALLY STIMULATED LUMINESCENCE AND ITS APPLICATION TO RADIATION MONITORS FOR NUCLEAR POWER PLANTS</b>	216
K. Polaczek-Grelík, J. Derus, A. Gilka, A. Kawa-Iwanicka, M. Stefańczyk	<b>SECONDARY RADIATION IN HIGH-ENERGY LINAC RADIOTHERAPY USING INTENSITY MODULATED TECHNIQUES</b>	217
Mark Herbert, Vusumuzi Masondo, Mathews Makhebula	<b>COMPARISON OF NEUTRON FLUENCE ENERGY DISTRIBUTIONS MEASURED WITH NE213 PROTON RECOIL SPECTROMETER AND NE230 DEUTERON RECOIL SPECTROMETER AT THE ITHEMBA LABS TIME- OF-FLIGHT FACILITY</b>	218
M. Cherepnev, I. Ippolitov, P. Nagorsky, S. Smirnov, V. Yakovleva, A. Vukolov	<b>INFLUENCE OF SOIL HUMIDITY AND WEATHER CHANGES ON <math>\beta</math>- AND <math>\gamma</math>-RADIATION FIELDS IN THE GROUND ATMOSPHERE</b>	219
M. Hult, F. Tzika, D. Arnold, O. Burda, Z. Tyminski, P. Kovar	<b>A NEW LARGE SCALE METAL REFERENCE STANDARD FOR RADIOACTIVE WASTE MANAGEMENT</b>	220
M. Čujić, J. Petrović, M. Đorđević, R. Dragović, S. Dragović	<b>THE RADIOLOGICAL HAZARD DUE TO NATURALLY OCCURRING RADIONUCLIDES IN SOIL AROUND THERMOELECTRIC POWER PLANT</b>	221
Nguyen Dinh Chau, Gargul Magdalena	<b>DETERMINATION OF VERY LOW CONTENT OF RADIUM ISOTOPES IN DRINKING AND MINERAL WATERS</b>	222
O. Moussous, T. Medjadj	<b>RELATIVE DEPTH DOSE PROFILE AND PEAK SCATTER FACTORS MEASUREMENT FOR CO-60 TELEOTHERAPY MACHINE USING CHEMICAL DOSIMETRY</b>	223
R. Kritsanuwat, H. Arae, M. Fukushi, S. Chanyotha, S. Kumar Sahoo	<b>NATURAL RADIONUCLIDES AND RADIATION RISK ASSESSMENT IN SOUTHERN THAILAND SOILS</b>	224
R. Cs. Begy, A. R. Iurian, O. A. Dumitru, L. Preoteasa	<b>PRELIMINARY RESULTS OF <math>^{210}\text{Pb}</math> DATING METHOD IN THE DANUBE DELTA LACUSTRINE SYSTEM FROM ROMANIA</b>	225
Romul Mircea Margineanu	<b>UNDERGROUND LABORATORY IN ULTRALOW RADIATION BACKGROUND IN SLANIC-PRAHOVA, ROMANIA</b>	226
S. Bercea, E. Iliescu, I. Mitu, A. Celarel, C. Cenusă	<b>DOSIMETRY FOR A NEW RESEARCH FACILITY, ELI-NP</b>	227

G. K. Gillmore, D. Wertheim, N. Petford, L. Fijalkowska- Lichwa	<b>SOLID STATE NUCLEAR TRACK ETCH DETECTORS, 2D AND 3D ANALYSIS OF ALPHA TRACKS</b>	228
G. Pantelić, D. Todorović, J. Nikolić, M. Rajačić	<b>TESTING OF HOMOGENEITY OF MATERIAL DISTRIBUTED IN INTERLABORATORY COMPARISON</b>	229
Michał Gryziński	<b>A NEW GENERATION OF RECOMBINATION CHAMBERS</b>	230
V. Petrović, G. Schoof, Z. Stamenković	<b>CHARACTERIZATION AND VERIFICATION OF A LATCHUP PROTECTION SWITCH IN RADIATION ENVIRONMENT</b>	231
Aleksandar Jakšić	<b>OVERVIEW OF RADFET TECHNOLOGY AND ITS APPLICATIONS</b>	232
Ewa Mandowska, Bartosz Nitsze, Arkadiusz Mandowski	<b>SPECTRAL STABILITY OF STIMULATION SOURCES FOR OSL READERS</b>	233
Ileana Radulescu, Marian Romeo Calin	<b>ENHANCEMENT OF THE PRECISION AND ACCURACY OF RESULTS FOR AN HPGE DETECTOR USING FAILURE ANALYSIS</b>	234
Nuretdin Eren, Engin Altinkay	<b>RESEARCHING OF NATURAL RADIATION DOSE LEVEL IN THE AROUND OF BEYŞEHİR LAKE OF TURKEY</b>	235
K. Kozak, D. Grządziel, J. Mazur, M. Mroczek	<b>TOOLS FOR DETERMINATION OF RADIOACTIVITY BACKGROUND AT THE LOCATION OF PLANNED NUCLEAR POWER PLANT</b>	236
M. Romeo Calin, I. Radulescu, M. Antonina Calin, G. Iuri Simionca	<b>RADIOMETRIC MEASUREMENTS AND EVALUATION OF RADON CONCENTRATION IN SOME NORTHERN ROMANIAN SALT MINES</b>	237
M. Troshina, A. Lychagin, V. Potetnya, P. Prusachenko	<b>EXPERIMENTAL NEUTRON AND <math>\gamma</math>-RAYS ABSORBED DOSE EVALUATION IN SUPERFICIAL SKIN LAYER USING RADIOCHROMIC FILM</b>	238
Nan-Ku Lai, Ying-Lan Liao, Yu-Shen Tyan, Hui-Yu Tsai	<b>PERFUSION CT DOSE ASSESSMENT FOR ACUTE STROKE: COMPARISON OF BISMUTH SHIELD AND ORGAN-BASED TUBE CURRENT MODULATION</b>	239
A. R. Paşcu, M. Toacaci, A. Timar-Gabor	<b>RETROSPECTIVE ACCIDENT DOSIMETRY USING UBIQUITOUS MATERIALS</b>	240
A. L. Antonio, P. M. P. Santos, A. Bento, B. Quintana	<b>ABSORBED DOSE AND EFFECTIVE DOSE IN FOOD IRRADIATION: MEASUREMENT AND VALIDATION WITH DIFFERENT PHANTOMS</b>	241

