



FOURTH INTERNATIONAL CONFERENCE ON RADIATION
AND APPLICATIONS IN VARIOUS FIELDS OF RESEARCH

May 23 - 27, 2016 | Niš | Serbia | rad-conference.org

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 Mančić

EDITOR: Prof. Dr Goran Ristić

COVER DESIGN: Vladan Nikolić, PhD

TECHNICAL EDITING: Vladan Nikolić, PhD and Sasa Trenčić, MA

PROOF-READING: Saša Trenčić, MA and Mila Aleksov, MA

PRINTED BY: Sven, Niš

PRINT RUN: 50 copies

The Fourth International Conference on Radiation and Applications in Various Fields of Research (RAD 2016) was financially supported by:

- Central European Initiative (CEI)
- Ministry of Education, Science and Technological Development of the Republic of Serbia

ISBN: 978-86-6125-160-3

CIP - Каталогизacija y publikaciji -
Народна библиотека Србије, Београд

539.16(048)

INTERNATIONAL Conference on Radiation and Applications
in Various Fields of Research (4th ; 2016 ; Niš)
Book of Abstracts / Fourth International Conference on Radiation and
Applications in Various Fields of Research, RAD 4, May 23-27, 2016, Niš,
Serbia ; [editor Goran Ristić]. - Niš : University, Faculty of Electronic
Engineering, 2016 (Niš : Sven). - [XL], 510 str. ; 25 cm

Tiraž 50. - Bibliografija uz svaki rad.

ISBN 978-86-6125-160-3

a) Јонизујуће зрачење - Дозиметрија - Апстракти

COBISS.SR-ID 223620620

CONTENTS

A INVITED TALKS

Luisa Torsi	ORGANIC ELECTRONIC BIOSENSORS FOR LABEL-FREE FEMTOMOLAR PROTEIN DETECTION	2
Renata Longo	MEDICAL IMAGING WITH SYNCHROTRON RADIATION	3

B KEYNOTE TALKS

Jasna Mihailovic	FDG PET/CT PHYSICAL ASPECTS AND CLINICAL APPLICATIONS IN MEDICINE	5
------------------	--	---

01 BIOCHEMISTRY

Vesna Zupunski, Vesna Spasic Jokic, Mirjana Vasic, Aleksandra Savic, Zoran Mitrovic, Ivan Zupunski	ESTIMATION OF UNCERTAINTY OF TRYPSIN INHIBITOR ACTIVITY MEASUREMENT IN LEGUME CROPS	7
Yordanka Gluhcheva, Juliana Ivanova, Ivelin Vladov, Kalina Kamenova	SUBACUTE CADMIUM INTOXICATION AND SUBSEQUENT DETOXIFICATION WITH CHELATING AGENTS / A HEMATOLOGICAL STUDY	8
Yordanka Gluhcheva, Ekaterina Pavlova, Ivelin Vladov	CHRONIC EXPOSURE TO COBALT CHLORIDE AND MURINE ERYTHROCYTES / AN <i>IN VIVO</i> STUDY	9
Blerina Resulaj, Rigerta Veseli, Ariol Rama	DIFFERENCES IN ACCURACY BETWEEN LABORATORY BIOCHEMICAL TESTS AND THE EXTRALABORATORY ONES	10
Anna A. Oleshkevich	ENZYME ACTIVITY AND CELLULAR FUNCTIONS MODIFIED BY ULTRASOUND	11

02 BIOINFORMATICS

Monika Simjanoska, Ana Madevska Bogdanova	COLORECTAL CANCER THROUGH THE PRISM OF SIGNALS	13
--	---	----

03 BIOMATERIALS

Polina Kachesova, Irina Goroshinskaya, Oleg Polozhentsev, Vladimir Borodulin, Oleg Losev	THE EFFECT OF ZINC OXIDE NANOPARTICLES ON THE GROWTH OF RAT LYMPHOSARCOMA	15
---	--	----

Gabriela Ciobanu, Octavian Ciobanu	RADIO-OPAQUE MATERIALS BASED ON HYDROXYAPATITE AND BISMUTH	16
Roxana Cristina Popescu, Andrei I. Apostol, Mihai Straticiu, Ecaterina Andronescu, Alexandru Mihai Grumezescu, Ileana Petcu, Diana Savu	LOW DOSE RADIOTHERAPY IMPROVEMENT USING FUNCTIONALIZED MAGNETITE NANOPARTICLES	17
H. Saito	GELATION OF DNA AND BOVINE SERUM ALBUMIN (DNA-BSA GEL) BY GAMMA IRRADIATION AS BIO-ABSORBENT FOR ACRIDINE ORANGE	18
Kaltrina Jusufi, Avni Berisha, Jeton Halili, Vjollca Palloshi, Valbonë Mehmeti, Lauresha Këpuska, Adelina Halili, Bardha Korça	POTENTIAL APPLICATION OF APPLE PEELS AS BIOSORBENTS IN THE REMOVAL OF ORGANIC MOLECULES FROM WASTE WATER	19
Kaltrina Jusufi, Jeton Halili, Avni Berisha, Mirlinda Alija, Valbonë Mehmeti, Lauresha Këpuska, Adelina Halili, Bardha Korça	REMOVAL OF DYES FROM WASTEWATER USING PLANT-BASED BIOSORBENT DERIVATE FROM POTATO PEELS	20
Kaltrina Jusufi, Jeton Halili, Avni Berisha, Adelina Halili, Valbonë Mehmeti, Bardha Korça	DETERMINATION OF HEAVY METALS IN NUMEROUS RIVERS IN KOSOVO DURING A ONE-YEAR PERIOD	21
Vera Alexandra Spirescu, Alexandru Mihai Grumezescu, Ecaterina Andronescu	NANOSTRUCTURES BASED ON ZNO AND PHYTOCHEMICAL SUBSTANCES WITH COSMETIC APPLICATIONS	22
Mioljub Nestic, Marica Popovic, Mihailo Rabasovic, Dejan Milicevic, Edin Suljovrujic, Dragan Markushev, Slobodanka Galovic	PHOTOACOUSTIC CHARACTERIZATION OF THIN POLYLACTIDE SAMPLES OF DIFFERENT CRYSTALLINITY	23
Jovanka Gasic, Radomir Barac, Jelena Popovic, Aleksandar Smiljkovic, Aleksandar Mitic, Marija Nikolic	THE EFFECT OF EXTREME TEMPERATURES ON MICRO AND NANO HYBRID DENTAL COMPOSITES: AN EXPERIMENTAL FORENSIC STUDY	24
Jeton Halili, Avni Berisha, Adelina Halili, Valbonë Mehmeti, Kaltrina Jusufi, Taulant Demelezi	DIRECT (IN SITU) ELECTROCHEMICAL DETERMINATION OF SUPERCRITICAL CO₂ EXTRACTED ASCORBIC ACID FROM AQUEOUS SOLUTIONS ONTO PT ELECTRODES	25

04 BIOMEDICAL ENGINEERING

Slavica Gajić, Saša Ćirković, Jasna Ristić-Djurović, Andjelija Ilić, Drago Djordjević, Vesna Špasić-Jokić	EXPOSURE SYSTEM WITH HOMOGENEOUS STATIC AND ELF MAGNETIC FIELDS IN EXPERIMENTAL VOLUME	27
Ljiljana Korugic-Karasz, Murat Tonga, Patrick Taylor, Eugene Wilusz, Paul Lahti, Frank Karasz	THE THERMOELECTRIC ENERGY HARVESTING SYSTEMS IODINE-DOPED MEH-PPV WITH CARBON NANOTUBES	28
Octavian Ciobanu, Gabriela Ciobanu	AN APPLICATION OF KINECT BASED 3D SCANNING IN BIOMEDICAL ENGINEERING	29

05 BIOMEDICINE

Zorica Becker-Kojic, Annie Schott, Ivan Zipancic, Vicente Hrabaza, Vicente Herranz Perez, Jose Maria Garcia Verdugo	NEURONAL DIFFERENTIATION OF ACA-GENERATED PLURIPOTENT STEM CELLS AND THEIR POTENTIAL APPLICATION IN CELL REPLACEMENT THERAPY	31
Amina Selimović, Selma Milišić, Ermina Mujičić	ANALYSIS OF CYSTIC FIBROSIS IN FEDERATION OF BOSNIA AND HERZEGOVINA	32
Mirjana Čolović, Vesna Vasić, Ulrich Kortz, Danijela Krstić	THE INFLUENCE OF SYNTHESIZED POLYOXOMETALATES ON Na^+/K^+-ATPASE ACTIVITY	33
Mirjana Čolović, Vesna Vasić, Ulrich Kortz, Danijela Krstić	INTERACTION OF SOME POLYOXOTUNSTATES WITH ACETYLCHOLINESTERASE	34
Ivan Pavlović, Ana Todorović, Vesna Stojiljković, Ljubica Gavrilović, Nataša Popović, Snežana B. Pajović, Snežana Pejić	THE ANTIOXIDANT CAPACITY OF THE KIDNEY TISSUE IN PATIENTS WITH RENAL CELL CARCINOMA	35
Tanja Dzopalic, Dragana Zmijanjac, Adil Ehmedah, Boris Djindjic, Dejan Krstic, Marija Dakovic - Bjelakovic, Biljana Bozic - Nedeljkovic	EFFECT OF SILICON DIOXIDE-ENRICHED WATER DURING CHRONIC INGESTION OF ALUMINUM ON FUNCTIONAL CHARACTERISTICS OF PERITONEAL MACROPHAGES	36
Tanja Novaković, Zana Dolićanin, Goran Babić, Nataša Đorđević	A CORRELATION BETWEEN HEMATOLOGICAL CHANGES AND FETAL CELLS MICRONUCLEI IN PREGNANT WOMEN WITH HYPOTHYROIDISM	37
Goran Babić, Snežana Marković, Zana Dolićanin, Nataša Đorđević, Jelena Milošević	ESTRADIOL IMPROVES MEAN ARTERIAL PRESSURE THROUGH REDUCTIONS OF OXIDATIVE STRESS IN WOMEN WITH PREECLAMPSIA	38
Slavica Shubeska Stratrova, Goran Petrovski, Snezana Markovik Temelkova	DUAL-ENERGY X-RAY ABSORPTIOMETRY DETERMINED BODY MASS DENSITY AND ITS RELATIONSHIP TO BONE TURNOVER MARKERS	39
Slavica Shubeska Stratrova, Goran Petrovski, Snezana Markovik Temelkova	RELATIONSHIP BETWEEN CENTRAL OBESITY INDEX AND ITS ESTIMATED VALUES IN CUSHING'S SYNDROME	40
Eugeniya Kuzmina, Elena Kovalenco, Oleg Vatin, Tatiana Mushkarina, Vyacheslav Pavlov	THE TUMOR ASSOCIATED WITH THE STRESS-INDUCED MOLECULE MICA IN THE BLOOD CAN BLOCK THE ACTIVITY OF NK CELLS IN CANCER	41
Tetiana Katrii, Olexiy Savchuk, Tetiana Vovk	IMMUNOGLOBULIN CLASS G FROM BLOOD PLASMA OF STROKE PATIENTS IN ACUTE PHASE AND THE SAME PATIENTS ONE YEAR LATER AS EFFECTORS OF THE HAEMOSTASIS KEY FACTORS	42
Eugeniya Kuzmina, Svetlana Zatsarenko, Tatiana Mushkarina	COMBINED IMMUNITY INDICATORS FOR DIFFERENTIAL DIAGNOSIS OF HODGKIN'S LYMPHOMA REMISSION AND RELAPSE	43

Eugeniya Kuzmina,
Tatiana Mushkarina,
Tatiana Konstantinova,
Ludmila Krikunova

**THE ACTIVATION STATUS OF LYMPHOCYTES'
SUBPOPULATIONS, APOPTOSIS AND THE LEVEL
OF CIRCULATING REGULATORY T-CELLS IN THE
DEVELOPMENT OF REPRODUCTIVE SYSTEM DISEASES
IN WOMEN LIVING IN RADIOACTIVELY CONTAMINATED
TERRITORIES FOLLOWING THE CHERNOBYL ACCIDENT**

44

06 BIOPHARMACEUTICALS AND PHARMACOLOGY

Hleb Harbatsevich,
Natalia Loginova,
Tatsiana Koval'chuk,
Yaroslav Faletrov,
Srećko Trifunović,
Marko Živanović,
Snezana Marković

**REDOX-ACTIVE COPPER(II) COMPLEXES
WITH 1,2-DIHYDROXYBENZENE DERIVATIVES**

46

Alexander Stankov,
Svetla Gateva,
Gabriele Jovtchev,
Fridrich Gregan

**THE INVESTIGATION OF THE ANTIGENOTOXIC POTENTIAL
OF PAPAVER RHOEAS L. AND SALVIA OFFICINALIS L.
EXTRACTS AGAINST AN OXIDATIVE STRESS INDUCER**

47

Ilma Robo,
Saimir Heta

**THE SIDE EFFECTS OF A GROUP OF ANTIBIOTICS THAT ARE
USED THE MOST IN PERIODONTAL TREATMENTS**

48

Kalina Andreevska,
Daniela Grekova,
Stanislav Gueorguiev,
Vasil Madjarov,
Radiana Kiskinova,
Elina Petkova

**THE PENETRATION OF TIOTROPIUM BROMIDE ON THE
BULGARIAN COPD MARKET**

49

Elina Petkova,
Valentina Petkova,
Guenka Petrova,
Stanislav Gueorguiev

**ECONOMIC ANALYSIS OF CHILDREN WITH TYPE 1 DIABETES
ON CONTINUOUS SUBCUTANEOUS INSULIN INFUSION**

50

07 BIOPHYSICS

Silvio R. De Luka, Andjelija Ž. Ilić,
Saša Ćirković, Drago M.
Djordjević,
Jasna L. Ristić-Djurović,
Alexander M. Trbovich

**STATIC MAGNETIC FIELD EFFECTS ON BIOCHEMICAL
REACTIONS INVOLVING REACTIVE OXYGEN SPECIES**

52

Ana Setrajcic-Tomić,
Ljubisa Dzambas,
Jovan Setrajcic

**OPTICAL CORE-SHELL MODEL FOR NANO-DELIVERY
APPLICATIONS**

53

Mikio Kato,
Yuta Okubo

**THE EFFECT OF GAMMA-RAY IRRADIATION
ON THE MOTILITY AND CHEMOTAXIS OF *ESCHERICHIA COLI***

54

Slavica Brkić,
Mirjana Pinjuh

QUANTUM DOTS AS BIOLOGICAL MARKERS

55

Slobodan Todosijević, Zlatan Šoškić, Slobodanka Galović	MEASUREMENT OF OPTICAL AND THERMAL PROPERTIES OF BIOLOGICAL TISSUES AND ANALYSIS OF TRANSPORT PROCESSES IN THEM	56
Dora Krezhova, Svetla Maneva, Nikolay Petrov, Antony Stoev, Irina Moszkova	REMOTE SENSING OF THE INFLUENCE OF ENVIRONMENTAL CHANGES ON PLANT BIOPHYSICAL VARIABLES	57
Jasna Vujin, Djordje Jovanovic, Radmila Panajotovic	PHYSICO-CHEMICAL CHARACTERIZATION OF LIPID-2D-MATERIALS SELF-ASSEMBLY FOR BIOSENSORS	58
Spomenko Mihajlovic, Milena Cukavac, Rudi Čop, Vlado Antonic	THE SOLAR AND MAGNETIC WEATHER - GEOEFFECTIVE IMPACTS	59
Anna A. Oleshkevich	GROWING, BIOCHEMICAL AND EMISSION PROCESS INTENSIFICATION WITH MODULATED ULTRASOUND	60
Jin Kyu Kim, Jin-Hong Kim, Vladislav G. Petin	BIOLOGICAL ACTIONS OF IONIZING RADIATION COMBINED WITH ANOTHER FACTOR: NUMERICAL APPROACH	61
Laura Baliulytė, Jelena Tamulienė	THEORETICAL STUDY OF THREONINE MOLECULE FRAGMENTATION BY LOW ENERGY ELECTRONS	62

