

# INTERNATIONAL CONFERENCE ON RADIATION APPLICATIONS

In Physics, Chemistry, Biology, Medical Sciences, Engineering and Environmental Sciences

September 16-19, 2019 | 88 Rooms Hotel | Belgrade | Serbia



## CONFERENCE PROGRAMME

### Sunday, September 15

15:00 - 20:00

Registration

Registration desk

### Monday, September 16

08:00 - 18:30

Registration

Registration desk

09:00

Official Opening

Room A

**Plenary Session**

Invited lectures

Chairperson: **Gregor Kramberger**

Room A

09:15

S. Landsberger, **Radioactivity in the oil exploration sector**

09:45

R. Ivkov, **Abscopal effects of radiation and nanoparticle hyperthermia with immune checkpoint inhibitor therapies**

10:15

Sponsor presentation: **DG PLASMA LIMITED**



11:00 - 11:30

Refreshments

**Oral Session**

Chairperson: **Sheldon Landsberger**

Room A

11:30

B. Kozłowska, A. Walencik-Łata, T. Przylibski, **Natural radioactivity in waters in selected regions of uranium ore mining in Poland**

11:50

C.-M. Kang, M. Liu, P. Koutrakis, **Indoor and outdoor origins contributing to indoor exposure to radioactive alpha activities in occupied homes**

12:10

E. Nazarov, A. Vasilyev, A. Ekin, **Tritium and carbon-14 in releases of nuclear reactor facilities of various types**

12:30

A. Karmakar, A. K. Gourishetty, A. Kelkar, **Comparison of energy response function of stilbene, BC501 and EJ309 neutron-gamma detection system**

12:50

E. Hamed Ghanim, N. Emad Khaled, A. Rashad El-Sersy, **Study of photo-neutron dosimetry spectrum using NTDs**

**Oral Session**Chairperson: **Robert Ivkov****Room B**

11:30

Z. Szefliński, M. Filipek, J. Gotlib, U. Kaźmierczak, **Radiobiological research and dosimetry using a flat alpha source**

11:50

V. Panteleev et al., **The development of high temperature and mass-separation methods for selective production of medical radionuclides**

12:10

A. Anees Ahmed et al., **Study of proton and photon-induced reactions on nat-Mo**

12:30

A. Tsygankova et al., **Pre-clinical analysis of boron neutron capture therapy of cancer****Oral Session**Chairperson: **Marko Zavrtanik****Room A**

15:00

P. Costa et al., **A compact electronic system for a photodiode neutron detector**

15:20

B. Kocaman, M. Köprü, M. Harmandalı, E. Yılmaz, **Development of radiation detector with three different sensors for space applications**

15:40

M. Lunardon et al., **A novel He<sup>3</sup>-free detector for thermal neutrons to be used for hydrological observations: Limitations and emerging opportunities**

16:00

F. Dachs, **Radiation hard Monolithic CMOS sensors with small electrode size for the ATLAS experiment in the HL-LHC**

16:20

A. Jaksic, N. Vasovic, S. Stankovic, R. Duane, **Comprehensive characterisation of Tyndall National Institute RADFETs for commercial applications in various fields**