B. Pourshahab, S. M. Hosseini Pooya, M. R. Abdi, C. Rasouli	<b>MEASUREMENT OF SPATIAL DISTRIBUTION OF HARD X-RAY DUE TO RUNAWAY ELECTRONS IN DAMAY AND TOKAMAK LIMITER</b>	242
Bojana Šećerov	<b>DOSIMETRY IN PROCESS CONTROL IN RADIATION PROCESSING</b>	243
Catia Saueia, Marcelo Nisti, Barbara Mazzilli	<b>COMPARISON OF <sup>210</sup>PB DETERMINATION IN ENVIRONMENTAL SAMPLES BY LIQUID SCINTILLATION COUNTING AND GAS FLOW PROPORTIONAL COUNTING</b>	244
S. Choi, S. A. Lim, J. S. Chae	<b>SPATIO-TEMPORAL VARIATIONS OF ANTHROPOGENIC RADIONUCLIDES IN THE SEAWATER OF EAST SEA/JAPAN SEA BEFORE FUKUSHIMA ACCIDENT</b>	245
D. Joković, R. Banjanac, D. Maletić, V. Udovičić, N. Veselinović, B. Grabež	<b>A GEANT4 BASED METHOD TO ESTIMATE RADON CONCENTRATION INSIDE LEAD CASTLE OF SHIELDED GERMANIUM DETECTORS</b>	246
David Fukumori, Leticia Campos Rodrigues	<b>STUDY OF TL AND OSL PROPERTIES OF ELECTROFUSED ALUMINA PELLETS</b>	247
D. Krezhova, N. Petrov, S. Maneva, A. Stoev	<b>SPECTRAL REFLECTANCE MEASUREMENTS FOR DETECTION AND MONITORING OF PLANT DISEASES</b>	248
G. Maria Liosi, F. Giacobbo, E. Pignoli, L. Marrone, G. Gambarini, M. Mariani	<b>STUDY OF THE EFFECTS OF TEMPORAL VARIABLES ON THE RESPONSE OF FRICKE-XYLENOL ORANGE GEL DOSIMETERS</b>	249
Andra-Rada Iurian, Constantin Cosma, Claudia Stihl	<b>A PRACTICAL EXPERIMENTAL APPROACH FOR THE DETERMINATION OF GAMMA-EMITTING RADIONUCLIDES IN ENVIRONMENTAL SAMPLES</b>	250
I. Jakonić, J. Nikolov, N. Todorović, B. Tenjović, I. Bikit	<b>QUENCH EFFECTS IN TRITIUM MEASUREMENTS BY LIQUID SCINTILLATION COUNTING</b>	251
J. Nikolić, G. Pantelić, M. Živanović, M. Rajačić, D. Todorović	<b>COMPARISON OF TWO METHODS FOR HPGE DETECTOR EFFICIENCY CALIBRATION FOR CHARCOAL CANISTER RADON MEASUREMENT</b>	252
J. Kamińska, B. Ciesielski, K. Krefft, M. Juniewicz, K. Emerich, B. Drogoszewska	<b>VERIFICATION OF RADIOTHERAPY DOSES IN PATIENTS' TEETH BY EPR DOSIMETRY</b>	253
Jonas Mazeika, Galina Lujanienė, Rimantas Petrosius	<b>PRELIMINARY DETERMINATION OF DIFFICULT TO MEASURE RADIONUCLIDES IN NUCLEAR WASTE FROM IGNALINA NUCLEAR POWER PLANT DECOMMISSIONING</b>	254

J. Tecl, J. Solc, P. Kovar, M. Bunata	<b>INDO4 METROMETAL PROJECT - SELECTED RESULTS</b>	255
K. Szewczak, K. Woloszczuk, K. Ciupek, D. Aksamit	<b>RESPONSE FLUCTUATION OF RADIOLOGICAL PROTECTION INSTRUMENTS USED IN NUCLEAR MEDICINE DEPARTMENTS</b>	256
Kamil Szewczak, Slawomir Jednorog	<b>APPLICATION OF ARGON FILLED IONIZATION CHAMBER FOR GAMMA/X RADIATION MEASUREMENTS AROUND <i>PLASMA-FOCUS</i> EXPERIMENTAL SYSTEM</b>	257
Luka Perazić, Ivan Knežević, Nevena Zdjelarević	<b>APPLICATION OF OPTICALLY STIMULATED LUMINESCENCE (OSL) DOSIMETERS IN PERSONAL DOSIMETRY</b>	258
Marcelo Nisti, Catia Saueia, Barbara Mazzilli	<b>DETERMINATION OF <sup>14</sup>C EFFICIENCY BY LIQUID SCINTILLATION COUNTER USING TWO METHODS: TRIPLE TO DOUBLE COINCIDENCE RATIO AND QUENCH PARAMETER EXTERNAL</b>	259
Monica Dolha, Alida Timar-Gabor, Constantin Cosma	<b>A HIGH RESOLUTION MAP OF GAMMA DOSE RATES IN CLUJ COUNTY, ROMANIA USING LIF:MG,CU,P DETECTORS</b>	260
N. M. Antović, S. K. Andrukhovich, A. V. Berestov	<b>A CONTRIBUTION OF THE COMPTON SCATTERED RADIATION TO DOUBLE GAMMA COINCIDENCES SPECTRA AT THE 32-DETECTOR SYSTEM</b>	261
Piotr Tulik, Katarzyna Tyminska, Maciej Maciak	<b>EPITHERMAL NEUTRON CALIBRATION FIELD</b>	262
R. Banjanac, V. Udovičić, D. Joković, D. Maletić, J. Filipović, N. Veselinović, A. Dragić	<b>RELATION BETWEEN DAILY GAMMA-RAY BACKGROUND AND RADON VARIABILITY IN THE UNDERGROUND LOW-LEVEL LABORATORY IN BELGRADE, SERBIA</b>	263
R. I. Dobrin, C. N. Dulama, Al. Toma	<b>CHERENKOV COUNTING FOR BETA RADIOACTIVITY DETERMINATION WITH A LIQUID SCINTILLATION ANALYZER</b>	264
R. Soboń, M. Gryziński, M. Maciak, P. Tulik	<b>MULTISIGNAL IONIZATION CHAMBER AS AN DIRECTIONAL NEUTRON SPECTROMETER</b>	265
R. Cs. Begy, O. A. Dumitru, A. R. Iurian, S. Hedvig, S. Kelemen	<b>ALFA AND GAMMA SPECTROMETRY APPLICATION IN DATING LAKES SEDIMENTS FROM DANUBE DELTA, ROMANIA: PRELIMINARY RESULTS</b>	266
S. Perov, E. Bogacheva, Q. Balzano, N. Kuster, N. Rubtsova	<b>CORRELATION OF DOSIMETRIC AND MAGNETIC NEAR FIELD FREE SPACE MEASUREMENTS</b>	267

V. Maslyuk, I. Megela, T. Okunieva, V. Holovey, M. Birov	<b>ON THE POSSIBILITY OF THE USE OF THE LONG-TERM PHOSPHORESCENCE OF THE <math>\text{Li}_2\text{B}_4\text{O}_7:\text{Cu}</math> AND <math>\text{Li}_2\text{B}_4\text{O}_7:\text{Mn}</math> CRYSTALS FOR THE HIGH-CURRENT ELECTRON BEAM DOSIMETRY</b>	268
D. Sporea, A. Stancalie, L. Ionascu, M. Nicu, C. Turcanu	<b>FIBER OPTICAL-BASED SYSTEM FOR IN-SITU MONITORING OF RADIOACTIVE WASTE CONDITIONING BY CEMENTATION</b>	269
K. Ciupek, D. Aksamit, K. Wołoszczuk, K. Szewczak	<b>APPLICATION OF TL DOSIMETERS IN MIXED FIELD BETA/PHOTON RADIATION</b>	270
Petr Otahal, Kamila Johnova	<b>RADIOACTIVE AEROSOL CONCENTRATION DETERMINATION BY SURFACE CONTAMINATION MONITOR</b>	271
Piotr Tulik, Natalia Golnik, Katarzyna Domanska	<b>STUDY ON RECOMBINATION INDEX OF RADIATION QUALITY OF X-RAY RADIATION</b>	272
Vigilija Cidzikienė, Vaidotė Jakimavičiūtė- Maselienė	<b>AN ASSESSMENT OF FLUORESCENT TRACER DYES USED FOR GROUNDWATER TRACING</b>	273
B. Veleva, B. Slavchev, L. Dobrev, D. Dimitrova, A. Nikiforova	<b>ALPHA SPECTROMETRY APPLICATION IN ANALYZING VARIETY OF MATRICES AND ACTIVITY CONCENTRATIONS</b>	274
M.M. Janković, G.K. Pantelić, N. B. Sarap, D. J. Todorović	<b>COMPARISON OF TWO DIFFERENT METHODS FOR GROSS ALPHA AND GROSS BETA ACTIVITY DETERMINATION IN WATER SAMPLES</b>	275
Alicja Boryło, Bogdan Skwarzec, Grzegorz Romańczyk	<b>ACTIVITY OF <math>^{210}\text{Po}</math> IN THE BLOOD AND URINE OF THE RESIDENTS OF THE TRICITY AGGLOMERATION</b>	276

