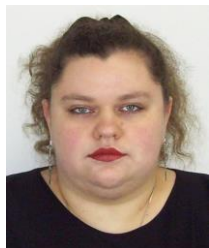


Curriculum Vitae
Assoc. Prof. Dr. Ekaterina Georgieva Borisova



Work address:
Institute of Electronics, Bulgarian Academy of Sciences (BAS)
72, Tsarigradsko chaussee Blvd., 1784, Sofia, Bulgaria
Tel.: +3592 979 58 94; mobile:+359 879 497 118
Fax: +3592 974 57 42; e-mail: borisova@ie.bas.bg

Personal information

Surname(s) / First name(s) **Borisova Ekaterina**

Education and training

Dates	September 1990 - June 1995
Title of qualification awarded	Degree in Physics
Name and type of organisation providing education and training	Sofia Mathematical High School "Paisii Hilendarski", Sofia
Dates	October 1995 - July 2000
Title of qualification awarded	Master of Science – Medical Physics Master of Science – Laser Physics
Name and type of organisation providing education and training	Sofia University "St. Kliment Ohridski" Department of Physics
Dates	January 2001 – December 2003
Title of qualification awarded	PhD degree in Physics
Name and type of organisation providing education and training	Institute of Electronics, Bulgarian Academy of Sciences, PhD thesis entitled: "Laser-induced fluorescence and reflectance spectroscopy of biological tissues"

Work Experience

Dates	July 2000 - December 2000
Occupation or position held	Physicist - Institute of Electronics, Bulgarian Academy of Sciences
Dates	January 2001 – December 2003
Occupation or position held	Ph.D. student, Institute of Electronics, Bulgarian Academy of Sciences
Dates	2004–October 2005
Occupation or position held	Scientific researcher II degree, Institute of Electronics, Bulgarian Academy of Sciences
Dates	October 2005 – December 2007
Occupation or position held	Scientific researcher I degree, Institute of Electronics, Bulgarian Academy of Sciences
Dates	January 2008 – currently
Occupation or position held	Associated Professor, Institute of Electronics, Bulgarian Academy of Sciences
Dates	April 2012 – July 2018
Occupation or position held	Scientific Secretary of Institute of Electronics, Bulgarian Academy of Sciences
Dates	July 2018 – current time
Occupation or position held	Deputy Director of Institute of Electronics, Bulgarian Academy of Sciences

Academic Profile

Academic positions	
Occupation or position held	Deputy Director of Institute of Electronics, Bulgarian Academy of Sciences
Dates	July 2018 – current time
Occupation or position held	Scientific Secretary of Institute of Electronics, Bulgarian Academy of Sciences
Dates	April 2012 – July 2018
Occupation or position held	Member of the Scientific Council of Institute of Electronics, Bulgarian Academy of Sciences
Dates	June 2012-June 2018
Occupation or position held	Member of the Academic Council of Training and Development Center of BAS

Dates	September 2013- February 2018
Occupation or position held	Member of the Executive Council of Bulgarian Academy of Sciences
Dates	March 2015-February 2016 – one year
Occupation or position held	Head of Biophotonics laboratory, IE-BAS
Dates	May 2018-may 2022 -four years mandate, elected by Scientific Council of IE-BAS

Teaching experience

As University lecturer

From 2011 – currently

Lecturer in MS degree course, for Medical Physics programme in Physics Faculty, Sofia University
"Photochemical interactions in biomedicine" – lectures and practice

2012 – 2017

Lecturer in BS degree course, for Medical Physics programme in Physics and Engineering
Technologies department of Plovdiv University

"Optical methods and technologies, used in medicine"– practice

From 2015 – currently

Lecturer in BS degree course for Applied Physics programme in Technical University- Sofia
"Optical spectral methods for analysis - basic principles and applications"- lectures and practice

From 2017 - currently

Lecturer in BS degree course for Physiology programme in Biology Faculty, Saratov State
University-Saratov, "Optical and laser methods in biology and medicine-principles and applications" -
lectures

As training supervisor and lecturer for young scientists

From 2009 to 2012 – E. Borisova as coordinator of project, funded by European Social Fund
prepared and presented lecture courses for young scientists and PhD students of IE-BAS on the
next topics:

1) Principles and work with systems for spectral analysis and measurements of optical properties of
liquids and solid samples

2) Optical biopsy of biological tissues – advantages and challenges

3) Biomedical photonics – principles and applications

4) Nanotechnologies in medicine and ecology

From 2013 to 2014:

5) Lasers in medicine – lectures and practice, PhD students course, in the frames of BG051PO001-
3.3.06 - 0048/04.10.2012 project on Human Resources Development project of Institute of
experimental morphology, pathology and anthropology with museum, BAS

In the frames of OP "HRD" student practices, 2013-2014 and 2016-2017 acted as mentor of 9
students

As supervisor of diploma students

Supervisor of students for their BS and MS degrees in Medical Physics (14 students), in Laser
Physics and Optics (2 students), in Quantum Electronics and Laser Technique (2 students) from
Physics Faculty of Sofia University – degrees received in the period 2001-2018;

One student –for MS degree, specialization "Medical Physics" in Sofia University, in current time

As supervisor of PhD students

Scientific consultant of one PhD student (Elmira Pavlova) in the field of Medicine – in collaboration
with University hospital Queen Giovanna, PhD thesis defended at 17.10.2013

Scientific consultant of one PhD student (Aleksandra Zhelyazkova) in the field of Physics – Jan 2013
– Dec 2015, IE-BAS

Scientific supervisor of one PhD student (Tsanislava Genova) in the field of Physics – Jan 2014-Dec
2018, IE-BAS

Other training/teaching activities

E. Borisova was supervisor in the frames of programme of WSF scholarships for:

1) I. Bliznakova – one-year grant for the work in the field of optical tomography of phantoms for
mammography applications (in 2011)

2) Al. Zhelyazkova – one-year grant for the work in the field of time- and frequency resolved
spectroscopy of benign and malignant skin tumors (in 2012)

3) L. Angelova – one-year grant for the work in the field of optical spectroscopy of lower tract
gastrointestinal tumors and metastatic lymph nodes (2013-2014)

4) Ts. Genova - one-year grant for the work in the field of synchronous fluorescence spectroscopy
for soft tissue tumours (2015-2016)

Research Profile

Research Interests

Optical biopsy of neoplasia, optical spectroscopy of biological tissues, steady-state and time-resolved

fluorescence spectroscopy, microscopic imaging – CFM, SHG, TPF, diagnostic oncological applications, laser-induced breakdown spectroscopy, reflectance and scattering spectroscopy of biological samples – tissues, cell clusters, organic solutions; photodiagnosis and photodynamic therapy; photodynamic inactivation of pathogenic bacteria; laser and optical equipment development for biomedical applications; new spectral techniques and methods for initial diagnosis and monitoring of therapies

Personal Skills and Competences

Computer skills and competences

Win98/2000/XP/Vista/7, Internet Explorer, MS Office, Microcal Origin, OOI Base; Adobe Photoshop, Adobe Acrobat, CorelDraw, Corel Photo-Paint, SPSS, Pascal

Language Skills

English	Fluent
Russian	Fluent
German	initial
Bulgarian	Native

Additional Information

Awards

- 1) Member of team, selected as **finalist of the EU Descartes Research Prize 2004** “Excellence in scientific research” for the research work entitled “Advanced Photocathodes for Luminescence Optimization in Medicine and Biology (APLOMB)”, December 2004
- 2) **Award of Bulgarian Academy of Sciences for the best youngest scientists** up to 30 years old – for the investigation cycle entitled “Optical biopsy of human tissues” in the field of Physics sciences, May 2004
- 3) First Prize for the best scientific report from the “IX National Congress of Gastroenterology”, 11/2006
- 4) National Price for significant contribution to the development of science in Bulgaria - the **Grand Prix "Pythagoras" of the Bulgarian Ministry of Educations, Youth and Science for 2012** in rank "Best Young Scientist" for research in the field of photonics and development of noninvasive methods for early diagnosis of cancer, June 2012;
- 5) Certificate from D.S.Rozhdestvensky Optical Society of Russian Federation in recognition of having met the highest standards of excellence in research in the topic of “Autofluorescence of skin cancer - tool for initial diagnosis and monitoring of therapy” - for best report presented at 15th International Conference “Laser Optics” July 2012.
- 6) **National Award for Bulgaria for 2014 of L'Oreal-UNESCO "For Women in Science"**, May 2014
- 7) E. Borisova was awarded with Senior Membership in International Society in Optics and Photonics - SPIE “In recognition of significant achievements within the optics and photonics community”, July 2015.

Organizational experience - organization of scientific events

- 1) Member of the Organizing Committee of Twelfth International School on Quantum Electronics “Laser physics and applications” Varna, Bulgaria 2002
- 2) Secretary of the Organizing Committee-Spring Seminar for Young Scientists, Pchelina, Bulgaria 2004
- 3) Secretary of the Organizing Committee of Thirteenth International School on Quantum Electronics “Laser physics and applications”, Bourgas, Bulgaria 2004
- 4) Secretary of the Organizing Committee of VI-XIV Winter Seminars for Young Scientists working in the field of Physics, Vitosha, Bulgaria, during 2003-2011 years
- 5) Chair of the Organizing Committee of Fifteenth International School on Quantum Electronics “Laser physics and applications”, Bourgas, Bulgaria 2008
- 6) Chair of the Organizing Committee of Summer Seminar “Laser and optical methods in medicine and biology”, June 2010, Sofia, Bulgaria
- 7) Chair of the Organizing Committee of School for Young Scientists “Spectroscopy and photometry”, July 2010, Rojen, Bulgaria
- 8) Chair of the Organizing Committee of Winter Seminar “Statistical methods for analysis of experimental data”, February 2011, Sofia, Bulgaria
- 9) Chair of the Organizing Committee of School for Young Scientists “Image processing and data analysis of physics experiments”, June 2011, Bansko, Bulgaria
- 10) Chair of the Organizing Committee of 19th International Conference on Advanced Laser Technologies ALT'2011, September 2011, Golden Sands, Bulgaria
- 11) Member of the International Programme Committee of 19th International Conference on Advanced Laser Technologies ALT'2011, September 2011, Golden Sands, Bulgaria

