

## Contents

### Topic Issue: Medical use of lasers and photonics in Russia I – Diagnostics

Issue Editors: Michael Fedorov and Valery V. Tuchin

#### Editorial

Michael Fedorov and Valery V. Tuchin  
**Current research on photonics and lasers in medicine in Russia — 81**

#### Announcement

Frank Frank, Lothar Lilge, Carsten M. Philipp and Ronald Sroka  
**New steps forward: Application for impact factor and free online access for better citations — 85**

#### Magazine section

Snapshots — 87

#### Original contributions

Natalia Bulgakova, Victor Sokolov, Larisa Telegina, Konstantin Vereshchagin, Georgy Frank and Valery Chissov  
**Study of laser-induced autofluorescence emission spectra from normal and malignant bronchial epithelium — 93**

Yuxiang Wu, Wenyan Hu, Ling Fu, Xiaohua Lv and Shaoqun Zeng  
**Application of high-resolution label-free imaging methods to obtain tissue images for histological analysis — 101**

Oxana V. Semyachkina-Glushkovskaya, Vladislav V. Lychagov, Olga A. Bibikova, Igor A. Semyachkin-Glushkovskiy, Sergey S. Sindeev, Ekaterina M. Zinchenko, Mohhanad M. Kassim, Hans A. Braun, Fatema Al-Fatle, Leith Al Hassani and Valery V. Tuchin  
**The assessment of pathological changes in cerebral blood flow in hypertensive rats with stress-induced intracranial hemorrhage using Doppler OCT: Particularities of arterial and venous alterations — 109**

Anastasia V. Ryabova, Daria V. Pominova, Victoria A. Krut'ko, Maria G. Komova and Victor B. Loschenov  
**Spectroscopic research of upconversion nanomaterials based on complex oxide compounds doped with rare-earth ion pairs: Benefit for cancer diagnostics by upconversion fluorescence and radio sensitive methods — 117**

Honghui He, Nan Zeng, E Du, Yihong Guo, Dongzhi Li, Ran Liao and Hui Ma  
**A possible quantitative Mueller matrix transformation technique for anisotropic scattering media — 129**

Sergey G. Proskurin and Anton Y. Potlov  
**Early- and late-arriving photons in diffuse optical tomography — 139**

#### Short communication

Elena V. Filonenko, Antonina N. Urlova, Antonina A. Raszhivina, Veniamin N. Sotnikov and Andrei M. Nechipai  
**Fluorescence diagnosis using 5-aminolevulinic acid in coloproctology — 147**

#### Technical note

Alexander Machihin, Vitold Pozhar and Vladislav Batshev  
**Compact AOTF-based spectral imaging system for medical endoscopic analysis — 153**

#### Congress announcements

Congresses 2013 — 159