## 14 RADIATION PHYSICS

Z. Jovanović, D. Krstić, V. Marković, D. Nikezić, V. Urošević	<b>MCNP SIMULATION OF THE DOSE DISTRIBUTION IN LIVER CANCER TREATMENT FOR BNCT THERAPY</b>	279
H. C. Manjunatha	<b>BETA INDUCED BREMSSTRAHLUNG DOSE RATE IN TISSUES FROM HUMAN ORGANS</b>	280
Vishwanath P. Singh, N. M. Badiger	<b>ENERGY ABSORPTION BUILDUP FACTORS, EFFECTIVE ATOMIC NUMBERS AND KERMA OF DIFFERENT HUMAN BODY PARTS, TISSUES, VITAMINS AND TISSUE SUBSTITUTES</b>	281



D. Mrđa, K. Bikit, I. Bikit, J. Slivka	<b>MONTE-CARLO SIMULATION OF BREMSSTRAHLUNG INDUCED DOSE DEPENDING ON SOURCE MATRIX</b>	282
Frank Becker, Bernhard Kienzler	<b>SIMULATION OF ALPHA DOSIMETRY FOR PREDICTING PRODUCTION OF RADIOLYTIC SPECIES AT THE SURFACE OF SPENT NUCLEAR FUEL PELLETS</b>	283
S. Kaya, A. Osman Cetinkaya, A. Aktag, E. Yilmaz	<b>EFFECTS OF GAMMA-RAY IRRADIATION ON INTERFACE STATES AND SERIES-RESISTANCE CHARACTERISTICS OF <math>Si_3N_4</math> MOS CAPACITORS</b>	284
V. Maslyuk, I. Megela, T. Okunieva, J. Pekar, V. Pekar	<b>SPECIFIC FEATURES OF THE INFLUENCE OF HIGH-CURRENT HIGH-ENERGY ELECTRON BEAMS ON THE LUMINESCENT PROPERTIES OF UNDOPED AND NB, FE-DOPED <math>Al_2O_3</math> CRYSTALS</b>	285
Agnieszka Marciniak, Bartłomiej Ciesielski, Anita Prawdzik-Dampc	<b>THE EFFECTS OF DOSE AND WATER TREATMENT ON EPR SIGNALS IN IRRADIATED FINGERNAILS</b>	286
Ekaterina Bosykh, Valentina Sohoreva	<b>THE POSSIBILITY OF USING NUCLEAR TRACK MEMBRANE FOR OPHTHALMOLOGY</b>	287
E. Ndrečka, E. Vataj, N. Civici, I. Gjipli, T. Dilo	<b>APPLICATION OF EDXRF SPECTROMETRY FOR THE ANALYSIS OF ANCIENT CERAMICS</b>	288
H. C. Manjunatha	<b>SPECIFIC ABSORBED FRACTION OF ENERGY AND RELATIVE PHOTON DOSE IN HYDROXYAPATITE</b>	289
H. Kiran Namburi, O. Marcinka, M. Miklos, E. Havlova-Homzova	<b>MUTLI-PURPOSE RESEARCH FACILITY: <math>^{60}Co</math> GAMMA IRRADIATION UNIT AT RESEARCH CENTER ŘEŽ</b>	290
I.V.Khyzhniy, E.V.Savchenko, S.A.Uyutnov, A.N.Ponomaryov, G.B.Gumenchuk, V.E.Bondybey	<b>ANOMALOUS DESORPTION FROM PRE-IRRADIATED SOLID NITROGEN</b>	291
Khalid Iqbal, Saeed Ahmad	<b>EVALUATION OF THE ACCURACY OF A COMMERCIAL RADIATION TREATMENT PLANNING SYSTEM FOR EXTERNAL BEAM PARTIAL BREAST IRRADIATION WITH AN ANTHROPOMORPHIC PRESAGE® DOSIMETER AND RADIOCHROMIC FILM</b>	292
Leila Yettou, Belgaid Mohamed	<b>CALCULATION OF THE CROSS SECTIONS ON <math>^{63}Cu</math> AND <math>^{176}Lu</math> TARGETS USED FOR PRODUCTION OF <math>^{64}Cu</math> AND <math>^{177}Lu</math> THERAPEUTIC RADIONUCLIDES BY USING THE TALYS AND EMPIRE CODES</b>	293
N. Vasović, A. Jakšić, C. Jackson, R. Duane	<b>OPTIMIZED READOUT ELECTRONICS FOR SPM GAMMA DETECTOR</b>	294

Petr Skorobogatov	<b>THE LATENT EFFECTS IN DIGITAL ICS UNDER ELECTRICAL OVERSTRESS PULSES AND ARRHENIUS LAW</b>	295
S. Bilińska, L. Markowski	<b>APPLICATION OF OPTICALLY STIMULATED EXOELECTRON EMISSION FROM CSCL IN FAST IRRADIATION DOSE READOUTS</b>	296
S. Popović, L. Vušković, A. Samolov, M. Bašović	<b>SECONDARY ELECTRON EMISSION AND MULTIPACTOR DISCHARGES</b>	297
T. V. Chuvilskaya	<b>INTERPRETATION AND PREDICTION OF NUCLEAR EXPERIMENTAL RESULTS BY THE DATA-CONTAINING CODES</b>	298
Vladan Ljubenov, Rodoljub Simović, Predrag Osmokrović	<b>INTEGRAL REFLECTION COEFFICIENTS FOR OBLIQUE INCIDENCE OF PHOTONS IN THE DOMAIN OF INITIAL ENERGIES UP TO 300 KEV</b>	299
Alexander Nikiforov, Dmitry Boychenko, Vitaly Telets	<b>COMPLEX APPROACH TO MICROELECTRONICS RADIATION HARDNESS INVESTIGATION</b>	300
Ewa Mandowska, Arkadiusz Mandowski	<b>THEORETICAL AND EXPERIMENTAL INVESTIGATION OF DOSE RESPONSE IN NON-HOMOGENEOUS OSL DETECTORS</b>	301