- 12) Member of the Programme Committee of 20th International Conference on Advanced Laser Technologies ALT'2012, September 2012, Ven, Switzerland
- 13) Member of the Programme Committee of International Conference on Photonics, Optics and Laser Technologies - PHOTOPICS'2013, February 2013, Barcelona, Spain
- 14) Member of the Programme Committee of International Conference on LAT2013-Laser Applications and Technologies, June 2013, Moscow, Russia
- 15) Member of the Programme Committee of 21th International Conference on Advanced Laser Technologies ALT'2012, September 2013, Budva, Montenegro
- 16) Member of the International Programme Committee of Second International Conference on Biomedical Engineering and Biotechnology (ICBEB 2013), October 2013, China
- 17) Member of the Programme Committee of International Conference on Photonics, Optics and Laser Technologies - PHOTOPICS'2014, January 2014, Portugal
- 18) Conference Committee member and Session "Optical Micromanipulation" Chair in the frames of Photonics Europe 2014, Conference "Biophotonics: Photonic Solutions for Better Health Care", April 2014, Brussels, Belgium
- 19) Chair of the Local Organizing Committee of 23 International Workshop "LASER PHYSICS-2014", Sofia, Bulgaria, 14-18 July 2014
- 20) Member of the Programme Committee of Workshop on Biomedical Spectroscopy on International Symposium „SFM2014 - Optics and Biophotonics“, 23-28 September 2014, Saratov, Russia
- 21) Member of the International Programme Committee of the 3rd International Conference Biomedical Engineering and Biotechnology (ICBEB), 25-28 September 2014, China
- 22) Member of the Programme Committee of 22nd International Conference on Advanced Laser Technologies ALT'2014, October 2014, Casis, France
- 23) Member of the Programme Committee of International Conference on Photonics, Optics and Laser Technologies - PHOTOPICS'2015, 12-14 March 2015, Berlin, Germany
- 24) Member of the Programme Committee of 24th International Workshop "LASER PHYSICS-2015", 21-25 August 2015, Shanghai, China
- 25) Member of the Programme Committee of 23rd International Conference on Advanced Laser Technologies ALT'2015, 7-11 September 2015, Faro, Portugal
- 26) Member of the Working group "Optics" of the National Organizing Committee – Bulgaria for the International Year of Light – 2015, Jan-Dec 2015
- 27) Member of the Programme Committee of Conference on Biomedical Spectroscopy II on International Symposium „SFM2015 - Optics and Biophotonics“, 21-25 September 2015, Saratov, Russia
- 28) Member of the Programme Committee of 4th International Conference on Photonics, Optics and Laser Technologies - PHOTOPICS'2016, 27-29 February 2016, Rome, Italy
- 29) Co-chair of the "Section B. Clinical optical imaging and spectroscopy" in the frames of ISLMB'16 of the International Congress "Lasers and Photonics" and the 17th International Conference "Laser Optics 2016", June 27 – July 1, 2016, St-Petersburg, Russia
- 30) Member of the Programme Committee of 4th international Symposium "Lasers in medicine and Biology" in the frames of International Congress "Lasers and Photonics" and the 17th International Conference "Laser Optics 2016", June 27 – July 1, 2016, St-Petersburg, Russia
- 31) Member of the Programme Committee of Conference on Biomedical Spectroscopy III on International Symposium „SFM2016 - Optics and Biophotonics“, September 2016, Saratov, Russia
- 32) Member of the Programme Committee of 24^d International Conference on Advanced Laser Technologies ALT'2016, 12-16 September 2016, Galway, Ireland
- 33) Member of the Programme Committee of 5th International Conference on Photonics, Optics and Laser Technologies - PHOTOPICS'2017, 27 February-01 March 2017, Porto, Portugal
- 34) Member of the Program Committee of 26th International Workshop "LASER PHYSICS-2017", 17-21 July 2017, Kazan, Russia
- 35) Member of the Program Committee of 25rd International conference on Advanced Laser Technologies ALT'2017, 10-15 September 2017, Busan, South Korea
- 36) Member of the Programme Committee of Conference on Biomedical Spectroscopy IV on International Symposium „SFM2017 - Optics and Biophotonics“, September 2017, Saratov, Russia
- 37) Member of the Scientific Committee of International Congress on Microscopy and Spectroscopy - INTERM2018- 24-30 April 2018, Turkey
- 38) Member of the Programme Committee of 5th international Symposium "Lasers in medicine and Biology" in the frames of International Congress "Lasers and Photonics" and the 17th International Conference "Laser Optics 2018", 04-08 June, 2018, St-Petersburg, Russia
- 39) Co-chair of Section B "Laser interaction with cells and tissues : clinical imaging and spectroscopy" of 5th international Symposium "Lasers in medicine and Biology", 04-08 June, 2018, St-Petersburg, Russia
- 40) Member of the Advisory and Program Committee of 27 International Workshop "LASER PHYSICS-2018", Nottingham, UK, 16-20 July 2018;

- 41) Co-chair of Seminar 3: Laser Biomedical Applications of 27 International Workshop "LASER PHYSICS-2018", Nottingham, UK, 16-20 July 2018;
 42) Member of the Programme Committee of Conference on Biomedical Spectroscopy V on International Symposium „SFM2018 - Optics and Biophotonics”, September 2018, Saratov, Russia

Editor activities

Regular member of editorial boards

Recent patents on biomedical engineering - from 2008 to 2013
 Studies in System Science – from 2012 – currently
 Journal of Biomedical Photonics & Engineering – from 2014-currently

Guest-editor in journals

Journal on Biophotonics, 2012 – special section "Advanced Laser Technologies in Biophotonics"
 Journal on Biomedical Optics, 2012 – special section "Laser Technologies for Biomedical Applications"
 Frontiers in Optoelectronics, 2017-special issue "Biophotonics in Europe"

Editor of proceedings and books

Proceedings of SPIE – 15th International School on Quantum Electronics "Laser Physics and Applications" – volume 7027, 2008
 Books of abstracts – for organized conferences and international schools - 7

Reviewer of articles in specialized journals and books

Journal on Biomedical Optics (JBO)	Applied Physics B
Journal on Biophotonics (JBP)	Journal on basic and Applied Physics (JBAP)
Journal on Applied Spectroscopy	Acta Stomatologica Croatica
Applied Optics	Applied Surface Science
Physics in Medicine and Biology	Photodermatology, Photoimmunology & Photomedicine
Lasers in Surgery and Medicine	Journal of Developmental Biology and Tissue Engineering (JDBTE)
Photonics & Lasers in Medicine	Journal of Microscopy
Quantum Electronics	Journal of Selected Topics in Quantum Electronics
Laser Physics	Minimally Invasive Therapy & Allied Technologies
SPIE Proceedings	Journal on Innovative Health Sciences (JIONHS)
Journal of Biological Physics	
Spectroscopy Letters	

Books and book chapters editing - publishers: Nova Publishers (USA), Oxford University Press (UK), SPIE (USA)

Membership

Regular member of Union of Physicists in Bulgaria (UPB), from 2000
 Member of the Advisory Council of the UPB – Sofia branch from 2009 to 2014
 Regular member of SPIE-the International Society for Optical Engineering, from 2000
 Regular member of European Society for Photobiology (ESP), from 2003
 Regular IEEE member, 2002-2007
 Member of the European Platform on Photodynamic Medicine (EPPM), from 2008
 Regular member of European Physics Society (EPS), from 2009
 Regular member of Optical Society of America (OSA), from 2009
Senior member of SPIE - the International Society for Photonics and Optical Engineering – from August 2015

Recognitions of the results obtained

- Development of experimental fiberoptic system for fluorescence and reflectance spectroscopy of biological tissues was chosen as the best applied-scientific achievement for 2002 year of the Institute of Electronics and BAS.
- Results from investigations "Optical biopsy of human tissues" were chosen as one of the best applied-scientific achievements for 2004 year of the Institute of Electronics and BAS.
- Results from investigations "Development of spectral methods for early diagnosis of malignant melanoma" were chosen as one of the best applied-scientific achievements for 2005 year of the Institute of Electronics and Bulgarian Academy of Sciences.
- Development of equipment and methodology for early diagnosis of dysplasia and adenocarcinoma of upper part of the gastrointestinal tract were chosen as one of the best applied-scientific achievements for 2006 year of the Institute of Electronics and BAS.
- Results from the investigation cycle "Spectral properties of the tissues – basis for development of new methods for diagnostics and treatment of skin cancer" were chosen as the best applied-scientific achievement for 2007 year of the Institute of Electronics and BAS.
- Results from the investigations of photophysical properties investigation of newly synthesized photosensitizers is chosen as the best applied-scientific achievement for 2011 of the Institute of

Organic Chemistry and BAS (E. Borisova- co-worker in the investigations)

- Results from the investigations on Improvement of photodissociation of oxy-hemoglobin for local tissue oxygen concentration increase is chosen as one of the best applied achievements of IE-BAS for 2012

International training activities

Jan-Feb 2006 – National Technical University of Athens, Greece - Laser systems for biomedical applications

May-June 2007 – Institute of Physics, Minsk, Belarus - Visible and NIR laser irradiation and its influence on tissue oxygenation levels

Oct 2008 - National Institute of Optoelectronics (INOE 2000), Bucharest, Romania – Investigations on photodetection of microbial pollutions

May-June 2009 – Saratov State University, Saratov, Russia – Measurements of absolute optical properties of skin and mucosa

July-Aug 2009 – University of Brighton, UK – Modeling of optical phantoms with application of collagen and Integra® matrices

Oct 2009 - National Institute of Optoelectronics (INOE 2000), Bucharest, Romania – Diagnostics of skin cancer in vivo using fluorescence and reflectance spectroscopy and optical coherence tomography

Nov-Dec 2014 – Saratov State University, Saratov, Russia – Spectral detection of stomach ulcers and neoplasia in rat model systems under stress

May-June 2015 - Saratov State University, Saratov, Russia – Oxygenation of newborn rats with stress-induced stroke.

April 2016, October 2016 Saratov State University, Saratov, Russia –Evaluation of development of stress-induced neoplasia in stomach using exogenous fluorescence spectroscopy

July-August 2017 – professor internship, LPICM, Ecole Polytechnique, Université Paris-Saclay, France

May-June 2018 - Saratov State University, Saratov, Russia – Photodiagnosis of stomach neoplasia using newly synthesized photosensitizers and drug carriers

Administrative activities

1) Member of National Committee for organization and implementation of National Physics Tournament of Young Physicists for 2009/2010

2) Member of National Committee for organization and implementation of National Physics Tournament of Young Physicists for 2010/2011

3) Member of the National list of experts of National Evaluation and Accreditation Agency, from 2010

4) Member of commission for development of National strategy for research and investigations of BAS, 2010

5) Member of National Committee for organization and implementation of National Physics Tournament of Young Physicists for 2011/2012

6) Member of National Committee for organization and implementation of National Physics Tournament of Young Physicists for 2012/2013

7) Scientific Secretary of Institute of Electronics, Bulgarian Academy of Sciences – elected for four years, from April 2012 – July 2018

8) Member of Academic Council of Bulgarian Academy of Sciences, from September 2013 - February 2018

9) Member of the Executive Council of Bulgarian Academy of Sciences – March 2016-February 2017 (one-year period)

10) Member of the Committee for the elaboration of the Rules of the Scientific Council for conducting the election of the heads of laboratories at the Institute of Electronics

11) Chairman of a commission for the preparation of accreditation of IE-BAS for 5 doctoral programs in the period February 2013-February 2014;

12) Member of the Scientific Council Committee for the Selection of the Most Important Scientific and Applied Achievements of IE-BAS - 2012 and 2013

13) Member of the Committee on the Development of Rules for Application, Implementation and Reporting of International Projects at BAS - May-September 2015

15) Member of Expert Group on Accreditation in Specialty Medical Physics - Doctoral Program in Varna Medical University at NEAA - July-December 2016

16) Member of Expert Group on Accreditation in Specialty Medical Physics - Doctoral Program in Shoumen University at NEAA – October 2017- June 2018

Citation index

For the period 2000-June 2018, Assoc. Prof. Dr. Ekaterina Borisova has more than 700 citations and current h-factor =13; i10 =21 (according SCOPUS and Google Scholar databases)

Projects and Contracts:

A) International projects:

Funded by EC Framework Programs:

- 1) Contract No. G5RD-CT-2000-00372 "Improved Photon Efficient Cathodes with Applications in Biological Luminescence", 2001–2003, team member
- 2) Contract No. G6RD-Ct- 2001-00642 "New all-optical systems and methods for precise magnetic and electromagnetic field measurements", 2002 – 2004, team member

Funded in the frames of COST Actions:

- 1) BM1205 "European Network for Skin Cancer Detection Using Laser Imaging", 2014-2017 - **MC member**
- 2) MP1302 "NanoSpectroscopy", 2014-2017 - **MC member**
- 3) TD1104 - EP4Bio2Med - European network for development of electroporation-based technologies and treatments", 2011-2015, team member

Funded by European Social Fund, in the frames of OP "Human Resources Development"

- 1) Contract #BG 051PO001-3.3.04/54/28.08.2009 "Development of interdisciplinary thinking and training of young researchers in the field of light-matter interactions", 2009-2012, **coordinator of the project**

Funded by International Atomic Energy Agency

- 1) Contract No. CRP F-12016 "Ion Beam Modification of Polymer Surfaces", 2004 – 2007, team member

Funded by SIEMENS-Medical Solutions

- 1) Agreement on a Cooperation in the field of optical tomography, 2006-2007, team member

Funded by Austrian Science and Research Liaison Offices Ljubljana and Sofia (ASO)

- 1) "Biomedical photonics, collaboration start up: Establishment of multilateral research network cooperation between scientific organizations in Austria, Bulgaria and Romania", 2007, , team member

Funded by JNIR – Dubna, Russia

- 1) Investigation of cataractogenesis under heavy charged particles and UV light irradiation, 2010-2012, team member
- 2) Radiation and radiobiological investigations in the fields of irradiation of JINR and of the environment, 2011-2013, team member
- 3) Тема 02-0-1065-2007/2014, 2012-2014, team member

Funded by Ministry of Education and Science of Russian Federation

- 1) Contract № 17.488.2014/K "Stomach cancer and innovative solutions: model of transformation of ulcer to cancer, mechanisms of provoking effects of bio-ecological factors, optical diagnostics, signaling systems and preventive methods for metastatic spread, prophylactics in risk groups", 2014-2016

B) Bilateral projects

Fiunded by the National Science Fund of the Ministry of Education and Science of Bulgaria:

- 1) Bulgaria-Romania Project BR-14/07 "Optimization of photodetection and photodynamic inactivation on microbial pollutants", 2007-2009, **head scientist**
- 2) Bulgaria-India Project Bin-04/07 "Inactivation of pathogenic bacteria in periodontal diseases – fluorescence diagnostics and photodynamic therapy", 2007-2010, **head scientist**
- 3) Bulgaria – Ukraine Project DNTS- Ukraine01/0006/14.11.2012 "Investigations of laser interaction with peripheral blood for development of highly effective phototherapy", 2012-2015, team member
- 4) Bulgaria-France Project DNTS – France 01/9/09.05.2017 "Polarization optical histology of tumours", 2017-2019, coordinator of the project
- 5) Bulgaria-Russia Project DNTS – Russia 01/07/23.06.2017 "Development of new optical technologies for improvement of diagnostics quality of gastric cancer", 2017-2019, coordinator of the project

Funded in frames of Academic exchange programmes:

- 1) Bulgaria-Belarus Project for academic exchange ""Development of new methods for laser diagnostics and therapy of dermatological and oncological diseases"", 2005-2008, team member
- 2) Bulgaria – Ukraine Project for academic exchange "Noninvasive optical methods for investigation of venous blood saturation with oxygen", 2011-2013, team member
- 3) Bulgaria-Belarus Project for academic exchange "Laser-induced photodissociation of oxy-hemoglobin in muscle tissues", 2011-2013, team member

- 4) Bulgaria-Ukraine Project for academic exchange “Development of novel method for laser-induced photodissociation of carboxyhemoglobin for carbon oxide intoxication reduction”, 2014-2016, team member
- 5) Bulgaria-Latvia Project for academic exchange “Multispectral and fluorescent imaging of skin tumours”, 2018-2020, **coordinator of the project from BG side**

C) National projects:

Funded by the National Science Fund of the Ministry of Education and Science of Bulgaria:

- 1) Project No. F-1203/02 “Emergent structures and collective behaviors in extended and distributed chaotic systems”, 2003 – 2005, team member
- 2) Project No. M-1422/04 “Extension and improvement of application possibilities of optical biopsy and its approval in diagnosis of malignant cutaneous tumors”, 2004 – 2006, team member
- 3) Project No. MU-F-03/05 “Development of apparatus and methods for optical biopsy of human skin”, 2005-2007, **coordinator of the project**
- 4) Project No. VUL-01/05 “Optical biopsy of dysplasia and tumors of upper part of gastrointestinal tract”, 2005-2007, **coordinator of the project**
- 5) Project No. SRP-101/07 “Preparation of project proposal for FP7 of EU “Development of a laser system laser ablation of biological tissue with smart feedback”, 2007-2008, **coordinator of the project**
- 6) Project No. DO-02-112/2008 “National Center on Biomedical Photonics”, 2009-2012, **leading researcher**
- 7) Project No. DO-02-58/2008 “Development of infrastructure for neutron therapy in Bulgaria”, 2009-2011, **coordinator of partner-organization**
- 8) Project No. DMU-03-46/2011 “Development and introduction of optical biopsy system for early diagnostic of malignant tumors” 2011-2013, **coordinator of the project**
- 9) Project No. DFNI-D02/9/2014 “Development of biophotonics methods as a basis of oncology theranostics”, 2014-2016, **leading researcher**
- 10) Project DN09/7/15.12.2016 “Modeling of the processes of development of prebiotic molecules ion the meteorite surface”, 2017-2019, team member
- 11) Project DFNP-183/14.05.2016, “Macroscopic and microscopic fluorescence spectroscopy for investigation of tumours of gastrointestinal tract”, 2016-2017, **coordinator of the project**
- 12) Project DN18/8/2017 “Biochip based on new plasmonic structures and nano-structured bio-recognition elements”, 2018-2020, **coordinator of partner-organization**

Funded by Bulgarian Academy of Sciences:

- 1) “Laser-induced fluorescence spectroscopy of biological tissues”, 2001-2005, team member
- 2) “Photophysics methods for early diagnosis of cutaneous diseases”, 2004 – 2006, **coordinator of the project**
- 3) “Biophotonics in nano- and femtosecond dimensions”, 2011-2013, team member

Funded by Bulgarian companies, NGOs and national departments:

- 1) “Photophysical characteristics investigation of newly synthesized photosensitizers for photodiagnosis and photodynamic therapy of malignant cutaneous lesions” – financed by OPTELLA Ltd, 2002 – 2005, team member
- 2) Project No.IF-00-121/06 “Laser opto-electronic system for optical tomography”, financed by National Innovation Fund,2006-2007, team member
- 3) Agreement between IE-BAS and Chemical Faculty of Sofia University – “Investigations of photophysical characteristics of new generation bi-stable compounds for optical storage”, 2001-2003, team member
- 4) Agreement between IE-BAS and Eye Clinic of University Hospital “Alexandrovska” – “Early diagnosis of eyelid tumors by laser-induced fluorescence spectroscopy method”, 2001-2003, **coordinator of the project**
- 5) Agreement between IE-BAS and Institute of Organic Chemistry of BAS – “Usage of biologically active compounds for improvement of fluorescent properties of tumor tissues”, 2003-2008, **head scientist**
- 6) Agreement between IE-BAS and Institute of Solid State Physics – “Investigation of photo-physical properties of thin film polymers, and investigation of their temperature dependencies”, 2003-2008, team member
- 7) Agreement between IE-BAS, National Specialized Hospital on Oncology Treatment and Optella Ltd – “Optical technologies for oncological applications”, 2005-current, team member
- 8) Strategic Agreement between IE-BAS and Saratov State Medical University, Russia for training and qualification improvement of young specialists in the field of diagnostics and treatment with application of bio- photo- and nano-technologies”, 2011-current time , **coordinator from Bulgarian side.**
- 9) Strategic Agreement between IE-BAS and Institut national de la recherche scientifique (INRS), Canada for scientific and training cooperation in the field of laser technologies in the field of biophotonics and its applications, **coordinator from Bulgarian side**

Participation in research conferences
and symposia

Personally presented

Type of presentation	International forum	National forum
Plenary lectures	6	0
Invited lectures	31	6
Oral presentation	30	9
Poster presentation	79	3
Seminars in foreign research institutes	8	1

Publications

Assoc. prof. Dr. Ekaterina Borisova has published 6 book chapters, 140 full text articles with IF and/or SJR , 25 full text articles in conference proceedings without IF/SJR and 4 patents – 2 national and 2 European patents for the period of September 2000-June 2018.

1. Book chapters

1. **E. Borisova**, G. Jones, P. Pavlova, C. Russell “Chromatic Monitoring of Biological Tissues and Fluids”, in Chromatic monitoring of complex conditions, ed. G. Jones, A Deakin, J. Spencer, CRC Press *Taylor and Francis Group* ISBN 9781584889885, chapter 8, p. 159-189 (2008)
2. **E. Borisova**, B. Vladimirov, R. Ivanova L. Avramov. Light-Induced Fluorescence Techniques for Gastrointestinal Tumour Detection, New Techniques in Gastrointestinal Endoscopy, Oliviu Pascu and Andrada Seicean (Ed.), InTech, chapter 14, p. 231 – 252, ISBN: 978-953-307-777-2 (2011)
3. **E. Borisova**, V. Mantareva, I. Bliznakova, I. Angelov, L. Avramov, E. Pavlova. Photodiagnosis and Photodynamic Therapy of Cutaneous Melanoma, Current Management of Malignant Melanoma, Ming Y. Cao (Ed.), InTech, chapter 7, p. 141-156, ISBN: 978-953-307-264-7(2011)
4. P. Pavlova, **E. Borisova**, L. Avramov, E. Petkova, P. Troyanova. Investigation of Relations Between Skin Cancer Lesions’ Images and Their Reflectance and Fluorescent Spectra, Melanoma in the Clinic - Diagnosis, Management and Complications of Malignancy, Prof. Mandi Murph (Ed.), InTech, chapter 6, (2011), p. 87- 104. ISBN: 978-953-307-571-6.
5. M. Ulanova, A. Gekhalyuk, I. Agranovich, A. Khorovodov, V. Rezumbaeva, **E. Borisova**, A. Sharif, N. Navolokin, E. Shuvalova, O. Semyachkina-Glushkovskaya, “Stress-induced stroke and stomach cancer: sex differences in oxygen saturation”, Q. Luo et al. (eds.), Springer Series, Oxygen Transport to Tissue XXXVIII, Advances in Experimental Medicine and Biology 923, 135-140, 2016
6. O. Semyachkina-Glushkovskaya, **E. Borisova**, A. Namikin, I. Fedosov, A. Abdurashidov, E. Zinchenko, A. Gekalyuk, M. Ulanova, V. Rezumbaeva, L. Avramov, D. Zhu, Q. Luo, V. Tuchin, “Hypoxia and neonatal haemorrhagic stroke: experimental study of mechanisms”, Q. Luo et al. (eds.), Springer Series, Oxygen Transport to Tissue XXXVIII, Advances in Experimental Medicine and Biology 923, 173-179, 2016

2. Patents

1. Patent office of Republic of Bulgaria “Optical multichannel irradiation-detection system”, D.Stoyanov, T. Dreischuh, L. Gurdev, O. Vankov, L. Avramov, **E. Borisova**, Priority 17.01.2007, Patent No. 65769 B1 (2009).
2. European patent. D.Stoyanov, T. Dreischuh, L. Gurdev, O. Vankov, L. Avramov, **E. Borisova**, I. Bliznakova, Method for determining optical and spatial characteristics of an inclusion in a turbid medium using multiple-scattering optical tomography, Priority 13 Aug.2008, applied by Siemens, Medical Solutions, AG, Germany, Patent No.EP2153772–A1, published on 17.02.2010–EP Bulletin [2010/07]
3. European patent. D.Stoyanov, T. Dreischuh, L. Gurdev, O. Vankov, L. Avramov, **E. Borisova**, I. Bliznakova, V. Koch, Apparatus for determining optical and spatial characteristics of an inclusion in a turbid medium using multiple-scattering optical tomography, Priority 10 Nov. 2008, applied by Siemens, Medical Solutions, AG, Germany, Patent No.EP2165647-A1, published on 24.03.2010–EP Bulletin [2010/12]
4. Patent office of Republic of Bulgaria “Set-up for spectral diagnostics of skin tumour diseases”, **E. Borisova**, L. Avramov, A. Andreev, Certificate No. BG2040 UI (2015).