16:40

N. Tekin, F. Sarimli, Z. A. Sezer, E. Yilmaz, **Electronic reader design with RADFET (p-MOSFET) dosimeter sensor**

17:00 - 17:30

**Refreshments**

17:30 - 19:00

**Poster Sessions****Room A**Chairpersons: **Beata Kozłowska, Alexandra Ioannidou**

- M1** T.-E. Kwon, W.-H. Ha, Y. W. Jin, **Uncertainties in internal dose assessment for intake of tritiated water**
- M2** J. Marek et al., **A novel class of small molecular inhibitors with radioprotective properties**
- M3** L. Madi, G.-M. Sordi, E. Araújo, **Nuclear state liability for damage resulting from nuclear activities**
- M4** M. Wrzesien, L. Krolicki, L. Albinia, J. Olszewski, **Advisability of eye lens dosimetry in nuclear medicine**
- M5** E. H. Ghanim, A. Salman, S. Harb, **Radiological risk assessment of phosphate mining in El-Sebaiya locality, Aswan zone, Egypt**
- M6** D. Zivkovic, N. Antovic, **Lung cancer incidence and cancer risk from radioactivity – some data for the capital of Montenegro**
- M7** N. Antovic, N. Svrkota, **Evaluation of radioactivity in Montenegro soil using a statistical approach**
- M8** I. Antović, D. Šuković, S. Andjelić, N. Svrkota, **Heavy metals and radionuclides in muscles of fish species in the South Adriatic – Montenegro**
- M9** Y. Sarhan, W. M. Badawy, M. V. Frontasyeva, W. Arafa, A. A. Hussein, H. El Samman, **On the use of neutron activation analysis to probe the air pollution using plant biomonitoring – Egypt**
- M10** T. Yoshihara, V. Yoschenko, H. Matsumura, **Interception effect of radiocesium by forests after the Fukushima nuclear accident**

- M11 R. Druteikienė et al., **Using the  $^{14}\text{C}$  activity measurements in tree rings near Ignalina Nuclear Power Plant to examine dilution peculiarities of the gaseous releases from the NPP**
- M12 Đ. Stratimirović, D. Sarvan, M. A. Hernández-Ceballos, J. Ajtić, **Scaling properties of the beryllium-7 activity concentrations in the surface air in Feno-Scandinavia**
- M13 J. Ajtić et al., **Comparison of the beryllium-7, lead-210 and caesium-137 activity concentrations in the surface air along  $45^\circ\text{N}$  in Serbia and Slovenia**
- M14 K. Kalneniece et al., **Response of *Lactobacillus* spp. in different physiological states to the oxidative stress induced by  $\text{H}_2\text{O}_2$  and ionizing radiation**
- M15 A. Marchenko, K. Mamatkulov, A. Gur'ev, K. Vereshchagin, A. Volkov, G. Arzumanyan, **Raman spectroscopy of NETosis: Search for spectral biomarker**

20:00 - 22:00

**Welcome cocktail**  
88rooms Hotel

## Tuesday, September 17

08:00 - 18:30

**Registration**

**Registration desk**

**Oral Session**

Chairperson: **Choong-Min Kang**

**Room A**

08:00

G. Kramberger et al., **Development of MOS-FET dosimetry for high radiation environments**

08:20

S. Abubakar, H. Karaçali, A. Aktağ, E. Yılmaz, **Stacked-NürFETs fabrication and characterization**

08:40

K. F. Oguz, M. Yüksel, **Determination of minimum detectable dose and the effect of different filters on TLD 100H main thermoluminescence peak**

09:00

E. Yılmaz, E. Doğancı, F. Ahmadov, G. Ahmadov, A. Sadıgov, S. Suleymanov, **Electrical characteristics and alpha particle detection performance of newly developed pin photodiode**

09:20

E. Zabelina et al., **Optical characteristics of as-grown and annealed  $\text{Gd}_5\text{Al}_2\text{Ga}_3\text{O}_{12}:\text{Ce}$  crystals under electron irradiation**

09:40

O. Yılmaz, E. Yılmaz, **Co-60 gamma irradiation effects on the crystallographic, morphological and electrical characteristics of  $\text{Eu}_2\text{O}_3$  thin films**

**Oral Session**

Chairperson: **Zygmunt Szepliński**

**Room B**

08:40

T. Paunesku, A. Zander, G. Woloschak, **Gamma and neutron irradiated animal archive: Evaluation of cancer incidence**

09:00

T. Paunesku, G. Woloschak, **Radiation biology models arising from irradiated animal studies**

09:20

A. Nozdracheva, R. Ushakov, N. Pleskach, M. Kuranova, **Analysis of the capabilities of the programs Fiji, IPLab and DARFI in the study of DNA repair abilities in the cells of patients with a mosaic form of ataxia telangiectasia**

09:40

R. Vazirov, S. Sokovnin, M. Balezin, A. Krivonogova, **Analysis of radiation effects of irradiated chicken eggs and meat with high-energy nanosecond electron beams**

