European Conferences on

Biomedical Optics

Molecular Imaging
Optical Coherence Tomography
Diagnostic Optical Spectroscopy
Diffuse Optical Imaging of Tissue
Confocal, Multiphoton, and Nonlinear Microscopic Imaging
Novel Optical Instrumentation for Biomedical Applicaitons
Therapeutic Laser Applications and Laser-Tissue Interactions
Biophotonics and Optics in Life Sciences

ICM—International Conference Centre Munich, Germany

17–21 June 2007

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European Conferences on
Biomedical Optics

17–21 June 2007
ICM—International Conference Centre Munich, Germany

General Chairs:

David Boas, Massachusetts General Hospital (United States)

Stefan Andersson-Engels, Lunds Tekniska Högskola (Sweden)

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We wish to thank the following for their contribution to the success of this conference: European Office of Aerospace Research and Development, Air Force Office of Scientific Research, United States Air Force Research Laboratory (www.london.af.mil)

Cooperating Organisations:

EOS European Optical Society

WLT German Scientific Laser Society (Wissenschaftliche Gesellschaft Lasertechnik e.V.)

DEUTSCHE GESELLSCHAFT FÜR LASERMEDIZIN e.V.

Welcome!

The use of optical technologies and methods for biomedical applications in diagnostics and therapeutics has emerged as a major research field. The European Conferences on Biomedical Optics (ECBO) bring together scientists, engineers, and clinicians from a variety of disciplines who are engaged in the development and application of optical science and photonic technologies to problems in biomedicine.

The scope of this meeting will range from basic research and instrumentation engineering to translational (bench-to-bedside) research and clinical studies, with the common thread of employing optics to impact problems in biology, medicine, or clinical health care. This biennial meeting is jointly sponsored by SPIE—The International Society for Optical Engineering and the Optical Society of America (OSA) and will be co located with Laser Munich 2007 - World of Photonics and other society meetings organized by WLT, EOS, OSA, IEEE/LEOS, EPS, and DGLM.

Program Chairs:

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Mary-Ann Mycek, Univ. of Michigan (United States)

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Zhenxi Zhang, Xi'an Jiaotong Univ. (China)
Gang Zheng, Univ. of Toronto (Canada)

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Daily Schedule

Sunday	Monday	Tuesday	Wednesday	Thursday
Special Events				
Opening Remarks and Plenary Session, 13.00 to 15.00, p. 3		**Breakfast with the Experts – A Student Networking Event**, 07.30 to 08.30, p. 3 **Welcome Reception,** 19.30 to 21.00, p. 3		
Conferences				
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Conf. 6627 **Optical Coherence Tomography and Coherence Techniques (OCT)** (*Andersen, Chen), pp. 6-26*			Conf. 6629 **Diffuse Optical Imaging of Tissue (DOI)** (*Pogue, Cubeddu), pp. 6-32*	
Conf. 6630 **Confocal, Multiphoton, and Nonlinear Microscopic Imaging (CMI)** (*Wilson, Periasamy), pp. 7-17*				
Conf. 6631 **Novel Optical Instrumentation for Biomedical Applications (NOI)** (*Depeursinge), pp. 7-21*				
	Conf. 6632 **Therapeutic Laser Applications and Laser-Tissue Interactions (TLA)** *(Vogel), pp. 7-30*			
	Conf. 6633 **Biophotonics 2007: Optics in Life Science (BOLS)** (*Popp), pp. 7-29*			

Opening Remarks and Plenary Session

Room 5

Sunday . . . . . 13.00 to 15.00

13.00 to 13.10
Welcome Remarks
Wolfgang Drexler, Cardiff Univ. (United Kingdom)
Mary-Ann Mycek, Univ. of Michigan (United States)

13.10 to 13.20
Presentation of SPIE Educator Award
Brian Culshaw, Univ. of Strathclyde (UK)

13.20 to 14.10
High Speed and Ultrahigh Resolution Optical Coherence Tomography

James Fujimoto,
Massachusetts Institute of Technology (United States)

Optical coherence tomo-graphy (OCT) is an emerging imaging modality which enables high-speed, ultrahigh resolution, cross-sectional imaging of tissue pathology. Recent advances provide micron scale, cellular resolution as well as dramatic improvements in speed, enabling three dimensional structural and functional imaging. This presentation discusses advances in OCT technology and biomedical applications.

14.10 to 15.00
A New Light on Bioscience

Kishan Dholakia, The Univ. of Saint Andrews (United Kingdom)

Photonics is playing an ever increasing role in the biosciences. I will discuss the emerging technique of optical micromanipulation for new studies in biology and cell sorting. Light may achieve much more: carefully engineered light fields may permit therapeutic agents to be delivered to cells at will and also extract key information via Raman spectroscopy.

Poster Sessions

Monday and Tuesday . . . . . 15.00 to 16.00

Poster sessions will be held Monday and Tuesday from 15.00 to 16.00 on the ground floor and first level of the ICM. Each session will represent a different set of posters. See pages 14–15 for Monday Poster Session. See pages 22–25 for Tuesday Poster Session. Timing and location differ for Conference 6633. See conference program for details.

Poster Authors

Please set up posters on the morning of your session by the AM coffee break. Poster viewing will be available all day. You are required to stand by your poster during the poster session to discuss it with session attendees. Please remove your poster following the poster session. Posters which are left on the boards after the poster session concludes will be discarded.

Breakfast with the Experts – A Student Networking Event

Tuesday 19 June . . . . . 07.30 to 08.30

Students! Join optics experts from both the Biomedical Optics and Laser Metrology conferences for a casual meal and lively discussion. This breakfast will feature experts willing to share their accumulated wisdom on career paths within the optics and photonics industry. Take advantage of this opportunity to network with some of the best and brightest minds at this free event hosted by SPIE Student Services. Seating is limited. Please arrive promptly and present your ticket which will be included in student materials picked up at the registration desk onsite.

Welcome Reception

Tuesday . . . . . 19.30 to 21.00

Registered attendees are invited to participate in this reception at the Paulaner Brewery in Munich. Guests of registered attendees may attend by purchasing tickets at the registration desk, €35, if space available.

General Information

Registration

Location: ICM - Entry Lobby

Sunday . . . . . 11.00 to 17.00

Monday through Thursday . . . . . 8.00 to 17.00

The Congress registration fee includes entry into Laser 2007 World of Photonics.

Coffee Breaks

Ground Level Foyer

Sunday . . . . . 17.00 to 17.30

Monday . . . 10.00 to 10.30 and 16.00 to 16.30

Tuesday . . . 10.00 to 10.30 and 16.00 to 16.30

Wednesday-Thursday . . . . . 10.00 to 10.30 and 16.00 to 16.30

Audiovisual Equipment

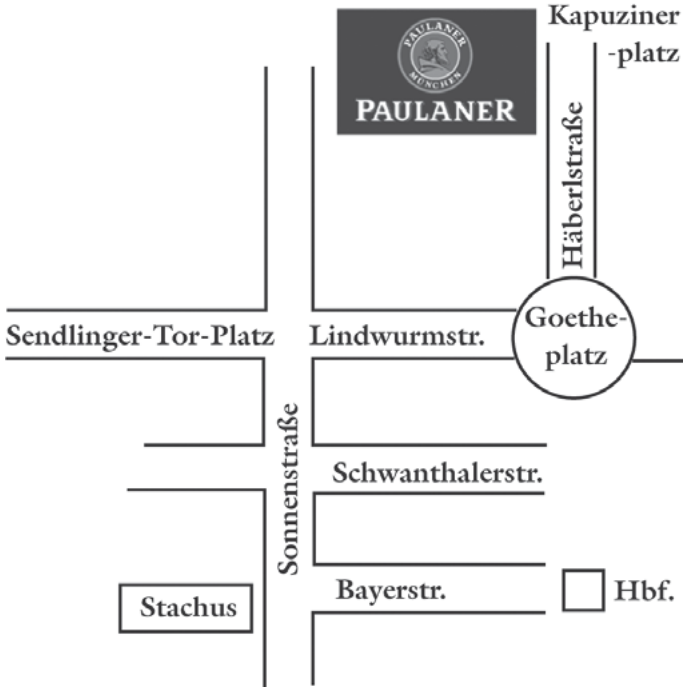
Presentations will be preloaded by the company M-Events in Munich, Germany. Authors will be contacted by M-Events with instructions for uploading meeting presentations and posters. The meeting rooms will contain the relevant equipment to carry out a centralised screening process. Any questions regarding compatibility would need to be directed to m-Events.