3. Journal articles (with IF and/or SJR)

2018

1. P. Pavlova, E. Borisova, Technique for matching similarity using the chromaticity space, Int. J Appl Res Tech 3(5), 51-61, DOI: [https://doi.org/10.24163/ijart/2017/3\(5\):51-61](https://doi.org/10.24163/ijart/2017/3(5):51-61), ISSN 2519-5115 (2018)
2. Ts Genova, E Borisova, N Penkov, B Vladimirov, Al Zhelyazkova, L Avramov, Time-dependance of synchronous fluorescence signals in gastrointestinal tumours ex vivo, 2018 International Conference Laser Optics (ICLO) **IEEE Xplore** Proceedings - International Conference Laser Optics 2018 - ICLO 2018, 8435892, pp. 495, DOI: 10.1109/LO.2018.8435892 (2018)
3. OV Semyachkina-Glushkovskaya, EU Rafailov, SG Sokolovsky, EG Borisova, Vanya Mantareva, Ivan Angelov, Alexander Shirokov, Nikita Navolokin, NA Shushunova, AP Khorovodov, AV Terskov, AA Bodrova, MV Ulanova, Esmat Shrif, VV Tuchin, J Kurths, The Laser Technologies of Targeted Opening of Blood-Brain Barrier for Drug Brain Delivery, 2018 International Conference Laser Optics (ICLO) **IEEE Xplore** Proceedings - International Conference Laser Optics 2018 - ICLO 2018, 8435846, pp. 501, DOI: 10.1109/LO.2018.8435846 (2018)
4. E Borisova, Ts Genova-Hristova, N Penkov, I Terziev, P Troyanova, B Vladimirov, L Avramov, Synchronous fluorescence spectroscopy of soft tissues–tool for diagnostics of malignant lesions, 2018 International Conference Laser Optics (ICLO) **IEEE Xplore** Proceedings - International Conference Laser Optics 2018 - ICLO 2018, 8435383, pp. 493, DOI: 10.1109/LO.2018.8435383 (2018)
5. G Dyankov, V Serbezov, E Borisova, H Kisov, E Belina, Direct immobilized nanostructured myoglobin for CO detection by surface plasmon resonance, 2018 International Conference Laser Optics (ICLO) **IEEE Xplore** Proceedings - International Conference Laser Optics 2018 - ICLO 2018, 8435542, pp. 532 DOI: 10.1109/LO.2018.8435542 (2018)

6. Ts Genova, **E Borisova**, N Penkov, B Vladimirov, L Avramov, Synchronous fluorescence spectroscopy with and without polarization sensitivity for colorectal cancer differentiation, Proc. SPIE - Biophotonics: Photonic Solutions for Better Health Care VI , 10685, 106852L (2018)
7. **E Borisova**, Ts Genova-Hristova, P Troyanova, I Terziev, EA Genina, AN Bashkatov, O Semyachkina-Glushkovskaya, V Tuchin, L Avramov, Optical UV-VIS-NIR spectroscopy of benign, dysplastic and malignant cutaneous lesions ex vivo, Proc. SPIE - Biophotonics: Photonic Solutions for Better Health Care VI, 10685, 106853T (2018)
8. **Ekaterina Borisova**, Dobroslav Kyurkchiev, Kalina Tumangelova-Yuzeir, Ivan Angelov, Tsanislava Genova-Hristova, Oxana Semyachkina-Glushkovskaya, Krassimir Minkin, Evaluation of photodynamic treatment efficiency on glioblastoma cells received from malignant lesions: initial studies, Proc. SPIE - Saratov Fall Meeting 2017: Optical Technologies in Biophysics and Medicine XIX , vol. 10716, 1071602 (2018)
9. Thomas SangHyuk Yoo, Tsanislava Genova-Hristova, Hee Ryung Lee, **Ekaterina Borisova**, Ivan Terziev, Enric Garcia-Caurel, Razvigor Ossikovski, Tatiana Novikova, Polarized light histology of tissue and differential Mueller matrix formalism, Proc. SPIE - Advanced Biomedical and Clinical Diagnostic and Surgical Guidance Systems XVI, vol. 10484, 10484-12 (2018) DOI: 10.1117/12.2291075
10. **Ekaterina Borisova**, Oxana Semyachkina-Glushkovskaya, Nikita Navolokin, Vanya Mantareva, Ivan Angelov, Ilana Agranovich, Alexander Photodynamic diagnostics of stress-induced gastrointestinal neoplasia in laboratory animals using 5-aminolevulinic acid and Al-phthalocyanine Khorovodov, Natalia Shushunova, Anastasiya Bodrova, Ivan Fedosov, Anton Namykin, Arkady Abdurashitov, Latchezar Avramov, , Proc. SPIE Optical Diagnostics and Sensing XVIII: Toward Point-of-Care Diagnostics, vol. 10501, 105011E (2018)
11. **E Borisova**, Ts Genova-Hristova, P Troyanova, E Pavlova, I Terziev, O Semyachkina-Glushkovskaya, M Lomova, E Genina, G Stanciu, D Tranca, L Avramov, Multispectral detection of cutaneous lesions using spectroscopy and microscopy approaches, Proc. SPIE - Photonics in Dermatology and Plastic Surgery , vol. 10467, 104670M (2018)
12. Oxana Semyachkina - Glushkovskaya, Vladimir Chehonin, **Ekaterina Borisova**, Ivan Fedosov, Anton Namykin, Arkady Abdurashitov, Alexander Shirokov, Boris Khlebtsov, Yelena Lyubun, Nikita Navolokin, Mariya Ulanova, Natalia Shushunova, Alexander Khorovodov, Ilana Agranovich, Anastasia Bodrova, Madina Sagatova, Ali Esmat Shareef, Elena Saranceva, Tatyana Iskra, Mariya Dvoryatkina, Ekaterina Zhinchenko, Olga Sindeeva, Valery Tuchin, Jurgen Kurths, Photodynamic opening of the blood - brain barrier and pathways of brain clearing, Journal of Biophotonics, 11(8):e201700287. doi: 10.1002/jbio.201700287 (2018)
13. Ivan A Bratchenko, Violetta P Sherendak, Oleg O Myakinin, Dmitry N Artemyev, Alexander A Moryatov, **Ekaterina Borisova**, Latchezar Avramov, Larisa A Zherdeva, Andrey E Orlov, Sergey V Kozlov, Valery P Zakharov, In vivo hyperspectral imaging of skin malignant and benign tumors in visible spectrum, Journal of Biomedical Photonics & Engineering 4 (1), 010301 (2018)
14. K. Koev, L. Avramov, **E. Borissova**, Five-year follow-up of low-level laser therapy (LLLT) in patients with age-related macular degeneration (AMD), Journal of Physics: Conference Series 992, 012061 (2018)
15. K. Koev, L. Avramov, **E. Borissova**, Clinical results from low-level laser therapy in patients with autosomal dominant cone-rod dystrophy, Journal of Physics: Conference Series 992, 012060 (2018)

2017

16. O. Semyachkina-Glushkovskaya, J Kurths, **E Borisova**, S Sokolovski, V. Mantareva, I. Angelov, A. Shirokov, N. NAVolokin, N. Shushunova, A. Khorovodov, M. Ulanova, M. Sagatova, I. Agaranovich, O. Sindeeva, A. Gekalyuk, A. Bodrova, E. Rafailov, Photodynamic opening of blood-brain barrier, Biomedical Optics Express 8 (11), 5040-5048 (2017)
17. Oxana Semyachkina-Glushkovskaya, **Ekaterina Borisova**, Sergei Sokolovski, Alexander Shirokov, Nikita Navolokin, Natalia Shushunova, Alexander Khorovodov, Maria Ulanova, Madina Sagatova, Ilana Agranovich, Anastasiya Bodrova, Maria Dvoryatkina, Edik Rafailov, Valery V Tuchin, Laser-induced generation of singlet oxygen: new strategies in the treatment of brain tumor, Proc. of International Conference on Photonics and Imaging in Biology and Medicine, P. T2B.5, <https://doi.org/10.1364/PIBM.2017.T2B.5> (OSA Publishing) (2017)
18. Valery V. Tuchin, **Ekaterina Borisova**, Małgorzata Jedrzejewska-Szczerska, Martin Leahy, Francesco Pavone, Jurgen Popp, Jose Pozo, A special issue on Biophotonics in Europe, Frontiers of Optoelectronics 10 (3), 203-210 (2017)
19. Oxana V Semyachkina-Glushkovskaya, Arkady S Abdurashitov, Elena I Saranceva, **Ekaterina G Borisova**, Alexander A Shirokov, Nikita V Navolokin, Blood-brain barrier and laser technology for drug brain delivery, Journal of Innovative Optical Health Sciences 10 (05), 1730011 (2017)
20. **E Borisova**, Ts Genova, O Semyachkina-Glushkovskaya, N Penkov, I Terziev, B Vladimirov, Excitation-emission matrices (EEMs) of colorectal tumors—tool for spectroscopic diagnostics of gastrointestinal neoplasia, Frontiers of Optoelectronics 10 (3), 292-298 (2017)
21. **Ekaterina Borisova**, Oxana Semyachkina-Glushkovskaya, Tsanislava Genova, Nikolay Penkov, Ivan Terziev, Borislav Vladimirov, Latchezar Avramov, "Synchronous fluorescence spectroscopy of colon neoplasia", Proc. SPIE 10336, SFM-2016: Optical Technologies in Biophysics and Medicine XVIII, 10336-02 doi: 10.1117/12.2269382; (2017);
22. Liliya Angelova, Antony Stoev, **Ekaterina Borisova**, Latchezar Avramov, "Detection of plum pox virus infection in selection plum trees using spectral imaging", Proc. SPIE 10226, 19th International Conference and School on Quantum Electronics: Laser Physics and Applications, 10226-14; doi: 10.1117/12.2261807; (2017)
23. Zhelyazkova, I. Kuzmina, E. Borisova, N. Penkov, Ts. Genova, J. Spigulis, L. Avramov, "Investigating different skin and gastrointestinal tract (GIT) pathologies ex vivo by autofluorescence spectroscopy and optical imaging", Proc. SPIE 10226, 19th International Conference and School on Quantum Electronics: Laser Physics and Applications, 10226-15, doi: 10.1117/12.2261817; (2017)
24. Ts. Genova, **E. Borisova**, G. Stanciu, D. Tranca, I. Terziev, N. Penkov, B. Vladimirov, M. Lomova, O. Semyachkina-Glushkovskaya, L. Avramov, "Nonlinear optical microscopy for investigation of gastrointestinal lesions", Proc. SPIE 10226, 19th International Conference and School on Quantum Electronics: Laser Physics and Applications, 10226-17; doi: 10.1117/12.2260712; (2017)
25. **E. Borisova**, Tz. Uzunov, D. Penev, Ts. Genova, L. Avramov, "Laser-induced breakdown spectroscopy of dental lesions: diagnostic and therapeutic monitoring tool", Proc. SPIE 10226, 19th International Conference and School on Quantum Electronics: Laser Physics and Applications, 10226-16, doi: 10.1117/12.2261423; (2017)