10:00 – 10:30

**Refreshments**

	<b>Plenary Session</b> <b>Invited lectures</b> Chairperson: <b>Gayle Woloschak</b>	<b>Room A</b>
10:30	O. Ciraj-Bjelac, <b>Current challenges in radiation protection in medicine</b>	
11:00	A. K. Larsen, <b>The vascular tumor microenvironment: new challenges and therapeutic targets</b>	
	<b>Oral Session</b> Chairperson: <b>Banu Ozden</b>	<b>Room A</b>
11:30	S. Oztel, S. Kaya, Z. A. Sezer, E. Budak, E. Yilmaz, <b>Sensing characteristics of SnO<sub>2</sub> thin film gas sensor</b>	
11:50	A. Kahraman, B. Morkoc, A. Mutale, U. Gurer, E. Yilmaz, <b>Irradiation effect on Er<sub>2</sub>O<sub>3</sub>/n-Si structure under high gamma dose</b>	
12:10	U. Gurer, E. Yilmaz, <b>Co-60 Gamma radiation influences on the electrochemical, physical and electrical characteristics of rare-earth dysprosium oxide (Dy<sub>2</sub>O<sub>3</sub>)</b>	
12:30	R. Lök, H. Karacali, E. Yilmaz, <b>Possible usage of the temperature sensor structure as a dosimeter</b>	
12:50	E. Budak, S. Hizarci, E. Yilmaz, <b>Recycling of hazelnut shell: Synthesis of boron carbide by carbothermic reaction</b>	
	<b>Oral Session</b> Chairperson: <b>Annette Larsen</b>	<b>Room B</b>
11:30	S. V. Chulkova, <b>Tumor stem cells</b>	
11:50	V. Jurisic, M. Kostic, J. Todosijevic T. Dzopalic, <b>Results for immunomagnetic cell separation based on different protocols and magnetic force</b>	
12:10	V. Kuplevatskiy, D. Kuplevatskay, <b>Possibilities of MR DTI for the planning of neuro-saving operations in local prostate cancer</b>	
12:30	Ö. Mermut, E. Arslan, <b>Case Report: Synchronous breast and cervical cancer togetherness</b>	
12:50	S. Shubeska Stratrova, D. Spasovski, <b>Age increase and weight reduction effects on bone mineral density and content</b>	
	<b>Panel Discussion</b> Moderators: <b>Aleksandar Jaksic, Ercan Yilmaz</b>	<b>Room A</b>
16:00	<b>MOSFET based radiation detectors: Current status and where do we go from here?</b>	
	<b>Oral Session</b> Chairperson: <b>Vladimir Jurišić</b>	<b>Room B</b>
15:40	S. Despotović et al., <b>Remodelling of collagen fibers in the uninvolved human colon mucosa 10 cm and 20 cm away from the malignant tumor</b>	
16:00	S. Hausdorfer, G. Rosca, <b>A new concept for skin rejuvenation and skin repair and acne management. Fluorescence via eosine, safran and blue light</b>	
16:20	E. Arslan, <b>Multiple metastatic basal cell carcinoma (MMBCC): Role and usefulness of 18FDG-PET and Tc 99m - MDP bone scan in locating metastatic foci - case report</b>	
16:40	E. Arslan, T. Aksoy, <b>18FDG PET-CT findings in a case with cervix adenocarcinoma</b>	
17:00 – 17:30	<b>Refreshments</b>	

17:30 - 19:00

### Poster Sessions

Chairpersons:

