



БДБФИ -  
БЪЛГАРСКО ДРУЖЕСТВО ПО  
БИОМЕДИЦИНСКА ФИЗИКА И  
ИНЖЕНЕРСТВО

BSBPE -  
BULGARIAN SOCIETY OF  
BIOMEDICAL PHYSICS AND  
ENGINEERING



## XXXVII<sup>th</sup> WORKSHOP “PHYSICS IN HUMAN AND ENVIRONMENT PROTECTION”

21 - 23 June 2019, Rila mountain

Topics:

**Contemporary Trends and Challenges  
in Radiation Therapy**

**Innovative Technologies in Diagnostic Radiology**

**Biological Modeling Systems and Biomedical Telemetry**

Sponsors:



GE Healthcare

SIEMENS  
Healthineers



БУМАР

### PROGRAM

**Friday, 21 June 2019**

**16:00 – 17:00 Registration**

**17:00 – 18:30 Session I. SESSION OF YOUNG SCIENTISTS & CONTEMPORARY TRENDS AND CHALLENGES IN RADIATION THERAPY**

17:00 – 17:15 Opening

17:15 – 17:30 *S. Bozhikov, K. Mitarova, Ph. Vassileva, B. Tacheva, B. Parvanova, M.*

*Karabaliev.* Determination of the sensitivity of trajectory log files gamma analysis - a method based on Python scripts.

17:30 – 17:45

*M. Vasileva, S. Masliankov, M. Atanasova, Ts Paycheva, A. Vlahova, M. Genadieva, G. Prodanova, Z. Zahariev, V. Pavlov, G. Todorov, A. Konsoulova, K. Angelov, D. Kostova-Lefterova.* Intraoperative radiotherapy with balloon-based electronic brachytherapy system – first Bulgarian experience in breast cancer patients.

17:45 – 18:00

*M. Gancheva, D. Kostova-Lefterova, D. Penev.* Evaluation of SSDE value of a single CBCT OBI patient verification system.

18:00 – 18:15

*D. Ivanova, S. Lalkovski, Zh. Toneva, V. Rangelov.* Comparative study of the properties of two Lanthanum halide scintillator detectors.

18:15 – 18:30

Discussion.

**Saturday, 22 June 2019**

**9:30 – 11:00      Session II. INNOVATIVE TECHNOLOGIES IN DIAGNOSTIC RADIOLOGY**

- 9:30 – 9:45      *N. Dukov, G. Gospodinova, Zh. Bliznakov, K. Bliznakova.* Database of real-based and simulated models dedicated to x-ray breast studies.
- 9:45 – 10:00      *P. Popov, N. Dukov, D. Bodurov, K. Bliznakova.* In-house developed optical system for x-ray imaging validation of processes.
- 10:00 – 10:15      *F. Feradov, S. Marinov, Zh. Bliznakov, K. Bliznakova.* Comparative evaluation of physical breast phantoms dedicated for mammography studies.
- 10:15 – 10:30      *Zh. Mincheva, K. Bliznakova.* A software application for grating design dedicated to optical imaging.
- 10:30 – 10:45      *P. Trindev, M. Dimcheva.* Second national survey of activimeters performance in Nuclear Medicine.
- 10:45 – 11:00      Discussion.

**11:00 – 11:30      BREAK**

**11:30 – 12:30      Session III. INNOVATIVE TECHNOLOGIES IN DIAGNOSTIC RADIOLOGY**

- 11:30 – 11:45      *S. Avramova-Cholakova, E. Kulama.* Patient exposures from three different modalities on one mammography system.
- 11:45 – 12:00      *A. Zagorska, D. Ivanova, D. Kostova-Lefterova, V. Gelev, N. Rifai, V. Krastev, I. Zheleva, N. Stoyanov, K. Romanova, J. Vassileva.* Multicentric study on patient doses in diagnostic and interventional cardiology and patient follow up: preliminary results.
- 12:00 – 12:15      *K. Romanova, D. Ivanova, V. Rangelov.1, M. Alyakov.* Evaluation of effective and peak skin dose of patients undergoing interventional cardiology procedures.
- 12:15 – 12:30      Discussion

**12:30 – 14:00      LUNCH**

**14:00 – 14:45      Session IV. COMPANY PRESENTATIONS**

- 14:00 – 14:15      *I. Hristova, GE Healthcare.* MotionFree respiratory gating for PET/CT systems.
- 14:15 – 14:30      *G. Dimitrov, GE Healthcare.* 4D CT respiratory gating for Radio Therapy CT simulators.
- 14:30 – 14:45      Theta-Consult company presentation.

**14:45 – 15:00      BREAK**

**15:00 – 16:45      Session V. INNOVATIVE TECHNOLOGIES IN DIAGNOSTIC RADIOLOGY & BIOLOGICAL MODELING SYSTEMS AND BIOMEDICAL TELEMETRY**

- 15:00 – 15:15      *E. Georgiev, R. Radeva, E. Naseva, G. Kirova-Nedyalkova.* Comparison of radiation dose and image quality in CTA of the peripheral arteries.
- 15:15 – 15:30      *S. Avramova-Cholakova, E. Kulama.* Comparative study of patient doses on four CT scanners.
- 15:30 – 15:45      *D. Kostova-Lefterova, K. Genova, A. Kaneva, S. Lazarov, D. Dobrev.* Additional step into team approach and optimisation of paediatric patient care and treatment – from CT scan images to 3D models.

- 15:45 – 16:00 *D. Ivanova.* Optimization of CT examinations of head, chest and abdomen, aimed at reduction of patient exposure.
- 16:00 – 16:15 *I. Djenev.* The endotoxin influence on the deformability of red blood cells (in vitro).
- 16:15 – 16:30 *L.Traikov, Z. Sabit, T. Bogdanov, D. Bakalov, R. Hadjiolova, J. Petrova, A. Ushiyama.* Animal models based on telemetry for investigation of mechanisms of neurological and cardiovascular diseases (in vivo).
- 6:30 – 16:45 Discussion

**20:00** DINNER

**Sunday, 23 June 2019**

**EXCURSION**