



## **Seventh Framework Programme**

# **Saratov Local Cluster Meeting: Clinical Studies in Biophotonics: Problems and Ethical Issues**

### **Organized by**

N.G. Chernyshevsky Saratov State University  
Photonics4Life Consortium of EC FP7: Network of Excellence for Biophotonics  
Institute of Precise Mechanics and Control, Russian Academy of Sciences  
Research-Educational Institute of Optics and Biophotonics at Saratov State University  
Saratov State Medical University  
SPIE Saratov State University Student Chapter  
OSA Saratov State University Student Chapter

### **Chairs**

**Valery V. Tuchin**, Saratov State University  
**Alexey N. Bashkatov**, Saratov State University

### **Secretary**

**Maxim A. Vilensky**, Saratov State University

## **ORAL SESSION**

1. **Clinical Studies on Biophotonics in LCS: Problems and Ethical Issues**, Valery V. Tuchin, Saratov State University, Russia, Institute of Precise Mechanics and Control RAS
2. **Laser Technologies in Medicine and Surgery**, Sergey V. Kapralov, Saratov State Medical University, Russia
3. **Laser application in otolaryngology** Anatoly B. Knyazev, Saratov State Medical University, Russia
4. **New technologies for diagnosis and treatment of eye diseases** Tatyana G. Kamenskikh, Saratov State Medical University, Russia
5. **Approval of human clinical trials: CRDF procedure** Elina A. Genina, Saratov State University, Russia
6. **Phototherapy of chronic dermatoses** Natal'ya A. Slesarenko, Saratov State Medical University, Russia
7. **Dental activity: Photoactivated disinfection in preventive dentistry and surgical aids in orthodontics** Dmitry E. Suetenkov, Saratov State Medical University, Russia
8. **Experimental researches: animal models in non-clinical studies** Alla B. Bucharskaya, Galina N. Maslyakova
9. **Biomedical applications of gold and composite nanoparticles** Nikolai G. Khlebtsov, Institute of Biochemistry and Physiology of Plants and Microorganisms RAS
10. **Photodynamic action on microorganisms using nanoparticles** Elena S. Tuchina, Saratov State University, Russia

## **POSTER SESSION**

1. **Objective prediction of recurrence of bleeding from acute gastric and duodenal ulcers** Ilya A. Frolov<sup>1</sup>, Sergey V. Kapralov<sup>1</sup>, Yury G. Shapkin<sup>1</sup>, Valery V. Tuchin<sup>2</sup>, 1 - Saratov State Medical University, 2 - Saratov State University, Russia
2. **Experimental simulation of laser fenestration of the liver** Irina A. Melnikova, Sergey V. Kapralov, Yury G. Shapkin, Vladimir V. Alipov, Saratov State Medical University, Russia
3. **The optimization method of the laser endoscopic hemostasis** Veniamin A. Grishaev<sup>1</sup>, Sergey V. Kapralov<sup>1</sup>, Alexey N. Bashkatov<sup>2</sup>, Valery V. Tuchin<sup>2</sup>, Yury G. Shapkin<sup>1</sup>, 1 - Saratov State Medical University, 2 - Saratov State University, Russia
4. **The experience of laser surgical treatment of snoring** Sergey V. Kapralov, Anatoly B. Knyazev, Ekaterina K. Evdokimova, Yury G. Shapkin, Oleg V. Mareev, Saratov State Medical University, Russia
5. **The RGB color space derivatives: selection for the human skin imaging** Leonid E. Dolotov, Saratov State University, Russia
6. **Mathematical simulation of endothelia-dependent relaxation of smooth muscle cells** Anastasia U. Neganova, Dmitry E. Postnov, Saratov State University, Russia
7. **The study of the human nail bed blood flow dynamics under the action of optical clearing agents with the full - field speckle - capillaroscopy technique** Polina A. Timoshina<sup>1</sup>, Ekaterina A. Zubkina<sup>1</sup>, Natalia V. Tsapurina<sup>1</sup>, Dmitry N. Agafonov<sup>1</sup>, Maxim A. Vilensky<sup>1</sup>, Elina A. Genina<sup>1</sup>, Valery V. Tuchin<sup>1,2</sup>, 1 - Saratov State University, Russia, 2 - Institute of Precise Mechanics and Control RAS
8. **Morphological changes in internal organs after prolonged administration of iron nanoparticles** Nikita A. Navolokin, Xiag Mio Kong, Galina N. Maslyakova, Alla B. Bucharskaya, Saratov State Medical University, Russia
9. **Corneal graft status after penetrating keratoplasty optic** Tatyana G. Kamenskikh, Natalya M. Khaibulina, Irina Yu. Gorunova, Igor O. Kolbenev, Nadegda R. Lopatinskaya, Saratov State Medical University, Russia

