

**MEDICAL PHYSICS IN THE BALTIC STATES
11TH CONFERENCE & WORKSHOP PROGRAM**

Thursday, 10 October 2013

Recent Innovative Radiation Technologies

- 10.30-11.00** Registration of participants at Klaipėda University Hospital, Liepojos str. 41, Klaipėda
- 11.00-11.10** Welcome to Klaipėda University Hospital (head of the Hospital *prof. Vinsas Janušonis*, head of Radiotherapy Department *dr. Aista Plieskienė*)
- 11.10-11.25** *Dainius Burdulis and Aista Plieskienė*. RapidArc radiation therapy: first experience at Klaipėda University hospital.
- 11.25-11.40** *Vanda Andrijaitienė and Lina Gerdauskienė*. Comparison of dose calculation algorithms in different treatment planning systems for clinical situations.
- 11.40-11.55** *Romas Vilkas*. Review and prospects for brachytherapy at Klaipėda University Hospital.
- 11.55-12.10** *Algimantas Šimkaitis*. Modern trends in interventional radiology: patient exposure and radiation protection.
- 12.10-12.25** *Aista Plieskienė*. Influence of treatment techniques on radiation dose to the LAD coronary artery.
- 12.25-12.50** *Sören Mattsson*. Highlights from the discussion on cancer risk from low doses of radiation.
- 12.50-13.00** *Ingela Hjelte*. Compact OSL reader in medical physics applications
- 13.00-14.00** Visit to the Radiology Department of Klaipėda University Hospital

Friday, 11 October 2013

08.30-09.30 Registration of participants at **Kaunas University of Technology**,
Studentų str. 50–325F, Kaunas

09.30-09.45 Conference opening: *Vytautas Janilionis*, Dean of the Faculty of Fundamental Sciences, *Giedrius Laukaitis*, Head of Physics Department, *Sören Mattsson*, Lund University, *Skåne University Hospital Malmö*, *Diana Adlienė*, Kaunas University of Technology

Session 1. Chair: prof. Diana Adlienė

09.45-10.30 *Leandar Litov*. CERN – bosons and medicine.

10.30-10.45 *Jan Aleksander Kraško, Ilona Maksimova, Martina Rudgalvytė, Vita Pašukonienė*. Radiation induced multidrug resistance in breast cancer - laboratory model.

10.45-11.00 *Rasa Vansevičiūtė, Olga Žukovskaja, Jonas Venius*. Comparison of 5-aminolevulinic acid based fluorescence diagnostics with histology in the detection of cervical neoplasia.

11.00-11.15 *Elena Lagzdina, Mindaugas Gaspariūnas, Rita Plukienė, Artūras Plukis, Vita Pašukonienė, Kęstutis Sužiedėlis, Vitalij Kovalevskij*. The application of 1.6 MV proton microbeam to investigate radiation induced bystander effect in mia paca-2 pancreatic cancer cell line.

11.15-11.30 *Deividas Sabonis, Gediminas Dauderis, Ričardas Rotomskis*. The two-photon absorption of quantum dots: experimental studies.

11.30-11.45 *Maksims Polakovs, Nina Mironova-Ulmane, Andrejs Pavlenko, Vera Skvortsova, Dmitrijs Jakovlevs*. Gallstones studies by EPR and EDX spectroscopies.

Coffee break 11:45-12:00

Session 2. Chair: dr.Cristian Bernhardsson

12.00-12.15 *Ingela Hjelte*. Compact OSL reader in medical physics applications.

12.15-12.30 *Andrius Tidikas and Diana Adlienė*. Comparative analysis of dose distribution simulated around HDR brachytherapy Ir-192 source and obtained from X-ray film images.

12.30-12.45 *Kinga Polaczek-Grelik, Marta Stefańczyk, Jakub Derus, Agnieszka Gilka, Aneta Kawa-Iwanicka*. Small fields dosimetry in the commissioning of medical linacs.

12.45-13.00 *Mattias Jönsson, Fredrik Nordström, Malin Kügele, Rebecca Ljungqvist, Charlotte Thornberg, Sven Bäck, Sofie Ceberg*. Technical evaluation of different motion-monitoring systems for respiratory gating in radiation therapy.