08 BIOTECHNOLOGY

Natalia Kamanina	REFRACTIVE PROPERTIES OF BIO- AND NANO-STRUCTURED MATERIALS AS INDICATORS OF THE MODEL MATRIX MACRO PARAMETER MODIFICATION	64
Natalia Poyedinok, Oksana Mykchaylova, Anatoly Negriyko	LOW-INTENSITY LASER RADIATION IN BIOTECHNOLOGY CULTIVATION OF CULINARY-MEDICINAL MUSHROOMS	65
Tatyana Tugay, Natalia Poyedinok, Andrei Tugay, Oksana Mykchaylova, Anatoly Negriyko	PROSPECTS FOR USING LOW-INTENSITY IONIZING AND LASER RADIATION TO ENHANCE THE MELANIN BIOSYNTHESIS WITH FUNGI	66
Blagica Cekova, Viktorija Bezhovska, Ismet Limani, Filip Jovanovski	MICROBIOLOGICAL COMPOSITION OF DEHYDRATED AGRICULTURAL PRODUCTS FROM THE REPUBLIC OF MACEDONIA	67
Blagica Cekova, Filip Jovanovski, Viktorija Bezhovska	THE ROLE OF MICROORGANISMS IN THE PRESERVATION OF SOME GARDENING PRODUCTS	68
Anna Grunina, Ludmila Tsvetkova, Natalia Pronina, Alexander Recoubratsky	INVESTIGATIONS ON DISPERMIC ANDROGENESIS IN STURGEON FISHES WITH THE USE OF CRYOPRESERVED SPERM: EXPERIMENT ON STERLET AND BELUGA STURGEONS	69
Petar Petrov, Vesna Markoska, Bojan Mitrovski	THE INFLUENCE OF FOLIAR FERTILIZING ON SOME CHEMICAL PARAMETERS OF THE BROCCOLI (BRASSICA OLERACEA L. VAR. BOTRYTIS)	70

Sanja Petrović, Sasa Savić, Jelena Zvezdanović, Dragan Cvetković, Dejan Marković	A LIPID MICROENVIRONMENT IMPACT ON LIPOSOMES WITH INCORPORATED PIGMENTS	71
Liubov Zelena, Igor Gretskey, Tatyana Kachur	ESTIMATION OF YEAST FLOCCULATION UNDER ULTRAHIGH FREQUENCY ELECTROMAGNETIC RADIATION	72
Sasa Savić, Sanja Petrović, Zivomir Petronijević	IMMOBILIZATION OF HORSE RADISH PEROXIDASE ON HYDROPHOBIC CARRIERS	73
Valentyna Katsan, Larysa Yurkevych, Anatoly Potopalsky	ADAPTATION AND ITS CONSTITUENTS MAY INDUCE THE CHANGES OF SOME ADAPTIVE FUNCTIONS OF PLANTS PERSISTING IN THE NEXT GENERATIONS AFTER THE TREATMENT	74

09 CANCER RESEARCH

Sergey Milyukov, Georgy Panshin, Natalia Kharchenko, Sergey Golub, Gadzhimurad Zapirov, Mikhail Kunda, Timur Izmailov	THE IMPACT OF PREDICTORS ON DISEASE-FREE SURVIVAL IN PATIENTS WITH SUPRATENTORIAL INFILTRATIVE LOW GRADE GLIOMAS (GRADE II)	76
Elham Raeisi, Seyed Mahmoud Reza Aghamiri, Negar Rahmatpour, Azin Bandi, Sedigheh Amini Kafi-Abadi, Lluis M. Mir	THE ANTITUMOR EFFICIENCY OF REPEATED ELECTROCHEMOTHERAPY WITH CISPLATIN ON A BREAST CANCER TUMOR MODEL IN MICE	77
Emilia Domina, Elena Pylypchuk	DEVELOPMENT OF APPROACHES FOR THE PRIMARY PREVENTION OF RADIOGENIC CANCER	78
Ludmila Grzybowska-Szatkowska, Brygida Ślaska, Jolanta Rzymowska	MISSENSE MUTATIONS IN MTDNA IN BREAST CANCER	79
Albert Berman, Galina Morozevich, Nadezda Kozlova, Nina Gevorkian	IMPLICATION OF AKT KINASE SIGNALING IN INTEGRIN ALPHA-2/BETA-1 DEPENDENT ANOIKIS RESISTANCE IN HUMAN MELANOMA CELLS	80
Galina Morozevich, Nadezda Kozlova, Natalia Ushakova, Nina Gevorkian, Olga Susova, Albert Berman	IMPLICATION OF ALPHA-2/BETA-1 AND ALPHA-5/BETA-1 INTEGRINS IN DRUG RESISTANCE OF HUMAN BREAST CARCINOMA CELLS	81
Eugeniya Kuzmina, Tatiana Mushkarina, Tatiana Konstantinova	MINIMAL RESIDUAL DISEASE CAN PREDICT RESPONSE TO TREATMENT OF LYMPHOPROLIFERATIVE DISORDERS	82
Eugeniya Kuzmina, Oleg Vatin, Mikhail Kaplan, Nina Tkachenko	SYSTEMIC EFFECT OF PHOTODYNAMIC THERAPY FOR CANCER ON CYTOKINE LEVEL	83

10 ENVIRONMENTAL CHEMISTRY

Irina Shtangeeva, Maria Ángela de B. C. Menezes	IS BROMINE A TOXIC TRACE ELEMENT OR IS IT AN ESSENTIAL NUTRIENT?	85
--	---	----

Natalia Masalitina, Alexander Ogurtsov	THE INVESTIGATION OF THE INFLUENCE OF MN-BI-CU-CE-O CATALYSTS ON THE ENVIRONMENT-FRIENDLY GREEN PROCESS OF LOW-TEMPERATURE AMMONIA OXIDATION TO NITROUS OXIDE	86
Lauresha Këpuska, Valbonë Mehmeti, Mentor Ismaili, Avni Berisha, Veprim Thaçi, Kaltrina Jusufi	PHYSICOCHEMICAL CHARACTERIZATION OF THE GOSHICA'S CLAY AND ITS USE FOR NITROGEN ADSORPTION	87
Lauresha Këpuska, Valbonë Mehmeti, Mentor Ismaili, Avni Berisha, Kaltrina Jusufi, Veprim Thaçi	DECOLOURIZATION OF OIL BY THE GOSHICA'S CLAY: A STUDY OF ADSORPTION ISOTHERMS AND BLEACHING KINETICS	88
Julijana Velevska, Nace Stojanov, Margareta Pecovska-Gjorgjevich, Metodija Najdoski	VISIBLE LIGHT MODULATION USING CHEMICALLY DEPOSITED ELECTROCHROMIC THIN FILMS	89
Avni Berisha, Gentiana Alidema, Mimoza Haxhimustafa, Fikreta Ejupi, Kaltrina Jusufi, Valbonë Mehmeti, Jeton Halili, Veprim Thaçi, Adelina Halili, Lauresha Këpuska	A COMPARATIVE STUDY OF THE ORGANIC MOLECULE REMOVAL PERFORMANCE OF THE BIOSORBENTS DERIVED FROM AGRICULTURAL PEELS	90
Avni Berisha, Fexha Salihu, Vera Morina, Jeton Halili, Valbonë Mehmeti, Kaltrina Jusufi, Adelina Halili	THE REMOVAL OF ORGANOCHLORINE PESTICIDES FROM THE ORGANIC OR AQUEOUS MODEL SYSTEM THROUGH THE ADSORPTION ONTO COVALENTLY-MODIFIED CARBON POWDER	91
Laura Binxhija, Arjana Ylli	MEDICAL PLANTS IN DIFFERENT SOILS WITH HEAVY METALS	92
Ekaterina Klementjeva, Svetlana Ovsiannikova	ASSESSMENT OF NATURAL RADIONUCLIDES IN BELARUSIAN DRINKING WATER SOURCES	93
Gye-Nam Kim, Seung-Soo Kim, Jong-Won Choi	THE REMOVAL OF URANIUM FROM THE CONTAMINATED SOIL BY ELECTROKINETIC TECHNOLOGY	94
Lydia Bondareva, Andrey Kuzmin	THE INFLUENCE OF OIL ON THE RYE GRAIN CULTURE OF <i>S. CEREALE (L)</i>	95
Jeton Halili, Altin Mele, Tahir Arbneshi, Adelina Halili, Valbonë Mehmeti, Kaltrina Jusufi, Avni Berisha	THE EVALUATION OF DITHIZONE PERFORMANCE AS A COMPLEXING REAGENT FOR THE SUPERCRITICAL CO₂ EXTRACTION OF HEAVY METALS FROM AQUEOUS SOLUTIONS	96
Valbonë Mehmeti, Kurt Kalcher, Fetah Podvorica, Avni Berisha	CORROSION INHIBITION OF MILD STEEL IN AQUEOUS SULFURIC ACID SOLUTION USING HETEROCYCLIC MERCAPTO COMPOUNDS	97
Marija Mihajlović, Jelena Petrović, Mirjana Stojanović, Milan Kragović, Jelena Milojković, Marija Petrović, Tatjana Šošarić	EFFECT OF KOH ACTIVATION ON HYDROCHARS: FT-IR SPECTROSCOPY ANALYSIS	98
Sanja Bijelovic, Natasa Dragic, Emil Zivadinovic, Jovana Nikolov, Natasa Todorovic	GROSS ALPHA AND BETA PARTICLE ACTIVITIES IN PUBLIC WELLS IN THE TERRITORY OF THE AP OF VOJVODINA	99

Valbonë Mehmeti, Kurt Kalcher, Avni Berisha, Fetah Podvorica	EXPERIMENTAL AND THEORETICAL (DFT/B3LYP) STUDIES ON CORROSION BEHAVIOR OF SOME MONO AND POLYHYDROXY AROMATIC DERIVATIVES ON COPPER	100
Valbonë Mehmeti, Kurt Kalcher, Avni Berisha, Fetah Podvorica	THE CORROSION INHIBITION PERFORMANCE OF THE COVALENTLY BONDED POLY(BROMOPHENYLENE) LAYERS ONTO MILD STEEL	101
Lauresha Këpuska, Valbonë Mehmeti, Mentor Ismaili, Avni Berisha, Veprim Thaçi, Kaltrina Jusufi	THE EVALUATION OF THE PORE SIZE AND PORE DISTRIBUTION FOR THE GOSHICA (KOSOVO) CLAY MODIFIED WITH QUATERNARY AMMONIUM IONS	102
Jeton Halili, Avni Berisha, Adelina Halili, Valbonë Mehmeti, Kaltrina Jusufi	COLOR REMOVAL FROM AQUEOUS SOLUTIONS CONTAINING DISSOLVED ORGANIC MOLECULES USING THE MATERIAL DERIVED FROM CUCUMBER PEELS AS A LOW COST BIO-SORBENT	103
Liri Miho, Ardian Maçi, Blerina Xhaferaj	THE PRESENCE OF HEAVY METALS IN FISH CANS IN ALBANIA	104
Liri Miho, Blerina Xhaferaj	THE ORGANOCHLORINE PESTICIDES IN POTATOES	105
Edmond Lukaj, Floran Vila, Florian Mandija	THE IMPACT OF ATMOSPHERIC IONS ON AEROSOL SIZE DISTRIBUTION	106

11 MEDICAL DEVICES

Dușanka Mandić, Dragan Cvetković	MADU INNOVATIVE MEDICAL DEVICE	108
Olga Bockeria, Mikhail Bazhin, Kirill Potlovskiy, Anna Satyukova, Tatyana Le, Vladimir Shvartz, Leo Bockeria	MODELING OF HEART KINEMATICS IN EXPERIMENTS ON THE CONVERSION OF HEARTBEATS INTO ELECTRICAL ENERGY TO POWER EPICARDIAL PACEMAKERS	109

12 MEDICAL IMAGING

Vladimir Shchedrenok, Olga Moguchaya, Tatjana Zakhmatova, Ilja Zuev, Konstantin Sebelev	THE TRANSFORMATION OF THE BRACHIOCEPHALIC ARTERY TORTUOSITY AT THE VERTICALIZATION OF A PATIENT	111
Maurizio Sessa, Claudia Rossi, Annamaria Mascolo, Enrico Grassi, Sonia Fiorentino, Cristina Scavone, Alfonso Reginelli, Antonio Rotondo, Liberata Sportiello	SUSPECTED ADVERSE REACTIONS TO CONTRAST MEDIA IN THE CAMPANIA REGION (ITALY): RESULTS FROM 14 YEARS OF POST-MARKETING SURVEILLANCE	112
Jelena Popić Ramač, Verica Garay Vrhovac	THE DYNAMIC MR IMAGING OF MEDIASTINAL TUMORS	113

Katsiaryna Halavataya, Tatyana Ginko, Ludmila Kalatskaya	INTERACTIVE COLOR IMAGE PROCESSING IN PHOTODYNAMIC THERAPY	114
Dragica Obad Kovačević, Jelena Popić Ramač, Ika Kardum-Skelin, Vinko Vidjak	CORRELATION BETWEEN SONOGRAPHIC FEATURES AND CYTOLOGY FINDINGS IN THYROID GLAND NODULES	115
Ahmet Murat Şenişık, Serap Tekşöz, Çiğdem İçhedef, Ayfer Yurt Kılçar, Eser Uçar, Kadir Arı, Yasemin Parlak, Elvan Sayıt Bilgin	COMPARISON OF THE BIOLOGICAL BEHAVIOR OF RADIOLABELED ^{18}FFDG-GLYCYLGLYCINE AND $^{99\text{m}}\text{Tc}(\text{CO})_3\text{-GLYCYLGLYCINE}$	116
Marija Dakovic Bjelakovic, Dragan Stojanov, Jelena Ignjatovic, Jelena Popovic, Tanja Dzopalic	EVALUATION OF VARIABILITY OF SUPRAORBITAL NOTCHES AND FORAMINA USING THREE-DIMENSIONAL COMPUTER TOMOGRAPHY VOLUME RENDERING	117
Irena Dimitrijevic, Dragan Mancic, Mirjana Kocic, Milica Lazovic	THE ROLE OF THE INFRARED THERMOGRAPHY IN DIAGNOSING THE UNILATERAL COMPLEX REGIONAL PAIN SYNDROME TYPE I	118
Vojislav Antic, Julie Haglund	NEED FOR REVISING PATIENT DOSE PROTOCOLS IN PET MEDICAL IMAGING BASED ON NOVEL TECHNOLOGY IMPROVEMENTS	119
Vojislav Antic, Julie Haglund	CONNECTIONS BETWEEN NOISE EQUIVALENT COUNT RATE AND IMAGE NOISE IN PET MEDICAL IMAGING	120
Jelena Popović, Marija Daković Bjelaković, Jovanka Gašić, Milan Spasić, Marija Nikolić, Radomir Barac	THE MENTAL FORAMEN POSITION IN RELATION TO THE RADIOGRAPHIC APEX OF THE MANDIBULAR SECOND PREMOLAR	121
Deniz Bulja, Dragan Stojanov, Jelena Ignjatovic, Marija Dakovic Bjelakovic, Jelena Popovic	THE INCIDENCE OF DEHISCENCE OF THE TYMPANIC SEGMENT OF THE FACIAL NERVE CANAL ESTIMATED COMPUTED TOMOGRAPHY	122
Nicoleta Andreea Pasare (Tudor), Radu Mutihac	ANALYSIS OF SUSCEPTIBILITY-WEIGHTED IMAGES USING SUPPORT VECTOR MACHINE IN PARKINSON'S DISEASE	123
Diana Ospanova, Zhanna Abdrakhmanova, Marzhan Kanafina	ANALYSIS OF RESULTS OF TREPHINE BIOPSY UNDER VISUAL CONTROL OF BREAST LUMPS PROVIDED AT ASTANA ONCOLOGY CENTER	124
Zhanna Abdrakhmanova	ENDOPROSTHESIS REPLACEMENT AND X-RAY DIAGNOSTICS OF KNEE JOINTS AMONG PATIENTS WITH HEMOPHILIC ARTHROPATHY	125
Huseyin Ozan Tekin, Umit Kara, Ozlem Ozturk, Tugba Manici, Elif Ebru Altunsoy, Baris Cavli	COMPARISON STUDY OF CLINICAL MEASUREMENTS AND MONTE CARLO METHOD ON RADIATION DOSE RATE CHANGES BY DISTANCE IN COMPUTERIZED TOMOGRAPHY (CT) FACILITY	126