Directions to Welcome Reception from ICM

The Welcome Reception will be held at the Paulaner brewery in Munich.

By public transport: Take local train to Marienplatz, then change into U3/U6 in direction of Fuerstenried West or Klinikum Grosshadern. Get off at stop "Goetheplatz". From there walk through Häberlstrasse; 2 mins on foot.

By Car: Go towards city centre, railway station, middle ring, Sendlinger-Tor-Platz, Lindwurmstrasse to Goetheplatz, turn left into Häberlstrasse (straight across fro the employment office)



About Munich

Munich, “the city with a heart,” is the capital of Bavaria, and has established itself as Germany’s high-tech hub (Silicon Bavaria) and is one of the most important industrial and economic centers in the European community. It boasts of such hi-tech corporations as BMW and Daimler-Chrysler Aerospace. In addition to being the country’s leading university center and hub for insurance, banking, electronic, and mechanical engineering, Munich offers its visitors shopping, music, art, gourmet restaurants, beer gardens, outdoor cafes, ethnic restaurants, popular night-spots, grand cathedrals and opulent palaces.

For more information on Munich and the surrounding area, please refer to the following websites:
www.tyzo.com/europe/germany/munich/
www.munichfound.de/

Hotel Accommodations

Laser / Optical Metrology 2007 provides links to accommodations in Munich and near the Munich International Conference Centre. You can use their online directory to search for hotels and make reservations. There are hotels in all price ranges and locations for you to select from.

To search the Directory, please see:
http://www.world-of-photonics.net/link/en/16211399

The following is a sampling of available hotels. Quoted travel times to the International Conference Centre are approximate using public transporation.

NH Munchen Neue Messe *****/5 minutes
http://www.nh-hotels.com
253 rooms, restaurants, bistro/bar, fitness area, sauna, steam bath, solarium and parking
Located near the Munich fairgrounds with connections to the centre of Munich, airport and the main train station.
Standard Room prices from €110
Tel. +49.89.993450 Fax. +49.89.99345400
nhmuenchenneuemesse@nh-hotels.com

Hotel Excelsior **** / 25 minutes
http:www.excelsior -muenchen.de
Great location in the city, near Hauptbanhof station and on the direct Ubahnline to the Messe..
Price per single room: €155 to €200 Double room €200 to €280
Tel: 49 (0) 89 55 137 0: Fax 49 (0) 89 551 37 122
Excelsior@geisel.hotels.de

Hotel Ludwig *** / 20 Minutes
http:www.hotel-ludwig.net
Hotel offers 139 rooms and suites in a modern and confirmatable style.
Price per single room from €79 Double room from €99
Tel: 49 (0) 89 551390; Fax: 49 (0) 89 593403

Participants must make their own determination of suitability considering price and location. Each hotel will determine when they will accept reservations for this event. Listed rates are approximate at time of publication and are subject to change without notice.

Student Housing Accommodations

Discounted accommodations for students are available in Munich. Please also refer to the following web site for additional information about available hostels:

Munich Hostels
http://www.hostelmunich.com/

CVJM Munchen (YMCA)
http://www.cvjm-muenchen.org/english/index.html

Euro Youth Hostel
http://www.euro-youth-hotel.de

Haus International
http://www.haus-international.de/gb/index/htm

Transportation from Airport to City Centre

The Franz Josef Strauss Airport (MUC) is located 17 miles (27 km) northeast of the Centre of Munich. Please refer to the Munich International Airport website for more detailed information:
http://www.munich-airport.de/EN/index.html

Taxi: Taxis are available outside the airport terminal. The cost is high, approximately €40, and the trip will take 30-45 minutes to the Centre of Munich.

Train: The Airport Rapid Transit Trains leave for the Centre of Munich frequently. Stations Marienplatz and Hauptbahnof (central railway Station) are the stops in the Centre. The trip will take 30-40 minutes and the cost is approximately €8. Follow the signs as you leave the customs area.

Bus: during the international trade fair, a special Trade Fair Shuttle Bus Service operates between Munich Airport and the ICM. The buses run at 30 minute intervals non-stop from the airport to the trade fair grounds. This service is free of charge upon presentation of a valide trade fair admission ticket, which can be obtained either at the trade fair information counter in the central area of the Munich airport or on the bus. Otherwise, the fair is approximately €8 for a single and for a return journey. The journey takes about 35 minutes, depending on volumes of traffic.

How to Reach the ICM — International Congress Centre München
At Munich Central Station take the underground U2. The journey to the trade fair grounds takes about 17 minutes. Please refer to the Laser 2007 website for more detailed information, http://www.world-of-photonics.net/link/en/16211399

Transportation from Munich City Centre to ICM — International Congress Centre München

The ICM is about 30-45 minutes from downtown Munich.

Free Public Transport

All registered conference attendees are eligible to use all Munich City Transport (MW- urban railway, underground, trams, and buses) and Laser Airport shuttle by presenting a corresponding ticket together with a conference entrance pass. Passes will be provided onsite with registration.

For the most current information about all transport options, schedules, and prices, please visit: http://www.munich-airport.de/EN/Areas/Consumer/Verkehrsanbindung/index.html

Conference 6626

Sunday-Monday 17-18 June 2007
Proceedings of SPIE Vol. 6626

Molecular Imaging (MI)

Conference Chairs: **Kai Licha**, Bayer Schering Pharma AG (Germany); **Vasilis Ntziachristos**, Harvard Medical School and Massachusetts General Hospital (USA)

Program Committee: **Samuel Achilefu**, Washington Univ. in St. Louis (USA); **Christoph Bremer**, Univ. Münster (Germany); **Markus Rudin**, ETH Zürich (Switzerland); **Bertrand Tavitian**, CEA/INSERM (France); **Gooitzen M. van Dam**, Groningen Univ. Medical Ctr. (Netherlands); **Andreas Wunder**, Charite Berlin (Germany); **Giannis Zacharakis**, Foundation for Research and Technology-Hellas (Greece); **Gang Zheng**, Univ. of Toronto (Canada)

Conference 6627

Sunday-Tuesday 17-19 June 2007
Proceedings of SPIE Vol. 6627

Optical Coherence Tomography and Coherence Techniques (OCT)

Conference Chairs: **Peter E. Andersen**, Technical Univ. of Denmark (Denmark); **Zhongping Chen**, Univ. of California/Irvine (USA)