26. Ts. Genova, **E. Borisova**, N. Penkov, B. Vladimirov, I. Terziev, Al. Zhelyazkova, L. Avramov, "Autofluorescence polarization spectroscopy of cancerous and normal colorectal tissues", Proc. SPIE 10226, 19th International Conference and School on Quantum Electronics: Laser Physics and Applications, 1022618 (5 January 2017); doi: 10.1117/12.2264453; (2017)
27. Ts. Genova, **E. Borisova**, O. Semyachkina-Glushkovskaya, D. Gorin, D. Bratashov, I. Terziev, Macro and micro spectroscopy parameters of cancerous and healthy gastrointestinal tissues, JBPE, vol 3(4), 040305, (2017)
28. KR koev, L Avramov, **E Borissova**, SIX YEARS FOLLOW-UP OF LOW-LEVEL LASER THERAPY (LLL) IN PATIENTS WITH AGERELATED MACULAR DEGENERATION (AMD)., International Journal of Advanced Research 5 (9), 1428-1232 (2017)
29. **E. Borisova**, Ts. Genova, P. Troyanova, I. Terziev, V. Zakharov, I. Bratchenko, M. Lomova, D. Gorin, L. Avramov, Microscopic and macroscopic spectral peculiarities of cutaneous tumours, Proc. SPIE Vol. 10592, Biophotonics—Riga 2017; 1059202 (2017)

2016

30. **E. Borisova**, Al. Zhelyazkova, M. Keremedchiev, N. Penkov, O. Semyachkina-Glushkovskaya, L. Avramov, "Endogenous synchronous fluorescence spectroscopy (SFS) of basal cell carcinoma – initial study", Optics and Spectroscopy, vol 120(1) p.43-49 (2016)
31. L. Ghervase, D. Savastru, S. Dontu, A.Forsea, **E. Borisova**, "Characterization of Human Skin by Fluorescence, Exemplified by Dermatofibroma, Keratoacanthoma, and Seborrheic Keratosis", Analytical Letters, Vol. 49(3), p. 342-349, DOI: 10.1080/00032719.2015.1036277 (2016)
32. Olga Sindeeva, **Ekaterina Borisova**, Arkady Abdurashitov, Ekaterina Zhinchenko, Artem Gekalyuk, Maria Ulanova, Aly Esmat Sharif, Victoria Razubaeva, Sergey Serov, Ludmila Yankovskaya, Valery Tuchin, Oxana Semyachkina-Glushkovskaya, The stress-related changes in the cerebral blood flow in newborn rats with intracranial hemorrhage: metabolic and endothelial mechanisms, JBPE 1(4), p.248 – 254, doi: 10.18287/JBPE-2015-1-4-248 (2016)
33. Ts. Genova, **E. Borisova**, Al. Zhelyazkova, N. Penkov, B. Vladimirov, I. Terziev, O. Semyachkina-Glushkovskaya, L. Avramov, Colorectal cancer stage evaluation using synchronous fluorescence spectroscopy technique, Optical and Quantum Electronics, 48 (8):378 (2016)
34. Ts. Genova, **E. Borisova**, N. Penkov, B. Vladimirov, Al. Zhelyazkova, L. Avramov, Excitation– emission matrices and synchronous fluorescence spectroscopy for cancer diagnostics in gastrointestinal tract, Quantum Electronics 46 (6) 510 –514 (2016)
35. Oxana Semyachkina-Glushkovskaya, **Ekaterina Borisova**, Maxim Abakumov, Dmitry Gorin, Lachezar Avramov. Ivan Fedosov6, Anton Namykin, Arkady Abdurashitov, Alexander Serov, Alexey Pavlov, Ekaterina Zinchenko, Vlad Lychagov, Nikita Navolokin, Alexander Shirokov, Galina Maslyakova, Dan Zhu, Qingming Luo, Vladimir Chekhonin, Valery Tuchin, Jürgen Kurths, The Stress and Vascular Catastrophes in Newborn Rats: Mechanisms Preceding and Accompanying the Brain Hemorrhages, Front. Physiol., 14 June 2016, <http://dx.doi.org/10.3389/fphys.2016.00210>
36. Oxana V Semyachkina-Glushkovskaya, Jürgen Kurths, Alexey N Pavlov, **Ekaterina G Borisova**, Arkady S Abdurashitov, Dan Zhu, Pengcheng Li, Qingming Luo, Valery V Tuchin, Silent Vascular Catastrophes in the Brain in Term Newborns: Strategies for Optical Imaging, IEEE Journal of Selected Topics in Quantum Electronics 22 (3), doi: 10.1109/JSTQE.2016.2523982 (2016)
37. Ivan P Angelov, Anton I Kril, Rumen G Dimitrov, **Ekaterina G Borisova**, Lachezar A Avramov, Vanya N Mantareva, Light enhancement of in vitro antitumor activity of galactosylated phthalocyanines, Photonics & Lasers in Medicine 5(2): 123-140 (2016)
38. B. Nikolova, I. Tsoneva, **E. Borisova**, E. Peycheva, L. Avramov, Electrochemotherapy of skin cancer treatment results estimated by in vivo autofluorescence measurements, OAM-RC Vol. 10, No. 5-6, p. 433 - 436 (2016)
39. Vanya Mantareva, Vesselin Kussovski, Mahmut Durmuş, **Ekaterina Borisova**, Ivan Angelov, Photodynamic inactivation of pathogenic species Pseudomonas aeruginosa and Candida albicans with lutetium (III) acetate phthalocyanines and specific light irradiation, Lasers Med Sci, DOI 10.1007/s10103-016-2022-8 (2016)

2015

40. Pavlova, P., **Borisova, E.**, Pavlova, E., Avramov, L. , Adaptive technique for matching the spectral response in skin lesions' images, Source of the Document Journal of Physics: Conference Series 594 (1), 012025 (2015)
41. **E. Borisova**, Ts. Genova, Al. Zhelyazkova, L. Angelova, M. Keremedchiev, N. Penkov, B. Vladimirov, O. Semyachkina-Glushkovskaya, L. Avramov, Polarization sensitive excitation-emission matrices for detection of colorectal tumours – initial investigations, Journal of Physics: Conference Series 594 (1), 012031 (2015)
42. O. Semyachkina-Glushkovskaya, A. Pavlov, J. Kurths, **E. Borisova**, A. Gisbrecht, O. Sindeeva, A. Abdurashitov, A. Shirokov, N. Navolokin, E. Zinchenko, A. Gekalyuk, M. Ulanova, D. Zhu, Q. Luo, V. Tuchin, "Optical monitoring of stress-related changes in the brain tissues and vessels associated with hemorrhagic stroke in newborn rats", Biomedical Optics Express 6 (10), 4088-4097 (2015)
43. **E. Borisova**, Ts. Genova, Al. Zhelyazkova, L. Angelova, M. Keremedchiev, N. Penkov, I. Terziev, B. Vladimirov, O. Semyachkina-Glushkovskaya, L. Avramov, "Synchronous autofluorescence spectroscopy of gastrointestinal tumours – tool for endogenous fluorophores evaluation", OAM-RC vol. 9, iss. 9-10, p. 1234-1238 (2015)
44. Al. Zhelyazkova, **E. Borisova**, Ts. Genova, E. Pavlova, P. Troyanova, I. Terziev, N. Penkov, L. Avramov, "Polarization-sensitive autofluorescence spectroscopy of non-melanoma cutaneous tumours, JOAM, Vol. 17, iss.9-10, p. 1283-1287 (2015)
45. Ts. Genova, **E. Borisova**, L. Angelova, Al. Zhelyazkova, M. Keremedchiev, N. Penkov, B. Vladimirov, L. Avramov, Excitation-emission matrices for detection of colorectal tumors - initial investigations, Bulg. Chem Commun., Vol. 47, pp.464-468, (2015)
46. Ya. Andreeva, **E. Borisova**, Ts. Genova, Al. Zhelyazkova, L. Avramov, Synchronous Fluorescence Spectroscopy for Analysis of Vegetable Oils, Bulg. Chem. Commun. Vol. 47, pp. 469-475 (2015)
47. V. Mantareva, I. Eneva, V. Kussovski, **E. Borisova**, I. P. Angelov, Antimicrobial photodisinfection with Zn(II) phthalocyanine adsorbed on TiO₂ upon UVA and red irradiation, Proc. SPIE, vol. 9447, 9447-0W (2015)
48. Ya. Andreeva, **E. Borisova**, Ts. Genova, Al. Zhelyazkova, L. Avramov, Synchronous fluorescence spectroscopy for analysis of wine and wine distillates, Proc. SPIE, Vol. 9447, 9447-0Z (2015)

49. Zhelyazkova, **E. Borisova**, L. Angelova, E. Pavlova, M. Keremedchiev, L. Avramov, Tissue Fluorescence Origins Evaluation Using Excitation-Emission Matrices, Proc. SPIE, vol. 9447, 9447-11(2015)
50. Ts. Genova, **E. Borisova**, Al. Zhelyazkova, O. Semyachkina-Glushkovskaya, N. Penkov, M. Keremedchiev, B. Vladimirov, L. Avramov, Excitation-emission matrices (EEMs) and synchronous fluorescence spectroscopy (SFS) investigations of gastrointestinal tissues, Proc. SPIE, vol. 9447, 9447-0X (2015)

2014

51. **E. Borisova**, A. Zhelyazkova, T. Genova, L. Avramov, E. Pavlova, P. Troyanova, Using spectroscopy to diagnose skin cancer, SPIE Newsroom - Biomedical Optics & Medical Imaging (invited paper), 19 June 2014, SPIE Newsroom. DOI: 10.1117/2.1201405.005509
52. **Borisova E.**, L. Angelova, Al. Zhelyazkova, Ts. Genova, O. Semyachkina-Glushkovskaya, M. Keremedchiev, N. Penkov, B. Vladimirov, L. Avramov, "Endogenous and exogenous fluorescence spectroscopy of gastrointestinal tumours – in vitro studies", JOAM 16 (9): 1196-1205 (2014)
53. L. Ghervase, E.M. Carstea, **E. Borisova** and A.M. Forsea, Bringing Light into the Diagnosis of Skin Disorders - Short Review on Laser Induced Fluorescence Spectroscopy and Optical Coherence Tomography in Dermatology, Current Medical Imaging Reviews 10, 297-303 DOI: 10.2174/157340561004150121141449, (2014)
54. Mamilov S.A., Esman S.S., Veligodski D.V., Asimov M.M., **Borisova E.G.**, Gisbrecht A.I., "The impact of laser radiation on the photodissociation of carboxyhemoglobin in blood", Proc. SPIE Vol. 9031, 9031-0G (2014)
55. **E. Borisova** ; Al. Jeliaskova ; E. Pavlova ; P. Troyanova ; T. Kundurdjiev ; P. Pavlova ; L. Avramov, Reflectance spectroscopy of pigmented cutaneous benign and malignant lesions, Proc. SPIE 9421 - AOMD-8, 9421-01 (2014).
56. **E. Borisova** ; E. Pavlova ; T. Kundurdjiev ; P. Troyanova ; Ts. Genova ; L. Avramov, Light-induced autofluorescence and diffuse reflectance spectroscopy in clinical diagnosis of skin cancer, Proc. SPIE 9129, Biophotonics: Photonic Solutions for Better Health Care IV, 9129-10 (2014).
57. **E. Borisova** ; L. Angelova ; Al. Jeliaskova ; Ts. Genova ; E. Pavlova ; P. Troyanova ; L. Avramov, Polarization effects in cutaneous autofluorescent spectra, Proc. SPIE 9129, Biophotonics: Photonic Solutions for Better Health Care IV, 9129-2G (2014).