Huseyin Ozan Tekin, Umit Kara	ANALYSIS OF FILTERING MATERIAL AND ITS EFFECT ON X-RAY FEATURES BY USING MONTE CARLO METHOD FOR MEDICAL IMAGING APPLICATIONS	127
Huseyin Ozan Tekin, Umit Kara, Tugba Manici, Ozlem Ozturk, Elif Ebru Altunsoy	AN INVESTIGATION ON PHOTON BEAM SPECTRA BY CONSIDERING ANGULAR VARIATIONS AND DEPTH DOSE CHARACTERISTIC FOR MAMMOGRAPHY BY USING MCNP-X	128
Umit Kara, Huseyin Ozan Tekin	ESTIMATED RADIATION RISKS, CLINICAL FACTORS AND PATIENT DOSE IN MAMMOGRAPHY	129
Marija Glisic, Erich Sorantin	LOCATION OF THYROID GLAND AND CHEST X-RAY IMAGING IN CHILDREN	130

13 MEDICAL PHYSICS

Evgeniia Sukhikh, Leonid Sukhikh, Evgeniy Malikov, Peter Filatov	EVALUATION OF MEASUREMENT DOSE UNCERTAINTY OF GAFCHROMIC EBT3 BECAUSE OF LOCAL INHOMOGENEITY	132
Yong Nam Kim, Soo Kon Kim	FEASIBILITY OF USING ARTIFICIAL NEURAL NETWORK ALGORITHM TO ESTIMATE DOSE DISTRIBUTION FOR RADIATION TREATMENT	133
Evgeniia Sukhikh, Indira Khassenova, Leonid Sukhikh, Evgeniy Malikov	INVESTIGATION OF DOSE BUILDUP REGION OF ELECTRON BEAM USING POLYMER FILMS AND IONIZATION CHAMBER	134
Sergey Stepanov, Vsevolod Byakov, Yurii Perfiliev, Leonod Kulikov	APPLICATION OF POSITRON ANNIHILATION AND EMISSION MÖSSBAUER SPECTROSCOPY FOR DETECTION OF CHEMICAL CARCINOGENS	135
Julie Haglund	SHIELDING REQUIREMENTS FOR PET/CT USING THE AAPM TASK REPORT 108	136
Md Shakilur Rahman, Md. Abdus Sattar, Meher Nigar Sharmin, AKM Moinul Haque Meaze	DOSIMETRY OF HIGH ENERGY PHOTON AND ELECTRON BEAMS FROM MEDICAL LINEAR ACCELERATOR: STUDY OF INTERNATIONAL PROTOCOLS WITH VARIOUS IONIZATION CHAMBERS	137
Armin Duraković, Semir Fazlić, Amar Nuhan, Edib Avdić	COMPARISON OF CTDI MEASUREMENTS IN STANDARD PMMA AND IN-HOUSE FABRICATED MDPE PHANTOM	138
Roumen Georgiev, Ivet Payanova, Zdravka Spasova, Ljupcho Iliev, Stoyanka Georgieva, Roumen Lazarov	CT AND MRI IMAGE FUSION TO IMPROVE TARGET POSITIONING FOR STEREOTACTIC RADIOSURGERY (SRS) TREATMENT PLANNING	139
Nikola Jovancevic, Brankica Andjelic, Milomir Milakovic, Miodrag Krmar	NEW APPLICATION OF UNFOLDING TECHNIQUE IN ESTIMATION OF ENERGY SPECTRA OF THERAPY PHOTON BEAMS	140

Stefan Rafajlović, Gordan Nišević	PROPOSAL OF TESTS THAT SHOULD BE CONDUCTED BEFORE THE TREATMENT, PERIODICALLY AND DURING RADIOACTIVE SOURCE REPLACEMENT, WITH THE AIM OF INTRODUCING QUALITY CONTROL AND QUALITY ASSURANCE IN BRACHYTHERAPY	141
Firas Ghareeb, Sofia Silva, Joana Lencart, Fatima Borges, Joao Santos	COMPARISON OF MEASURED AND CALCULATED OUT-OF-FIELD DOSES IN A PAEDIATRIC ANTHROPOMORPHIC PHANTOM / OUT OF THE BODY SCATTER CONTRIBUTION EVIDENCE	142
Soumaya Boujamaa, Hilde Bosmans, Farida Bentayeb	PRELIMINARY STUDY ON MAMMOGRAPHY QUALITY CONTROL IN MOROCCAN HOSPITALS	143
Kristina Bliznakova	DEVELOPMENT OF BREAST SOFTWARE PHANTOM DEDICATED FOR RESEARCH AND EDUCATIONAL PURPOSES	144
Renata Longo, Renato Padovani, Luciano Bertocchi	A MEDICAL PHYSICS TRAINING OPPORTUNITY FOR YOUNG PHYSICISTS IN ITALY	145
Abdel-Hai Benali	ENERGY DEPENDENCE OF GLASS DOSIMETER RPL GD-301 AND TLD LiF:Mg,Ti AND OSL AL₂O₃:C DOSIMETERS BY USING MONTE CARLO SIMULATIONS	146
Meriem Fiak, Jamal Inchaouh	STUDY OF DOSE DISTRIBUTIONS IN BIOLOGICAL TISSUES OF A PATIENT AND DOSIMETRIC CONTROL OF RADIATION THERAPY TREATMENTS	147

14 MICROWAVE, LASER, RF AND UV RADIATIONS

Zorica Podrascanin, Zoran Mijatovic, Ana Firanj	TRENDS OF UV INDEX MEASURED IN NOVI SAD FROM 2004 TO 2013	149
Anibal Aguirre	WIDE-BANDWIDTH MEASUREMENTS OF NON-IONIZING RADIATION: THEIR ERRORS VERSUS THE MOBILE PHONE SYSTEM OPERATING LEVEL	150
Alexander Guridov, Elena Deshevaya, Sergei Shashkovsky, Dmitriy Zakharenko, Natalia Khamidullina, Natalia Novikova	THE DEVELOPMENT OF PULSED UV UNITS AND REGIMES OF AIR AND SURFACE DECONTAMINATION IN A LANDING MODULE	151
Sergei Voychuk, Elena Gromozova, Valentin Pidgorskiy	YEAST CELL WALL POLYSACCHARIDE CONTENT UNDER ACTION OF RF EMF AND CHEMICAL STRESSES	152
Dana Dabala, Victor Dabala, Didi Surcel, Emanoil Surducan, Vasile Surducan	EXPERIMENTAL MODEL OF RISK ASSESSMENT AND MANAGEMENT IN OCCUPATIONAL EXPOSURE TO RADIOFREQUENCY/MICROWAVE RADIATION	153

Nataša Dorđević, Jovan Vuković, Aleksandar Peulić, Andraš Štajn, Milica Paunović, Edin Dolićanin, Zana Dolićanin	BEHAVIORAL EFFECTS OF LOW FREQUENCY ELECTROMAGNETIC FIELD MEDIATED BY NITRIC OXIDE IN RATS' HYPOTHALAMUS	154
Avni Berisha, Blerina Baxhaku, Nardi Sheqerxhiu, Ahmet Hoxha, Nimet Orqusha, Jeton Halili, Valbonë Mehmeti, Kaltrina Jusufi, Adelina Halili	THE EVALUATION OF THE SHORT TERM PHOTOSTABILITY OF THE ALPRAZOLAM DRUG	155
Svetlana A. Komarova, Anna A. Oleshkevich	THE USE OF UV-SPECTROPHOTOMETRY IN THE EXAMINATION OF ANIMAL HAIR	156
Natalia Statsyuk, Khyal Thakur, Smetanina Tatiana, Maria Kuznetsova	THE EFFECT OF THE PRE-PLANTING TREATMENT OF TUBERS WITH THE LOW-FREQUENCY PULSE ELECTRIC FIELD ON SOME BIOMETRIC PARAMETERS OF POTATO PLANTS	157
Maria Kuznetsova, Natalia Statsyuk, Alexander Rogozhin, Alexey Filippov	LOW-FREQUENCY PULSE ELECTRIC FIELD: A NEW GREEN TECHNOLOGY TO IMPROVE THE YIELD OF VEGETABLE CROPS	158
Milesa Srećković, Slađana Pantelić, Srbislav Stanković, Suzana Polić, Aleksander Kovačević, Nenad Ivanović, Aleksandar Bugarinović, Stanko Ostojić, Željka Tomić	ELION TECHNIQUES IN APPLICATION AND IN SCIENCE WITH ACCENT ON ECOLOGY AND CULTURAL HERITAGE	159
Drago Jelovac, Melvil Sabani, Drago Djordjević, Mirjana Jovanovich, Branko Djurović, Ivan Boricich, Novica Boricich, Milan Petrovich	THE INFLUENCE OF MOBILE PHONES RADIATION ON THE OCCURRENCE AND DEVELOPMENT OF HEAD AND NECK TUMORS	160
Michel Israel, Ivanka Topalova, Tsvetelina Shalamanova, Mihaela Ivanova, Victoria Zaryabova	DATA OF EMF MEASUREMENTS IN URBAN AREAS WITH HIGH DENSITY OF SOURCES AND SUCH WITH "SENSITIVE PLACES AND BUILDINGS"	161
Mihaela Ivanova, Tsvetelina Shalamanova, Michel Israel, Victoria Zaryabova, Hristina Petkova	OCCUPATIONAL AND ENVIRONMENTAL EXPOSURE TO MAGNETIC FIELDS IN RESIDENTIAL BUILDINGS WITH BUILT-IN TRANSFORMERS	162
Tsvetelina Shalamanova, Mihaela Ivanova, Rumiana Petrova, Ivanka Topalova, Petya Ivanova, Magdalena Dimitrova	THE EMF EXPOSURE OF THE GENERAL PUBLIC AFTER THE DIGITALIZATION OF BROADCAST TECHNOLOGY	163
Valeriy Zaporozhan, Andrey Ponomarenko	THE ROLE OF MAGNETIC AND ELECTROMAGNETIC INTERACTIONS IN VIRUS INFECTIONS: IMPLICATIONS AND NEW OPTIONS FOR MEDICINE	164

15 NEUTRON AND HEAVY ION RADIATIONS

George Ryazantsev, Maxim Khaskov	NEUTRON MATTER AND ITS PLACE IN THE PERIODIC SYSTEM OF ELEMENTS	166
-------------------------------------	--	-----

Alexander Shemyakov, Svetlana Zaichkina, Olga Rozanova, Svetlana Sorokina, Sergey Romanchenko, Helena Smirnova, Olga Vakhrusheva, Vladimir Pikalov	STUDY OF BIOLOGICAL EFFECTS INDUCED BY ACCELERATED ^{12}C IONS WITH ENERGY OF 450 MEV/N ON MICE <i>IN VIVO</i>	167
Pavel Chubunov, Vasily Anashin, Sergey Iakovlev	ESTIMATION OF HEAVY IONS LET FOR SEE TESTING OF ELECTRONIC COMPONENTS USING ROSCOSMOS TEST FACILITIES	168
Kiril Krezhov, Dariya Vladikova, Gergana Ivanova, Tanya Malakova, Tzvetana Nonova, Erzebet Svab, Ivaylo Genov, Margit Fabian	$\text{BACe}_{0.85}\text{Y}_{0.15}\text{O}_{3-x}$. BASED MATERIALS FOR SOLID OXIDE FUEL CELLS: NEUTRON DIFFRACTION STUDY	169

16 NUCLEAR MEDICINE

Satoru Nakamura	CASE STUDY OF IMPROVED IMAGING WITH DATSCAN AFTER DEEP BRAIN STIMULATION IN PARKINSON'S DISEASE	171
Mariia Firsova, Nina Polyakova, Oksana Kashchenko	INTERMITTENT USAGE OF ZOLENDRONIC ACID AND PAMIDRONATE BETWEEN RADIONUCLIDE THERAPY COURSES	172
Yulia Lysak, Vladimir Klimanov, Boris Narkevich	THE ASSESSMENT OF ABSORBED DOSE IN RADIONUCLIDE THERAPY	173
Julie Haglund	PREPARING FOR A CLINICAL DRIFT OF PET/CT, AN EXAMPLE FROM NORWAY	174
Maryam Pourkaveh	A COMPARATIVE SURVEY OF THE AWARENESS LEVEL OF WORKING DOCTORS AND MEDICAL STUDENTS IN THE HAMADAN PROVINCE CONCERNING THE MEDICAL RESPONSE AND PREPAREDNESS IN NUCLEAR ACCIDENTS	175
Umit Kara, Huseyin Ozan Tekin, Mustafa Yıldız	CLINICAL EXPERIENCES WITH TC-99m RENAL SCINTIGRAPHY	176
Umit Kara, Huseyin Ozan Tekin, Mustafa Yıldız	CARDIAC NUCLEAR MEDICINE PROCEDURES AND RADIATION EFFECTS	177

17 RADIATION DETECTORS

Ercan Yilmaz, Senol Kaya, Ramazan Lok, Aliekber Aktag, Huseyin Karacali, Aleksandar Jaksic	NEWLY-GENERATED NUCLEAR RADIATION SENSING FIELD EFFECT TRANSISTOR (NÜRFET) FOR IRRADIATION DETECTION	179
Aysegul Kahraman, Ercan Yilmaz, Aliekber Aktag, Şenol Kaya	A DETAILED STUDY OF THE RADIATION RESPONSE OF ER_2O_3 MOS CAPACITOR UNDER ZERO GATE BIAS	180

Mehmet Yüksel, Ziyafer Gizem Portakal, Tamer Dogan, Mustafa Topaksu	LUMINESCENCE STUDY OF NEODYMIUM-DOPED CALCIUM SULFATE	181
Mehmet Yüksel	THERMOLUMINESCENCE PROPERTIES OF ANHYDROUS SODIUM SULFATE	182
Toshiyuki Onodera, Keitaro Hitomi, Tadayoshi Shoji	THALLIUM BROMIDE SEMICONDUCTOR CRYSTALS GROWN VIA VERTICAL TRAVELING MOLTEN ZONE METHOD FOR FABRICATING GAMMA-RAY DETECTORS	183
Nursultan Japashov, Ahmet Saymbetov, Ramizulla Muminov, Sali Radzhapov, Yorqin Toshmurodov, Bauyrzhan Mukhametkali, Nursultan Sissenov, Nurzhigit Kuttybay, Aizhan Mansurova	DEVELOPMENT OF SILICON STRIP DETECTORS OF NUCLEAR RADIATION WITH ORTHOGONAL FIELD	184
Laura Basiricò, Andrea Ciavatti, Tobias Cramer, Piero Cosseddu, Annalisa Bonfiglio, Beatrice Fraboni	FLEXIBLE ORGANIC X-RAY DETECTORS	185
Miguel Angel Carvajal Rodriguez, Sofia Martinez Garcia, Damián Guirado Llorente, Antonio Martínez Olmos, Alberto J. Palma Lopez	THERMAL COMPENSATION FOR DMOS TRANSISTORS USED AS REAL TIME DOSIMETERS IN ELECTRON BEAMS	186
Mustafa Topaksu, Mehmet Yüksel, Tamer Dogan	DETERMINATION OF NATURAL CALCIUM FLUORITE TRAP DEPTHS	187
G. Georgiev, V. Kozhuharov, L. Tsankov	PLASTIC SCINTILLATIONS RESEMBLING LED DRIVER	188
G. Georgiev, V. Kozhuharov, L. Tsankov	THE PADME TRACKING SYSTEM	189
Gordana Medin	THE NEW EMERGING TECHNOLOGIES AND MATERIALS: GRAPHENE BASED SENSORS	190
Ercan Yilmaz, A. Kahraman, D. Yegen, Aleksandar Jaksic	INVESTIGATION OF RADFET RESPONSE TO X-RAY AND ELECTRON BEAMS IN REFERENCE CONDITIONS	191
J. Burger, V. Cindro, A. Gorišek, G. Kramberger, I. Mandić, M. Zavrtanik, M. Mikuž	DEVELOPMENT OF IN-VIVO DIAMOND AND RADFET DOSIMETRY FOR BRACHYTHERAPY	192
Sophie Mallows	PREDICTING THE RADIATION LEVELS IN THE CMS EXPERIMENTAL CAVERN	193
Aleksandar Jaksic, Nikola Vasovic, Srboljub Stankovic	SENSITIVITY OF STANDARD AND STACKED RADFET DOSIMETERS	194