Program Committee: **Jennifer K. Barton**, The Univ. of Arizona (USA); **Stephen A. Boppart**, Univ. of Illinois at Urbana-Champaign (USA); **Wolfgang Drexler**, Cardiff Univ. (United Kingdom); **James G. Fujimoto**, Massachusetts Institute of Technology (USA); **Christoph K. Hitzenberger**, Medizinische Univ. Wien (Austria); **Andrzej Kowalczyk**, Nicolaus Copernicus Univ. (Poland); **Michael Larsen**, Univ. of Copenhagen (Denmark); **Constantinos Pitris**, Univ. of Cyprus (Cyprus); **Adrian G. Podoleanu**, Univ. of Kent at Canterbury (United Kingdom); **René-Paul Salathé**, École Polytechnique Fédérale de Lausanne (Switzerland); **Natalia M. Shakhova**, Institute of Applied Physics (Russia); **Ton G. van Leeuwen**, Univ. Twente (Netherlands) and Univ. of Amsterdam (Netherlands); **Julia Welzel**, General Hospital Augsburg (Germany); **Yoshiaki Yasuno**, Univ. of Tsukuba (Japan)

Conference 6628

Tuesday-Thursday 19-21 June 2007
Proceedings of SPIE Vol. 6628

Diagnostic Optical Spectroscopy (DOS)

Conference Chairs: **Dietrich Schweitzer**, Friedrich-Schiller-Univ. Jena (Germany); **Maryann Fitzmaurice**, Case Western Reserve Univ. (USA)

Program Committee: **Ralf Brinkmann**, Univ. zu Lübeck (Germany); **Karsten König**, Fraunhofer-Institut für Biomedizinische Technik (Germany); **Junle Qu**, Shenzhen Univ. (China); **Georges A. Wagnières**, École Polytechnique Fédérale de Lausanne (Switzerland)

Conference 6629

Tuesday-Thursday 19-21 June 2007
Proceedings of SPIE Vol. 6629

Diffuse Optical Imaging in Tissue (DOI)

Conference Chairs: **Brian W. Pogue**, Dartmouth College (USA); **Rinaldo Cubeddu**, Politecnico di Milano (Italy)

Program Committee: **Simon R. Arridge**, Univ. College London (United Kingdom); **Hamid Dehghani**, The Univ. of Exeter (United Kingdom); **Andreas H. Hielscher**, Columbia Univ. (USA); **Rainer Macdonald**, Physikalisch-Technische Bundesanstalt (Germany); **Eiji Okada**, Keio Univ. (Japan); **Henricus J. C. M. Sterenborg**, Univ. of Rotterdam (Netherlands); **Jean-Michel Tualle**, Ctr. National de la Recherche Scientifique (France)

Conference 6630

Sunday-Monday 17-18 June 2007
Proceedings of SPIE Vol. 6630

Confocal, Multiphoton, and Nonlinear Microscopic Imaging (CMI)

Conference Chairs: **Tony Wilson**, Univ. of Oxford (United Kingdom); **Ammasi Periasamy**, Univ. of Virginia (USA)

Program Committee: **Alberto Diaspro**, Univ. degli Studi di Genova (Italy); **Daniel L. Farkas**, Cedars-Sinai Medical Ctr. (USA); **Hans C. Gerritsen**, Univ. Utrecht (Netherlands); **Enrico Gratton**, Beckman Laser Institute and Medical Clinic (USA); **Stefan W. Hell**, Deutsches Krebsforschungszentrum (Germany); **Karsten König**, Fraunhofer-Institut für Biomedizinische Technik (Germany); **Jerome Mertz**, Boston Univ. (USA); **David W. Piston**, Vanderbilt Univ. (USA); **Peter T. C. So**, Massachusetts Institute of Technology (USA); **Ernst H. K. Stelzer**, European Molecular Biology Lab. (Germany); **Sunny Xie**, Harvard Univ. (USA)

Conference 6631

Sunday-Tuesday 17-19 June 2007
Proceedings of SPIE Vol. 6631

Novel Optical Instrumentation for Biomedical Applications (NOI)

Conference Chair: **Christian D. Depeursinge**, École Polytechnique Fédérale de Lausanne (Switzerland)

Conference 6632

Monday-Wednesday 18-20 June 2007
Proceedings of SPIE Vol. 6632

Therapeutic Laser Applications and Laser-Tissue Interactions (TLA)

Conference Chair: **Alfred Vogel**, Univ. zu Lübeck (Germany)

Program Committee: **Stanley B. Brown**, Univ. of Leeds (United Kingdom); **Heyke C. Diddens**, Medizinisches Laserzentrum Lübeck GmbH (Germany); **Martin Frenz**, Univ. Bern (Switzerland); **Raimund Hibst**, Univ. Ulm (Germany); **Giulio Jori**, Univ. degli Studi di Padova (Italy); **Karsten König**, Fraunhofer-Institut für Biomedizinische Technik (Germany); **Holger Lubatschowski**, Laser Zentrum Hannover e.V. (Germany); **Dieter Manstein**, Wellman Ctr. for Photomedicine (USA); **Michael C. Mrochen**, ETH Zürich (Switzerland); **Günther Paltauf**, Karl-Franzens-Univ. Graz (Austria); **Ronald Sroka**, Ludwig-Maximilians-Univ. München (Germany); **Herbert G. Stepp**, Ludwig-Maximilians-Univ. München (Germany); **Hubert van den Bergh**, École Polytechnique Fédérale de Lausanne (Switzerland); **Zhenxi Zhang**, Xi'an Jiaotong Univ. (China)

Conference 6633

Monday-Wednesday 18-20 June 2007
Proceedings of SPIE Vol. 6633

Biophotonics 2007: Optics in Life Science (BOLS)

Conference Chair: **Jürgen Popp**, Friedrich-Schiller-Univ. Jena (Germany)

Cochair: **Gert von Bally**, Univ. Münster (Germany)

Program Committee: **Martin L. Bennink**, Univ. Twente (Netherlands); **Arthur E. T. Chiou**, National Yang-Ming Univ. (Taiwan); **Christian D. Depeursinge**, École Polytechnique Fédérale de Lausanne (Switzerland); **Paul M. W. French**, Imperial College London (United Kingdom); **Jeremy C. Hebden**, Univ. College London (United Kingdom); **Stefan W. Hell**, Deutsches Krebsforschungszentrum (Germany); **Karsten König**, Fraunhofer-Institut für Biomedizinische Technik (Germany); **Pierre Le Ber**, Lab. d'Electronique de Technologie de l'Information (France); **Eric D. Mazur**, Harvard Univ. (USA); **Francesco S. Pavone**, Univ. degli Studi di Firenze (Italy); **Markus Sauer**, Univ. Bielefeld (Germany); **Colin J. R. Sheppard**, National Univ. of Singapore (Singapore); **Ernst H. K. Stelzer**, European Molecular Biology Lab. (Germany); **Valery V. Tuchin**, Saratov State Univ. (Russia); **Brian C. Wilson**, Univ. of Toronto (Canada)

Sunday 17 June • 15.30 to 17.00

Conf. 6626 (MI)

SESSION 1

Room 3 . . . . . Sun. 15.30 to 17.00

Probes for Contrast and Molecular Reporting I

Chair: **Kai Licha**, Bayer Schering Pharma AG (Germany)

15.30: **Optical molecular imaging of stroke-induced brain inflammation in the mouse *(Invited Paper)*,** J. Klohs, J. M. Steinbrink, R. Bourayou, Charité-Univ. Medicine Berlin (Germany); M. Grafe, Deutsches Herzzentrum Berlin (Germany); G. Kronenberg, Charité-Univ. Medicine Berli (Germany); K. Greger, E. H. K. Stelzer, European Molecular Biology Lab. (Germany); U. Lindauer, U. Dirnagl, A. Wunder, Charité-Univ. Medicine Berlin (Germany) . . . . . [6626-01]