2013

58. Pavlova E., Troyanova P., **Borisova E.**, „Fluorescent and diffuse-reflectance spectroscopy for diagnostics of malignum melanoma and dysplastic nevi”. Dermatological review, vol. 2, p.6-10 (2013)
59. Pavlova E., Troyanova P., **Borisova E.**, „Fluorescence spectroscopy of squamous cell carcinoma of the skin”, Bulgarian Medical Journal 7(3): 75-79 (2013)
60. V.Mantareva, I. Angelov, D. Wöhrle, **E. Borisova**, V. Kussovski, "Metallophthalocyanines for antimicrobial photodynamic therapy: an overview of our experience", J. Porphyrins Phthalocyanines 2013; 17: 399–416 (2013)
61. **E. Borisova**, L. Angelova, E. Pavlova, "Endogenous and Exogenous Fluorescence Skin Cancer Diagnostics for Clinical Applications" (invited paper), IEEE J Select Topics Quant Electr 20(2), 12 p. (2014), DOI: 10.1109/JSTQE.2013.2280503 (published on-line – 23 Sept 2013)
62. **Borisova E.**, L. Plamenova; M. Keremedchiev, B. Vladimirov, L. Avramov, "Endogenous and exogenous fluorescence of gastrointestinal tumors: initial clinical observations", Proc. SPIE, Vol. 8770: 87701C, DOI: 10.1117/12.2016389 (2013)
63. Angelova L., **E. Borisova**, Al. Zhelyazkova, M. Keremedchiev, B. Vladimirov, L. Avramov, "Fluorescence Spectroscopy of Gastrointestinal Tumors – In Vitro Studies and In Vivo Clinical Applications", Proc. SPIE Vol. 9032, 9032-5, doi: 10.1117/12.2044449 (ISSN: 1605-7422) (2013)
64. Zhelyazkova A., **E. Borisova**, L. Angelova, E. Pavlova, M. Keremedchiev, "Excitation-Emission Matrices Measurements of Human Cutaneous Lesions – Tool for Fluorescence Origins Evaluation", Proc. SPIE Vol. 9032, 90320A-1, doi: 10.1117/12.2044450, (ISSN: 1605-7422) (2013)

2012

65. **Borisova E.**, Pavlova P., Pavlova E., Troyanova P., Avramov L., "Optical biopsy of human skin – tool for cutaneous tumours' diagnosis", Int. J. Bioautomation, 16(1): 53-72, (2012)
66. Mantareva V., Kril A., Angelov I., Dimitrov R., **Borisova E.**, Avramov L.; "Effects of the position of galactose units to Zn(II) phthalocyanine on the uptake and photodynamic activity towards breast cancer cells", in Biophotonics: Photonic Solutions for Better Health Care III, Jürgen Popp; Wolfgang Drexler; Valery V. Tuchin; Dennis L. Matthews, Editors, Proceedings of SPIE Vol. 8427 (SPIE, Bellingham, WA 2012), 8427-43, ISSN: 16057422 ISBN: 978-081949119-0, DOI: 10.1117/12.923794
67. **Borisova Ekaterina**, Plamenova Lilia, Keremedchiev Momchil, Vladimirov Borislav, Avramov Latchezar, "Endogenous and exogenous fluorescence of gastrointestinal tumors – initial clinical observations", Proc. SPIE, ISQ12-ISQ100-87, 9 p. (2012)

2011

68. T.Dreischuh, D. Stoyanov, L. Gurdev, Orlin Vankov, I.Bliznakova, L.Avramov, **E. Borisova**, Method for detection and analysis of small turbid inclusions in turbid media using single-sided laser sensing, News of BAS, No 1 (89), Year IX, ISSN 1312-2436 (2011).
69. **E. Borisova**, „Development of interdisciplinary thinking and training of young scientists in the field of light-matter interactions”, News of BAS, 7 (95), стр. 1-3 (2011)
70. Koev, K., Avramov, L., **Borisova, E.**, He-Ne low level laser therapeutic applications for treatment of corneal trauma, Proceedings of SPIE - The International Society for Optical Engineering 7747, art. no. 7747-11 (2011)
71. Mantareva V., Angelov I., Stambolieva N., Kussovski V., Dimitrov R., **Borisova E.**, Avramov L., Wöhrle D., Immobilized metallophthalocyanines and fullerene C60 for inactivation of human pathogens, Medimond Proc., 13th IPA World Congress, p. 115-120 (2011)

2010

72. **E. Borisova**, G. Pavelescu, A. Daskalova, L. Cristescu, E. M. Carstea, "Fluorescence evaluation of anthropogenic influence on rivers crossing Sofia", Rom.Rep.Phys. 62(1) p. 193-201, (2010)
73. P. Pavlova, **E. Borisova**, L. Avramov, El. Petkova, P. Troyanova, "Investigation of relations between skin cancer lesions' images and their fluorescent spectra", Laser Physics, 20, p. 596-603 (2010)
74. E. Carstea, L. Chervase, G. Pavelescu, D. Savastru, A. Forsea, E. Borisova, Combined optical techniques for skin lesion diagnosis: short communication, OAM-RC, Vol. 4(12) p. 1960-1963, (2010)
75. T.Tsvetkova, Balabanov S., Avramov L., **Borisova E.**, Angelov, I., Bischoff, L., "Photoluminescence of Si+ and C+ implanted polymers", Journal of Physics: Conference Series, Volume 223, Article number 012033, ISSN: 17426588, DOI: 10.1088/1742-6596/223/1/012033 (2010)
76. S.Balabanov, Tsvetkova T., **Borisova E.**, Avramov L., Bischoff, L., Zuk, J., Optical properties of Si+ implanted PMMA, Journal of Physics: Conference Series, Volume 223, Article number 012032, ISSN: 17426588, DOI: 10.1088/1742-6596/223/1/012032(2010).
77. K. Koev, **E. Borisova** and L. Avramov. He-Ne low level laser therapeutic applications for treatment of acute iridocyclitis, Acta Medica Bulgarica Vol. 37 (1) p. 22-29 (2010)
78. K. Koev, **E. Borisova** and L. Avramov. Laser-induced autofluorescence spectroscopy of basal cell carcinoma and papilloma of eyelids and comparison with the results from the histological investigation, Acta Medica Bulgarica Vol. 37 (1) p. 51-54 (2010)
79. **E. Borisova**; L. Avramov; P. Pavlova; E. Pavlova; P. Troyanova, "Qualitative optical evaluation of malignancies related to cutaneous phototype", Proc. SPIE vol. 7563 Dynamics and Fluctuations in Biomedical Photonics VII. 75630X, (2010)

2009

80. V. Kussovski, V. Mantareva, I. Angelov, P. Orozova, D. Wohrle, G. Schnurpfeil, **E. Borisova**, L. Avramov, "Photodynamic inactivation of Aeromonas hydrophila by cationic phthalocyanines with different hydrophobicity" FEMS Microbiol Lett 294 p.133–140(2009)
81. T. Tsvetkova, S. Balabanov, L. Avramov, **E. Borisova**, I. Angelov, S. Sinning, L. Bischoff, "Photoluminescence enhancement in Si+ implanted PMMA", Vacuum, Vol. 83: S252-S255 (2009).
82. **Borisova E.**, Bliznakova, I., Troyanova, P., Avramov, L., „Endogenous and exogenous fluorescence spectroscopy of base-cell carcinoma", Comptes Rendus de L'Academie Bulgare des Sciences 61 (7), pp. 871-878, (2009)
83. **E. Borisova**, E. Carstea, L. Cristescu, E. Pavlova, N. Hadjiolov, P. Troyanova, L. Avramov, "Light-induced fluorescence spectroscopy and optical coherence tomography of basal cell carcinoma", Journal of Innovative Optical Health Sciences vol.2(3), pp 261-268 (2009)
84. **E. Borisova**, Dogandjiiska, D., Bliznakova I., Avramov, L., Pavlova, E., Troyanova, P., "Multispectral autofluorescence diagnosis of non-melanoma cutaneous tumors", Progress in Biomedical Optics and Imaging - Proceedings of SPIE, Vol. 7368, p. 736823 – 1-6, (2009).
85. **E.G. Borisova**, Vladimirov, B., Terziev, I., Ivanova, R., Avramov, L., „5-ALA/PpIX fluorescence detection of gastrointestinal neoplasia", Progress in Biomedical Optics and Imaging - Proceedings of SPIE, Vol. 7368, p.736824 -1-6 (2009)

2008

86. **E. Borisova**, P. Troyanova, P. Pavlova, L. Avramov, Diagnostics of pigmented skin tumors based on laser-induced autofluorescence and diffuse reflectance spectroscopy, Quantum Electronics 38(6): 597-605 (2008)
87. **E. Borisova**, B. Vladimirov, L. Avramov, "5-ALA Mediated Fluorescence Detection of Gastrointestinal Tumors", Adv Opt Tech, doi:10.1155/2008/862081 (2008)
88. S.Balabanov, T.Tsvetkova, **E. Borisova**, L. Avramov, L. Bischoff: "Dose dependence of visible range diffuse reflectivity for Si+ and C+ ion implantad polymers", Proc. 15th Int. School on "Vacuum, Electron and Ion Technologies" (VEIT'07), Sept. 17-21, Sozopol, Bulgaria, J Phys: Conference Series, 113, 2008, 012038 (2008).
89. S.Balabanov, T.Tsvetkova, **E. Borisova**, L. Avramov, L. Bischoff: "Spectral distribution of UV range diffuse reflectivity for Si+ ion implantad polymers", Proc. of the 15th Int. School on "Vacuum, Electron and Ion Technologies" (VEIT'07), Sept. 17-21, Sozopol, Bulgaria, J Phys: Conference Series 113, 012039 (2008).
90. T.Tsvetkova, S.Balabanov, L. Avramov, **E. Borisova**, L. Bischoff: "Si+ implantation induced photoluminescence enhancement in PMMA", Przegląd Elektrotechniczny R84 (3), 72-74 (2008).
91. P. Troyanova, **E. Borisova**, L. Avramov, Photodynamic medicine - perspectives of development, Oncology, 36(1): 45-54 (2008).
92. **E. Borisova**, E. Nikolova, P. Troyanova, L. Avramov, Autofluorescence and diffuse reflectance spectroscopy of pigment disorders in human skin, JOAM 10(3) 717-722, (2008)
93. **E. Borisova**, P. Troyanova, E. Nikolova, L. Avramov, Cutaneous Tumors In Vivo Investigations Using Fluorescence and Diffuse Reflectance Techniques (invited), Proc. SPIE Vol. 6791, SFM'07 - Optical Technologies in Biophysics and Medicine IX, ed. V. Tuchin,, 679105, (2008)
94. **E. Borisova**, B. Vladimirov, L. Avramov, Fluorescence Detection of Esophageal Neoplasia, Proc. SPIE Vol. 6791, SFM'07 - Optical Technologies in Biophysics and Medicine IX, ed. V. Tuchin, 679104, (2008)
95. **E. Borisova**, B. Vladimirov, L. Avramov, "5-ALA/PpIX fluorescence detection of esophageal and stomach neoplasia – effects of autofluorescence background from normal and inflammatory areas", Proc. SPIE, Vol. 7027, 7027-1A, (2008)
96. Angelov, V. Mantareva, V. Kussovski, D. Woehrl, **E. Borisova** and L. Avramov, "Improved Antimicrobial Therapy with Cationic Tetra- and Octa-substituted Phthalocyanines", Proc. SPIE, Vol. 7027, 7027-17, (2008)

2007

97. L. Avramov, **E. Borisova**, B. Vladimirov, "Biomedical photonics – new direction in science and technologies", News of BAS, 9(49):1-2 (2007).