18 RADIATION EFFECTS

Jinshun Bi	THE BODY BIAS EFFECTS ON THE SINGLE-EVENT-TRANSIENT OF SILICON-ON-INSULATOR CMOS TECHNOLOGY	196
Alexander Ogurtsov, Olga Bliznjuk	KINETIC STUDY OF SYNCHROTRON RADIATION INDUCED RARE-GAS CRYSTALS MODIFICATION BY EXCITON SELF-TRAPPING	197
José Pinela, Amilcar L. Antonio, Lillian Barros, Sandra Cabo Verde, Ana Maria Carvalho, M. Beatriz P.P. Oliveira, Isabel C.F.R. Ferreira	FROM THE FIELD TO THE TABLE: IONIZING RADIATION AS A FEASIBLE POSTHARVEST TREATMENT FOR FRESH AND DRIED PLANT FOODS	198
Eliana Pereira, Andreia I. Pimenta, Ricardo C. Calhelha, Amilcar L. Antonio, Sandra Cabo Verde, Lillian Barros, Celestino Santos-Buelga, Isabel C.F.R. Ferreira	THE IMPACT OF GAMMA IRRADIATION ON THE CYTOTOXIC PROPERTIES AND PHENOLIC COMPOSITION OF <i>THYMUS VULGARIS</i>L. AND <i>MENTA X PIPERITA</i> L.	199
Elena Savchenko, Ivan Khyzhniy, Sergey Uytunov, Mikhail Bludov, Andrei Barabashov, Galina Gumenchuk, Vladimir Bondybey	THE MODIFICATION OF SOLID NITROGEN BY AN ELECTRON BEAM	200
Nadezhda Shimalina, Elena Antonova, Vera Pozolotina	QUALITY OF PLANTAGO MAJOR L. SEED PROGENY GROWING WITHIN RADIOACTIVE OR CHEMICAL CONTAMINATED AREAS	201
Binh Nguyen Van, Quynh Tran Minh, Diep Tran Bang, Sang Hoang Dang, Thao Hoang Phuong, Thom Nguyen Thi	LOW MOLECULAR WEIGHT XANTHAN PREPARED BY GAMMA IRRADIATION AND ITS EFFECTS ON SEEDLINGS	202
Iryna Kovalchuk, Mechyslav Gzhegotskyi, Vasyl Dukach	THE IMPACT OF RADIATION ON THE FATTY ACID COMPOSITION OF PHOSPHOLIPIDS OF THE BLOOD PLASMA, MYOCARDIUM AND LIVER TISSUES OF RATS	203
Jaroslava Budinski-Simendić, Ayse Aroguz, Milena Marinović-Cincović, Gordana Marković, Ljiljana Korugić-Karasz, Vesna Teofilović, Jelena Tanasić	THE PERFORMANCE ASSESSMENT OF GAMMA IRRADIATED ELASTOMERIC NANOCOMPOSITES	204
Gordana Marković, Milena Marinović-Cincović, Jaroslava Budinski-Simendić, Vojislav Jovanović, Suzana Samaržija-Jovanović, Ljiljana Tanasić, Radmila Radićević	THE HIGH ENERGY IRRADIATION AGEING OF REINFORCED ELASTOMERS BASED ON RUBBER BLENDS	205
Slaviša Jovanović, Gordana Marković, Suzana Samaržija-Jovanović, Milena Marinović-Cincović, Vojislav Jovanović, Jaroslava Budinski-Simendić	THE INFLUENCE OF GAMMA-IRRADIATION ON MECHANICAL PROPERTIES OF NANO-SILICA REINFORCED TERNARY NR/BR/SBR RUBBER BLEND	206

Ângela Fernandes, Amílcar L. Antonio, M. Beatriz P.P. Oliveira, Anabela Martins, Isabel C.F.R. Ferreira	GAMMA RADIATION PRESERVES CHEMICAL AND BIOACTIVE PROPERTIES OF BOLETUS EDULIS WILD MUSHROOMS	207
Joanna Reszczyńska, Ludwik Dobrzyński, Krzysztof Fornalski, Yehoshua Socol	LOW DOSE RADIATION RESPONSE: FROM LIFE SPAN STUDIES TO MATHEMATICAL MODELS	208
Armen Sogoyan, Georgiy Davydov, Aleksy Artamonov, Anna Kolosova, Yuriy Ozhegin, Anna Kameneva	THE IDENTIFICATION OF MICROELECTRONIC DEVICES DURING THE INCOMING CONTROL STAGE	209
Svetlana Sorokina, Svetlana Zaichkina, Olga Rozanova, Sergey Romanchenko, Alsu Dyukina, Helena Smirnova, Alexander Shemyakov, Vladimir Balakin	USE OF CYTOGENETIC ENDPOINTS TO EVALUATE INFLUENCE OF PROTON IRRADIATION ON MICE IN VIVO	210
Ercan Yilmaz, Ramazan Lök, Senol Kaya, Huseyin Karacali	TOTAL-DOSE RADIATION RESPONSE OF HAFNIUM-SILICATE MOS CAPACITORS	211
Ivan Khyzhniy	RADIATION-INDUCED SPECIES MONITORING IN NITROGEN SOLIDS	212
Vlado Antonic, Gurung Ganga, Isabel L. Jackson, Terez Shea-Donohue, Zeljko Vujaskovic	DEVELOPMENT OF NOVEL MURINE MODEL OF COMBINED RADIATION AND PERIPHERAL TISSUE TRAUMA INJURY	213
Dmitry Grodzinsky, Yulia Shylina, Svitlana Pchelovska, Sergii Litvinov, Darina Sokolova, Vladyslav Zhuk, Ludmila Tonkal, Anastasia Salivon, Olena Nesterenko	THE EFFECT OF ACUTE X-RAY IRRADIATION OF MEDICINAL PLANT SEEDS ON THE SECONDARY METABOLITE PRODUCTIVITY	214
Terez Shea-Donohue, Vlado Antonic, Neemesh Desai, Isabel L. Jackson, Zeljko Vujaskovic	THE ROLE OF IMPAIRED MUCOSAL BARRIER FUNCTION IN IRRADIATION-INDUCED CHRONIC GASTROINTESTINAL (GI) SYNDROME	215
Vladimir Anan'ev, Mikhail Miklin, Elena Dyagileva, Valery Pak, Denis Yakubik	VUV PHOTOLYSIS OF CRYSTALLINE ALKALI NITRATES	216
Vladimir Anan'ev, Mikhail Miklin, Valery Pak, Denis Yakubik	PARAMAGNETIC CENTERS FORMATION UNDER RADIOLYSIS OF CRYSTALLINE POTASSIUM PICRATE	217
Elena Pylypchuk, Emilia Domina	EFFECT OF CO-MUTAGENS ON RADIOSENSITIVITY OF HUMAN SOMATIC CELLS	218
Igor Alekseev	THE AMORPHIZATION OF METALLIC ALUMINIUM UNDER THE ACTION OF ⁵⁷CO RECOIL NUCLEI	219
Alexandra Demidova, Alexey Kessarinsky	HETEROGENEOUS RADIATION BEHAVIOR OF DIFFERENT SAMPLES OF HONEYWELL SS495A MAGNETIC FIELD SENSOR	220

A.P. Barabashov, I.V. Khyzhniy, S.A. Uyutnov, E.V. Savchenko	ELECTRON-STIMULATED DESORPTION OF EXCITED ATOMS FROM SOLID NITROGEN	221
Emanuele Calabrò, Salvatore Magazù	MICROWAVE RADIATION AT 1800 MHZ INDUCES INCREASE OF β-TURN AND β-SHEET FEATURES IN TYPICAL PROTEINS	222
Emanuele Calabrò, Salvatore Magazù	REORIENTATION OF POLYMER CHAINS CAN BE PRODUCED BY EXTREMELY LOW FREQUENCY ELECTROMAGNETIC FIELD RADIATION	223
Piotr Szajerski, Andrzej Gasiorowski, Joanna Celinska, Henryk Bem	RADIATION EFFECTS IN SULPHUR POLYMER CONCRETE (SPC) MATRIX UNDER HIGH DOSE IRRADIATION	224
Emilia Domina, Elena Pylypchuk	CYTOGENETIC RESEARCH OF CO-MUTAGENES' ROLE IN INCREASING RISK OF CARCINOGENESIS	225
Arkadiusz Mandowski, Rafał Sobota, Ewa Mandowska, Mirosław Kornatka	INVESTIGATION OF SELECTED CERAMIC INSULATORS USING RADIATION-INDUCED THERMOLUMINESCENCE	226
Nurdoğan Can, Mehmet Ayvacikli, Yüksel Karabulut, Laura Muresan, Adil Canimoglu	LUMINESCENCE PROPERTIES OF MG AND RARE EARTH DOPED YTTRIUM ALUMINATE BASED PHOSPHORS	227
Adrian-Ionut Cadis, Laura Elena Muresan, Ioana Perhaita, Lucian Barbu-Tudoran, Emil Indrea	STUDIES ON $ZnS:Mn^{2+}$ PREPARED BY MICROWAVE-ASSISTED SOLYOTHERMAL DECOMPOSITION OF SINGLE-SOURCE MOLECULAR PRECURSORS	228

19 RADIATION IN MEDICINE

Nelya Metlyayeva, Andrey Bushmanov, Valery Krasnyuk, Elena Zapadinskaya, Olga Scherbatic, M Bolotnov	THE EVALUATION OF THE ADAPTATION EFFECTIVENESS OF THE MILITARY PERSONNEL AND PERSONNEL OF CHNPP, WHO PARTICIPATED IN THE LIQUIDATION OF THE CHNPP ACCIDENT IN 1986 AND 1987	230
Viacheslav Sukhov, Denis Firsanov, Konstantin Zaplatnikov	DOSIMETRY IN NUCLEAR MEDICINE (PET/CT)	231
Goran Sevo, Marija Tasic, Dalibor Paspalj, Olga Vasovic, Aleksandra Milicevic-Kalasic, Dragana Damnjanovic	SERBIAN TC COHORT: 2016 UPDATE - THERAPEUTIC USE OF X-IRRADIATION DURING 1950S AND ITS DELAYED HEALTH CONSEQUENCES	232
Marina V. Troshina, Anatoly A. Lychagin, Stepan E. Ulianenko, Vladimir I. Potetnyia, Alexey N. Solovev, Sergei N. Koryakin, Vladimir A. Pikalov, Alexander G. Alexeev	RADIOCHROMIC FILM DOSIMETRY IN HIGH ENERGY ION BEAMS	233
Sehad Kadiri, Gezim Hodolli, Gamend Nafezi, Naim Sylva, Meleq Bahtijari, Burim Uka, Kostandin Dollani	EVALUATION OF X-RAY BEAM QUALITY BASED ON MEASUREMENTS IN SOME MEDICAL TREATMENT CENTERS	234

Amra Meštrić, Zijah Rifatbegović, Senija Kunosić, Selma Kunosić	RADIOFREQUENCY ABLATION IN LIVER TUMOR THERAPY	235
Stefan Rafajlovic, Predrag Bozovic, Danijela Arandjic, Sandra Ceklic, Djordje Lazarevic, Olivera Ciraj-Bjelac	MAMMOGRAPHY IN SERBIA: IMAGE QUALITY AND RADIATION DOSE	236
Mirya Kuranova	X-RAY IRRADIATION IN THE DIAGNOSIS OF RARE GENETIC DISEASES	237
Natasha Ivanova, Severina Ivanova	RADIATION PROTECTION OR WHAT IF?	238
Zoran Brnić, Iva Bušić-Pavlek, Saša Schmidt, Tomislav Krpan	OLD AND OUTDATED RADIOLOGY EQUIPMENT IN CROATIA - RADIATION SAFETY AND ECONOMICAL CONSEQUENCES	239
Andrej Petres, Sanja Stojanovic, Predrag Bozovoc, Danijela Arandjic, Viktor Til, Olivera Ciraj-Bjelac	RADIATION EXPOSURE TO PATIENTS AND INTERVENTIONAL RADIOLOGY STAFF DURING PERIPHERAL VASCULAR ANGIOGRAPHY AND INTERVENTION	240
Sanja Knezevic, Bojana Matejic, Zorica Terzic Supic, Petar Bulat	EXPLORING RISK PERCEPTION AND BEHAVIOR CONCERNING OCCUPATIONAL SAFETY PRACTICES AMONG THE PROFESSIONALS IN RADIOLOGY SERVICES	241
Esmeralda Dautović, Una Suljić	RADIOIMMUNOTHERAPY IN THE TREATMENT OF CANCER	242
H. Harrass, M. A. Misdaq, Azeddine Mortassim	DETERMINATION OF BETA RADIATION DOSE TO THYROID FROM THE INGESTION OF RADIOIODINE (¹³¹I) BY PATIENTS FOR DIAGNOSTIC AND THERAPEUTIC PURPOSES	243
Jozef Sabol, Jana Hudzietzová, Bedrich Sestak	THE ASSESSMENT OF THE EXPOSURE OF RADIATION WORKERS IN NUCLEAR MEDICINE IN THE CZECH REPUBLIC	244

20 RADIATION MEASUREMENTS

Şeref Turhan	RADIOACTIVITY LEVELS IN SOILS FROM THE CAPPADOCIA REGION (NEVŞEHİR CITY, TURKEY)	246
Şeref Turhan	DETERMINATION OF TRITIUM ACTIVITY CONCENTRATIONS IN NATURAL WATER SAMPLES	247
Maxim Karetnikov	APPLICATION OF TAGGED NEUTRON TECHNOLOGY FOR RESEARCH, INDUSTRY, AND GLOBAL SECURITY	248
Serkan Akkoyun, Gökhan Koçak, Tuncay Bayram	HALF-LIVES OF THE TITANIUM ISOTOPES FROM PHOTONUCLEAR REACTIONS	249
Andrei I. Apostol, Igor A. Maliuk, Octavian Sima, Nicolae Marginean	METHODOLOGICAL TRIANGULATION APPROACH FOR AGE DETERMINATION OF PLUTONIUM SAMPLE BY HIGH RESOLUTION GAMMA SPECTROMETRY	250
Sung-Kyun Park, Jeong-MIn Park, Yi-Sub Min, Yong-Sub Cho	QT-BASED CONTROL PLATFORM FOR THE RADIATION DOSE DATA MEASURED IN KOMAC	251

Maxim Vasyanovich, Alexey Ekidin, Marina Rogozina, Russkikh Ivan, Fomina Nataliya	SIZE DISTRIBUTION ASSESSMENT OF RADIOACTIVE AEROSOLS AT RESEARCH REACTOR	252
Ingrida Pliopaitė Bataitienė, Renata Mikalauskienė	INVESTIGATION OF REDISTRIBUTION OF ARTIFICIAL (¹³⁷CS, ⁹⁰SR) AND NATURAL (⁴⁰K) RADIOISOTOPES IN DIFFERENT USAGE SOILS	253
Margarita Kuqali, Gerti Xhixha, Dhurata Kuqi, Merita Kaceli Xhixha, Manjola Shyti, Gazmend Nafezi, Meleq Bahtijari	A PRELIMINARY STUDY OF THE DISTRIBUTION OF ENVIRONMENTAL RADIOACTIVITY IN THE URBAN AREA OF THE TIRANA CITY, ALBANIA	254
Özlem Karadeniz, Fatih Çoban, Hidayet Karakurt, Rukiye Çakır	DETERMINATION OF RADIOCESIUM LEVELS IN FOREST SOILS OF MOUNT IDA IN TURKEY	255
Buket Canbaz Öztürk, N. Füsün Çam, Günseli Yaprak, Osman Candan	THE NATURAL RADIOACTIVITY IN THE BEACH SAND - CANAKKALE, WESTERN ANATOLIA/TURKEY	256
Victor Ivanov, Anatoli Loutchanski, Vadims Ogorodniks, Viktors Fjodorovs	THE USE OF A NEW GENERATION OF SILICON PHOTOMULTIPLIERS IN PORTABLE GAMMA RADIATION SCINTILLATOR BASED DETECTORS	257
Tímea Hülber, Enikő Kis, Csilla Pesznyák, Katalin Lumniczky, Géza Sáfrány	THE FIRST VALIDATION STEP OF AN AUTOMATIC MICRONUCLEUS COUNTER: THE COMPARISON OF MANUAL AND AUTOMATIC MICRONUCLEUS X-RAY DOSE-EFFECT CURVES	258
Srboljub Stanković, Radovan Ilić, Dragana Nikolić, Boris Lončar	MSV SIGNAL PROCESSING SYSTEM AND CALCULATION OF RATIO ($Q_{\text{NEUTRON}}/Q_{\text{GAMMA}}$) FOR BF₃ IONIZATION CHAMBER IN CF-252 FIELD	259
María Sofía Martínez García, Alberto Palma, Julia Torres del Río, Fernando Martínez Martí, Aleksandar Jaksic, Miguel Ángel Carvajal Rodríguez	THE ANALYSIS OF THE RADIATION RESPONSE OF ELECTRICAL PARAMETERS OF DIFFERENT MOSFET MODELS	260
Vera Starichenko, Naum Lyubashevskiy	BIOINDICATION AS THE VERIFICATION OF FORMULAS FOR CALCULATING SR-90 DOSE IN THE SKELETON OF SMALL MAMMALS	261
Rohit Mehra, Sarabjot Kaur, Rajan Jakhu, Pargin Bangotra	THE MEASUREMENT OF URANIUM CONCENTRATION IN WATER SAMPLES FOR THE ASSESSMENT OF THE RADIOLOGICAL DOSE IN PATIALA AND THE FATEHGARH DISTRICT OF PUNJAB	262
Sudhir Mittal, Asha Rani, Rohit Mehra, R.C Ramola	ESTIMATION OF NATURAL RADIONUCLIDES HAZARDS AND ANNUAL EFFECTIVE DOSE MEASUREMENT IN SOIL SAMPLES OF NORTHERN RAJASTHAN, INDIA	263
Antonio Cannuli, E. Calabrò, M. T. Caccamo, S. Magazù	A STUDY OF MONITORING HIGH FREQUENCY ELECTROMAGNETIC FIELD POLLUTION IN URBAN AREA	264