13.00-13.15 *Tomas Krilavičius, Rūta Užupytė, Indrė Žliobatė, Henrikas Simonavičius*. Correlation of external markers and functional targets for respiration compensation in radiotherapy.

13.15-13.30 *Anna-Carin Strandberg and Bengt-Eric Rösth*. True Versatility in Radiation Therapy.

Time for the lunch 13:30 – 14:15

POSTER SESSION (13:30-18:00)

Chairs: Dr. J.Puišo and Prof. Nina Mironova- Ulmane

Session 3. Chair: *Alexandr Vodovatov*

- 14.15-14.45** *Sören Mattsson*. Estimations of radiation-induced cancer risks from very low doses and how to communicate about these risks.
- 14.45-15.00** *Jan Aleksander Kraško, Vita Pašukonienė, Agata Mlynska, Valerijus Ostapenko*. Computer-assisted risk assessment for breast cancer - who should do the mammography in Lithuania?
- 15.00-15.15** *Birutė Gricienė, Kristina Kristinaitytė, Arijanda Neverauskienė, Mindaugas Matačiūnas, Algirdas E. Tamošiūnas*. Age-specific radiation doses and risks in head computed tomography.
- 15.15-15.30** *Olga Sevriukova, Austė Kanapekaitė, Indrė Lapeikaitė, Vilma Kisnierienė, Vidmantas Sakalauskas*. Impact of low dose tritium on the bioelectrical activity of charophyte cell.
- 15.30-15.45** *Vladas Valiulis, Kastytis Dapšys, Giedrius Gerulskis, Rolandas Kaukėnas, Aldona Šiurkutė, Valentinas Mačiulis*. Electrophysiological comparison between transcranial magnetic stimulation and electroconvulsive therapies.
- 15.45-16.00** *Ramūnas Grigonis, Rokas Buišas, Robertas Guzulaitis, Aidas Alaburda*. The influence of increased membrane conductance on action potential threshold of spinal motoneurons.

Coffee break 16.00-16:15

Session 4. Chair: *prof. Sören Mattsson*

- 16.15-16.30** *Sigita Činčiūtė, Algis Daktariūnas, Osvaldas Rukšėnas*. Functional near-infrared spectroscopy (fNIRS): development and applications in neurosciences.
- 16.30-16.45** *Inga Griškova-Bulanova and Milena Korostenskaja*. Neurophysiological markers of brain's ability to entrain and to detect change: methodological considerations.
- 16.45-17.00** *Redas Dulinskas and Osvaldas Rukšėnas*. Relationship between stimulus intensity and rat visual cortex evoked potentials to visual stimulus onset and offset.
- 17.00-17.15** *Denisas Dankinas, Mingailė Greičiūtė, Kastytis Dapšys, Saulius Ročka*. Frontal lobe lesion and preparation of imitative and learned responses.
- 17.15-17.30** *Aleksandras Pleskačiauskas and Osvaldas Rukšėnas*. Eye tracking as a tool for medicine.
- 17.30-17.45** *Vydmantas Atkočius, Ernestas Janulionis, Ramūnė Mineikytė*. Medical physicists staffing for radiation oncology: last two decades in Lithuania.
- 17.30-17.45** *Diana Adlienė, Ričardas Rotomskis, Violeta Karenauskaitė, Simona Letautienė, Arūnas Maršalka and Jonas Venius*. Recognition and licensing of medical physicists in Lithuania.
- 18.00-19.00** Meeting of Medical Physicists Society (Studentų str. 50 -325F, Kaunas)

19:30-22:00 Get-together party
Best Western hotel Santaka, Gruodžio str.21, Kaunas

Saturday, 12 October 2013

9.00-9.30 Registration of participants at **Kaunas University of Technology, Studentų str. 50-325F, Kaunas.**