Anna Wysocka-Rabin, Sanja Despotović

Room A

- T1
- T2 S. Nakamura, **Variation of oblique fissure of the right lung on sagittal Computed Tomography**
- T3 M. Đokić Lišanin, V. Jurišić, U. Golubović, S. Radivojević, **Analysis and change of vitamin status 25 (OH) D<sub>3</sub> in relation to the gender and age of patients from Kragujevac and the environment during the change of seasons**
- T4 J. Mrđanović, S. Šolajić, B. Srđenović Conić, V. Bogdanović, D. Karaba Jakovljević, V. Jurišić, **Does chronic low dose exposure to ionizing radiation and antineoplastic drugs of hospital workers lead to increased micronuclei frequency, oxidative stress and changes in complete blood count?**
- T5 V. Stojiljković et al., **Peroxide scavenging enzymes and lipid peroxidation in children affected by celiac disease**
- T6 Lj. Gavrilović, S. Dronjak, S. Glišić, V. Stojiljković, **Treadmill running changes gene expression of catecholamine biosynthetic enzymes only in the left adrenal medulla of adult rats**
- T7 N. Popović et al., **Interrelationship of prefrontal brain-derived neurotrophic factor and neuroendocrine system during chronic restraint stress**
- T8 Lj. Gavrilović, M. Senčanski, D. Radošević, S. Glišić, **In silico screening for GSK-3 $\beta$  inhibitors as potential radioprotectors**
- T9 D. Spasovski, S. Shubeska Stratrova, **Accuracy of functional methods for detecting coronary artery disease with asymmetric dimethylarginine (adma), myocardial perfusion scintigraphy, or both as shifted test in detecting asymptomatic endothelial dysfunction in patients with systemic lupus erythematosus**
- T10 E. T. Sarcan, A. Tas, M. Silindir-Gunay, A. Yekta Ozer, S. Colak, B. Hekimoglu, **ESR Investigation of X-ray exposed pharmaceuticals**
- T11 H. M.H. Zakaly, M. Mostafa, M Zhukovsky, **Comparison between two labelled EDTMP radiopharmaceuticals with <sup>153</sup>Sm and <sup>177</sup>Lu**
- T12 M. Paluch-Ferszt, B. Kozłowska, M. Dybek, **Dose in the HDR brachytherapy for gynecological cancer with the use of thermoluminescence dosimetry**
- T13 Y. N. Kim, H.-M. Joo, I. J. Lee, **A novel method to improve learning efficiency of artificial neural network algorithm to estimate dose distribution for radiation treatment**
- T14 A. Tsukanava, V. Shakhouskaya, K. Fabusheva, N. Veyalkina, **Changes of reproductive parameters of D. melanogaster females under the influence of Wi-Fi EMR router at different stages of development**
- T15 A. Tsukanava, V. Shakhouskaya, K. Fabusheva, N. Veyalkina, **Evaluation of fertility of D. melanogaster individuals of the first-third generation contained in the conditions of constant influence of EMR of Wi-Fi router**
- T16 N. Puzan, G. Gorox, I. Cheslyk, V. Shakhouskaya, **The influence of electromagnetic fields of anthropogenic origin on the molecule of bovine serum albumin**

20:00

**Visit to the Historical Museum of Serbia**

Nikola Pasic Square 11

## Wednesday, September 18

08:00 - 18:00

**Registration**

**Registration desk**

**Oral Session**

Chairperson: **Tatjana Stevanovic**

**Room A**

08:40

**Topical keynote talk:** E. Suraud, M. Dinh, P.-G. Reinhard, **Dynamics of irradiation: From molecules to nano-objects and from material science to biology**

09:10

E. Zabelina, N. Kozlova, O. Buzanov, A. Kozlova, P. Lagov, Yu. Pavlov, V. Stolbunov, **Optical characteristics of  $\text{La}_3\text{Ga}_{3,5}\text{Ta}_{0,5}\text{O}_{14}$  and  $\text{Ca}_3\text{TaGa}_3\text{Si}_2\text{O}_{14}$  crystals under electron and proton irradiation**

09:30

O. Zlygosteva, S. Sokovnin, V. Ilves, **Methods for managing textural properties of nanopowders to create a drug delivery system based on  $\text{SiO}_2$ ,  $\text{SiO}_2\text{-MnO}_2$**

09:50

S. Sokovnin, M. Kiseleva, M. Balezin, **Production and characterization of  $\text{Al}_2\text{O}_3\text{+Ag}$  composite nanopowders**

10:10

L. Rubinjoni, S. Stanković, K. Karadžić, B. Lončar, **The effect of Co-60 gamma irradiation on coal fly-ash geopolymer set times**

**Oral Session**

Chairperson: **Olivera Ciraj-Bjelac**

**Room B**

08:10

D. Pap, **Clinical significance of accreditation standards in laboratory for radioactivity application and diagnostics**

08:30

J. Parga, S. Landsberger, **Comparison of computational and experimental dose rates in neutron activation analysis facilities**

08:50

I. Okeme, **Characterisation of radioactive particles in coal ash via electron microscopy and synchrotron-based techniques**

09:10

T.-E. Kwon et al., **Personalized dose assessment for a patient with incompletely blocked thyroid in iodine misadministration accident**