## 15 RADIATION PROTECTION

A. Mladenov, D. Stankov, T. Nonova, K. Krezhov	<b>RADIATION PROTECTION, RADIATION WASTE MANAGEMENT AND SITE MONITORING AT THE NUCLEAR SCIENTIFIC AND EXPERIMENTAL CENTRE IRT-SOFIA AT INRNE-BAS</b>	305
Iva Vošahlíková, Petr Otáhal	<b>DECONTAMINATION OF PROTECTIVE CLOTHING AGAINST RADIOACTIVE CONTAMINATION</b>	306
J. Ranouil, S. Balduyck, V. Legrand, M. Figueira, J. G. Mozziconacci, C. Tourneux, S. Ouabdelkader, E. Mosca, S. Berard	<b>RESULTS OF THE FRENCH NATIONAL WORKING GROUP GEDOC FOR OCCUPATIONAL EYE-LENS EXPOSURE IN CLINICAL AND INDUSTRY FIELDS</b>	307
M. Spunei, M. Mihai, I. Malaescu, C. N. Marin	<b>ABSORBING MATERIALS WITH APPLICATIONS IN RADIOTHERAPY AND RADIOPROTECTION</b>	308

Paulo Lainetti	<b>SUPERFICIAL DECONTAMINATION OF CORRODED STEEL STRUCTURES OF COMPLEX SHAPES BY MOLTEN SALT STRIPPING</b>	309
Surendra Bahadur Chand, P. P. Chaurasia	<b>STATUS OF RADIATION PROTECTION AND SAFETY AT BPKM CANCER HOSPITAL, NEPAL</b>	310
T. McKenna, P. Vilar Welter, J. Callen, E. Buglova	<b>PROTECTION OF THE PUBLIC DURING A SEVERE EMERGENCY AT A LIGHT WATER REACTOR OR ITS SPENT FUEL POOL</b>	311
B. Bašić, A. Beganović, A. Skopljak-Beganović, D. Samek	<b>FIFTEEN YEARS OF OCCUPATIONAL EXPOSURE MONITORING IN THE FEDERATION OF BOSNIA AND HERZEGOVINA</b>	312
D. Krstić, Z. Jovanović, D. Nikezić, D. Savić, D. Vučić	<b>CALCULATION OF THE DOSE CONVERSION COEFFICIENTS FOR THE VOXELIZED EYE LENS FOR NEUTRONS IRRADIATION</b>	313
E. Iliescu, S. Bercea, D. Niculae, A. Celarel, S. Patrascu	<b>AREA DOSIMETRY FOR THE NEW RADIOPHARMACEUTICAL CENTER IN IFIN-HH</b>	314
F. Hasford, J. Owusu- Banahene, F. Otoo, S. Adu, E. K. Sosu, J. K. Amoako, E. O. Darko, G. Emi-Reynolds, E. K. Nani, M. Boadu, C. C. Arwui, J. Yeboah	<b>ASSESSMENT OF ANNUAL WHOLE-BODY OCCUPATIONAL RADIATION EXPOSURE IN EDUCATION, RESEARCH AND INDUSTRIAL SECTORS IN GHANA (2000/09)</b>	315
F. Hasford, J. Owusu- Banahene, J. K. Amoako, F. Otoo, E. O. Darko, G. Emi-Reynolds, J. Yeboah, C. C. Arwui, S. Adu	<b>ASSESSMENT OF ANNUAL WHOLE-BODY OCCUPATIONAL RADIATION EXPOSURE IN MEDICAL PRACTICE IN GHANA (2000/09)</b>	316
Gediminas Stankunas, Aurimas Tonkunas, Raimondas Pabarcus	<b>ASSESSMENT AND BENCHMARKING OF THE IMPACT TO GAMMA DOSE RATE EMPLOYING DIFFERENT PHOTON-TO-DOSE CONVERSION FACTORS USING MCNP CODE AT THE DECOMMISSIONING STAGE OF IGNALINA NPP</b>	317
Helena Malá, Petr Rulík, Tereza Ježková	<b>EMERGENCY RESPONSE EXERCISE OF LABORATORIES EQUIPPED WITH GAMMA SPECTROMETRY</b>	318
J. Carneiro, M. P. Sanches, D. L. Rodrigues, G. M. A. A. Sordi	<b>RADIATION DOSE IMPACT ON THE WORKERS FROM THE RADIOPHARMACEUTICAL FACILITY</b>	319
Jaroslav Rachubik	<b>MONITORING OF FOOD RADIOACTIVE CONTAMINATION AS AN TOOL FOR CONSUMER RADIATION PROTECTION</b>	320

Katarzyna Wołoszczuk, Dariusz Aksamit, Krzysztof Ciupek	<b>ASSESSMENT OF OCCUPATIONAL RADIATION EXPOSURE FROM RTG AND CT IN VETERINARY CLINICS</b>	321
N. Navab Moghadam, S. M. Hosseini Pooya, H. Afarideh, M. R. Kardan	<b>A NATIONAL INTERCOMPARISON PROGRAM FOR PERFORMANCE APPROVAL TESTS OF INDIVIDUAL DOSIMETERY SERVICE PROVIDERS IN IRAN</b>	322
V. N. Gulbin, N. S. Kolpakov, V. V. Polivkin, N. P. Gulbina	<b>INVESTIGATION OF RADIO- AND RADIATION- PROTECTIVE NANO-STRUCTURED MATERIALS</b>	323
Đ. Vukmirović, B. Đurović	<b>AERO ENGINES MAINTENANCE - SPECIFIC RISKS</b>	324
Y. N. Kim, G. H. Kim, S. K. Kim, K. Jeong, S. H. Park	<b>MONTE CARLO STUDY ON THE PHOTONEUTRON SHIELDING IN A MEICAL ACCELERATOR ROOM</b>	325
Yunjong Lee	<b>DEVELOPMENT OF THE APPLICATION SOFTWARE AND DESIGN OF THE HARDWARE FOR THE RADIATION SAFETY MANAGEMENT</b>	326
Alireza Karimian, Ashkan Nomani	<b>RADIATION ABSORBED DOSE ASSESSMENT OF CREW MEMBERS BY MONTE CARLO METHOD</b>	327
Vesna Cibreva, Elisaveta Stikova	<b>COMPARATIVE ANALYSIS OF TWO METHODOLOGIES FOR RISK EVALUATION AND ASSESSMENT AT WORKPLACE WHERE PROFESSIONAL EXPOSURE OF IONIZED RADIATION EXISTS IN CONDITIONS OF CONTROLLED RADIATION ZONE</b>	328

## 16 RADIATION PROTECTION IN MEDICINE

A. Skopljak-Beganović, B. Hanić, A. Beganović, M. Gazdić-Šantić, M. Kulić, M. Spužić, D. Samek, A. Drljević	<b>A TOOL FOR ESTIMATION OF EFFECTIVE DOSES IN INTERVENTIONAL CARDIOLOGY</b>	331
Đ. Milković, M. Ranogajec- Komor, L. Porcs-Makkay, Ž. Knežević	<b>INFLUENCE OF VARIOUS FACTORS ON THE DOSE OF PERSONNEL DURING CARDIOLOGY DIAGNOSTIC</b>	332
Arun Chougule	<b>ESTIMATION OF SKIN EXPOSURE DURING RADIOGRAPHY/VERIFICATION OF EMPIRICAL FORMULA</b>	333
Alireza Karimian, Bahareh Nikparvar, Iran Jabbari	<b>RADIATION ABSORBED DOSES ASSESSMENT OF PHYSICIAN AND PATIENT (CHILD AND ADULT) DURING RENAL ANGIOGRAPHY</b>	334