10. **Immunohistochemical and immunocytochemical studies of human eye lens with various forms of cataract** Tatyana G. Kamenskikh<sup>1</sup>, Antonina S. Tishkova<sup>1</sup>, Vladimir A. Galanzha<sup>1</sup>, Alla B. Bucharskaya<sup>1</sup>, Galina N. Maslyakova<sup>1</sup>, Alexander A. Shirokov<sup>1</sup>, Andrey M. Burov<sup>1</sup>, Elina A. Genina<sup>2</sup>, Alexey N. Bashkatov<sup>2</sup>, 1 - Saratov State Medical University, 2 - Saratov State University, Russia
11. **Electrical stimulation with bio-feedback and magnetic sympatho-correction in the treatment of patients with primary open-angle glaucoma** Tatyana G. Kamenskikh, Ekaterina V. Veselova, Igor O. Kolbenev, Saratov State Medical University, Russia
12. **Development of device for treatment of concomitant strabismus** Olga S. Kachkina<sup>1</sup>, Tatyana G. Kamenskikh<sup>1</sup>, A.V. Myasnikova<sup>2</sup>, Ekaterina V. Dolgova<sup>1</sup>, 1 - Saratov State Medical University, Saratov State Technical University, Russia
13. **Laser destruction as the optimal method of treatment of benign skin tumors** Marya A. Reznikova, Natal'ya A. Slesarenko, Saratov State Medical University, Russia
14. **Glucose impact on the structure of ocular tissues** Anzhelika S. Orlova<sup>1</sup>, Tatyana G. Kamenskikh<sup>1</sup>, Ivan D. Kamenskikh<sup>1</sup>, Igor O. Kolbenev<sup>1</sup>, Alexey N. Bashkatov<sup>2</sup>, Elina A. Genina<sup>2</sup>, Valery V. Tuchin<sup>2,3</sup>, 1 - Saratov State Medical University, Russia, 2 - Saratov State University, Russia, 3 - Institute of Precise Mechanics and Control RAS
15. **OCT investigation of skin optical clearing by PEG-300** Darya K. Tuchina<sup>1</sup>, Alexey N. Bashkatov<sup>1</sup>, Elina A. Genina<sup>1</sup>, Valery V. Tuchin<sup>1,2</sup>, 1 - Saratov State University, Russia, 2 - Institute of Precise Mechanics and Control RAS
16. **Study of photodynamic action of carbon nanoparticles on RBC using digital holographic microscopy** Yana V. Tarakanchikova<sup>1</sup>, Natalya V. Tkachenko<sup>1</sup>, Olga A. Perepelitsina<sup>1,2</sup>, Vladimir P. Ryabukho<sup>1,2</sup>, 1 - Saratov State University, Russia, 2 - Institute of Precise Mechanics and Control RAS
17. **Synthesis of iron oxide nanoparticles for inhibition of bacteria growth** Maria V. Kulikova, Elena S. Tuchina, Vyacheslav I. Kochubey, Saratov State University
18. **Absorption and scattering properties of muscle tissue** Marina D. Kozintseva, Alexey N. Bashkatov, Vyacheslav I. Kochubey, Elina A. Genina, Valery V. Tuchin, Saratov State University
19. **Monitoring the rat's pancreas reperfusion changes with speckle-capillaroscopy** Dmitry N. Agafonov<sup>1</sup>, Polina A. Timoshina<sup>1</sup>, Viktor A. Kuleshov<sup>2</sup>, Andrey A. Skorokhod<sup>2</sup>, Maxim A. Vilensky<sup>1</sup>, Denis A. Alexandrov<sup>2</sup>, Valery V. Tuchin<sup>1,3</sup>, 1 - Saratov State University, 2 - Saratov State Medical University, 3 - Institute of Precise Mechanics and Control RAS
20. **Glucose determination using chirped photonic crystal fiber** Anton V. Malinin, Saratov State University
21. **Chirped waveguides application for complex analysis of the blood** Anastasia A. Zanishevskaya<sup>1</sup>, Anton V. Malinin<sup>1</sup>, Yulia S. Skibina<sup>1</sup>, Igor Yu. Silokhin<sup>1</sup>, Valery V. Tuchin<sup>1,2</sup>, Valery A. Dubrovsky<sup>3</sup>, Alexey A. Dolmashkin<sup>3</sup>, 1 - Saratov State University, Russia, 2 - Institute of Precise Mechanics and Control RAS, 3 - Saratov State Medical University, Russia
22. **Optical properties of photonic crystal waveguides** Igor Yu. Silokhin, Anton V. Malinin, Anastasia A. Zanishevskaya, Yulia S. Skibina, Valery V. Tuchin, Mikhail V. Chainikov, Saratov State University, Russia