Mauro Valente, Rodolfo Figueroa, Francisco Malano, Pedro Perez, Mauricio Santibañez, Jose Vedelago	FRICKE GEL DOSIMETER LAYERS OPTICALLY ANALYZED FOR QUALITY ASSURANCE IN STEREOTACTIC RADIOSURGERY	265
Nevenka Antović, Sergey Andrukhovich	ASYMMETRY IN EXPERIMENTS TESTING CPT IN ORTHO-P_s DECAYS	266
Silvia Vargas Castrillon, Francisco Cutanda Henriquez	ON THE USE OF A PARALLEL PLATE ION CHAMBER FOR FFF PHOTON PDDS MEASUREMENTS	267
David Chacón, Facundo Mattea, Mauro Valente	THE DEVELOPMENT AND CHARACTERIZATION OF A NOVEL POLYMER GEL DOSIMETER BASED ON ITACONIC ACID FIXED TO A GEL MATRIX WITH GLUTARALDEHYDE	268
Alexandra Demidova, Mikhail Koroteev, Alexey Borisov	THE DOSE RATE INDUCED DANGER PARAMETER DETERIORATION OF THE LOGIC LEVEL CONVERTERS IN THE SWITCHED-OFF MODE	269
Paul Atta Amoah, Raymond Agalga, Ann Mensah, Simon Adu, Daniel Nii Adjei, Michael Ansah, Sheila Victoria Gbomittah	RADIATION DOSE RATE MEASUREMENTS AROUND A NUCLEAR INSTALLATION	270
Abdus Sattar Mollah, Md. Ashrafal Alam, Sabiha Sattar, M. Altab Hossain, Abu Zafor M. Salahuddin	ROBOT-BASED SYSTEM FOR MONITORING OF IONIZING RADIATION IN NUCLEAR ENVIRONMENT	271
Antonio Cannuli, Emanuele Calabrò, Maria Teresa Caccamo, Salvatore Magazu	MEASUREMENTS AND EFFECTS OF MICROWAVE RADIATION EMITTED BY WIRELESS COMMUNICATION DEVICES	272
Sudhir Mittal, Asha Rani, Rohit Mehra	ESTIMATION OF ANNUAL EFFECTIVE DOSE DUE TO RADON AND THORON LEVEL IN INDOOR AIR OF NORTHERN RAJASTHAN, INDIA	273
Azeddine Mortassim, My Ali Misdaq, Aziz Chaouqi, Jamal Ougidi, A Chaib	THE MEASUREMENT OF ^{238}U AND ^{232}Th IN PETROL, GAS-OIL AND LUBRICANT SAMPLES BY USING NUCLEAR TRACK DETECTORS AND RESULTING RADIATION DOSES TO THE SKIN OF MECHANIC WORKERS	274
B. Elouardi, M.A. Misdaq, Azeddine Mortassim	ALPHA RADIATION DOSES TO THE EYES OF INDIVIDUALS WEARING OPTICAL GLASSES	275
A. Aitayoub, M.A Misdaq, Azeddine Mortassim, Aziz Chaouqi	THE ANALYSIS OF ^{238}U, ^{232}Th AND ^{222}Rn IN VARIOUS FISH SAMPLES AND RESULTING RADIATION DOSES TO THE CONSUMERS	276

A Matrane, M.A Misdaq, Azeddine Mortassim, H Erramli	^{238}U AND ^{232}Th CONCENTRATIONS MEASURED IN DIFFERENT MEDICAL DRUGS BY USING SOLID STATE NUCLEAR TRACK DETECTORS AND RESULTING RADIATION DOSES TO THE SKIN OF PATIENTS	277
Josipa Madunic, Slavica Brkic	CONTAMINATED AREAS OF SOUTHERN BOSNIA AND HERZEGOVINA	278
Ivan Iliev	AIRBORNE GAMMA-SPECTROMETRY MAPPING	279
Abdel-Hai Benali	COMPARATIVE STUDY OF RPL GD-301, TLD-100 AND $\text{Al}_2\text{O}_3:\text{C}$ DETECTOR RESPONSES BY MONTE CARLO SIMULATION	280
Ewa Mandowska, Renata Majgier, Arkadiusz Mandowski	SPECTRAL PROPERTIES OF ULTRA-WEAK THERMOLUMINESCENCE IN SELECTED DETECTORS	281
Rohit Mehra	THE MEASUREMENT OF URANIUM CONCENTRATIONS IN WATER SAMPLES FOR THE ASSESSMENT OF THE HAZARD QUOTIENT	282

21 RADIATION ONCOLOGY

Petar Chakalaroski, Violeta Klisarovska, Igor Stojkovski, Jasmina Djundeva	HYPOFRACTIONATED SUPERFICIAL HIGH DOSE RATE BRACHYTHERAPY IN TREATMENT OF NON-MELANOMA SKIN CANCERS	284
Javed Mahmood, Radmila Pavlovic, Isabel Jackson, Zeljko Vujaskovic	THE MOLECULAR MECHANISM INVOLVED IN RADIATION-INDUCED ERECTILE DYSFUNCTION (RIED)	285
Violeta Klisarovska, Petar Chakalaroski, Snezana Smickoska, Igor Stojkovski, Nadica Dimitrovska, Zoran Stefanovski, Jasmina Djundeva	SINGLE INSTITUTION EXPERIENCE OF TWO-DIMENSIONAL VERSUS TRI-DIMENSIONAL INTRACAVITARY BRACHYTHERAPY IN LOCALLY ADVANCED CERVICAL CARCINOMA	286
Ramune Mineikyte, Vydmantas Atkocius	RADIOTHERAPY IN LITHUANIA - FROM COBALT TO LINAC	287
Vydmantas Atkocius	SECOND PRIMARIES (SP): IMPACT OF HDR ^{252}Cf BRACHYTHERAPY NEUTRON IRRADIATED VOLUME AND DOSE	288
Igor Stojkovski, Milan Risteski, Violeta Klisarovska, Petar Chakalaroski	COMPARISON OF DOSES AND VOLUMES OF TARGETS AND ORGANS AT RISK IN PATIENTS WITH HIGH GRADE GLIOMA IRRADIATED WITH TWO DIFFERENT TECHNIQUES	289
S. Georgieva, I. Payanova, R. Lazarov, Z. Spassova, I. Apostolova	ADJUVANT RADIOTHERAPY OF MALIGNANT TRITON TUMORS (MTT)	290

Nataša Anastasov

THREE-DIMENSIONAL MICROTISSUES AS PHENOTYPIC MODELS TO CATEGORIZE ACTIVITY OF RADIATION MODIFIERS

291

22 RADIATION PHYSICS

Tuncay Bayram, Serkan Akkoyun,
Necati Çelik, Emel Hacıslamoğlu,
Serhat Uruk, Şevki Şentürk

PHOTONUCLEAR REACTION CROSS SECTIONS FOR Xe-131

293

Olga Bliznjuk,
Alexander Ogurtsov

INELASTIC SCATTERING, ENERGY LOSS AND CHANNELING OF PHOTOELECTRONS IN N₂ DOPED SOLID Kr

294

Anna Selva, Valeria Conte,
Paolo Colautti, Berndt Grosswendt

EXPERIMENTAL NANODOSIMETRY OF 25 MeV PROTONS AT DNA SCALE

295

B. Firoozi,
M. Malek Mohammadi,
S. M. Hosseini Pooya

ALLOWED AND FIRST-FORBIDDEN UNIQUE BETA DECAY STUDY OF ¹⁶N TO ¹⁶O IN RANDOM PHASE APPROXIMATION FRAMEWORK

296

George Ryazantsev,
Maxim Khaskov

NEUTRINO RESONANT INTERACTION AS A POSSIBLE REASON OF NUCLEAR OBJECT ACCIDENTS

297

Slobodan Milutinović,
Filip Jeremić, Marko Mišić,
Miloš Vujišić, Predrag Marinković

PLATFORM DEPENDENT EFFICIENCY OF A MONTE CARLO CODE FOR TISSUE NEUTRON DOSE ASSESSMENT

298

Anna Kozlova, Nina Kozlova,
Evgenia Zabelina,
Dmitriy Spasskiy,
Marina Voronova,
Kirill Shcherbachyov

RADIATION-INDUCED DEFECTS AND DICHROISM IN LA₃GA_{5.5}TA_{0.5}O₁₄ CRYSTALS

299

Elena Lagzdina, Rita Plukienė,
Artūras Plukis, Andrius Puzas,
Andrius Garbaras,
Danielius Lingis,
Jevgenij Garankin,
Vidmantas Remeikis

¹⁴C ANALYSIS OF THE GRAPHITE DISPOSAL FROM RBMK-1500 REACTOR

300

Dusan Mrdja, Kristina Bikit,
Istvan Bikit, Jaroslav Slivka,
Sofija Forkapic

OPTIMIZATION OF THE HPGE DETECTOR SHIELD BY MONTE-CARLO SIMULATIONS

301

Elvin Erdoğan,
Elvin Erdoğan,
Oya Güneylı,
Melahat Garipagaoglu,
Halil Kucucuk

THE EFFECT OF FFF FOR PATIENTS RECEIVING PELVIC RADIOTHERAPY USING VOLUMETRIC MODULATED ARC THERAPY (VMAT) TECHNIQUE

302

M. Popovic, M. Nestic,
D. Todorovic, D. Milicevic,
S. Trifunovic, E. Suljovrujic,
S. Galovic

A STUDY OF GAMMA-IRRADIATED POLY-L-LACTIDE BY DYNAMIC THERMAL TECHNIQUES

303

Madhavi Thakurdesai,
Smita Survase

C₆T_E NANOPHASE FORMATION USING SWIFT HEAVY ION IRRADIATION

304

Radmila Panajotovic,
Jasna Vujin,
Djordje Jovanovic

ELECTRON-BEAM DAMAGE FROM SEM TO LIPID-(GRAPHENE, MoS₂, WS₂) HETEROSTRUCTURES

305

Dimitrije Maletic, Dejan Jokovic, Radomir Banjanac, Vladimir Udovicic, Aleksandar Dragic, Nikola Veselinovic, Mihailo Savic	VARIATION OF MUON COSMIC RAY FLUX RECORDED BY BELGRADE COSMIC RAY STATION DURING DECEMBER 2015 AND COMPARISON WITH EUROPEAN NEUTRON FLUX MONITORS	306
Piotr Szajerski, Andrzej Gasiorowski, Malgorzata Jakubowska	DOSIMETRIC BEHAVIOR OF RARE EARTH DOPED PHOSPHATE GLASSES AND POLYTETRAFLUOROETHYLENE COMPOSITES	307
Liliia Elnikova, Olga Iliyukhina, Eugenii Prokop'ev, Yurii Funtikov	APPLICATIONS OF POSITRON ANNIHILATION SPECTROSCOPY FOR INVESTIGATIONS OF ORGANIC LIQUIDS	308
Mauro Valente, Rodolfo Figueroa, Francisco Malano, Mauricio Santibañez	MONTE CARLO SIMULATIONS TO OPTIMIZE THE SETUP FOR THE DETECTION OF AU NANOPARTICLES IN TUMORS	309

23 RADIATION PROTECTION

Sibel Karaca, Önder Şimşek, Özgür Yeşiloğlu	THE VIEWS AND THOUGHTS OF PRIMARY SCHOOL STUDENTS ABOUT RADIATION	311
Vijay Singh, Martin Hauer-Jensen	THE DEVELOPMENT OF GAMMA-TOCOTRIENOL AS A RADIATION COUNTERMEASURE FOR THE ACUTE RADIATION SYNDROME	312
Nataša Tomić-Petrović	THE RISK AND PROTECTION FROM IONIZING RADIATION AT WORK AND IN EVERYDAY LIFE	313
M. Malek Mohammadi, S. M. Hosseini Pooya, B. Firoozi	PERFORMANCE CHARACTERISTICS OF A HOME-MADE TLD READER; PRELIMINARY RESULTS	314
Constantin Popescu, Gabi Rosca Fartat, Constantin Stanescu	THE HORIZONTAL FUEL CHANNEL PRESSURE TUBE DECOMMISSIONING IN THE CANDU 6 NUCLEAR REACTOR	315
Constantin Popescu, Gabi Rosca Fartat, Constantin Stanescu	THE HORIZONTAL FUEL CHANNEL PRESSURE TUBE DECOMMISSIONING IN THE CANDU 6 NUCLEAR REACTOR PART I: CUTTING AND EXTRACTING DEVICE PRESENTATION	316
Constantin Popescu, Gabi Rosca Fartat, Constantin Stanescu	THE HORIZONTAL FUEL CHANNEL PRESSURE TUBE DECOMMISSIONING IN THE CANDU 6 NUCLEAR REACTOR PART II: CUTTING AND EXTRACTING DEVICE FUNCTIONING PRESENTATION	317
Constantin Popescu, Gabi Rosca Fartat, Constantin Stanescu	THE HORIZONTAL FUEL CHANNEL PRESSURE TUBE DECOMMISSIONING IN THE CANDU 6 NUCLEAR REACTOR PART III: OPERATING THE CUTTING AND EXTRACTING DEVICE	318
Gabi Rosca Fartat, Constantin Popescu, Constantin Stanescu	THE HORIZONTAL FUEL CHANNELS IN THE CANDU 6 NUCLEAR REACTOR PART IV: DISMANTLING MAIN STEPS WITH THE DECOMMISSIONING DEVICE	319

Gabi Rosca, Constantin Popescu, Constantin Stanescu	THE HORIZONTAL FUEL CHANNELS IN THE CANDU 6 NUCLEAR REACTOR PART V: DECOMMISSIONING DEVICE OPERATING PRESENTATION	320
Andrew Gapeyev, Nina Lukyanova, Sergey Gudkov	DEPENDENCE OF RADIATION PROTECTIVE EFFECTS OF EXTREMELY HIGH-FREQUENCY ELECTROMAGNETIC RADIATION ON EXPOSURE PARAMETERS	321
Aleksander Mladenov, Tsvetana Nonova, Dobromir Dimitrov, Kiril Krezhov	RADIOACTIVE WASTE MANAGEMENT AT THE NUCLEAR SCIENTIFIC AND EXPERIMENTAL CENTRE OF INRNE-BAS	322
Sergei Lovachev	ESTIMATION OF INDIVIDUALIZED RADIATION RISK OF CHRONIC OCCUPATIONAL EXPOSURE DUE TO INHALATION INTAKE OF U²³⁴	323
Nguyen Thi Cam Tu, Nguyen Ngoc Anh	CALCULATION OF RADIATION SHIELDING FOR MEGAVOLTAGE GAMMA RAY FACILITY USING MONTE CARLO CODE EGS_{NRC}	324
Dragana Stojiljković, Ivana Arsić, Vanja Tadić	OIL EXTRACTS OF WILD APPLE FRUIT AS ACTIVE SUBSTANCES IN UV PROTECTION PREPARATIONS	325
Julius Ziliukas, Boris Andonovski, Giorgi Nabakhtiani, Panicos Demetriades, Ion Ursulean, Rodolfo Cruz Suarez, Burcin Okyar, Olivera Ciraj Bjelac	REGIONAL EAST EUROPEAN AND CENTRAL ASIAN ALARA NETWORK (RECAN): NETWORKING FOR IMPROVING THE OCCUPATIONAL RADIATION PROTECTION	326
Nataša Todorović, Silvija Lučić, Dragana Marić, Dragan Golubović, Jovana Nikolov, Miodrag Krmar	RADIATION EXPOSURE OF NUCLEAR MEDICINE STAFF WORKING WITH RADIONUCLIDES ^{99m}Tc AND ¹³¹I	327
Julie Haglund	SHIELDING REQUIREMENTS FOR PET/CT USING THE AAPM TASK REPORT 108	328
Aleksandra Volchkova, Elena Shishkina, Bryan Schwarz, Wesley Bolch, Evgenia Tolstykh, Marina Degteva	ORGAN DOSE RATES DUE TO ¹³⁷Cs/^{137m}Ba CONTAMINATION OF SOIL DEPEND ON DEPTH OF RADIONUCLIDE DEPOSITION AND AGE OF A PERSON	329
Stoyan Papanov, Ekaterina Petkova, Violeta Grudeva	USE AND ANTIOXIDANT CHARACTERISTICS OF COFFEE	330
Elena Shishkina, Aleksandra Volchkova, Marina Degteva, Bruce Napier, Bryan Schwarz, Wesley Bolch	AIR KERMA-TO-ORGAN DOSE CONVERSION COEFFICIENTS FOR HUMANS STAYING ON THE CONTAMINATED SOIL	331
Yulia Lysak, Boris Narkevich, Vladimir Klimanov	THE REASONS FOR THE FEASIBILITY OF OUTPATIENT RADIONUCLIDE THERAPY	332
Natasa Todorovic, Zeljko Grahek, Nataša Sarap, Ivana Stojkovic, Jovana Nikolov, Ivana Coha, Marija Jankovic	DIFFERENT METHODS FOR ⁹⁰Sr DETERMINATION IN WATER	333