16.00: **Detection and treatment of cancers using photodynamic molecular beacons,** G. Zheng, Ontario Cancer Institute (Canada) and Univ. of Toronto (Canada) and Univ. of Pennsylvania (USA); J. Chen, Ontario Cancer Institute (Canada); K. Stefflova, Univ. of Pennsylvania (USA); B. C. Wilson, Ontario Cancer Institute (Canada) . . . . . [6626-02]

16.15: **Sensitive detection of protoporphyrin-IX accumulation in genetically modified colon cancer cells: a new tool for molecular imaging,** B. Ebert, S. Rüttinger, J. Voigt, R. Macdonald, Physikalisch-Technische Bundesanstalt (Germany); W. Kemmner, K. Wan, U. Klamm, P. M. Schlag, Charité-Univ. Medizin Berlin (Germany) . . . . . [6626-03]

16.30: **Functional relations between GFP-like chromoproteins and red fluorescent proteins,** S. Gundel, G. U. Nienhaus, J. Wiedenmann, Univ. Ulm (Germany) . . . . . [6626-04]

16.45: **Optical properties of green fluorescent proteins and their applications on virus infection,** J. Lee, C. Kao, Y. Chen, T. Wu, I. Hsu, Chung Yuan Christian Univ. (Taiwan) . . . . . [6626-05]

Coffee Break 17.00 17.30

Conference 6626 continues page 9.

Conf. 6627 (OCT)

SESSION 1

Room 5 . . . . . Sun. 15.30 to 17.00

Source Technology for OCT

Chair: **Peter E. Andersen**, Technical Univ. of Denmark (Denmark)

15.30: **Advances in ultrahigh speed OCT with Fourier domain mode locked (FDML) lasers *(Invited Paper)*,** R. A. Huber, Ludwig-Maximilians-Univ. München (Germany); D. C. Adler, V. J. Srinivasan, I. M. Gorczynska, J. G. Fujimoto, Massachusetts Institute of Technology (USA) . . . . . [6627-01]

16.00: **Novel superluminescent diodes and SLD-based light sources for optical coherence tomography,** V. R. Shidlovski, S. D. Yakubovich, E. V. Andreeva, P. I. Lapin, V. Prokhorov, M. V. Shramenko, Superlum Diodes Ltd. (Russia) . . . . . [6627-02]

16.15: **Ultrahigh resolution optical coherence tomography at two infrared wavelength regions using a single light source,** F. Spöler, S. Kray, P. Grychtol, B. Hermes, J. Bornemann, M. Först, H. Kurz, RWTH Aachen (Germany) . . . . . [6627-03]

16.30: **High speed wavelength-swept laser source with a simple configuration for optical coherence tomography,** C. Chong, A. Morosawa, T. Sakai, Santec Corp. (Japan) . . . . . [6627-04]

16.45: **Wide tuning range wavelength-swept laser with single semiconductor optical amplifier for OCT,** A. Morosawa, C. Chong, T. Sakai, Santec Corp. (Japan) [6627-05]

Coffee Break . . . . . 17.00 to 17.30

Conference 6627 continues page 9.

Conf. 6630 (CMI)

SESSION 1

Room 4A . . . . . Sun. 15.30 to 17.00

Applications for Cellular and Tissue Imaging

Chair: **Daniel L. Farkas**, Cedars-Sinai Medical Ctr. (USA)

15.30: **Two-color intranuclear distance measurements of gene regions in human lymphocytes,** S. Fenz, Forschungszentrum Jülich GmbH (Germany); H. Mathée, G. Kreth, D. Baddeley, Ruprecht-Karls-Univ. Heidelberg (Germany); Y. Weiland, Ruprecht-Karls-Univ. Heidelberg (Georgia); J. Schwarz-Finsterle, C. G. Cremer, U. J. Birk, Ruprecht-Karls-Univ. Heidelberg (Germany) [6630-01]

15.45: **In vivo imaging of structures in Caenorhabditis elegans using non-linear (TPEF-SHG-THG) microscopy,** E. J. Gualda, G. Filippidis, M. Mari, C. Fotakis, G. Voglis, N. Tavernarakis, Foundation for Research and Technology-Hellas (Greece) . . [6630-02]

16.00: **Functional imaging of skeletal muscle fiber in different physiological states by second harmonic generation,** V. Nucciotti, C. Stringari, L. Sacconi, F. Vanzi, C. Tesi, N. Piroddi, C. Poggesi, Univ. degli Studi di Firenze (Italy); C. Castiglioni, A. Milani, Politecnico di Milano (Italy); M. Linari, G. Piazzesi, V. Lombardi, F. S. Pavone, Univ. degli Studi di Firenze (Italy) . . [6630-03]

16.15: **Surgical visualization of rabbit cornea after photorefractive keratectomy by multiphoton microscopy,** C. Hsueh, W. Lo, National Taiwan Univ. (Taiwan); T. Wang, F. Hu, National Taiwan Univ. Hospital (Taiwan); C. Dong, National Taiwan Univ. (Taiwan) . . . . . [6630-04]

16.30: **Post surgical visualization of rabbit cornea after conductive keratoplasty by multiphoton microscopy,** W. Lo, National Taiwan Univ. (Taiwan); T. Wang, F. Hu, National Taiwan Univ. Hospital (Taiwan) and National Taiwan Univ. Medical Collage (Taiwan); C. Dong, National Taiwan Univ. (Taiwan) . . . . . [6630-05]

16.45: **Enhanced fluorescence cell imaging with metal-coated slides,** E. Le Moal, E. Fort, École Supérieure de Physique et de Chimie Industrielles (France); S. Lévêque-Fort, Univ. Paris-Sud II (France); A. Janin, H. Murata, Univ. Paris VII (France); F. P. Cordelières, M. Fontaine-Aupart, Univ. Paris-Sud II (France); C. Ricolleau, École Supérieure de Physique et de Chimie Industrielles (France) . . . . . [6630-06]

Coffee Break . . . . . 17.00 to 17.30

Conference 6630 continues page 9.

Conf. 6631 (NOI)

SESSION 1

Room 11 . . . . . Sun. 15.30 to 17.00

Photoacoustics I

Chair: **Christian D. Depeursinge**, École Polytechnique Fédérale de Lausanne (Switzerland)

15.30: **Improvement of depth resolution on photoacoustic imaging using multiphoton absorption *(Invited Paper)*,** Y. Yamaoka, T. Takamatsu, Kyoto Prefectural Univ. of Medicine (Japan) . [6631-01]

16.00: **Photoacoustic image reconstruction methods: a quantitative analysis,** J. I. Sperl, General Electric Co. (Germany); K. Zell, Technische Univ. München (Germany); P. Menzenbach, Innolas GmbH (Germany); C. Haisch, Technische Univ. München (Germany); S. Ketzer, M. Marquart, H. Koenig, M. W. Vogel, General Electric Co. (Germany) . . . . . [6631-02]

16.15: **Two-dimensional image reconstruction for photoacoustic tomography with line detectors,** G. Paltauf, R. Nuster, Karl-Franzens-Univ. Graz (Austria); M. Haltmeier, Leopold-Franzens-Univ. Innsbruck (Austria); P. Burgholzer, Upper Austrian Research GmbH (Austria) . . . . . [6631-03]

16.30: **OPUS: optoacoustic imaging combined with conventional ultrasound for breast cancer detection,** C. Haisch, K. Zell, Technische Univ. München (Germany); J. I. Sperl, General Electric Co. (Germany); M. W. Vogel, General Electric Co. (USA); P. Menzenbach, InnoLas GmbH (Germany); R. Niessner, Technische Univ. München (Germany) . . . . . [6631-04]

16.45: **Development of waveguide sensors for the application in photoacoustic tomography,** R. Nuster, G. Paltauf, H. Ditlbacher, Karl-Franzens-Univ. Graz (Austria); P. Burgholzer, Upper Austrian Research GmbH (Austria) . . . . . [6631-05]

Coffee Break . . . . . 17.00 to 17.30

Conference 6631 continues page 9.