09:30

K. F. Oguz, Y. Yahsi Celen, B. Erdurmus Tirpanci, M. Yuksel, M. Topaksu, O. Eroglu Ermis, **Investigation of integral dose in pelvic region using different planning treatment techniques**

09:50

A. Wysocka-Rabin, **Physical and technical aspects of intraoperative electron radiation therapy: Future perspectives**

10:10

B. Ile, M. Spunei, S. Negru, I. Malaescu, C. Marin, **Measurements of the radiation attenuation in bolus materials with silicone based rubber for applications in radiotherapy**

10:30 – 11:00

**Refreshments**

**Plenary Session**

**Invited lectures**

Chairperson: **Peter Bossew**

**Room A**

11:00

A. Ioannidou, **Radioactive aerosol particles in different environments and under different meteorological conditions**

11:30	S. K. Sahoo, N. Kavasi, <b>Thermal ionization mass spectrometry measurement of <math>^{90}\text{Sr}</math> as a challenge in Fukushima samples</b>
	<b>Oral Session</b> Chairperson: <b>Toshihiro Yoshihara</b> <span style="float: right;"><b>Room A</b></span>
12:00	P. Bossew et al., <b>The Ruthenium-106 event, September-October 2017: Review and open questions</b>
12:20	R. Mikailova, A. Panov, D. Kurbakov, <b>Radioecological monitoring of aquatic ecosystems in the vicinity of Rooppur NPP (People's Republic of Bangladesh)</b>
12:40	B. Ozden, C. Brennan, S. Landsberger, <b>Environmental risk assessment of bauxite residue by determining toxic elements and natural radionuclides</b>
13:00	P. Bossew, <b>The Metro radon project as support for the implementation of the Basic Safety Standards</b>
13:20	T. Hailat, B. Al-Bataina, B. Madas, <b>Measurement of radon and thoron concentration levels in Disi soil (in Jordan) using CR-39 detectors</b>
13:40	A. Jomehzadeh, P. Mehnati, V. Doostmohammadi, <b>Rn-222 concentration measurement and estimation of the annual effective dose due to Inhalation of radon gas in the vicinity of hot springs in Kerman province</b>
	<b>Panel Discussion</b> Moderator: <b>Banu Ozden</b> Introductory speakers: <b>Peter Bossew, Alexandra Ioannidou, Olivera Ciraj-Bjelac, Sarat K. Sahoo</b> <span style="float: right;"><b>Room A</b></span>
15:30	Nuclear incidents/accidents from 1950's to now
17:00 - 17:30	<b>Refreshments</b>
17:30 - 19:00	<b>Poster Sessions</b> Chairpersons: <b>Olga Mutere, Sergey Sokovnin</b> <span style="float: right;"><b>Room A</b></span>
W1	A. Singh, M. Kumar Gupta, A. S. Dhaliwal, <b>Measurement of LIII sub-shell jump ratio, jump factor and associated parameters of Pb using Bremsstrahlung method</b>
W2	A. C. Iglesias Rodrigues, Tufic Madi Filho, Davilson Gomes da Silva, <b>Core modeling of the research reactor IEA-R1 with the MCNP-6.2 computational code</b>
W3	T. Madi Filho, M. da Conceição Costa Pereira, J. R. Berretta, L. Faustino Tomaz, M. Nieri Madi, <b>Study and development of neutron detectors using doped CsI crystals</b>
W4	M. da Conceição Costa Pereira, T. Madi Filho, J. R. Berretta, L. Faustino Tomaz, M. Nieri Madi, <b>Optical properties and radiation response of Li ion-doped CsI scintillator crystal</b>
W5	J. Holeček, P. Otáhal, <b>Utilization of wipe methods to determine the areal activity of selected surfaces of the urban infrastructure</b>
W6	N. Kržanović, A. Röttger, V. Morosh, M. Luchkov, S. Neumaier, <b>CdZnTe solid-state detector characterisation for its use as a spectro-dosimeter</b>
W7	E. Artnak, W. Charlton, S. Landsberger, Colin Brennan, <b>Assessment of elemental B content in industrial diamonds using PGAA and Co, Fe, Ni, Cr, Mn and Si using thermal and epithermal NAA with Compton suppression</b>
W8	E. Yilmaz, Z. Abidin Sezer, <b>Novel reader circuit design for PIN photodiodes</b>
W9	A. Toikka, N. Kamanina, <b>Unique approaches to the optimization of liquid crystal material orientation</b>
W10	R. Dagher, T. Stevanovic, V. Landry, <b>The use of Mössbauer spectroscopy for the analysis of products formed by the reaction of reactive dyes on wood's surface</b>