Julie Haglund	DEVELOPING A CULTURE OF RADIATION PROTECTION IN THE HOSPITAL ENVIRONMENT	334
Magdalena Długosz-Lisiecka	COLLECTIONS OF RADIOACTIVE MINERALS IN GEOLOGICAL MUSEUMS	335
Paulo Ernesto de Oliveira Lainetti	SURFACE RADIOACTIVE DECONTAMINATION BY MOLTEN SALT STRIPPING	336
H. Harrass, M.A. Misdaq, Azeddine Mortassim, Jamal Ouguidi	THE DETERMINATION OF ALPHA RADIATION DOSE TO SKIN DUE TO THE APPLICATION OF DIFFERENT RADIOPHARMACEUTICALS	337
Jozef Sabol, Bedrich Sestak	EDUCATION IN RADIATION PROTECTION AND RADIATION RISK COMMUNICATION WITH THE PUBLIC	338
Zoran Jovanović, Dragana Krstić, Paolo Ferrari, Eleftheria Carinou, Vadim Chumak, Jad Farah, Sara Principi, Artem Morgun, Frank Becker, Pedro Teles	THE STUDY OF THE RADIATION SCATTER IN INTERVENTIONAL CARDIOLOGY THROUGH MONTE CARLO SIMULATIONS: THE EURADOS WORKING GROUP NO.12 APPROACH	339
Natasa Todorovic, Nemanja Golubovac, Jovana Nikolov, Krmar Miodrag	STRUCTURAL SHIELDING DESIGN FOR RADIOGRAPHIC ROOM BY SCATTERED RADIATION MEASUREMENT	340
Abdulameer Kazem Farhood, Laith Mohamad Rasheed	A STUDY OF RADON CONCENTRATIONS AND RADIATION DOSE LEVELS IN SALT SAMPLES EXTRACTED FROM THE SAMAWA SALTERN - IRAQ	341
Djurdjica Milkovic, Maria Ranogajec-Komor, Lovro Kavur	OUR EXPERIENCE IN DOSIMETRY AND RADIATION PROTECTION IN PEDIATRIC CHEST X-RAY DIAGNOSTICS	342
Samoilov Alexander, Andrey Bushmanov, Andrey Kretov	PREVENTION OF MEDICAL CONTRAINDICATIONS AT WORK / NEW ASPECT OF OCCUPATIONAL HEALTH SYSTEM	343
Paul Atta Amoah, Ann Mensah, Raymond Agalga	NUCLEAR SECURITY CULTURE: EVALUATION OF CONCEPT AND IMPLEMENTATION (CASE STUDY: TWO FACILITIES AT THE GHANA ATOMIC ENERGY COMMISSION PREMISES)	344

24 RADIOBIOLOGY

Denis Firсанov, Ljudmila Solovieva, Vyacheslav Soukhov, Maria Svetlova	THE IMPAIRMENT OF DNA DOUBLE-STRAND BREAK REPAIR IN PRESENESCENT HAMSTER FIBROBLASTS AFTER BLEOMYCIN ACTION	346
Natalia Koltovaya, Nadya Zhuchkina, Alexandra Kokoreva, Natalia Shvaneva	KINETICS OF UV-INDUCED GENE AND STRUCTURAL MUTATIONS	347
Vladimir Nugis, Maria Kozlova	THE CYTOGENETIC DOSE EVALUATION AFTER NON-UNIFORM IRRADIATION	348

Anna Suponkina, Michael Zhukovsky, Anna Krivonogova, Kseniya Shcherbakova, Kseniya Moiseeva	RADIATION SENSITIVITY OF BACTERIA CONTAMINATING FOOD	349
Aleksei Solovev, Aleksandr Chernukha, Vladimir Potetnya, Stepan Uliyanenko	TOWARDS ACCURATE SIMULATION OF RBE AND RADIATION- INDUCED DAMAGE IN CARBON ION BEAMS USING GEANT4	350
Željko Milosavljević, Nikola Krstić, Branislava Mitrović, Mirjana Lazarević Macanović	EFFECTS OF EXPERIMENTALLY IRRADIATED PITUITARY GLAND ON SOME MORPHOLOGICAL PARAMETERS OF RATS' HEAD, BODY AND TIBIA	351
Quynh Tran Minh, Van Doan Hong, Tuan Dinh Ba, Thom Nguyen Thi, Anh Tran Tuan, Ngan Nguyen Thuy, Thuan Ta Bich, Lan Vo Thi Thuong	STUDY OF DNA DAMAGES INDUCED BY UV RADIATION	352
Ekaterina V. Koryakina, Vladimir I. Potetnya, Raisa M. Baykuzina, Marina V. Troshina	CYTOGENETIC EVIDENCE OF HRS/IRS EFFECTS IN CHINESE HAMSTER CELLS FOLLOWING CARBON-12 IONS IRRADIATION	353
Tetiana Andriichuk, Nataliia Raksha, Svitlana Lugova, Ludmila Ostapchenko	ATP-DEPENDENT STEPS OF RADIATION-INDUCED APOPTOSIS	354
Svetlana Belkina	OPTIMIZING THE EFFICIENCY OF THE SEQUENTIAL THERMORADIATION THERAPY IN ONCOLOGY	355
Nadezhda Kudryasheva, Tatiana Rozhko, Oleg Guseynov	ON THE MECHANISM OF BIOLOGICAL ACTIVATION BY RADIONUCLIDE SOLUTIONS	356
Arjana Ylli, Ilirjana Stamo, Laura Binxhija	INFLUENCE OF MUTAGENS ON DECORATIVE PLANTS	357
Arjana Ylli, Malvina Karcini, Laura Binxhija	INDUCED MUTAGENESIS APPLIED IN BEAN SEEDS	358
Orjeta Jaupaj, Ilirjana Stamo, Vladimir Malo	GENETIC IMPROVEMENT BY MEANS OF γ RAY TECHNIQUES IN <i>TRITICUM AESTIVUM</i>: RESULTS ON DAVID X MEC VARIETY	359
Orjeta Jaupaj, Ilirjana Stamo, Miranda Deda, Vladimir Malo, Nikollaq Bardhi	PLANT HEIGHT REDUCTION BY MEANS OF γ-RAY TECHNIQUES IN THREE GENOTYPES OF TRITICUM	360
Sergey Milyukov, Yulia Lysak, Georgy Panshin, Natalia Kharchenko, Sergey Golub, Timur Izmailov	CLINICAL RADIOBIOLOGY OF INFILTRATIVE LOW-GRADE GLIOMAS (GRADE II)	361
Elena V. Antonova, Natal'ya A. Orekhova, Vera N. Pozolotina	CORRELATION BETWEEN PHYSIOLOGICAL AND BIOCHEMICAL STATUS OF <i>SILENE LATIFOLIA</i> SEEDLINGS FROM KYSHTYM ACCIDENT (RUSSIA, URALS)	362

Stanislav Vasilyev, Alena Velichevskaya, Tatyana Vishnevskaya, Nikolay Skryabin, Andrey Belenko, Alena Agab, Alexey Sleptsov, Eugenia Sukhikh, Olga Gribova, Zhanna Startseva, Igor Lebedev	EFFECTS OF SPONTANEOUS γH2AX LEVEL ON GENE EXPRESSION IN HUMAN SOMATIC CELLS	363
Francisco Cutanda, Silvia Vargas Castrillón	A MATHEMATICAL APPROACH TO THE COMPOSITION OF TUMOUR CONTROL PROBABILITIES FOR HYPOFRACTIONATED SCHEDULES AND REPLANNED TREATMENTS	364
Ljudmila Lioshyna, Olga Bulko, Svitlana Pchelovska, Anastasiya Berestyayana, Darina Sokolova	EFFECT OF X-RAY ON PLANTS AND HAIRY ROOTS OF DIGITALIS PURPUREA L.	365
Elena Grigorkina, Grigory Olenev, Oleg Tarasov	ADAPTATION MECHANISM OF SMALL MAMMAL POPULATIONS TO ACUTE AND LOW LEVEL CHRONIC EXPOSURE	366
Milan Vujović, Danijela Maksin, Miloš Vujisić	MICRODOSIMETRIC SIMULATIONS FOR TESTING CELL RADIOSENSITIVITY	367
Valeria Hadjidekova, Jenja Vasileva, Emil Sultanov	THE EFFECT OF IONIZING RADIATION ON THE EMBRYO AND FETUS: REAL CASE STUDIES	368
Natalia Koltovaya, Nadya Zhuchkina, Natalia Shvaneva	PROTON INDUCTION OF GENE MUTATIONS	369
Nadezda Giliano, Leonid Konevega, Sergey Stepanov, Elena Zhurichkina, Sergey Akulinichev, Vasili Derzhiev, Sergey Chaushansky	EFFICACY OF YTTERBIUM SOURCES TO INDUCE LETHAL AND CYTOGENETIC DAMAGES IN HUMAN CELLS IN CULTURE	370
Gayle Woloschak, Sumita Raha, Tatjana Paunesku	NATIVE REGULATION OF MICRO RNA $MMU-MIR1195$ IS NECESSARY FOR RADIATION RESISTANCE IN MOUSE THYMIC LYMPHOMA CELL LINES	371
Tatjana Paunesku, Benjamin Haley, Gayle Woloschak	THE DOSE RATE EFFECTIVENESS FACTOR CALCULATIONS USING ANIMAL ARCHIVE DATA	372
Nikoghos Hovhannisyan, Anahit Karapetyan, Vahan Grigoryan	EVALUATION OF ENDOCRINE DISORDERS IN LIQUIDATORS OF CHERNOBYL NUCLEAR POWER PLANT	373
Svetlana Zunic, Ljubisa Rakic	THE PETKAU EFFECT IS A WAVE PHENOMENON	374
Anahit Karapetyan	IMMUNE SYSTEM ASSESSMENT OF CHERNOBYL NUCLEAR POWER PLANT DISASTER CONSEQUENCE LIQUIDATORS	375
Anna Antsiferova, Vyacheslav Demin, Pavel Kashkarov, Mikhail Kovalchuk	PROLONGED ADMINISTRATION BIOKINETICS OF Ag NANOPARTICLES IN MAMMAL ORGANISMS	376

Vyacheslav Demin,
Anna Antsiferova, Vladimir
Demin, Yurii Buzulukov, Pavel
Kashkarov

**SELENIUM BIOKINETICS STUDY BOTH BY TERMS
OF NUCLEAR-PHYSICAL METHOD
AND NUMERICAL MODELING**

377

**25 RADIOCHEMISTRY AND RADIATION
CHEMISTRY**

Anastasia Zlobina,
Leonid Rikhvanov,
Nanping Wang,
Irina Matveenکو

**THE NATURE OF HIGH SOIL RADIOACTIVITY
IN THE CHINESE PROVINCE OF GUANGDONG**

379

Berkan Cetinkaya, Suleyman Inan,
Yuksel Altas, Huseyin Tel

**THE SYNTHESIS OF HYDROUS (ZR-SI)O₂ SPHERES
BY THE SOL-GEL METHOD AND THE INVESTIGATION OF
COLUMN PARAMETERS FOR SIMULATED WASTE SOLUTIONS**

380

Renata Mikalauskiene,
Jonas Mažeika

**INVESTIGATION OF DIFFERENT RADIOCHEMICAL
PROCEDURES USING ANION EXCHANGE RESIN COLUMN
FOR DETERMINATION OF LEAD-210 BY LIQUID
SCINTILLATION COUNTER**

381

Nadezhda Shchepina,
Viktor Avrorin, Gennadii Badun,
Roman Shchepin

**NUCLEAR-CHEMICAL METHOD - NEW WAY FOR SYNTHESIS
OF TRITIUM LABELED RADIOTRACERS WITH FLUORINE
SUBSTITUTED HETEROCYCLIC STRUCTURE**

382

Zita Žukauskaitė,
Benedikta Lukšienė,
Olga Jefanova

**INVESTIGATION OF PU (III) SORPTION BY MINERALS
(WUSTITE/MAGNETITE AND HEMATITE) AND SOIL FROM
AQUATIC SOLUTIONS USING AM (III) AS AN ANALOGUE**

383

Violeta Pintilie,
Lucian-Puiu Georgescu,
Luminita Moraru,
Antoaneta Ene,
Catalina Iticescu

**NATURAL RADIOACTIVITY IN DRINKING WATER
FROM GALATI AND VRANCEA AREAS, ROMANIA**

384

Akos Banyasz,
Tiia Maria Ketola,
Luciana Esposito, Marion Perron,
Pascale Changenet-Barret,
Lara Martinez, Jean-Luc Ravanat,
Thierry Douki, Roberto Improta,
Dimitra Markovitsi

**UV-INDUCED ONE-PHOTON IONIZATION OF DNA
AND OXIDATIVE DAMAGE**

385

Yuriy Demidov,
Alexander Rusakov,
Andrei Zaitsevskii

**INTERACTION OF SUPERHEAVY ELEMENTS (COPERNICIUM
AND FLEROVIUM) WITH SELENIUM SURFACE: RELATIVISTIC
DENSITY FUNCTIONAL STUDY**

386

Branislava Tenjovic,
Nataša Todorovic, Jovana Nikolov,
Ivana Stojković, Jelena Spasojević

**DETERMINATION OF ⁹⁰Sr VIA CHERENKOV RADIATION
ON QUANTULUS 1220 LIQUID SCINTILLATION COUNTER
AFTER MICROWAVE DIGESTION PREPARATION OF MILK
SAMPLES**