S. M. Hosseini Pooya, L. Hafezi, A. R. Talaeipour, F. Manafi	<b>OCCUPATIONAL EXPOSURE DUE TO WORKING WITH A PORTABLE DENTAL X-RAY SYSTEM</b>	335
Jorge Sampaio, M <sup>a</sup> . Conceição Abreu, Patrick Sousa	<b>SCATTER FRACTION WITH SIMULATIONS. REVISITING RADIATION SCATTER IN X-RAY IMAGING.</b>	336
D. Arandić, O. Ciraj-Bjelac, D. Hadnađev, S. Stojanović, P.Božović	<b>RADIATION DOSES IN ADULTS CT PRACTICE IN SERBIA: INITIAL RESULTS</b>	337
Jasminka Chabukovska- Radulovska, Tatjana Slezenskova, Anastasika Poposka	<b>REDUCING RADIATION EXPOSURE: OUR EXPERIENCE REVIEW AND FURTHER STEPS</b>	338
E. Ofori, W. Antwi, L. Arthur	<b>COMPARISON OF PATIENT RADIATION DOSE FROM CHEST AND LUMBAR SPINE X-RAY EXAMINATIONS IN 10 HOSPITALS IN GHANA</b>	339
E. Ofori, W. Antwi, D. Scutt, M. Ward	<b>OPTIMIZATION OF PATIENT RADIATION PROTECTION IN PELVIC X-RAY EXAMINATION IN GHANA</b>	340
M.Gazdić-Šantić, A.Beganović, A. Skopljak-Beganović, B. Bašić, D. Samek, S. Prevljak, S. Vegar-Zubović	<b>INFLUENCE OF COMPUTED TOMOGRAPHY ANGULAR TUBE CURRENT MODULATION ON PATIENT SKIN DOSE</b>	341
Olga Girjoaba, Alexandra Cucu	<b>ROMANIAN PEDIATRIC EXPOSURE TO IONIZING RADIATION FROM DIAGNOSTIC MEDICAL PROCEDURES</b>	342
M. Zdraveska Kochovska, V. Spasić Jokić, O. Vaskova, A. Bogdanovska, D. Miladinova, V. Majstorov	<b>CALCULATED DOSES TO FAMILY MEMBERS OF PATIENT TREATED WITH RADIOIODINE 131</b>	343
Jelena Samac, Olivera Ciraj-Bjelac	<b>ASSESSMENT OF ABSORBED AND EFFECTIVE DOSE FOR PATIENTS AFTER PARATHYROID GLAND SCINTIGRAPHY USING <sup>99m</sup>Tc-MIBI</b>	344
M. Vujović, O. Ciraj-Bjelac, P. Božović, D. Arandić, M. Gavrilović	<b>UNCERTAINTY OF DOSE ASSESSMENT IN CONVENTIONAL RADIOGRAPHY</b>	345
E. M. Ahmed, A. Babkir, A. Sulieman, A. A. Elsalam	<b>MEASUREMENT OF PATIENT DOSE IN VASCULAR INTERVENTIAL RADIOGRAPHY</b>	346
Mosab Bashir, Ibrahim Idris Suliman	<b>STAFF DOSIMETRY IN INTERVENTIONAL CARDIOLOGY USING ELECTRONIC PERSONAL DOSIMETRY</b>	347
Seife Delle, Muhedin Abdo	<b>OPTIMIZATION OF RADIOLOGICAL DOSES TO PATIENTS UNDERGOING INTRAVENOUS UROGRAPHY (IVU) EXAMINATIONS IN ADDIS ABABA, ETHIOPIA</b>	348

D. Kishta, A. Deda, K. Preza, E. Islami	<b>OPTIMISATION MEDICAL EXPOSURES IN INTERVENTION RADIOLOGY USED IN MOTHER TERESA HOSPITAL, TIRANA, ALBANIA</b>	349
E. M. Ahmed, M. Abazer, A. Sulieman, A. A. Elsalam	<b>EVALUATION OF PATIENT AND STAFF DOSE DURING PACEMAKER PROCEDURES</b>	350
E. M. Ahmed, Nagla Awad, A. Sulieman, E. A. Allah	<b>EVALUATION OF PATIENT AND STAFF DOSE IN BRAIN INTERVENTIONAL RADIOGRAPHY</b>	351
Klara Uhrhan, Ferdinand Sudbrock, Alexander Drzezga	<b>THE PATIENT AS A RADIOACTIVE SOURCE - AN INTERCOMPARISON OF SURVEY-METERS FOR MEASUREMENTS IN NUCLEAR MEDICINE</b>	352
Mosab Bashir, E. Mohamed-Ahmed	<b>REDUCTION OF PATIENT'S DOSE OF I-131 THERAPY BY USED LOCAL DIURETIC JUICE</b>	353
Seife Dellie, Rao	<b>SUGGESTED DIAGNOSTIC REFERENCE LEVELS FOR MAMMOGRAPHY X-RAY EXAMINATION IN ETHIOPIA</b>	354
Voleta Acovska, Vesna Gershan	<b>WHICH IS MORE DOMINANT PARAMETER IN DAP VALUE: FLUOROSCOPIC TIME OR PATIENT SIZE?</b>	355

## 17 RADIOBIOLOGY

Nataša Anastasov on behalf of the Dark.risk consortium	<b>CONTRIBUTION OF NON-CODING GENOME TO SUSCEPTIBILITY AT LOW DOSES OF RADIATION (STUDIES ON A COHORT OF SERBIAN CHILDREN EXPOSED TO X-IRRADIATION)</b>	359
T. Todorova, D. Miteva, M. Pesheva, S. Chankova	<b>ZEOCIN-INDUCED ADAPTIVE RESPONSE IN YEAST <i>SACCHAROMYCES CEREVISIAE</i></b>	360
A.Moskalev, M.Shaposhnikov, E. Plyusnina, L. Shilova, N. Zemskaya, D. Peregodova, A. Danylov, E. Dobrovlskaya, A. Kudryavtzeva	<b>MECHANISMS OF RADIATION HORMESIS ON <i>DROSOPHILA</i> MODEL</b>	361
Elena Lyapunova, Ludmila Komarova	<b>DISPLAY OF GENETIC INSTABILITY OF CELLS IN THE POPULATION OF <i>CHLORELLA VULGARIS</i> AFTER SPARSELY AND DENSELY RADIATION EXPOSURE</b>	362