Plenary Session . . . . . 13.00 to 15.00

High Speed and Ultrahigh Resolution Optical Coherence Tomography,
J. G. Fujimoto, Massachusetts Institute of Technology (USA)

A New Light on Bioscience, K. Dholakia, Univ. of St. Andrews (United Kingdom)

Conf. 6626 (MI)

SESSION 2

Room 3 . . . . . Sun. 17.30 to 18.30

Advances in Bioluminescence and Fluorescence Imaging I

Chair: **Vasilis Ntziachristos**, Massachusetts General Hospital (USA)

17.30: **Three dimensional bioluminescence tomography *(Invited Paper)*,** H. Dehghani, The Univ. of Exeter (United Kingdom); B. W. Pogue, S. C. Davis, Dartmouth College (USA); M. S. Patterson, Juravinski Cancer Ctr. (Canada) . . . . . [6626-06]

18.00: **Post mortem evaluation of a new approach for quantitative bioluminescence imaging in small animals,** D. C. Comsa, Juravinski Cancer Ctr. (Canada) and McMaster Univ. (Canada); T. J. Farrell, M. S. Patterson, Juravinski Cancer Ctr. (Canada) . [6626-07]

18.15: **Spectral unmixing of multi-color tissue specific in vivo fluorescence in mice,** G. Zacharakis, R. Favicchio, A. Garofalakis, S. Psycharakis, C. Mamalaki, J. Ripoll, Foundation for Research and Technology-Hellas (Greece) . . . . . [6626-08]

Conference 6626 continues page 10.

Conf. 6627 (OCT)

SESSION 2

Room 5 . . . . . Sun. 17.30 to 18.30

Clinical and Pre-Clinical Applications of OCT I

Chair: **Julia Welzel**, General Hospital Augsburg (Germany)

17.30: **Three-dimensional Fourier-domain optical coherence tomography of alveolar mechanics in stepwise inflated and deflated isolated and perfused rabbit lungs,** A. Krueger, L. Knels, S. Meissner, M. Wendel, A. R. Heller, T. Lambeck, T. Koch, E. Koch, Technische Univ. Dresden (Germany) . . . . . [6627-06]

17.45: **Diagnostic potential of optical coherence tomography in non-melanoma skin cancer: a clinical study,** M. Mogensen, Univ. of Copenhagen (Denmark); L. Thrane, P. E. Andersen, Technical Univ. of Denmark (Denmark); G. B. E. Jemec, Univ. of Copenhagen (Denmark) . . . . . [6627-07]

18.00: **In vivo and 3D visualization of coronary artery development by optical coherence tomography,** L. Thrane, Technical Univ. of Denmark (Denmark); K. Norozi, Medizinische Hochschule Hannover (Germany); J. Männer, Georg-August-Univ. Göttingen (Germany); F. Pedersen, Technical Univ. of Denmark (Denmark); S. Mottl-Link, Deutsches Krebsforschungszentrum (Germany); H. E. Larsen, P. E. Andersen, Technical Univ. of Denmark (Denmark); A. Wessel, T. M. Yelbuz, Medizinische Hochschule Hannover (Germany)[6627-08]

18.15: **Ultrahigh-speed optical coherence tomography imaging and visualization of the embryonic avian heart using a buffered Fourier domain mode locked laser,** M. W. Jenkins, Case Western Reserve Univ. (USA); D. C. Adler, Massachusetts Institute of Technology (USA); M. Gargesha, Case Western Reserve Univ. (USA); R. Huber, Massachusetts Institute of Technology (USA); F. G. Rothenberg, Univ. of Cincinnati (USA); M. Watanabe, D. L. Wilson, Case Western Reserve Univ. (USA); J. G. Fujimoto, Massachusetts Institute of Technology (USA); A. M. Rollins, Case Western Reserve Univ. (USA) . . . . . [6627-09]

Conference 6627 continues page 10.

Conf. 6630 (CMI)

SESSION 2

Room 4A . . . . . Sun. 17.30 to 18.30

Fluorescence Lifetime Imaging Microscopy

Chair: **Ammasi Periasamy**, Univ. of Virginia (USA)

17.30: **Multi-wavelength multiphoton FLIM with direct detection,** W. Becker, A. Bergmann, Becker & Hickl GmbH (Germany) . . . . . [6630-07]

17.45: **Full photon information data structure applied to laser scanning microscopes enabling FLIM, FRET, and FCS data analysis,** U. Ortmann, B. Krämer, F. Koberling, PicoQuant GmbH (Germany) [6630-08]

18.00: **Microscopic fluorescence lifetime and hyperspectral imaging with digital micromirror illuminator,** A. Bednarkiewicz, M. Bouhifd, M. P. Whelan, Joint Research Ctr. (Italy) . . . . . [6630-09]

18.15: **Development of a TIRF-FLIM microscope for biomedical applications,** P. Blandin, S. Lévêque-Fort, F. P. H. Druon, M. Hanna, P. M. Georges, Univ. Paris-Sud II (France); R. Briandet, Institut National de la Recherche Agronomique (France); Z. Lenkei, École Supérieure de Physique et de Chimie Industrielles (France); M. Fontaine-Aupart, Univ. Paris-Sud II (France) . . . . . [6630-10]

Conference 6630 continues page 10.

Conf. 6631 (NOI)

SESSION 2

Room 11 . . . . . Sun. 17.30 to 18.10

Photoacoustics II

Chair: **Christian D. Depeursinge**, École Polytechnique Fédérale de Lausanne (Switzerland)

17.30: **Photoacoustic tomography using a fiber based Fabry-Perot interferometer as an integrating line detector and image reconstruction by model-based time reversal method,** H. Grün, Upper Austrian Research GmbH (Austria); M. Haltmeier, Leopold-Franzens-Univ. Innsbruck (Austria); G. Paltauf, Karl-Franzens-Univ. Graz (Austria); P. Burgholzer, Upper Austrian Research GmbH (Austria) . . . . . [6631-06]

17.45: **Gold nanorods: contrast agents for photoacoustic imaging?,** C. Ungureanu, R. G. Rayavarapu, S. Manohar, T. G. van Leeuwen, Univ. Twente (Netherlands) . . . . . [6631-08]

18.00: **Concomitant acoustic property measurements in a photoacoustic imager,** S. Manohar, R. Willemink, F. v. d. Heijden, K. Slump, T. G. van Leeuwen, Univ. Twente (Netherlands) . . [6631-09]

Conference 6631 continues page 13

Conf. 6626 (MI)

SESSION 3

Room B12 . . . . . Mon. 09.00 to 10.00

Probes for Contrast and Molecular Reporting II

Chair: **Gang Zheng**, Univ. of Toronto (Canada)

09.00: **Molecular imaging of experimental arthritis using an EDB targeting antibody NIR-dye conjugate,** A. Vater, K. Licha, S. Vollmer, Bayer Schering Pharma AG (Germany); I. Gemeinhardt, O. Gemeinhardt, J. Schnorr, Charité-Univ. Medizin Berlin (Germany); J. Voigt, J. Berger, B. Ebert, Physikalisch-Technische Bundesanstalt (Germany); M. Taupitz, Charité-Univ. Medizin Berlin (Germany); M. Schirner, Bayer Schering Pharma AG (Germany) . . . . [6626-09]