- W11** N. Puzan, I. Chesnyk, V. Shakhouskaya, **Efficiency of using the fluorescent method for the determination of conformational changes of bovine serum albumin in water quality assessment**
- W12** P. B. Kasangana, T. Stevanovic, **Application of 2D NMR spectroscopy for structural elucidation of complex polysaccharide from sugar maple bark**
- W13** R. Mukhamadiyarov, V. Kanygin, A. Tsygankova, **Using the luminescent dyes for the assessment of liposome transport properties as the boron carrier for boron neutron capture therapy**
- W14** E. Fabiszewska, A. Wysocka-Rabin, K. Pasicz, M. Jarosz, W. Skrzyński, I. Grabska, **Applying MTF, NPS and DQE calculations to assess the exposure conditions in digital mammography studies**

19:00	Conference Closing	Room A
20:30 - 01:00	Conference Gala Dinner, Dva Jelena Restaurant, Skadarlija	

## Thursday, September 19

10:30 - 15:00	Conference Excursion Cruise on Danube and Sava
---------------	---

### VIRTUAL SESSION

#### Radiobiology

O.S. Izmetieva, L.A. Dzikovskay, L.P. Zhavoronkov, **Estimation of minimal effective doses of  $\gamma$ - irradiation on rat peripheral blood reaction**

L.A. Dzikovskay, T.I. Ivanova, O.S. Izmetieva, **Radioprotective and anti-stress properties of the drug "Pronumol"**

V. Monich, N. Tiunova, S. Malinovskaja, V. Borsikov, **Oxidative stress in the brain tissues after blood circulation disorders and its compensation by LED radiation**

T. Belyakova et al., **Oligofractionated irradiation of the solid Ehrlich ascites carcinoma in mice with a pencil scanning beam of protons**

T. Belyakova, V. Balakin, A. Shemyakov, S. Zaichkina, O. Rozanova, H. Smirnova, **Possibility of application of proton therapy complex «Protomeus» for radiobiological investigation on animals**

O.S. Izmetieva, L.A. Dzikovskay, L.P. Zhavoronkov, **Estimation of minimal effective doses of  $\gamma$ - irradiation on rat peripheral blood reaction**

L.A. Dzikovskay, T.I. Ivanova, O.S. Izmetieva, **Radioprotective and anti-stress properties of the drug "Pronumol"**

V. Monich, N. Tiunova, S. Malinovskaja, V. Borsikov, **Oxidative stress in the brain tissues after blood circulation disorders and its compensation by LED radiation**



T. Belyakova et al., **Oligofractionated irradiation of the solid Ehrlich ascites carcinoma in mice with a pencil scanning beam of protons**

T. Belyakova, V. Balakin, A. Shemyakov, S. Zaichkina, O. Rozanova, H. Smirnova, **Possibility of application of proton therapy complex «Protemeus» for radiobiological investigation on animals**

O.S. Izmestieva, L.A. Dzikovskaya, L.P. Zhavoronkov, **Estimation of minimal effective doses of  $\gamma$ -irradiation on rat peripheral blood reaction**

N. Veyalkina, A. Kadukova, A. Tsukanova, K. Shafarost, A. Abdullayev, E. Shamilov, **Radioprotective effect of Co(II) inosinate on the blood system cells of C57Bl/6 mice after single exposure to  $\gamma$ -radiation**

### Radiation Protection

A. M. Abdullaeva, L. P. Blinkova, I. G. Seryogin, D. I. Udavliev, S. S. Shikhov, Yu. D. Pakhomov, **Preventive treatment of drying chamber with uv radiation and ozonization for protection against spoilage of raw smoked sausages**