F. Ingel, S. Khussainova, G. Kosdauletova, E. Krivtsova	<b>IN VITRO RADIOSENSITIVITY AND ADAPTTATIVE RESPONSE TO GAMMA-IRRADIATION OF BLOOD LYMPHOCYTES OF CHILDREN LIVING IN THE ARAL SEA BASIN (ZONE OF ECOLOGICAL DISASTER)</b>	363
Gabriela Vochita, Ramona Focea, Dorina Creanga	<b>DIRECT VERSUS INDIRECT RADIATION ACTION IN IRRADIATED VEGETAL EMBRYOS</b>	364
B. Tóth Schilling, N. Sándor, G. Sáfrány, H. Hegyesi	<b>GDF-15 OVEREXPRESSION INCREASE RADIOSENSITIVITY OF BREAST CANCER CELLS</b>	365
Jin Kyu Kim, Jin-Hong Kim, Vladislav G. Petin	<b>SYNERGISM MODEL FOR THE COMBINED ACTION OF RADIATION AND HEAT</b>	366
K. Stankova, E. Zaharieva, N. Aneva, O. Katzarska, P. Ostoich, R. Georgieva, R. Boteva	<b>MOLECULAR MARKERS FOR THE ASSESSMENT OF RADIATION-INDUCED OXIDATIVE STRESS IN OCCUPATIONALLY IRRADIATED INDIVIDUALS</b>	367
Soile Tapio	<b>USE OF PROTEOMICS IN SEARCH FOR BIOMARKERS OF RADIATION EXPOSURE</b>	368
T. Paunesku, S. Raha, B. Wanzer, G. E. Woloschak	<b>INVESTIGATION OF MICRO RNA (MIR) EXPRESSION IN ARCHIVAL ANIMAL SAMPLES</b>	369
Guy Mong Ky Tran	<b>TRISOMY 21 AND CONGENITAL MALFORMATIONS AFTER CHERNOBYL: CONFIRMATION OF MICROCEPHALY IN BIRDS BY HUMAN MICROCEPHALY. NON DISJUNCTION OF CHROMOSOMES DURING MEIOSIS, INDUCED BY IRRADIATION, IS RESPONSIBLE OF TRISOMIES (21, 13, 18) NINE MONTHS AFTER CHERNOBYL.</b>	370
Žarko Barjaktarović	<b>IONISING RADIATION INDUCES PERSISTENT CHANGE IN CARDIAC MITOCHONDRIAL FUNCTION OF C57BL/6 AND APOE<sup>-/-</sup> MICE</b>	371
Vijay Singh	<b>PRECLINICAL DEVELOPMENT OF A BRIDGING THERAPY FOR RADIATION CASUALTIES</b>	372
Aksana Kotava	<b>DEVELOPMENT OF STATE REGISTER OF PERSONS EXPOSED TO RADIATION AS A RESULT OF THE CHERNOBYL ACCIDENT IN BELARUS</b>	373
D. Gudkov, N. Shevtsova, E. Dzyubenko, N. Pomortseva, N. Rodionova, A. Kaglyan, A. Nazarov	<b>EFFECTS OF THE CHRONIC LOW DOSES ON AQUATIC SPECIES WITHIN THE CHERNOBYL EXCLUSION ZONE</b>	374

I. Yarmoshenko, G. Malinovsky, L. Konshina, M. Zhukovsky	<b>LATE CANCER AND NON-CANCER EFFECTS OF CHRONIC RADIATION EXPOSURE OF BONE MARROW</b>	375
N. Kuzmina, A. Myazin, N. Lapteva, A. Rubanovich	<b>THE STUDY OF HYPERMETHYLATION IN IRRADIATED PARENTS AND THEIR CHILDREN BLOOD LEUKOCYTES</b>	376
V. Yu. Nugis, A.V. Sevan'kaev, I. K. Khvostunov, E. V. Golub, M. G. Kozlova, N.M.Nadejina, I. A. Galstyan	<b>RETROSPECTIVE DOSE EVALUATION BY MEANS OF CLASSIC CYTOGENETIC METHOD</b>	377
A. G. Georgakilas, S. Kriptomou, G. C. Psarras, C. Tsonos, A. Kanapitsas	<b>USING NANOTECHNOLOGY AND A BIOPHYSICAL APPROACH FOR THE ANALYSIS OF THE DNA BIOPOLYMER DEGRADATION AND REPAIR BY IONIZING RADIATION</b>	378
Nina Mironova-Ulmane, Maksims Polakovs, Ainars Aboltinš	<b>ANALYSIS OF THE EFFECT OF RADIATION ON HUMAN BLOOD BY EPR</b>	379
D. Miteva, Z. Mitrovska, N. Yurina, S. Chankova	<b>HSP70B - EARLY WARNING MARKER FOR OXIDATIVE STRESS OR GENOTYPE RESISTANCE?</b>	380
Dong-Min Chung, Jin Kyu Kim	<b>16J-GINGEROL PROTECTS HEPG2 CELLS AGAINST IONIZING RADIATION (IR)-INDUCED APOPTOSIS</b>	381
Stephka Chankova, Daniela Miteva, Zhana Mitrovska	<b>GENOTYPE RESISTANCE OF <i>CHLORELLA</i> SPECIES TO UV-B INDUCED STRESS</b>	382
Svetlana Fišter, Slavoljub Jović	<b>FREQUENCY OF CHROMOSOMAL ABERRATIONS IN COWS FROM AREA CONTAMINATED BY DEPLETED URANIUM DURING NATO AIR STRIKES IN 1999</b>	383
A. Kotava	<b>INCIDENCE OF A THYROID CANCER IN THE GOMEL REGION OF BELARUS AFTER CHERNOBYL ACCIDENT</b>	384
Daniil Petrenyov	<b>THE ELEVATED LEVEL OF REACTIVE NITROGEN SPECIES PRODUCTION IN BONE MARROW CELLS IN RATS EXPOSED TO LOW DOSE OF IONIZING RADIATION COULD BE HEREDITABLE</b>	385
Ioana Esanu, Filip Puicea, Dana Niculae	<b>BIOLOGICAL EVALUATION OF <sup>68</sup>GA-DOTA-NT FOR PET IMAGING AND THERAPY FOLLOW-UP</b>	386
J. Mrđanović, J. Sudi, B. Srđenović Conić, S. Dojčinović, N. Kladar, B. Božin, V. Jurišić	<b>MICRONUCLEI AND 8OHdG IN HOSPITAL WORKERS PROFESSIONALLY EXPOSED TO IONIZING RADIATION</b>	387



S. Kolubaeva, I. Sukhina, A. Ivanov, A. Kissel, O. Krasnova, T. Isakova	<b>IMMUNOCYTOGENETICS INVESTIGATION OF THE PATIENTS WITH CHRONIC LYMPHOCYTIC LEUKEMIA, WHO HAD CONTACT WITH RADIATION</b>	388
Mikhail Shaposhnikov, Daria Peregudova, Alexey Moskaev	<b>TRANSGENIC LINES OF DROSOPHILA MELANOGASTER AS POSSIBLE BIOSENSORS OF LOW DOSES OF IONIZING RADIATION</b>	389
N. A. Metlyaeva, A. Yu. Bushmanov, V. I. Krasnuk	<b>FEATURES OF SOCIAL AND PHYCHOPHYSIOLOGICAL ADAPTATION OF THREE PATIENTS, WHICH HAVE TRANSFERRED ACUTE RADIATION DISEASE OF III-IV DEGREE</b>	390
N. Maznyk, T. Sypko, N. Pshenichna, I. Krugova, L. Zabobonina, V. Starenkiy	<b>CHROMOSOME ABERRATIONS IN CANCER PATIENTS WITH DIFFERENT TUMOUR LOCALIZATIONS UNDERGONE CO<sup>60</sup> RADIOTHERAPY</b>	391
Vladimir Potetnya, Ekaterina Koryakina	<b>BIOLOGICAL EFFICIENCY OF SLOW HEAVY CHARGED PARTICLES</b>	392
Vladimira Vasilieva, Mitko Alyakov, Margarita Apostolova	<b><i>IN VITRO</i> TESTING OF RADIOPROTECTIVE EFFECT OF DIFFERENT COPPER CHELATORS ON HEPG2 CELLS AND PRIMARY HUMAN LYMPHOCYTES</b>	393