Session 5. Chair: Dr. Marius Laurikaitis

- 9.30-9.45** *Mikael Hörnlund and Christian Bernhardsson.* Organ doses determined using a Rando phantom for different radionuclide depositions and photon energies.
- 9.45-10.00** *Oksana Skrypnik, Valdis Pede, Aldis Balodis.* Calibration of dosimeter with internal proportional detector in backscattering X-ray field.
- 10.00-10.15** *Larisa Chipiga and Irina Zvonova.* PET image quality assurance with MADEIRA phantom.
- 10.15-10.30** *Anatoli Vladimirov and Kalle Kepler.* Estimation of signal transfer property for wireless digital detector in different measurement schemes.
- 10.30-10.45** *Judita Puišo, Leonas Jakevičius, Danutė Vaičiukynienė, Vitoldas Vaitkevičius, Aras Kantautas, Arūnas Baltušnikas.* X-ray shielding zeolite containing lead.
- 10.45-11.00** *Aistė Lisauskaitė, Virginija Jankauskaitė, Egidijus Griškonis, Rita Plaipaitė-Nalivaiko.* Silicone composites for X-ray protection.
- 11.00-11.15** *Egidijus Griškonis, Diana Adlienė, Igoris Prosyčevas, Neringa Vaičiūnaitė, Benas Urbonavičius, Pranas Narmontas, Rimas Šeperys.* Investigation of x-ray attenuating properties of high concentration phosphotungstic acid solutions.

Coffee break 11:15 -11.30

Session 6. Chair: Dr. Kalle Kepler

- 11.30-11.45** *Christian Bernhardsson, Mikael Hörnlund, Alexandr Vodovatov, Sören Mattsson.* Variation in gamma dose rate in different locations following the Chernobyl accident.
- 11.45-12.00** *Aleksandr Vodovatov and Christian Bernhardsson.* Estimation of patient doses from x-ray examinations in the Bryansk region hospitals.
- 12.00-12.15** *Ilya Shatskiy, Vladislav Golikov.* Estimation of effective dose to pediatric patients undergoing X-ray examinations.
- 12.15-12.30** *Kristina Repšė and Marius Gedvilas.* Doses to cardiologist in interventional radiology.
- 12.30-12.45** *Neringa Vaičiūnaitė, Marius Laurikaitis, Diana Adlienė.* Reduction of patient dose in digital radiography.
- 12.45-13.30** **Final remarks: prof. Sören Mattsson**

POSTER SESSION

- P01** *L.Aslamova, S. Luchkovskiy, I.Kulich, N.Melenevska.* Radiation exposure dose of patient during the positioning procedure before the cyberknife system treatment.
- P02** *Milda Rudžianskienė, Arturas Inčiūra, Elona Juozaitytė, Viktoras Rudžianskas.* Single (8 Gy) fraction irradiation for painful bone destructions of multiple myeloma.
- P03** *Yana Gluhcheva, Diana Adlienė, Todorka L. Dimitrova, Jurgita Laurikaitienė.* Phantom based evaluation of shielding efficiency of leaded silicon rubber in kilovoltage X-ray therapy
- P04** *Alena Feskova, Valery Luhn, Viktor Leontiev, Olga Ignatovets, Olga Stasevic.* Herbal medicines based on secoisolariciresinol diglucoside from flaxseed are the potential radioprotector.
- P05** *Justina Navickaitė, Alvydas Gleiznys, Eglė Ivanauskienė, Jurgina Sakalauskienė, Darius Gleiznys.* Biomechanics of removable dentures and conception of the neutral zone.
- P06** *Aušra Baltrušaitytė, Gaivilė Pileičikienė, Eglė Ivanauskienė, Gediminas Skirbutis, Alvydas Gleiznys.* An evaluation of the computerized occlusal analysis.
- P07** *Virgilijus Minialga.* Parameters of pyrolytic graphite diamagnetic interaction.
- P08** *Recep Kandemir, Emel Ada.* Estimation of effective dose and cancer risk of lumbar spine CT patients using dose-length product and conversion factors: retrospective study.
- P09** *Gediminas Adlys, Evelina Jaselskytė, and Saulius Raila.* Theoretical prediction of Fukushima radioactive releases.