09.15: **Ligand-conjugated lipoprotein nanocarriers for molecular imaging and therapy of cancer,** I. Corbin, J. Chen, Ontario Cancer Institute (Canada); G. Zheng, Ontario Cancer Institute (Canada) and Univ. of Toronto (Canada) and Univ. of Pennsylvania (USA) . . . . . [6626-10]

09.30: **Synthesis, functionalization, and characterization of rod-shaped gold nanoparticles as potential optical contrast agents,** R. G. Rayavarapu, C. Ungureanu, W. Petersen, S. Manohar, T. G. van Leeuwen, Univ. Twente (Netherlands) . . . . . [6626-11]

09.45: **Nanoparticle assisted optical molecular imaging (NAOMI) using biodegradable nanoparticles,** D. J. Faber, M. D. de Bruin, M. C. G. Aalders, F. D. Verbraak, T. G. van Leeuwen, Univ. van Amsterdam (Netherlands) . . . . . [6626-12]

Coffee Break . . . . . 10.00 to 10:30

Conference 6626 continues page 11

Conf. 6627 (OCT)

SESSION 3

Room 5 . . . . . Mon. 09.00 to 10.00

Clinical and Pre-Clinical Applications of OCT II

Chair: **Jennifer K. Barton**, The Univ. of Arizona (USA)

09.00: **Dynamic imaging of penetration and decontamination after chemical eye burn using optical coherence tomography,** F. Spöler, M. Först, H. Kurz, RWTH Aachen (Germany); M. Frentz, N. F. Schrage, Aachen Ctr. of Technology Transfer in Ophthalmology (Germany) . . . . . [6627-10]

09.15: **Operating microscope with time domain optical coherence tomography (OCT) for neurosurgery,** E. Lankenau, D. Klinger, H. Müller, A. Malik, Univ. zu Lübeck (Germany); C. Winter, Thorlabs GmbH (Germany); A. Giese, Georg-August-Univ. Göttingen (Germany); S. Oelckers, Möller-Wedel Optical GmbH (Germany); G. Hüttmann, Univ. zu Lübeck (Germany) . . . . . [6627-11]

09.30: **Investigation of murine vasodynamics by Fourier domain optical coherence tomography,** S. Meissner, J. Walther, G. Müller, A. Krüger, H. Morawietz, E. Koch, Technische Univ. Dresden (Germany) . . . . . [6627-12]

09.45: **Robust intravascular optical coherence elastography,** G. van Soest, Erasmus Univ. Medical Ctr. (Netherlands); R. R. Bouchard, Erasmus Univ. Medical Ctr. (Netherlands) and Duke Univ. (USA); F. Mastik, Erasmus Univ. Medical Ctr. (Netherlands); N. de Jong, Erasmus Univ. Medical Ctr. (Netherlands) and Univ. of Twente (Netherlands) and Interuniv. Cardiology Institute of The Netherlands (Netherlands); A. F. W. van der Steen, Erasmus Univ. Medical Ctr. (Netherlands) and Interuniv. Cardiology Institute of The Netherlands (Netherlands) . . . . . [6627-13]

Coffee Break . . . . . 10.00 to 10.30

Conference 6627 continues page 11

Conf. 6630 (CMI)

SESSION 3

Room 4A . . . . . Mon. 09.00 to 10.00

Accuracy and Quantitation in Microscopy

Chair: **David W. Piston**, Vanderbilt Univ. (USA)

09.00: **Refractive index determination by index-mismatch-induced spherical aberration,** P. Su, T. Fwu, H. Vladimir, C. Dong, National Taiwan Univ. (Taiwan) . . . . . [6630-11]

09.15: **Determination of the confocal volume for quantitative fluorescence correlation spectroscopy,** S. Rüttinger, Physikalisch-Technische Bundesanstalt (Germany); V. Buschmann, B. Krämer, F. Koberling, PicoQuant GmbH (Germany); R. Macdonald, Physikalisch-Technische Bundesanstalt (Germany) [6630-12]

09.30: **Quantitative determination of specimen properties using computational differential-interference contrast (DIC) microscopy,** C. Preza, The Univ. of Memphis (USA); J. A. O'Sullivan, Washington Univ. in St. Louis (USA) . . . . . [6630-13]

09.45: **Two- and one-photon color confocal screening microscope,** J. Walter, TILL I.D. GmbH (Germany); C. Seebacher, Ludwig Maximilians Univ. Munich (Germany); R. Uhl, Ludwig Maximilians Univ. Munchen (Germany) . . . . . [6630-14]

Coffee Break . . . . . 10.00 to 10.30

Conference 6630 continues page 11.

Monday 18 June • 10.30 to 12.30

Conf. 6626 (MI)

SESSION 4

Room B12 . . . . . Mon. 10.30 to 12.30

Advances in Bioluminescence and Fluorescence Imaging II

Chair: **Andreas Wunder**, Charité Universitätsmedizin Berlin (Germany)

10.30: **MR-guided near-infrared fluorescence spectroscopy of brain tumor,** B. W. Pogue, Dartmouth College (USA) . . . . . [6626-13]

10.45: **Autofluorescence removal from fluorescence tomography data using multispectral imaging,** S. Psycharakis, G. Zacharakis, A. Garofalakis, J. Ripoll, Foundation for Research and Technology-Hellas (Greece) . . . . . [6626-14]

11.00: **Fluorescence Lifetime Imaging of Targets, a Step to a Functional Imaging of Tissue Abnormalities, Deeply Embedded in Turbid Medium,** V. V. Chernomordik, M. Hassan, J. D. Riley, A. H. Gandjbakhche, National Institutes of Health (USA) . . . . . [6626-15]

11.15: **Non-invasive scalping: increasing the sensitive of non-invasive fluorescence brain imaging in mice by using a two wavelength approach,** P. Bahmani, J. Klohs, A. Wunder, U. Lindauer, R. Bourayou, U. Dinagl, J. M. Steinbrink, Charité-Univ. Medizin Berlin (Germany) . . . . [6626-16]

11.30: **Time-resolved scanning system for double re?ectance and transmittance ?uorescence imaging of small animals,** M. Brambilla, L. Spinelli, A. Pifferi, A. Torricelli, R. Cubeddu, Politecnico di Milano (Italy) . . . . . [6626-17]

11.45: **Recent advances in time-resolved confocal fluorescence microscopy,** U. Ortmann, F. Koberling, P. Kapusta, PicoQuant GmbH (Germany) . . . [6626-18]

12.00: **Applying time-dependent data for fluorescence tomography,** R. B. Schulz, J. Peter, W. Semmler, Deutsches Krebsforschungszentrum (Germany); C. D'Andrea, G. Valentini, R. Cubeddu, Politecnico di Milano (Italy); M. Schweiger, S. R. Arridge, Univ. College London (United Kingdom) . . . . . [6626-19]

12.15: **Pump-lasers-induced multi-structures photoprocesses or the near-lying singlet and triplet excited electronic states in the geteroaromatic molecules,** A. E. Obukhov, Moscow Mining Institute (Russia) . . . . . [6626-20]

Conference 6626 continues page 14.