## 18 RADIOECOLOGY

L. G. Bondareva	<b>NEW APPROACHES IN THE PREPARATION OF PROCESS SOLUTIONS FOR THE DETERMINATION OF NATURAL RADIONUCLIDES</b>	397
D. Dordević, A. M. Stortini, D. Relić, A. Mihajlidi-Zelić, J. Buha, Lj. Ignjatović, J. Huremović, C. Barbante, A. Gambaro	<b>PHYSICOCHEMICAL CHARASTERISTIC OF URBAN AEROSOL OF CONTINENTAL PART OF BALKANS</b>	398
J. Nikolov, T. Petrović-Pantić, N. Todorović, J. Hansman, S. Forkapić, D. Mrđa, I. Bikit, K. Bikit	<b>RADIOACTIVITY OF THERMAL WATERS IN SOUTH-EAST PART OF SERBIA</b>	399
N. Horvatinčić, A. Sironić, J. Barešić, I. Krajcar Bronić, M. Krmar, J. Nikolov, N. Todorović, J. Hansman, I. Bikit	<b>ISOTOPE ANALYSES OF THE LAKE SEDIMENTS IN THE PLITVICE LAKES AREA</b>	400
M. E. Vasyanovich, A. A. Ekidin, I. V. Yarmoshenko	<b>RADIONUCLIDE RATIO IN TENORM STUDIES</b>	401

Stanisław Chałupnik, Małgorzata Wysocka	<b>RADIUM IN MINE WATERS IN POLAND</b>	402
Safija Herenda, Emira Zovko, Gordana Radović-Rajević	<b>GAMMASPECTROMETRIC DETERMINATION U-238 IN ROOT PLANT SPECIES</b>	403
I. Reka, G. Sandor, B. Bety-Denissa, M. Moldovan, C. Constantin	<b>SOME RESULTS ON NATURAL AND ARTIFICIAL RADIOACTIVITY IN COVASNA COUNTY (ROMANIA)</b>	404
M. B. Radenković, J. D. Joksić, Š. S. Miljanić	<b>SYNERGY OF CHEMICAL AND ISOTOPIC SIGNATURES DATA FOR ENVIRONMENTAL FATE STUDIES</b>	405
M. Cherepnev, I. Ippolitov, P. Nagorsky, S. Smirnov, V. Yakovleva, A. Vukolov	<b>ALPHA-, BETA- RADIOACTIVE AEROSOLS BEHAVIOR IN THE GROUND ATMOSPHERE</b>	406
E.O. Agbalagba, R.O.A. Osakwe	<b>GAMMA SPECTROSCOPY STUDY OF NATURAL RADIOACTIVITY IN SOIL, SEDIMENT, DRINKING AND BRINE WATERS IN COMMUNITIES OF THE OIL RICH NIGER DELTA REGION OF NIGERIA</b>	407
Günseli Yaprak, Özden Yaşar	<b>THE NATURAL RADIONUCLIDE DISTRIBUTION IN COMMERCIAL TURKISH NATURAL STONES</b>	408
I. Vukašinović, D. Todorović, N. Nikolić, J. Nikolić, M. Rajačić, M. Janković	<b>INFLUENCE OF SOIL PROPERTIES ON SOIL-TO-PLANT TRANSFER FACTORS OF NATURAL RADIONUCLIDES IN THE VICINITY OF COAL FIRED POWER PLANTS IN SERBIA</b>	409
M. Rakić, M. Karaman, S. Forkapić, J. Hansman, I. Bikit, M. Matavulj	<b>NATURAL AND ARTIFICIAL RADIONUCLIDES IN THREE WILD MUSHROOM SPECIES FROM SERBIA</b>	410
Adriana Ion	<b>THE INFLUENCE OF MINERALS, FOSSILS AND ROCKS DISPLAYED IN GEOLOGICAL COLLECTIONS ON INDOOR RADON LEVELS</b>	411
Dagmara Strumińska- Parulska, Bogdan Skwarzec	<b>CHARACTERIZATION OF <sup>241</sup>PU OCCURRENCE, DISTRIBUTION AND BIOACCUMULATION IN SEABIRDS</b>	412
Dagmara Strumińska- Parulska, Bogdan Skwarzec	<b><sup>241</sup>PU IN THE SOUTHERN BALTIC SEA</b>	413
Dagmara Strumińska- Parulska, Bogdan Skwarzec, Karolina Szymańska	<b>POLONIUM <sup>210</sup>PO AND RADIOLEAD <sup>210</sup>PB IN HAIR OF DOMESTIC ANIMALS</b>	414
D. Maletić, J. Ajtić, V. Đurđević, D. Todorović, J. Nikolić, R. Banjanac, V. Udovičić	<b>MULTIVARIATE ANALYSIS OF CLIMATE VARIABLES, TELECONNECTION INDICES AND ACTIVITIES OF LEAD- 210 AND BERYLLIUM-7 IN SURFACE AIR IN BELGRADE, SERBIA</b>	415

D. Gudkov, S. Kireev, A. Nazarov, A. Kaglyan, V. Klenus	<b>AQUATIC ECOSYSTEMS IN THE CHERNOBYL EXCLUSION ZONE: CURRENT LEVELS AND TRENDS OF RADIOACTIVE CONTAMINATION</b>	416
Georgy Malinovsky, Iliya Yarmoshenko, Vera Starichenko	<b>ASSESSMENT OF CONTEMPORARY RADIATION EXPOSURE OF MURINE RODENTS AT THE TERRITORIES OF THE EAST-URAL RADIOACTIVE TRACE</b>	417
Anatoly Gusev, Inacio Malmonge Martin	<b>HIGH TIME RESOLUTION MEASUREMENTS OF THE <sup>214</sup>Pb CONCENTRATION IN RAINFALLS</b>	418
I. Antović, N. Svrkota, M. Hadžibrahimović, R. Žižić	<b>RADIOECOLOGICAL RESEARCH ON THREE SPECIES OF THE GENERA <i>LIZA</i> FROM THE SOUTH ADRIATIC SEA</b>	419
I. Yordanova, M. Banov, L. Misheva, D. Staneva, T. Bineva	<b>NATURAL RADIOACTIVITY IN VIRGIN SOILS AND SOILS FROM SOME AREAS WITH CLOSED URANIUM MINING FACILITIES IN BULGARIA</b>	420
J. Ajtić, Đ. Stratimirović, V. Đurđević, D. Todorović, J. Nikolić	<b>WAVELET SPECTRAL ANALYSIS OF TELECONNECTION INDICES AND ACTIVITIES OF BERYLLIUM-7 AND LEAD-210 IN GROUND LEVEL AIR IN BELGRADE, SERBIA</b>	421
J. Petrović, R. Dragović, B. Gajić, M. Čujić, S. Dragović	<b>VERTICAL MIGRATION OF <sup>137</sup>CS IN UNDISTURBED ARENOSOLS OF BANAT, SERBIA</b>	422
Lj. Janković-Mandić, S. Dragović, M. Đorđević, M. Đokić, R. Dragović	<b>RADIUM-226 ACTIVITY CONCENTRATIONS IN WELL AND SPRING WATERS IN SERBIA: SPATIAL DISTRIBUTION AND RELATION TO GEOLOGICAL FORMATIONS</b>	423
M. Li, W. Yao, J. Yang, Z. Shen, E. Yang	<b>USING <sup>137</sup>CS ANALYSIS TO STUDY THE EFFECT OF SLOPE ASPECT ON THE HILLSLOPE EROSION</b>	424
Miloš Petrović, Dušica Vučić, Jugoslav Karamarković	<b>DOSE ASSESSMENT FROM BUILDING MATERIALS USED IN HOUSING SECTOR IN SERBIA</b>	425
Nataša B. Sarap, Marija M. Janković, Dragana J. Todorović	<b>PRELIMINARY EXAMINATION OF THE GROSS ALPHA AND GROSS BETA ACTIVITY IN VITAMINS</b>	426
Petr Otahal, Jan Merta	<b>RADIOACTIVITY OF PRIVATE DRINKING WATER WELLS</b>	427
Petya Kovacheva, Rumyana Djingova	<b>IMPACT OF SHARP TEMPERATURE VARIATIONS ON THE MIGRATION ABILITY OF <sup>137</sup>CS IN FOUR SOIL TYPES FROM BULGARIA</b>	428
R. Druteikienė, J. Šapolaitė, Ž. Ežerinskis, A. Puzas, V. Remeikis, V. Juzikienė	<b>IODINE BEHAVIOUR IN CEMENTED RADIOACTIVE WASTE STORAGE BARRIERS</b>	429