98. E. Drakaki, **E. Borisova**, M. Makropoulou, L. Avramov, A. A. Serafetinides, I. Angelov, "Laser induced autofluorescence studies of animal skin used in modeling of human cutaneous tissue spectroscopic measurements", *Skin Res&Tech*, 13 (4) 350-359 (2007)
99. V. Mantareva, V. Kussovski, I. Angelov, **E. Borisova**, L. Avramov, D. Woehrl, Efficacy of microbial photoinactivation by cationic and anionic Zn(II)-phthalocyanines following the fluence rate, cell density and drug uptake, *Bioorganic & Medicinal Chemistry* 15 4829–4835 (2007)
100. **E. G. Borisova**, P. P. Troyanova, L. A. Avramov, "Fluorescence spectroscopy for early detection and differentiation of cutaneous pigmented lesions", *Optoelectronics and Advanced Materials – Rapid Communications* 1:388-393 (2007).
101. Bliznakova, **E. Borisova**, L. Avramov, Laser- and Light- Induced Autofluorescence Spectroscopy of Human Skin in Dependence on Excitation Wavelengths, *Acta Physica Polonica A* 112: 1131-1136 (2007).
102. N. Momchilov, I. Bliznakova, **E. Borisova**, P. Troyanova, L. Avramov, Development of Low-cost Photodynamic Therapy Device, *Acta Physica Polonica A* 112: 1125-1130 (2007).
103. Gorbenko; A. Kuzmin; V. Polischuk; D. Slavov; L. Petrov; **E. Borisova**; G. Todorov, Peculiarities of the magneto-optical resonances on $2p^53s$ states in a Ne glow discharge, *Proc. SPIE – Vol. 6726, 6726-2V* (2007)
104. **E. Borisova**, I. Bliznakova, N. Momchilov, P. Troyanova, L. Avramov, "Fluorescence Spectroscopy Investigations of Cutaneous Tissues", *AIP Conference Proceedings "VI International Conference of BPU" - April 23, 2007 – Vol. 899, p. 465-466.*
105. **E. Borisova**, B. Vladimirov, I. Angelov, L. Avramov, "Fluorescent Endoscopy of Tumors in Upper Part of Gastrointestinal Tract", *AIP Conference Proceedings "VI International Conference of BPU" - April 23, 2007 – Vol. 899, p. 467-468.*
106. Bliznakova, **E. Borisova**, P. Troyanova, N. Momchilov, L. Avramov, "Autofluorescence spectroscopy for noninvasive skin phototypes differentiation", *Proc. SPIE, 2007, Vol. 6604, 6604-29*
107. V. Mantareva, I. Angelov, **E. Borisova**, L. Avramov, V. Kussovski, "Phthalocyanine-assisted photodynamic inactivation of pathogenic microorganisms", *Proc. SPIE, 2007, Vol. 6604, 6604-2A*
108. **E.G. Borisova**, Tz. T. Uzunov, L.A. Avramov, "Laser-induced autofluorescence of oral cavity hard tissues", *Proc. SPIE, 2007, Vol. 6604, 6604-2F*
109. **E.G. Borisova**, B. G. Vladimirov, I.G. Angelov, L.A. Avramov, "Fluorescence spectroscopy of gastrointestinal tumors using δ -ALA", *Proc. SPIE, 2007, Vol. 6604, 6604-2H*
110. E. Drakaki, M. Makropoulou, A. Serafetinides, **E. Borisova**, L. Avramov, J. Sianoudis, "Optical spectroscopic studies of animal skin used in modelling of human cutaneous tissue", *Proc. SPIE, 2007, Vol. 6604, 6604-2K*
111. K. Koev, V. Tanev, L. Avramov, **E. Borisova**, "Clinical investigation of combined therapy influence over Keratitis Herpetica Dendrica with He-Ne laser, Pandavir and Acycovir", *Proc. SPIE, 2007, Vol. 6604, 6604-2E*
112. **E. Borisova**, Tz. Uzunov, S. Valkanov, L. Avramov, "Light diffuse reflectance for detection and differentiation of teeth caries lesions (invited)", *Proc. SPIE "Optical Technologies in Biophysics and Medicine VIII" 2007, 6535, 6535-10*
113. **E. Borisova**, Tz. Uzunov, B. Vladimirov, L. Avramov, "Investigation of formalin influence over hard and soft biological tissues fluorescent spectra *in vitro*", *Proc. SPIE "Optical Technologies in Biophysics and Medicine VIII" 2007, 6535, 6535-49*
114. **E. Borisova**; I. Bliznakova; P. Troyanova; L. Avramov, Light-induced autofluorescence of animal skin used in tissue optical modeling, *SPIE Proc.*, Vol. 6628, 6628-1J (2007)
115. B. Vladimirov; **E. Borisova**; L. Avramov, Delta-ALA-mediated fluorescence spectroscopy of gastrointestinal tumors: comparison of in vivo and in vitro results, *Proc. SPIE – Vol. 6727, 6727-1X* (2007)
116. P. Troyanova; **E. Borisova**; L. Avramov Fluorescence and reflectance properties of hemoglobin-pigmented skin disorders , *Proc. SPIE – Vol. 6734, 6734-15* (2007)
117. **E. Borisova**; P. Troyanova; L. Avramov, Influence of measurement geometry on the human skin reflectance spectra detection, *Proc. SPIE – Vol. 6734, 6734-16* (2007)

2006

118. **E. Borisova**, Tz. Uzunov, L. Avramov "Laser-induced autofluorescence study of caries model in vitro", *Las Med Sci* 2006; Vol. 21, p. 34–41 (2006)
119. E. Borisova, T. Uzunov, L. Avramov, "Investigation of dental caries using laser and light-induced autofluorescence methods", *Bulg J Phys*; Vol. 33(1), p. 55-67 (2006).
120. P. Troyanova, E. Borisova, "Possibilities for usage of clinical photography in dermatology", *Military Medicine*; 58:21-27 (2006).
121. **E. Borisova**, Fluorescence detection makes malignant melanoma diagnosis more precise and easier (invited), *SPIE Newsroom*, DOI: 10.1117/2.1200610.0470 (2006)
122. P. Troyanova, **E. Borisova**, V. Stoyanova, L. Avramov, "Laser-induced autofluorescence spectroscopy of benign and dysplastic nevi and malignant melanoma", *Proc. SPIE 2006, Vol. 6284, 62840K-1-62840K-8.*
123. **E. Borisova**, P. Troyanova, L. Avramov, "Laser-induced autofluorescence properties of base-cell lesions – analysis and algorithms for diagnosis and differentiation", *Proc. SPIE 2006, Vol. 6284, 62840F-1-62840F-7.*

2005

124. L. Avramov, **E. Borisova**, P. Townsend, and L. Valberg, "Potential and current uses of luminescence in medical diagnosis", *Mater Sci Forum*; Vol. 480-481, p.411-416. (2005)
125. **E. Borisova**, P. Troyanova, L. Avramov, "Laser-induced autofluorescence spectroscopy for diagnosis and differentiation of malignant melanoma – results and perspectives, *Journal of BAS*, 6:62-65 (2005).
126. V. Mantareva, D. Petrova, L. Avramov, I. Angelov, **E. Borisova**, M. Peeva, D. Woehrl, "Long wavelength absorbing cationic Zn (II)-phthalocyanines as fluorescent contrast agents for B16 pigmented melanoma", *J Porphyr Phthalocyan*; 9:47-53 (2005)
127. **E. Borisova**, I. Angelov, V. Mantareva, D. Petrova, P. Townsend, L. Valberg, L. Avramov, "Tumor detection by exogenous fluorescent dyes using new generation photo-multiplier tubes", in *13th International School on Quantum Electronics: Laser physics and applications*,

edited by Peter Atanasov, Alexander Serafetinides, Sanka Gateva, Latchezar Avramov (SPIE, Bellingham, WA, 2005), Vol.5830, 2005, p. 399-403.

128. **E.G. Borisova**, P.P. Troyanova, V. P. Stoyanova, L.A. Avramov, "Laser-induced fluorescence spectroscopy of benign and malignant cutaneous lesions", in *13th International School on Quantum Electronics: Laser physics and applications*, edited by Peter Atanasov, Alexander Serafetinides, Sanka Gateva, Latchezar Avramov (SPIE, Bellingham, WA, 2005), Vol.5830, 2005, 394-399.
129. I.S. Atanasov, **E.G. Borisova**, O.I. Yordanov, Tz.T. Uzunov, L.A. Avramov, "Classification of dental lesions using fluorescence analysis by support vector machine method", in *13th International School on Quantum Electronics: Laser physics and applications*, edited by Peter Atanasov, Alexander Serafetinides, Sanka Gateva, Latchezar Avramov (SPIE, Bellingham, WA, 2005), Vol.5830, 2005, p. 389-393.
130. E. Alipieva, C. Andreeva, L. Avramov, G. Bevilaqua, V. Biancalana, **E. Borisova**, E. Breschi, S. Cartaleva, Y. Dancheva, S. Gateva, T. Karaulanov, R. Lammegger, L. Moi, L. Petrov, N. Petrov, D. Slavov, E. Taskova, G. Todorov, L. Windholz, A. Yanev, "Coherent population trapping for magnetic field measurements", in *13th International School on Quantum Electronics: Laser physics and applications*, edited by Peter Atanasov, Alexander Serafetinides, Sanka Gateva, Latchezar Avramov (SPIE, Bellingham, WA, 2005), Vol.5830, 2005, p. 170-175.
131. **E. Borisova**, P. Troyanova, L. Avramov, "Optical biopsy of non-melanin pigmented cutaneous benign and malignant lesions", Proc. SPIE 2006, Vol. 6257, 62570U-1-62570U-8.
132. **E. Borisova**, P. Troyanova, L. Avramov, "Reflectance measurements of skin lesions – noninvasive method for diagnostic evaluation of pigmented neoplasia", Proc. SPIE Vol. 5862 "Diagnostic Optical Spectroscopy in Biomedicine III" 2005, 20A1-20A11.