S. Stanković, R. Ilić, P. Marinković, D. Nikolić, N. Kržanović, M. Radenković, **Application of the Monte Carlo method and the empirical approximate formulas by Taylor and Berger for the calculation of the build-up factor in the fields of gamma and X radiation**

### Radioecology

C. Betsou et al., **Trace elements in moss samples using Neutron Activation Analysis**

A. Abojassim et al., **Assessment of natural radionuclide levels for tea samples in Najaf, Iraq**

D. Ganzha, D. Ganzha, A. Nazarov, B. Sploshnoi, **The tensile breaking strength of *Phragmites australis* (Cav.) Trin. ex Steud leaves as a chronic irradiation effect**

### Material Science

Y. Ergunt et al., **CdZnTe bulk crystal growth and surface processing technology at METU-CGL**

### Radiation Effects

V. Kolokoltsev, **Radiation destruction of TF-1 type glasses when irradiated with 21MeV electrons**

M. Campajola, **Radiation induced defects in CMOS SPADs sensors**

A. Krivobok, Yu. Berkovich, T. Bibikova, V. Nikitin, A. Skripnikov, I. Konovalova, **Studies of mutual influence of light and gravity on the model plants *Physcomitrella patens* and *Arabidopsis thaliana* in space flight conditions**

### Medical Physics

E. Sukhikh, A. Vertinskiy, L. Sukhikh, A. Taletsky, M. Tatarchenko, **Influence of the distance between implanted sources on the local control probability**

A. Vertinskiy, E. Sukhikh, L. Sukhikh, Ya. Sutygina, **Implementation of the EPID-based in vivo dosimetry system for the patient plan quality assurance**

I. Yakovlev, S. Akulinichev, Yu. Gavrilov, **Designing the medical set-up of the proton beam of the Institute for Nuclear Research**

A. Demianovich, D. Sanin, N. Borysheva, V. Martynova, S. Ivanov, A. Kaprin, **Radiation - induced skin pigmentation after accelerated partial breast irradiation: Dose volume histogram analysis**

L. Aslamova, I. Kulich, N. Melenevska, **Implementation of medical physicist certification in Ukraine**

W. Bulski, K. Chełmiński, A. Cichoński, A. Wysocka-Rabin, **Preliminary evaluation of ArcCHECK® detector's usefulness for treatment plan verification in brachytherapy**

## Radiology

O. I. Girjoaba, **Recurrent exposure of patients with chronic conditions in a small private medical center**

## Environmental Chemistry

M. Mantzari, M. Manousakas, J. Paatero, A. Ioannidou, **Elemental analysis of TSP samples from Helsinki, Finland for the 1995 – 2005 period**

## Microwave, Laser, RF and UV radiations

S. Suciú et al., **Preliminary risk assessment study- neurobiological effects in experimental long-time exposure to low GSM radiation**

S. Umar, N. G. Nuradeen, **Assessment of radio-frequency radiation from selected mobile base stations in Zaria and environs, Nigeria**

S. Mitropoulos, A. Amerikanos, S. David, I. Sianoudis, K. Skouroliakou, **Blue light reducing software applications for mobile phone screens: Measurement of spectral characteristics and biological parameters**

A. M. Abdullaeva, L. P. Blinkova, Yu. D. Pakhomov, **Use of commercial and UV-induced phages for protection of chicken mince from contamination by microorganisms**

## Biomedicine

T. Mushkarina, E. Kuzmina, T. Konstantinova, **Changes in the immune system after long-term radiation for cervical cancer treatment**

E. Kuzmina, T. Mushkarina, T. Konstantinova, T. Bogatyreva, **The long-term effect of therapeutic irradiation on the bone marrow cells after the treatment of Hodgkin's lymphoma**

E. V. Kiva, I. N. Pustynskiy, S. V. Chulkova, A. V. Egorova, **Cryosurgery method in the treatment of patients with skin cancer of the head**

## Pharmaceutical Sciences

D. Stojiljković, I. Nešić, V. Tadić, **Wild apple fruit extract as active substance in UV protection cream – investigation of *in vivo* hypopigmentation efficacy**

I. Nešić, D. Stojiljković, V. Tadić, **Skin photoprotection products with wild apple fruit extracts as source of bioactive polyphenols: A comparison of polar and non-polar solvents**