Conf. 6627 (OCT)

SESSION 4

Room 5 . . . . . Mon. 10.30 to 12.30

Retinal Imaging

Chair: **Wolfgang Drexler**, Cardiff Univ. (United Kingdom)

10.30: **In vivo optophysiology of the human retina *(Invited Paper),*** B. M. Hermann, A. Binns, B. Považay, A. Unterhuber, B. Hofer, T. H. Margrain, W. Drexler, Cardiff Univ. (United Kingdom) . . . . . [6627-14]

11.00: **OFDI for retinal imaging,** J. F. DeBoer, Massachusetts General Hospital (USA) . . . . [6627-15]

11.15: **Phase retardation measurement of retinal nerve fiber layer using polarization-sensitive spectral domain optical coherence tomography and scanning laser polarimetry,** M. Yamanari, Univ. of Tsukuba (Japan); M. Miura, Tokyo Medical Univ. Kasumigaura Hospital (Japan); S. Makita, T. Yatagai, Y. Yasuno, Univ. of Tsukuba (Japan) . . . . . [6627-16]

11.30: **Intensity based quantification of fast retinal blood flow in 3D via high resolution resonant Doppler spectral OCT *(Invited Paper),*** R. Michaely, A. H. Bachmann, M. L. Villiger, C. Blatter, T. Lasser, R. A. Leitgeb, École Polytechnique Fédérale de Lausanne (Switzerland) . . . . . [6627-17]

12.00: **En-face visualization methods for analyzing three-dimensional UHR OCT retinal imaging data,** I. M. Gorczynska, J. J. Liu, V. J. Srinivasan, Massachusetts Institute of Technology (USA); R. W. Chen, Tufts Univ. School of Medicine (USA); M. Wojtkowski, Nicolaus Copernicus Univ. (Poland); E. Reichel, J. S. Duker, Tufts Univ. School of Medicine (USA); J. G. Fujimoto, Massachusetts Institute of Technology (USA) . . . . . [6627-18]

12.15: **Towards isotropic resolution in ophthalmic ultrahigh-resolution optical coherence tomography by using pancorrection,** E. J. Fernández, C. Torti, B. Považay, B. M. Hermann, A. Unterhuber, B. Hofer, W. Drexler, Cardiff Univ. (United Kingdom) . . . . [6627-19]

Lunch/Exhibition Break . . . . . 12.30 to 14.00

Conference 6627 continues page 12

Conf. 6630 (CMI)

SESSION 4

Room 4A . . . . . Mon. 10.30 to 12.30

Advanced Instrumentation for Microscopy I

Chair: **Tony Wilson**, Univ. of Oxford (United Kingdom)

10.30: **Advances in lasers for multi photon microscopy,** D. P. Armstrong, Coherent Scotland Ltd. (United Kingdom) . . . . . [6630-15]

10.45: **Substantial improvement in penetration depths and photo damage reduction: multiphoton microscopy beyond one micron,** E. Büttner, APE GmbH (Germany); V. Andresen, LaVision BioTec GmbH (Germany); I. Rimke, APE GmbH (Germany); P. Friedl, Univ. Würzburg (Germany) . . . . . [6630-16]

11.00: **Coherent light microscopy with a multi-spot source,** R. Riesenberg, M. Kanka, Institut für Physikalische Hochtechnologie e.V. (Germany)[6630-17]

11.15: **Phase reconstruction by multiple plane detection for holographic microscopy,** A. Grjasnow, R. Riesenberg, A. Wuttig, Institut für Physikalische Hochtechnologie e.V. (Germany) . . . . . [6630-18]

11.30: **STED microscopy far beyond the diffraction limit employing beam scanning in a regular microscope,** V. Westphal, S. W. Hell, Max-Planck-Institut für biophysikalische Chemie (Germany)[6630-19]

11.45: **Advanced fluorescence microscopy using light emitting diodes,** G. T. Kennedy, V. Poher, I. H. Munro, D. S. Elson, P. M. W. French, M. A. A. Neil, Imperial College London (United Kingdom) . [6630-20]

12.00: **Programmable optics for confocal and multi-photon microscopy,** M. A. A. Neil, B. R. Boruah, Imperial College London (United Kingdom) . [6630-21]

12.15: **Spherical aberration cancellation in polarized photon-pairs confocal laser scanning microscopy,** C. Chang, National Central Univ. (Taiwan); C. Chou, National Yang Ming Univ. (Taiwan) and National Central Univ. (Taiwan); H. Huang, National Yang Ming Univ. (Taiwan); H. Chang, National Central Univ. (Taiwan); W. Kuo, National Taiwan Normal Univ. (Taiwan); H. Yau, National Central Univ. (Taiwan) . . . . . [6630-22]

Lunch/Exhibition Break . . . . . 12.30 to 13.30

Conference 6630 continues page 13

Conf. 6627 (OCT)

SESSION 5

Room 5 . . . . . Mon. 13.30 to 14.45

OCT Modeling and Speckle Reduction

Chair: **Lars Thrane**, Technical Univ. of Denmark (Denmark)

13.30: **Scatterer size-based analysis of optical coherence tomography signals,** A. Kartakoulis, C. Pitris, Univ. of Cyprus (Cyprus) . . . . . [6627-20]

13.45: **Stereoscopic optical coherence tomography in the frequency domain for refractive index sensitive imaging,** P. H. Tomlins, M. Tedaldi, R. A. Ferguson, National Physical Lab. (United Kingdom); R. K. Wang, Oregon Health and Science Univ. (USA) and Cranfield Univ. (United Kingdom) . . . . . [6627-21]

14.00: **Speckle reduction in optical coherence tomography images of human skin by a spatial diversity method,** T. M. Jørgensen, L. Thrane, A. Zam, P. E. Andersen, Technical Univ. of Denmark (Denmark) . . . . . [6627-22]

14.15: **Contribution of various scattering orders to OCT images of skin,** M. Y. Kirillin, Univ. of Oulu (Finland) and M.V. Lomonosov Moscow State Univ. (Russia); A. V. Priezzhev, M.V. Lomonosov Moscow State Univ. (Russia); R. A. Myllylä, Univ. of Oulu (Finland) . . . . . [6627-23]

14.30: **Speckle size in optical coherence tomography,** G. Lamouche, National Research Council (Canada); C. Bisaillon, Conseil National De Recherches Canada (Canada); R. Maciejko, École Polytechnique de Montréal (Canada); M. L. Dufour, National Research Council (Canada); J. Monchalin, Conseil National De Recherches Canada (Canada) . . . . . [6627-24]

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Conf. 6630 (CMI)

SESSION 5

Room 4A . . . . . Mon. 13.30 to 15.00

Advanced Instrumentation for Microscopy II

Chair: **Klaus Suhling**, King's College London (United Kingdom)

13.30: **High throughput, high content microscopic imaging,** P. T. C. So, Massachusetts Institute of Technology (USA) . . . . . [6630-23]

13.45: **Aberration-free refocusing in high numerical aperture microscopy,** T. Wilson, Univ. of Oxford (United Kingdom) . . . . . [6630-24]

14.00: **Two-photon luminescence imaging of cancerous tissue using gold nanorods as bright contrast agents,** N. J. Durr, T. Larson, D. K. Smith, The Univ. of Texas/Austin (USA); B. A. Korgel, The Univ. of Texas/Austin (USA) and Texas Materials Institute (USA); K. V. Sokolov, The Univ. of Texas M.D. Anderson Cancer Ctr. (USA); A. Ben-Yakar, The Univ. of Texas/Austin (USA) . . . . . [6630-25]

14.15: **A new, easy to use light source for CARS microscopy based on an optical parametric oscillator,** I. Rimke, APE GmbH (Germany); C. L. Evans, Harvard Univ. (USA); E. Büttner, APE GmbH (Germany); S. Xie, Harvard Univ. (USA) . . . . [6630-26]

14.30: **Application of multiplex CARS spectroscopy and microscopy in biomedical sciences,** H. A. Rinia, Univ. van Amsterdam (Netherlands); M. Bonn, FOM Institute for Atomic and Molecular Physics (Netherlands); E. M. Vartiainen, Lappeenrannan Teknillinen Yliopisto (Finland); C. B. Schaffer, Cornell Univ. (USA); M. Müller, Univ. van Amsterdam (Netherlands) . . . . . [6630-27]

14.45: **Confocal Raman microscopy for investigation of differentiating living tumor cells,** C. Scalfi-Happ, S. Fulda, Univ. Ulm (Germany); A. Jauss, WITec GMBH (Germany); O. Hollricher, WITec GmbH (Germany); C. Hauser, R. W. Steiner, A. C. Rueck, Univ. Ulm (Germany) . . . . . [6630-28]

Conference 6630 continues page 17.