387

Nikolai Chernorukov,
Oxana Nipruk, Elena Kostrova,
Chaplieva Kseniya

SYNTHESIS AND STUDY OF POTASSIUM URANATE

388

Jana Strišovská, Dušan Galanda, Silvia Dulanská, Jozef Kuruc	A SEPARATION PROCEDURE FOR THE DETERMINATION OF NEPTUNIUM AND PLUTONIUM ISOTOPES BY EXTRACTION CHROMATOGRAPHY	389
Nikolai Alov, Pavel Sharanov, Daria Filatova	TOTAL REFLECTION X-RAY FLUORESCENCE ANALYSIS OF ADVANCED OXIDE NANOMATERIALS	390
Nikolay Chernorukov, Nipruk Oxana, Kseniya Chaplieva, Elena Kostrova	SYNTHESIS AND STUDY OF PLUMBUM URANATE WITH GENERAL FORMULA $Pb(UO_2)_2O_2(OH)_2 \cdot H_2O$	391
Nagima Dzhakipbekova, Aziza Issa, Aisulu Alzhanova	RADIOPROTECTIVE TECHNOLOGY TO PRODUCE CONSTRUCTION MATERIALS FOR NUCLEAR POWER BASED ON THE SULFUR BINDING	392
Catalin Vancea, Maria Demeter, Ionut Calina, Anca Scarisoreanu, Elena Stancu, Eugenia Badita	SYNTHESIS OF SUPERABSORBENT XANTHAN-REDUCED OXIDE GRAPHENE HYDROGELS USING ELECTRON BEAM IRRADIATION	393
Anca Scarisoreanu, Maria Demeter, Catalin Vancea, Elena Stancu, Eugenia Badita, Ionut Calina	THE RADIATION SYNTHESIS AND CHARACTERIZATION OF THE NETWORK STRUCTURE OF COLLAGEN-PVP SUPERABSORBENT HYDROGELS	394
Laima Nedzveckienė, Benedikta Lukšienė	DETERMINATION OF PLUTONIUM SORPTION CAPACITY IN DIFFERENT TYPES OF SOIL	395
Jelena Krstic, Aleksandra Radosavljevic, Jelena Spasojevic, Momcilo Djuric, Dragutin Jovanovic, Srdjan Popovic, Zorica Kacarevic-Popovic	ANTIBACTERIAL Ag-POLY(VINYL ALCOHOL)/WS CHITOSAN HYDROGEL SYNTHESIZED BY GAMMA IRRADIATION	396
Alicia Negron-Mendoza, Sergio Ramos-Bernal, Maria Colin-Garcia, Alejandro Heredia	CHEMICAL EVOLUTION: AN APPROACH FROM RADIATION CHEMISTRY	397
Alicia Negron-Mendoza, Ellen Aguilar-Ovando, Jorge Cruz-Castañeda Cruz- Castañeda, Thomas Buhse	RADIOLYSIS OF AQUEOUS GLYCERALDEHYDES AT DIFFERENT IRRADIATION TEMPERATURES	398

26 RADIOECOLOGY

Aleksander Nikitin, Olga Shurankova, Olga Popova, Raisa Korol	THE QUANTITATIVE ASSESSMENT OF THE PERORAL INTAKE OF TRANSURANIUM ELEMENTS BY THE WILD HOOFED ANIMALS INHABITING THE POLESSIE STATE RADIATION- ECOLOGICAL RESERVE	400
Yuriy Kutlakhmedov, Irina Matveeva	THE ENVIRONMENTAL STANDARDIZATION OF RADIATION FACTORS FOR THE BIOTA ECOSYSTEMS	401

Yuriy Kutlahkmedov	RADIOECOLOGICAL RELIABILITY AND RADIOCAPACITY OF DIFFERENT ECOSYSTEMS	402
Kutlahkmedov Yuriy, Pchelovska Svitlana, Salivon Asya, Tonkal Ludmila	ISSUES OF SYNERGY AND ANTAGONISM OF RADIATION AND CHEMICAL FACTORS	403
Branislava Mitrović, Svetlana Grdović, Borjana Vranješ, Mihajlo Vićentijević, Jelena Ajtić, Darko Sarvan	RADIOECOLOGICAL INVESTIGATION IN THE ENVIRONMENT OF BELGRADE CITY, SERBIA	404
Borjana Vranjes, Branislava Mitrovic, Velibor Andric, Svetlana Grdovic	RADIOACTIVITY IN ENVIRONMENT OF STARA PLANINA MOUNTAIN IN AREA OF SUMMER SCHOOL FOR MOUNTAIN ANIMAL BREEDING	405
Miryana Varbeva, Petya Kovacheva	THE IMPACT OF RAPID WARMING ON THE BIOACCUMULATION OF RADIONUCLIDES AND THEIR TRANSFER WITHIN THE FOOD CHAIN	406
Miryana Varbeva, Petya Kovacheva	THE IMPACT OF SHARP TEMPERATURE SHIFT ON THE WATER-SOLUBLE FORMS OF TECHNOGENIC RADIONUCLIDES IN DIFFERENT SOIL TYPES	407
Peter Bossew, Giorgia Cinelli, Miguel Hernandez, Tore Tollefsen, Marc De Cort	GAMMA RADIATION FROM "RADON PEAKS" / ASSOCIATION WITH FACTORS RELATED TO GEOGENIC RADIATION SOURCES AND METEOROLOGY	408
Peter Bossew, Giorgia Cinelli, Tore Tollefsen, Marc De Cort	TOWARDS A EUROPEAN MAP OF TERRESTRIAL GAMMA RADIATION	409
Jelena Ajtić, Vladimir Đurđević, Darko Sarvan, Erika Brattich, Miguel A. Hernández Ceballos	BERYLLIUM-7 SPECIFIC ACTIVITY IN SURFACE AIR AND ITS CORRELATION WITH METEOROLOGICAL VARIABLES, SOLAR ZENITH ANGLE, AND NUMBER OF SUNSPOTS	410
Jelena Ajtić, Vladimir Đurđević, Darko Sarvan, Erika Brattich, Miguel A. Hernández Ceballos	ANALYSIS OF EXTREME BERYLLIUM-7 SPECIFIC ACTIVITIES IN SURFACE AIR	411
Marina Konstantinova, Benedikta Benedikta Lukšienė, Nikolaj Tarasiuk, Evaldas Maceika	ACCUMULATION OF CS ISOTOPES BY DIFFERENT ABOVE-GROUND-VEGETATION AFTER THE FUKUSHIMA DAIICHI NPP ACCIDENT	412
Tatiana Paramonova, Vladimir Belyaev	CS-137 VERSUS STABLE K IN ROOT UPTAKE FROM RADIOACTIVELY CONTAMINATED SOILS: FIELD OBSERVATIONS	413
Alexander Jr. Dvornik, Cheshik Igor, Alexander Dvornik	ASSESSMENT OF AIR POLLUTION BY ¹³⁷CS DURING FOREST FIRES	414
Dmytro Ganzha, Christina Ganzha	CHANGES IN FRACTAL DIMENSION OF <i>PHRAGMITES AUSTRALIS</i> LEAVES UNDER CHRONIC RADIATION EXPOSURE	415

Galina Lavrentyeva, Regina Shoshina, Boris Synzynys	APPLICATION OF ZONALITY CONCEPTUAL MODEL OF CHRONIC EFFECTS OF IONIZING RADIATION FOR STUDYING BEHAVIOR OF SR-90	416
Tatyana Tugay, Andrei Tugay	ADAPTATION OF HYPHOMYCETES TO CHRONIC IONIZING RADIATION	417
Sukwon Choi, Daeji Kim, Jungsuk Chae	THE BIOACCUMULATION FACTOR OF HEAVY METALS IN MARINE ORGANISMS FROM THE KOREAN COAST	418
Marya Kropacheva, Mikhail Melgunov, Irina Makarova	ISOTOPE CONTENTS AND TRANSFER FACTORS OF ¹³⁷CS AND ⁹⁰SR IN BIOGEOCENOSIS OF YENISEI RIVER FLOODPLAIN	419
Serpil Aközcan, Mücahit Yılmaz, Fatih Külahcı	DETERMINATIONS OF GAMMA EMITTING RADIONUCLIDES IN SOIL SAMPLES FROM THRACE REGION, TURKEY	420
Andrius Puzas, Rasa Gvozdaitė, Rūta Druteikienė, Justina Šapolaitė, Vida Juzikienė, Vidmantas Remeikis	PLUTONIUM ISOTOPIC RATIOS ANALYSIS IN ENVIRONMENTAL SOIL SAMPLES - A TECHNIQUE TO DETECT ARTIFICIAL NUCLEAR CONTAMINATION	421
Mikhail Melgunov	THE PROBLEM OF MOBILITY OF INDUCED RADIONUCLIDES IN CONTAMINATED ALLUVIAL SOILS OF THE YENISEI RIVER	422
Sergey Karpenko	RADIATION-EPIDEMIOLOGICAL STUDY OF THE INCIDENCE AND MORTALITY OF CARDIOVASCULAR DISEASE AMONG EMERGENCY WORKERS OF THE CHERNOBYL ACCIDENT	423
Ljiljana Janković Mandić, Ranko Dragović, Sonja Pisanjuk, Snežana Dragović	NATURAL RADIONUCLIDES IN THE SOIL OF SUBOTICA, SERBIA: THEIR DISTRIBUTION AND CORRESPONDING GAMA DOSE RATES	424
Igor Gretsky, Tetiana Shylo	THE USE OF LUMINOUS BACTERIA PHOTOBACTERIUM PHOSPHOREUM AS A BIOINDICATOR OF GEOMAGNETIC ACTIVITY	425
Alla Oudalova, Stanislav Geras'kin, Svetlana Pyatkova, Nina Dikareva, Sergey Kiselev	CYTO- AND GENOTOXICITY OF NATURAL WATERS IN THE VICINITY OF RADIOACTIVE WASTE STORAGE FACILITIES	426
Małgorzata Jakubiak, Magdalena Rykaczewska, Romuald Stęborowski, Grażyna Bystrzejewska- Piotrowska, Monika Asztemborska	ACCUMULATION OF CESIUM AND STRONTIUM BY MYCELIA OF <i>PLEUROTUS ERYNGII</i> IN THE PRESENCE OF ALUMINA NANOPARTICLES	427
Sladana Meseldžija, Jelena Đorđević, Ljiljana Janković Mandić, Antonije Onjia	POPULATION DOSES FROM TERRESTRIAL EXPOSURE IN THE VICINITY OF THE KOSTOLAC THERMAL POWER PLANT, SERBIA	428
Dejan Joković, Nikola Veselinović, Radomir Banjanac, Dimitrije Maletić, Vladimir Udovičić, Mihailo Savić, Marija Keržlin, Slavša Stošić	A STUDY ON NATURAL RADIOACTIVITY OF VARIOUS ENVIRONMENTAL SAMPLES FROM THE VICINITY OF THE OBRENOVAC POWER PLANT	429

Liubov Zelena, Tatyana Tugay, Andrei Tugay	GENETIC ANALYSIS OF <i>ASPERGILLUS VERSICOLOR</i> GROWING AT CHERNOBYL ZONE	430
Tatyana Tugay, Viktor Zheltonozhsky, Marina Zheltonozhskaya, Andrey Tugay, Leinid Sadovnikov	DECOMPOSING RADIOACTIVE HOT PARTICLES FOUND IN THE CHERNOBYL EXCLUSION ZONE BY MICROSCOPIC FUNGI <i>CLADOSPORIUM CLADOSPORIOIDES</i>	431
Dharmendra Kumar Gupta, Linda Hamann, Clemens Walther	DOES NANOMOLAR PLUTONIUM CONCENTRATION GENERATE OXIDATIVE STRESS IN <i>SOLANUM TUBEROSUM</i> L. (POTATO) PLANTS?	432
Alexander Bolsunovsky, Dmitry Demytyev, Tatiana Zotina, Mikhail Melgunov	THE EFFECT OF RADIOACTIVE PARTICLES ON THE YENISEI RIVER ECOSYSTEM	433
Miryana Varbeva, Petya Kovacheva	THE INFLUENCE OF THE SOIL ORGANIC MATTER ON THE MIGRATION ABILITY OF TECHNOGENIC RADIONUCLIDES IN DIFFERENT SOIL TYPES UNDER A SHARP TEMPERATURE SHIFT	434
Aleksander Egorkin, Aleksy Chasovskikh, Natalia Khamidullina, Dmitriy Zakharenko	THE IMPROVEMENT OF FOOD SHELF LIFE WITH IONIZING IRRADIATION	435
Dmitry Demytyev, Alexander Bolsunovsky, Roman Borisov, Sergey Kosinenko	SPATIAL DISTRIBUTION OF RADIONUCLIDES AND HEAVY METALS IN BOTTOM SEDIMENTS OF THE YENISEI RIVER	436
Mikhail Melgunov	TO THE PROBLEM OF THE MOBILITY OF INDUCED RADIONUCLIDES IN CONTAMINATED ALLUVIAL SOILS OF THE YENISEI RIVER	437
Natalia Shamal, Ekaterina Klementjeva, Sergei Gaponenko, Alexander Nikitin, Alexander Dvornik, Shuichi Okumoto, Shintani Masaki	INFLUENCE OF MICROBIOLOGICAL PREPARATION EMI ON STATE OF ¹³⁷CS IN SOIL	438
Lydia Bondareva	THE ESTIMATION OF THE TOXICITY AND GENOTOXICITY OF WATER, SEDIMENTS AND SUBMERGED MACROPHYTE <i>ELODEA CANADENSIS</i> OF THE YENISEI RIVER IN THE PRESENCE OR ABSENCE OF AMERICIUM-241	439
Pavel Sharagin, Elena Shishkina, Evgeny Pryakhin, Irina Popova, Denis Osipov	THE CONCENTRATION RATIO OF ¹³⁷CS IN THE BODY OF A FISH FOUND IN THE TECHA RIVER IN COMPARISON WITH THE RESULTS OF OTHER WATER BODIES	440
Ruslan Spirov, Raisa Korol, Alexander Nikitin	THE SUBSTANCE OF TRANSURANIC ELEMENTS IN <i>CORYNEPHORUS CANESCENS</i> AND <i>YACCINIUM MYRTILLUS</i> GROWING IN THE POLESYE STATE RADIATION ECOLOGICAL RESERVE	441

Ruslan Spirov, Raisa Korol, Alexander Nikitin	THE SUBSTANCE OF TRANSURANIC ELEMENTS IN <i>BETULA PENDULA</i> GROWING IN THE POLESYE STATE RADIATION ECOLOGICAL RESERVE	442
Ruslan Spirov, Raisa Korol, Alexander Nikitin	THE SUBSTANCE OF TRANSURANIC ELEMENTS IN <i>PINUS SYL VESTRIS</i> GROWING IN THE POLESYE STATE RADIATION ECOLOGICAL RESERVE	443
Jovana Nikolov, Tanja Petrović Pantić, Ines Krajcar Bronić, Nataša Todorović, Jadranka Barešić, Tamara Marković, Kristina Bikit, Milan Tomić, Ivana Stojković, Branislava Tenjović	ISOTOPES ^3H, $\delta^2\text{H}$ AND $\delta^{18}\text{O}$ IN GROUNDWATERS FROM VOJVODINA REGION	444
Inacio Martin, Anatoly Gusev, Mauro Alves	RADON PROGENY FALLOUT IN TROPICAL RAINFALLS	445
Inacio Martin, Anatoly Gusev, Mauro Alves	OBSERVATION OF RADON PROGENY NEUTRONS	446
Miodrag Krmar, Dragan Radnovic, Minucer Mesaros, Jan Hansman, Zarko Medic	SPATIAL DISTRIBUTION OF SOME RADIONUCLIDES IN MOSSES COLLECTED IN SERBIA	447
Ljiljana Gulan, Biljana Milenković, Biljana Vučković, Gordana Milić	MEASUREMENTS OF RADIOACTIVITY LEVELS IN THE SOIL SAMPLES FROM PRISTINA, KOSOVO AND METOHIJA, SERBIA	448
Nedžad Gradasević, Davorin Samek, Nedim Mujic	THE STUDY OF THE VERTICAL MIGRATION OF ^{137}CS IN THE CHAIN SOIL-GRASS	449
Yuriy Kutlakhmedov, Svitlana Pchelovska, Anastasia Salivon, Ludmila Tonkal	ISSUES OF SYNERGY AND ANTAGONISM OF RADIATION AND CHEMICAL FACTORS	450
Begy Robert-Csaba, Kelemen Szabolcs, Burghele Bety-Denissa	THE INVESTIGATION OF THE SEDIMENTATION RATE IN CUIBIDA AND ISAC LAKES FROM THE DANUBE DELTA (ROMANIA) BY USING ^{210}PB DATING METHODS	451
Mirjana Cvijovic, Srboljub Stankovic, Brankica Tanovic	VALIDATION METHOD FOR PESTICIDE RESIDUE AFTER GAMMA IRRADIATION	452
Magdalena Długosz-Lisiecka	UNUSUAL PO-210 AND PB-210 ACTIVITY RATIOS IN THE AIR	453
Milan Tanić, Goran Bačić, Ljiljana Janković Mandić	SPATIAL AND DEPTH DISTRIBUTION OF ^{137}CS IN SOIL AROUND "NIKOLA TESLA A" COAL FIRED POWER PLANT, SERBIA	454
Marija Janković, Dragana Todorović, Milica Rajačić, Nataša Sarap, Jelena Nikolić, Gordana Pantelić	STUDY OF RADIOACTIVITY IN ENVIRONMENT AROUND POWER PLANTS TENT A AND KOLUBARA DUE TO COAL BURNING FOR 2015	455