Rositsa Radicheva-Kazantseva	<b>DETERMINATION OF <math>^{238}\text{U}</math> AND <math>^{232}\text{Th}</math> IN SAMPLES FROM ENVIRONMENT, SOIL AND PLANTS</b>	430
S. Forkapić, J. Nikolov, K. Bikit, J. Hansman, S. Milojković	<b>RADIOACTIVITY MONITORING OF THE CITY OF NIŠ</b>	431
A. Todorovik, R. Uzunov, Z. Hajrulai-Musliu, E. Dimitrieska-Stojkovik, B. Dimzoska-Stojanovska	<b>NATURAL RADIONUCLIDES IN SOIL SAMPLES IN THE SURROUNDING OF THE CITY OF SKOPJE, MACEDONIA</b>	432
Sh. E. Usupayev, L. G. Bondareva	<b>RADIATION DOSE OF NATURAL RADIONUCLIDES AND PECULIARITIES OF SPATIAL WASTE DISPOSAL (RADIONUCLIDES, METALS) OF THE MINING INDUSTRY OF THE KYRGYZSTAN REPUBLIC</b>	433
Z. Gršić, S. Pavlović, S. Dramlić, D. Arbutina, D. Dramlić, S. Dimović, D. Nikezić, J. Kaljević, M. Milinčić, M. Zdravković	<b>MATHEMATICAL MODELING OF TOTAL DOSE TO A HYPOTHETICAL RESIDENT IN THE ENVIRONMENT OF NUCLEAR FACILITY BY CONTAMINATION THROUGH THE ATMOSPHERE</b>	434
Alicja Boryło, Bogdan Skwarzec	<b>DISEQUILIBRIUM ACTIVITY BETWEEN URANIUM (<math>^{234}\text{U}</math>, <math>^{235}\text{U}</math>, <math>^{238}\text{U}</math>) ISOTOPES IN THE ENVIRONMENT AROUND PHOSPHOGYPSUM WASTE HEAP IN NORTHERN POLAND</b>	435
Alicja Boryło, Bogdan Skwarzec	<b>THE POTENTIAL SOURCES OF URANIUM ISOTOPES (<math>^{234}\text{U}</math>, <math>^{235}\text{U}</math>, <math>^{238}\text{U}</math>) CONTAMINATION IN THE BALTIC SEA FROM POLAND</b>	436
Serpil Aközcan	<b>NATURAL AND ARTIFICIAL RADIONUCLIDE CONTENT OF SURFACE SEDIMENTS IN CANDARLI GULF, TURKEY</b>	437

## 19 SPACE RADIATION

Alina Badescu, Andreea Simion	<b>SIMPLE RADIO ARRAYS FOR EXTRAGALACTIC NEUTRINOS</b>	441
N. Yagova, V. Pilipenko, A. Kozlovsky, B. Heilig, V. Gladyshev	<b>ULF WAVES AND PARTICLE FLUX IN THE EARTH'S MAGNETOSPHERE</b>	442
A. Chumakov, A. Pechenkin, D. Savchenkov, A. Yanenko, A. Sogoyan, P. Nekrasov, D. Bobrovsky, A. Boruzdina, A. Tararaksin, A. Vasil'ev	<b>JOINT USE OF HEAVY IONS AND LASER FACILITIES FOR SINGLE EVENT EFFECTS TESTING</b>	443
Anatoly Smolin, Anastasiya Ulanova, Armen Sogoyan	<b>INTRA-DEVICE LEAKAGE MODELING IN 180 AND 90 NM BULK CMOS DEVICES</b>	444

A. Petrov, A. Chumakov, A. Nikiforov, A. Yanenko, A. Ulanova	<b>FLASH MEMORY CELLS DATA LOSS CAUSED BY TOTAL IONIZING DOSE AND HEAVY IONS</b>	445
Anna Boruzdina, Maxim Gorbunov, Vitaly Telets	<b>SINGLE-EVENT EFFECTS TESTING OF 65 NM CMOS SRAM</b>	446
F. Loffredo, M. Pugliese, M. Quarto, C. Mattone, A. Varriale, V. Roca	<b>COMPARISON AND VALIDATION OF GEANT4 MODELS OF THE INTERACTION OF HEAVY IONS WITH SEVERAL MATERIALS</b>	447
Leonid Kessarinskiy, Dmitry Boychenko, Alexander Nikiforov	<b>LINEAR AND SWITCHING DC-DC CONVERTERS' TID HARDNESS INVESTIGATION</b>	448
Mohammad Eslami, Tayeb Kakavand	<b>SPACE RADIATION SHIELDING: A COMPARATIVE APPROACH TO STUDY THE INTERACTION OF SPACE RADIATION CHARGED PARTICLES AS WELL AS SECONDARY GENERATED PARTICLES WITH POLYMERIC COMPOUNDS</b>	449
N. M. Khamidullina	<b>THE EFFECT OF SC FLIGHT RADIATION ENVIRONMENT ON REQUIREMENTS TO RADIATION HARDNESS OF COMPONENTS OF ONBOARD ELECTRONIC DEVICES</b>	450



## **COMPARISON OF TWO METHODS FOR HPGE DETECTOR EFFICIENCY CALIBRATION FOR CHARCOAL CANISTER RADON MEASUREMENT**

**Jelena Nikolić, Gordana Pantelić, Miloš Živanović,  
Milica Rajačić, Dragana Todorović**

Institute of Nuclear Sciences Vinča, University of Belgrade, Vinča-Belgrade, Serbia

The charcoal canister method of radon concentration estimation according to US EPA protocol 520/5-87-005, is the most widely used method of screening. This method is based on radon adsorption on coal and measurement of gamma radiation of radon daughters. For the purpose of gamma spectrometry, appropriate efficiency calibration of the measuring system must be performed. The most usual method of calibration is using standard canister, a sealed canister with the same matrix and geometry as the canisters used for measurements, but with the known activity of radon. In absence of standard canister, a different method of efficiency calibration has to be implemented.

This paper presents the results of efficiency calibration using EFTRAN efficiency transfer software. Efficiency was calculated using soil matrix cylindrical secondary reference material as a starting point. Calculated efficiency is then compared to the one obtained using standard canister and applied to a realistic measurement in order to evaluate the results of the efficiency transfer.