2004

133. **Ekaterina G. Borisova**, Tzonko T. Uzunov, Latchezar A. Avramov "Early Differentiation between Caries and Tooth Demineralization using Laser-Induced Autofluorescence Spectroscopy", *Lasers Surg Med* 2004; 34(3):249-253.
134. Stela Minkovska, Bojana Jeliakova, **Ekaterina Borisova**, Latchezar Avramov and Todor Deligeorgiev: "Substituent and solvent effect on the photochromic properties of a series of spiroindolinophthoxazines", *J Photochem PhotoBiol A: Chemistry* 2004; 163:121-126.
135. P.Troyanova, **E. Borisova**, L. Avramov, "Imaging methods in diagnostics of cutaneous tumors", *Dermatology Venerology (in Bulgarian)* 2004, 43(2):3-9.
136. P. Pavlova, **E. Borisova**, H. Naradikyan, T. Angelov, "Temperature Dependence of Chromaticity in Polymer-stabilized Cholesteric Liquid Crystals", *Nanoscience & nanostructured materials application and innovation transfer*, HERON Press Science Series, ISBN 954 -580-160-3, 2004, 4:220-222.
137. Ekaterina G. Borisova, Latchezar A. Avramov, Tzonko T. Uzunov, "Laser-induced fluorescence studies of caries model", Eighth International Conference on Laser and Laser Information Technologies, edited by Vladislav Ya. Panchenko, Nikola V. Sabotinov, Proceedings of SPIE Vol. 5449 (SPIE, Bellingham, WA 2004) 235-242.

2003

138. **E. Borisova**, Tz. Uzunov, A. Gisbreht, L. Avramov, "Early detection of the carious conditions by laser-induced fluorescence spectroscopy" (invited paper), in Proceeding of SPIE Vol. 5149 *Laser Applications in Medicine, Biology, and Environmental Science*, edited by Gerhard Mueller, Valery Tuchin, Gennadii Matvienko, Christian Werner, Vladislav Panchenko, (SPIE, Bellingham, WA, 2003), p. 39 – 44.
139. Pl. Djorev, **E. Borisova**, L. Avramov, "Interaction of the IR laser radiation with human skin - Monte-Carlo simulation", in Proceeding of SPIE Vol. 5226 *12th International School on Quantum Electronics: Laser physics and applications*, edited by Peter Atanasov, Alexander Serafetinides, Ivan Kolev (SPIE, Bellingham, WA, 2003), p. 403 – 407.
140. Tz. Uzunov, **E. Borisova**, Al. Gisbreht, L. Avramov, "Investigation of pathological changes of human teeth by the method of laser-induced autofluorescence spectroscopy", in Proceeding of SPIE Vol. 5226 *12th International School on Quantum Electronics: Laser physics and applications*, edited by Peter Atanasov, Alexander Serafetinides, Ivan Kolev (SPIE, Bellingham, WA, 2003), p. 428 – 432.
141. **E. Borisova**, S. Valkanov, Tz. Uzunov, L. Avramov, "Correlation between photophysical characteristics and morphological structures of dental tissues", in Proceeding of SPIE Vol. 5226 *12th International School on Quantum Electronics: Laser physics and applications*, edited by Peter Atanasov, Alexander Serafetinides, Ivan Kolev (SPIE, Bellingham, WA, 2003), p. 433 – 436

2002

142. **E. Borisova**, K. Koev, L. Avramov, "Laser-induced autofluorescence spectroscopy of base-cell carcinoma" (invited paper), Proc. EGAS'34, Sofia 2002, p. 63-64.

2001

143. S.Dimitrov, **E.Borisova**, A.Gisbrecht, R.Todorovska, L.Avramov, G.Todorov, "Comparative investigation of the tooth whitening processes using Ar⁺ and CuBr lasers", in *11th International School on Quantum Electronics: Laser Physics and Applications*, Peter A. Atanasov, Stefka Cartaleva, Editors, Proceedings of SPIE Vol. 4397, 400-404 (2001)
144. **E. Borisova**, L.Avramov, "Laser System for Optical Biopsy and in vivo Study of the Human Skin", in *11th International School on Quantum Electronics: Laser Physics and Applications*, Peter A. Atanasov, Stefka Cartaleva, Editors, Proceedings of SPIE Vol. 4397, 405-409 (2001)
145. H.Hristov, **E.Borisova**, L.Avramov, I.Kolev, "Applications of laser-induced fluorescence for remote sensing", in *11th International School on Quantum Electronics: Laser Physics and Applications*, Peter A. Atanasov, Stefka Cartaleva, Editors, Proceedings of SPIE Vol. 4397, 496-500 (2001)

4. Full text publications in conference proceedings without IF or/and SJR

1. **E. Borisova**, L. Avramov, "Laser-induced fluorescence spectroscopy of tissues", Proceedings of Third Winter Seminar for Young Scientists working in the field of Physics, Vitosha, December 2000, p. 6-10 (in Bulgarian).

2. K.Koev, V.Tanev, **E.Borisova**, L.Avramov, "New ophthalmological system for low-level laser therapy "MEDIRAY 04"" Proc. of Intern. Symp. Laser Technologies and Lasers LTL'2001, Smolyan – Bulgaria, p.143-149.
3. Tz. Uzunov, **E.Borisova**, A.Gisbrecht, L.Avramov, "Autofluorescence — potential method for early diagnosis of dental caries (in vitro preliminary study)", Proc. of Intern. Symp. Laser Technologies and Lasers LTL'2001, Smolyan – Bulgaria, p.197-203.
4. **E. G. Borisova**, P. P. Troyanova, and L.A.Avramov, "Noninvasive optical methods for pigmented skin lesion diagnosis", Proc. of the Fifth General Conference of the Balkan Physical Union BPU-5, Vrnjacka Banja, Serbia and Montenegro, August 25-29, 2003, [Elektronski izvor], ed. S. Jokic, I. Milosevic, A. Balaz, Z. Nikolic, - Elektronska interaktivna multimedia. –Belgrade: Serbian Physical Society, ISBN 86-902537-4-2, p. 1771-1774.
5. T. T. Uzunov, **E. G. Borisova**, and L.A.Avramov, "Reflectance spectroscopy of human teeth (in vitro preliminary study)", Proc. of the Fifth General Conference of the Balkan Physical Union BPU-5, Vrnjacka Banja, Serbia and Montenegro, August 25-29, 2003, [Elektronski izvor], ed. S. Jokic, I. Milosevic, A. Balaz, Z. Nikolic, - Elektronska interaktivna multimedia. –Belgrade: Serbian Physical Society, ISBN 86-902537-4-2, p. 1775-1778.
6. P. Pavlova, **E. Borisova**, L. Avramov, "Automation of the skin cancer diagnostics on the bases of reflectance spectroscopy", Proc. 9th National Confer on Biomed Phys Eng, ISBN 954-91589-1-8, 2004, p.260-265.
7. **E. Borisova**, Tz. Uzunov, L. Avramov, "Reflectance properties of carious lesions", in Proc. of the Fourth International Symposium LTL'05, Plovdiv, Bulgaria 2005, ISSN 1312-0638, p. 126-130.
8. V. Stoyanova, P. Troyanova, **E. Borisova**, L. Avramov, "Multispectral discriminant analysis of cutaneous tumor fluorescence and reflectance spectra", in Proc. of the Fourth International Symposium LTL'05, Plovdiv, Bulgaria 2005, ISSN 1312-0638, p. 256 – 260.
9. **E. Borisova**, V. Stoyanova, N. Momchilov, P. Troyanova, L. Avramov, "Simplified experimental set-up for fluorescence and reflectance spectroscopy of normal skin and neoplasia", in Proc. of the Fourth International Symposium LTL'05, Plovdiv, Bulgaria 2005, ISSN 1312-0638, p. 131-136.
10. V. Mantareva, I. Angelov, I. Goshev, **E. Borisova**, L. Avramov, "Laser-induced fluorescence investigations of protein-longwavelength dye interactions", in Proc. of the Fourth International Symposium LTL'05, Plovdiv, Bulgaria 2005, ISSN 1312-0638, p. 194-198.
11. I. Angelov, V. Mantareva, **E. Borisova**, L. Avramov, "Laser scattering detection of protein conformation changes", in Proc. of the Fourth International Symposium LTL'05, Plovdiv, Bulgaria 2005, ISSN 1312-0638, p. 101-105.
12. **E. Borisova**, P. Troyanova, L. Avramov, "Laser-induced autofluorescence spectroscopy of base-cell benign and malignant lesions", WBMS Proc. 2006, P-3, p.74-75.
13. **E. Borisova**, I. Angelov, L. Avramov, "Autofluorescence studies of animal skin used in modeling of human cutaneous tissues", WBMS Proc. 2006, P-4, p. 76-78.
14. L. Avramov, **E. Borisova**, "Laser biomedicine", Proc. of XXXIV National conference "Physics in biology and medicine" 2006, ISBN:10:954-91841-1-0, p. 46-51.
15. B. Vladimirov, I. Tsakova, **E. Borisova**, N. Momchilov, L. Avramov, New dimensions of medical diagnostics of gastrointestinal tumors – fluorescent endoscopy", Proc. of XXXIV National conference "Physics in biology and medicine" 2006, ISBN:10:954-91841-1-0, p.165-168.
16. **E. Borisova**, I. Angelov, V. Mantareva, M. Marinova, I. Goshev, G. Likhstenshtein, L. Avramov, "Evaluation of protein hydrolysis by phthalocyanine labeling", Proc. ILLA/LTL'06, Smolyan, p.236-244 (2007).
17. **E. Borisova**, T. Tzvetkova, S. Balabanov, L. Avramov, J. Zuk, L. Bischoff, "Optical properties of Si⁺ and C⁺ implanted polymers", Proc. ILLA/LTL'06, Smolyan, p.201-206 (2007).
18. L. Cristescu, E. Carstea, G. Pavelescu, G. Pavelescu, **E. Borisova**, A. Daskalova, "Fluorescence fingerprints of different surface aquatic systems", Proc. International Symposium "The Environment and Industry", p. 253-258, Oct. 2009;
19. **Borisova E.**, Pavlova E., Troyanova P., Nikolova B., Tsoneva I.; „Optical biopsy – tool for initial cancer diagnosis and monitoring of therapy", Proc. of EMPEC (European Medical Physics Conference) October 2012, 172-179; ISBN 978-954-91589-3-9 (2012)
20. **Borisova E.**, Pavlova E., Troyanova P., Avramov L.; "Optical Biopsy of Cutaneous Tumours", Proc. CLSM, CLSM6-2, 42-43 (2012)
21. **Borisova E.**, Uzunov T., Avramov L.; "Laser-Induced Breakdown Spectroscopy of Dental Lesions – Tool for Real Time Optical Feedback During Laser Ablation of Caries", Proc. CLSM, CLSM7p-3, 48-49 (2012)
22. **Borisova E.**, Pavlova E., Troyanova P., Nikolova B., Tsoneva I.; "Autofluorescence of skin cancer – tool for initial diagnosis and monitoring of therapy", Proc. of 15th Int. Conf. "Laser Optics-2012", St. Petersburg, Russia, 25-29 June, 3 p. (2012)
23. **Borisova E.**, E. Pavlova, M. Keremedchiev, L. Angelova, A. Zhelyazkova, and Ts. Genova, "Optical biopsy of cutaneous tumors – from laboratory experiments to clinical applications", (invited), Proc. of IV International Symposium "Topical Problems of Biophotonics", p. 291-293 (ISBN 978-5-8048-0093-3) (2013)
24. **Borisova E.**, L. Angelova, E. Pavlova, M. Keremedchiev, P. Troyanova, B. Vladimirov, "Fluorescence diagnosis of cutaneous and mucosal tumors – clinical experience", Proc. of BioPIC Ireland, 25-27 March, p. 60-61 (2013)
25. Ya. L. Andreeva, **E. Borisova**, Ts. Genova, Al. Zhelyazkova, L. Avramov, Synchronous fluorescence spectroscopy for analysis of vegetable oils, Proc. of XIX Int. Conf. Young Scientists and Specialists- JINR, Dubna, p.4, (2015)