Milica Rajačić, Dragana Todorović, Jelena Krneta-Nikolić, Marija Janković, Gordana Pantelić, Nataša Sarap	RADIONUCLIDE LOADING INDICES (RLI) FOR ⁷BE AND ²¹⁰PB IN SERBIA IN 2015	456
Robert-Csaba Begy, Edina Reizer, Alida Timar Gabor, Ferenc Forray	DIFFERENT POTENTIAL SYSTEMATIC UNCERTAINTIES INVOLVED IN ²¹⁰PB DATING METHOD	457
Ines Krajcar Bronić, Bogomil Obelić, Jadranka Barešić, Nada Horvatinčić, Damir Borković, Borut Breznik, Aleš Volčanšek, Andreja Sironić	TEN YEARS OF MONITORING ¹⁴C ACTIVITY IN ATMOSPHERIC CO₂ AND BIOLOGICAL SAMPLES AROUND THE KRŠKO NUCLEAR POWER PLANT, SLOVENIA	458
Aleksandra Angeleska, Elizabeta Dimitrieska Stojkovik, Zehra Hajrulai-Musliu, Radmila Crceva Nikolovska, Biljana Dimzovska, Riste Uzunov	²²⁶RA, ²³²TH AND ⁴⁰K IN WHEAT SAMPLES WITH THE ESTIMATION OF THE INDEX OF RADIATION RISK IN THE SURROUNDING OF THE CITY OF SKOPJE (R. MACEDONIA)	459
Serpil Aközcan, Mehlike Beste Öztürk	ENVIRONMENTAL RADIONUCLIDE DETERMINATION AND RADIOACTIVITY EVALUATION OF SEDIMENT SAMPLES COLLECTED ALONG THE BÜYÜK MENDERES RIVER, TURKEY	460
Hanna Vasylyeva, Svyatoslav Vuchkan, Valeriy Yakovlev, Yuriy Kylivnyk	THE INFLUENCE OF GAMMA IRRADIATION ON THE PROPERTIES OF THE SURFACE OF INORGANIC SORBENTS	461
Olesya Symkanych, Sergiy Sukharev, Svetlana Delegan-Kokayko, Oleg Glukh	THE DISTRIBUTION OF HEAVY METALS AND GAMMA-ACTIVE NUCLIDES IN NATURAL OBJECTS	462
Anna Grodzinskaya, Sergey Syrchin, Vladimir Landin, Irina Dudka	RADIOACTIVE CONTAMINATION OF UKRAINIAN WILD MUSHROOMS	463

27 RADIOLOGY

Elisaveta Petrova	THE SIGNIFICANCE OF LUNG HRCT FOR THE EARLY DIAGNOSIS OF PNEUMOCONIOSIS	465
Mikhail Cherkashin, Alexey Serov, Natalia Berezina, Grigory Lyutyh, Denis Puchkov	CENTRAL VENOUS PORT CATHETER SYSTEM IMPLANTATION NAVIGATED BY MULTISPIRAL CHEST COMPUTER TOMOGRAPHY	466
Vladimir Kuplevatsky, Mikhail Cherkashin, Natalia Berezina, Nicolay Vorobyov, Alexey Mikhailov	INDICATIONS FOR MRI-GUIDED PROSTATE BIOPSY	467
Dragan Stojanov, Jelena Ignjatovic, Marija Dakovic Bjelakovic, Daniela Benedeto Stojanov, Miodrag Djordjevic, Nebojsa Ignjatovic	LOCALISATION, DIFFUSION-WEIGHT IMAGING AND APPARENT DIFFUSION COEFFICIENT IN PREOPERATIVE ASSESSMENTS OF BRAIN ABSCESSSES	468

Jelena Ignjatovic, Dragan Stojanov, Marija Dakovic Bjelakovic, Daniela Benedeto Stojanov, Miodrag Djordjevic, Nebojsa Ignjatovic	APPARENT DIFFUSION COEFFICIENT (ADC) AND LOCALIZATION IN DETERMINING SUBTYPES OF MENINGIOMAS	469
Marina Marković, Marina Petrović, Olga Petrović, Dragan Marković, Tomislav Nikolić, Vladimir Jurišić	HOW MAY PET/CT REALLY HELP IN THE EVALUATION OF THE PRESENCE OF METASTASES: THE CASE OF LIVER METASTASES WHICH IS VISUALIZED ON THE BASIS OF CT BUT NOT ON THE BASIS OF PET/CT TECHNIQUES	470
Dragana Nikolić, Vladimir Jurišić	CT FOR THE MONITORING OF OSTEOARTHRITIS: A RARE LOCALIZATION OF THE SHOULDER OF A BOY AGED 12 YEARS	471
Rastko Radović, Mirjana Perišić, Vladimir Jurišić	ULTRASOUND TO MONITOR THE SIZE OF THE GALLBLADDER DURING MEALS	472
Nikolay Sirakov, Irina Angelova, Athanas Todorov, Lubo Chervenkov, Vladimir Sirakov	CASES OF ABSCESSSES OF THE STERNOCLEIDOMASTOID MUSCLE	473

28 RADIOTHERAPY

Labinot Kastrati, Gazmend Nafezi, Gëzim Shehi	THE PENUMBRA OF IRRADIATIONS IN LINEAR ACCELERATORS, ITS USE IN RADIOTHERAPY OF CANCER DISEASES, NEGATIVE EFFECTS, AND THE POSSIBILITIES OF REDUCING THEM	475
Wojciech Bulski, Krzysztof Chelminski	NATIONWIDE AUDIT OF SMALL FIELD OUTPUT CALCULATIONS IN POLAND	476
Krzysztof Chelminski, Piotr Sobotka, Barbara Buczek, Ewelina Gruszczynska, Wojciech Bulski	A PHANTOM FOR BRACHYTHERAPY TREATMENT PLANNING SYSTEM VERIFICATION WITH THE ARCCHECK® DEVICE	477
Sergey Milyukov, Georgy Panshin, Natalia Kharchenko, Mikhail Kunda, Sergey Golub, Gadzhimurad Zapirova, Timur Izmailov	INFLUENCE OF DIFFERENT RADIOTHERAPY PARAMETERS ON OVERALL DISEASE / SPECIFIC SURVIVAL IN PATIENTS WITH LOW-GRADE GLIOMAS	478
Parvaneh Shokrani, Maryam Khorami	AN INVESTIGATION OF DOSIMETRIC CHARACTERISTICS OF COMPOSITE SHIELDS FOR ELECTRON THERAPY: A MONTE CARLO STUDY	479
Nicolay Vorobyov, Georgy Andreev, Anna Kalesnik, Andrey Lyubinsky	EARLY RESULTS OF HYPOFRACTIONATION COMBINED WITH WHOLE PELVIC IRRADIATION FOR HIGH-RISK PROSTATE CANCER	480
Mauro Valente, Rodolfo Figueroa	CONVERAY®: A DEVICE FOR CONVERGENT BEAM RADIOTHERAPY	481

Ioana Scarlatescu, Aurel Chis, Marius Spunei, Calin Avram	DOSE DISTRIBUTION IN ARCCHECK UNDER THE INFLUENCE OF POSITIONING ERRORS	482
Vladimir Klimanov, Alexey Moiseev, Maria Kolyvanova	THE DOSE KERNELS FOR PENCIL BEAM AND DIFFERENTIAL PENCIL BEAM OF PHOTONS WITH THE SPECTRUM OF THE TREATMENT MACHINE WITH ⁶⁰CO SOURCE AND THEIR ANALYTICAL APPROXIMATIONS	483
Tereza Hanušová, Simona Buryšková	IMPACT OF CALIBRATION CURVE PRECISION ON RESULTS OF IMRT VERIFICATION WITH EBT₃ FILMS	484

29 RADON AND THORON

Francesco Cardellini, Marco Capogni, Lina Quintieri	THE ITALIAN THORON REFERENCE MEASUREMENT SYSTEM	486
Martin Schläger, Khatam Murtazaev, Bakhtovar Rakhmatuloev, Petro Zoriy, Burkhard Heuel-Fabianek	RADON EXHALATION OF THE URANIUM TAILINGS DUMP DIGMAI, TAJIKISTAN	487
Mostafa Mostafa, Maxim Vasyanovich, Michael Zhukovsky	PROTOTYPE OF RADON CONCENTRATION STANDARD WITH CLOSED SYSTEM	488
Ana Sofia Silva, Maria de Lurdes Dinis, Alcides Pereira	ASSESSMENT OF INDOOR RADON LEVELS IN PORTUGUESE THERMAL SPAS	489
Vladimir Udovicic, Dimitrije Maletic, Maja Eremic Savkovic, Gordana Pantelic, Predrag Ujic, Igor Celikovic, Dragoslav Nikezic, Vladimir Markovic, Per Nilsson, Sofija Forkapic, Vesna Arsic, Jovana Ilic	FIRST NATIONAL INDOOR RADON SURVEY IN SERBIA	490
Petr Miklyaev, Tatiana Petrova, Albert Marennyy, Andrey Tsapalov, Sergey Kiselev	EXPERIENCE IN MAPPING GEOGENIC RADON POTENTIAL IN RUSSIA	491
Albert Marennyy, Petr Miklyaev, Andrey Tsapalov, Tatiana Petrova, Sergey Kiselev	ASSESSMENT OF POTENTIAL RADON HAZARD OF BUILDING SITES IN RUSSIA	492
Gazmend Nafezi, Labinot Kastrati, Gëzim Hodolli, Sehad Kadiri, Margarita Kuqali, Meleq Bahtijari	RADON ACTIVITY CONCENTRATIONS IN UNDERGROUND WORKPLACES OTHER THAN MINES IN KOSOVO	493
Judith Pena Dembo, Csaba Szabo, Zsuzsanna Szabo, Peter Volgyesi	SEASONAL AND SPATIAL VARIATION OF RADON AND THORON IN ANGOLAN ADOBE HOUSES	494
Caner Taşköprü, Mutlu Ichedef, Muslim Murat Sac	DETERMINATION OF RADON CONCENTRATIONS AND DIFFUSION COEFFICIENTS IN SOILS OF THE KÜÇÜK MENDERES BASIN	495
Murat Bölükbaş, M. Murat Saç, Caner Taşköprü	DETERMINATION OF INDOOR RADON CONCENTRATION IN MANISA-SOMA MINE	496

Vladimir Udovicic, Dimitrije Maletic, Radomir Banjanac, Dejan Jokovic, Gordan Nisevic, Vesna Manic, Goran Manic	IN-FIELD INTERCOMPARISON INDOOR RADON MEASUREMENTS IN RADON-PRONE AREAS OF NISKA BANJA, SERBIA	497
Ivana Stojković, Jovana Nikolov, Nataša Todorović	PSA DISCRIMINATOR INFLUENCE ON ²²²Rn EFFICIENCY DETECTION IN WATERS BY LIQUID SCINTILLATION COUNTING	498
Martin Bulko, Karol Holý, Žofia Pohronská, Monika Müllerová	ESTIMATION OF THE EFFECTIVE DOSE FROM NATURAL SOURCES IN THE VICINITY OF MOCHOVCE NUCLEAR POWER PLANT, SLOVAKIA	499
Biljana Vuckovic, Ljiljana Gulan, Biljana Milenkovic, Jelena Stajic, Gordana Milic	INDOOR RADON AND THORON CONCENTRATIONS IN SOME MUNICIPALITIES IN SOUTHERN PART OF SERBIA	500
Mukesh Prasad, Peter Bossew, Rosaline Mishra, R.C. Ramola	THE STUDY OF RADON, THORON, ATTACHED/UNATTACHED PROGENY, UNATTACHED FRACTIONS, EQUILIBRIUM FACTORS AND THE RADIATION DOSES IN THE INDOOR ENVIRONMENT OF GARHWAL HIMALAYA	501
Janja Vaupotič, Ana Brodar	EXPOSURE TO RADON AND NANO AEROSOL IN DWELLING OF HIGH RADON LEVEL	502
Coretchi Liuba, Plavan Irina, Bahnael Ion, Virlan Serghei, Cojocari Alexandra, Streil Thomas	CONTROL OF PUBLIC EXPOSURE TO RADON IN REPUBLIC OF MOLDOVA	503
Leonid Chunikhin, Artur Chekhovskii, Denis Drozdov	MAPPING RADON RISK ON TERRITORY OF REPUBLIC OF BELARUS	504
Abd Elmoniem Ahmed Elzain	DOSE ASSESSMENT OF INHALATION EXPOSURE TO INDOOR RADON IN SUDAN USING SSNTD₅	505
Amela Kasić, Amira Kasumović, Feriz Adrović, Muhamed Hodžić	RADON ACTIVITY CONCENTRATION IN DRINKING WATER IN TUZLA CITY, BOSNIA AND HERZEGOVINA	506
Adriana Ion	THE ESTIMATION OF ANNUAL EFFECTIVE DOSE FROM INDOOR RADON AND RADON CONCENTRATION MEASUREMENTS IN THE GEOLOGICAL INSTITUTE OFFICE BUILDING, BUCHAREST, ROMANIA	507
Magdalena Długosz-Lisiecka, Jerzy Olszewski	INTERCOMPARISON OF SELECTED MONITORS FOR Rn-222 ACTIVITY DETERMINATION IN THE AIR	508

30 OTHER TOPICS

Paul Atta Amoah, Victus Horlu, Ernest Sarhene	THERMAL CONDUCTIVITY OF REFRACTORY BRICK MATERIALS USING TRANSIENT HOT WIRE METHOD OF COMPARISON	510
---	---	-----



INTERACTION OF SOME POLYOXOTUNGSTATES WITH ACETYLCHOLINESTERASE

Mirjana Čolović¹, Vesna Vasić¹, Ulrich Kortz², Danijela Krstić³

1 Department of Physical Chemistry, Institute of Nuclear Sciences, University of Belgrade, Belgrade, Serbia

2 Department of Life Sciences and Chemistry, Jacobs University, Bremen, Germany

3 University School of Medicine, Institute of Medical Chemistry, University of Belgrade, Belgrade, Serbia

Polyoxometalates (POMs) are polyanionic oligomeric aggregates of transition metal ions, such as tungsten, molybdenum, vanadium, etc. held together by oxygen bridges, with a high density of negative charge. They are relatively stable, some even highly stable in aqueous solutions at biological pH values. In addition to applications in catalysis, separations, analysis, and as electron-dense imaging agents, some of these complexes have been shown to exhibit biological activity *in vitro* as well as *in vivo* ranging from anti-cancer, antibiotic, and antiviral to antidiabetic effects. Recent investigations reported some polyoxotungstates as reversible inhibitors of acetylcholinesterase (AChE), making them potential anti-Alzheimer's drugs.

AChE is a serine hydrolase mainly found at neuromuscular junctions and cholinergic brain synapses. Its principal biological role is the termination of impulse transmission at cholinergic synapses. Reversible inhibitors of AChE mostly have therapeutic applications, while toxic effects are associated with irreversible AChE activity modulators. Reversible inhibitors play an important role in the pharmacological manipulation of the enzyme activity, and have been applied in the diagnostic and/or treatment of various diseases such as: myasthenia gravis, AD, postoperative ileus, bladder distention, glaucoma, as well as antidote to anticholinergic overdose.

The effect of four new synthesized polyoxotungstates soluble in water on AChE activity was studied. AChE is purified from electric eel and commercially available. The enzyme was treated *in vitro* with polyoxotungstates in the concentration range from 1×10^{-7} to 1×10^{-3} mol/L at 37°C for 15 minutes, and the incubation time was 12 min. The obtained dependence remaining enzyme activity vs. the inhibitor concentration fitted the sigmoidal function. IC_{50} values, indicating the enzyme sensitivity toward the inhibitor and the inhibitory capacity of the analyzed compounds, were determined from the inhibition sigmoidal curves. $Na_{10}[H_2W_{12}O_{42}] \times 27H_2O$ did not markedly reduce AChE activity at the highest investigated concentration (1 mmol/L). $K_7[SiV_3W_9O_{40}] \times 10H_2O$ exhibited a weak inhibitory potential, causing 50% decrease in the enzyme activity at 5×10^{-4} mol/L. However, AChE sensitivity in the presence of $K_7[Ti_2PW_{10}O_{40}]$ was several hundred times higher, reaching IC_{50} at 1.15×10^{-6} mol/L. Furthermore, $(NH_4)_{14}[NaP_5W_{30}O_{110}] \times 31H_2O$ demonstrated the strongest capacity to inhibit AChE. In the presence of its low concentration of 2×10^{-8} mol/L, the enzyme activity was noticeably reduced related to the control value (obtained without inhibitor), while 50% decrease in AChE activity was achieved at 3.8×10^{-7} mol/L.



rad-conference.org