Conf. 6631 (NOI)

SESSION 3

Room 11 . . . . . Mon. 13.30 to 15.00

Turbid Media and Interferometry Holography

Chair: **Christian D. Depeursinge**, École Polytechnique Fédérale de Lausanne (Switzerland)

13.30: **Simultaneous acquisition of time-domain fNIRS and fMRI during motor activity,** A. Torricelli, D. Contini, A. Pifferi, L. Spinelli, R. Cubeddu, Politecnico di Milano (Italy); L. Nocetti, A. A. Manginelli, P. Baraldi, Univ. degli Studi di Modena e Reggio Emilia (Italy) . . . . . [6631-10]

13.45: **Time-resolved diffuse reflectance at small source-detector separation using a time-gated single-photon avalanche diode,** A. Pifferi, A. Torricelli, L. Spinelli, D. Contini, R. Cubeddu, Politecnico di Milano (Italy); F. Martelli, G. Zaccanti, Univ. degli Studi di Firenze (Italy); A. Tosi, A. Dalla Mora, F. Zappa, S. Cova, Politecnico di Milano (Italy) . . . . . [6631-11]

14.00: **Estimation of biomedical optical properties by simultaneous use of diffuse reflectometry and photothermal radiometry: investigation of light propagation models,** E. S. R. Fonseca, Univ. da Beira Interior (Portugal); M. E. P. de Jesus, Univ. da Beira Interior (Portugal) and Unidade de Detecção Remota (Portugal) . . . . . [6631-12]

14.15: **New approaches in laser speckle biomedical imaging: nonergodictiy correction and active speckle sampling,** P. V. Zakharov, A. Völker, Univ. de Fribourg (Switzerland); A. Buck, B. Weber, Univ. Hospital Zürich (Switzerland); F. Scheffold, Univ. de Fribourg (Switzerland) . . . . . [6631-13]

14.30: **Heterodyne interference microscopy for non-invasive cell morphometry,** M. P. Whelan, F. Lakestani, D. Rembges, M. G. Sacco, Joint Research Ctr. (Italy) . . . . . [6631-14]

14.45: **Dynamics measurement of both the integral refractive index and cell morphometry with digital holography microscopy,** P. P. Marquet, Ctr. Hospitalier Univ. Vaudois (Switzerland); Y. Emery, LyncéeTec SA (Switzerland); T. Colomb, F. Charriere, J. G. Köhn, C. D. Depeursinge, B. Rappaz, P. Jourdain, P. J. Magistretti, École Polytechnique Fédérale de Lausanne (Switzerland) . . . . . [6631-15]

Conference 6631 continues page 17.

Conf. 6632 (TLA)

SESSION 1

Room B12 . . . . . Mon. 13.30 to 15.00

Laser Surgery on Tissues

Chair: **Ronald Sroka**, Ludwig-Maximilians-Univ. München (Germany)

13.30: **CO2 laser free-form processing of hard tissue,** M. Werner, M. M. Ivanenko, Ctr. of Advanced European Studies and Research (Germany); D. Harbecke, Ctr. of Advanced European Studies and Research (Germany) and Univ. Düsseldorf (Germany); M. Klasing, Ctr. of Advanced European Studies and Research (Germany); H. Steigerwald, Ctr. of Advanced European Studies and Research (Germany) and Univ. Bonn (Germany); P. Hering, Ctr. of Advanced European Studies and Research (Germany) and Univ. Düsseldorf (Germany) . . . . . [6632-01]

13.45: **Ultra-short pulse laser processing of hard tissue, dental restoration materials, and biocompatibles,** E. Wintner, M. Strassl, V. Wieger, A. Yousif, Technische Univ. Wien (Austria) . . . . [6632-02]

14.00: **Optimized laser treatment of bone tissue by means of thermal effect visualization,** S. Stopp, D. Guenther, H. Deppe, T. C. Lueth, Technische Univ. Muenchen (Germany) . . . . . [6632-03]

14.15: **Partial kidney resection by use of a 1,94µm thulium fiber laser,** D. Theisen-Kunde, Univ. zu Lübeck (Germany); S. Tedsen, Univ zu Lübeck (Germany); V. Danicke, K. Herrmann, R. Brinkmann, Univ. zu Lübeck (Germany) . . . . . [6632-04]

14.30: **Preliminary results on diode-laser assisted vaporization of prostate tissue,** R. Sroka, M. Seitz, O. Reich, A. Bachmann, V. Steinbrecher, A. Ackermann, C. G. Stief, Ludwig-Maximilians-Univ. München (Germany) . . . . . [6632-05]

14.45: **Optical coherence tomography monitoring of vocal fold femtosecond laser microsurgery,** H. Wisweh, Laser Zentrum Hannover e.V. (Germany) and Hannover Medical School (MHH) (Germany); U. Merkel, A. Hüller, K. Lüerssen, Medizinische Hochschule Hannover (Germany); H. Lubatschowski, Laser Zentrum Hannover e.V. (Germany) . . . . . [6632-06]

Conference 6632 continues page 17

Conf. 6633 (BOLS)

Room BO.R2 . . . . . Mon. 09.30

Working Group on Biophotonics of the German Optical Society DGaO

Lunch Break . . . . . 12.30 to 13.30

Room BO.R2 . . . . . Mon. 13.30 to 14.30

Welcome and Keynote

Chair: **Jürgen Popp**, Friedrich-Schiller-Univ. Jena (Germany)

Welcome Address . . . . . 13.30 to 13.40

13.40: **Breaking the barrier: fluorescence microscopy with diffraction-unlimited resolution (Keynote) *(Presentation Only)*,** S. W. Hell, Deutsches Krebsforschungszentrum (Germany) . . . . . [6633-01]

SESSION 1

Room BO.R2 . . . . . Mon. 14.30 to 16.00

Understanding Life Processes: Innovative Analysis, Detection and Diganostic Methods I

Chair: **Valery V. Tuchin**, Saratov State Univ. (Russia)

14.30: **Optical and chemical switches: key molecules for improved fluorescence imaging and tracking with high optical resolution *(Invited Paper)*,** M. Sauer, Univ. Bielefeld (Germany); K. H. Drexhage, Univ. Siegen (Germany); J. Mattay, P. Tinnefeld, Univ. Bielefeld (Germany) . . . . . [6633-02]

15.00: **Approaches to quantitative in vivo studies by single-molecule fluorescence spectroscopy,** H. Ta, C. M. Roth, P. I. Heinlein, D. Herten, Ruprecht-Karls-Univ. Heidelberg (Germany) . . . . . [6633-03]

15.15: **Fluorescence imaging of cholesterol and temperature dependent cell membrane dynamics,** P. Weber, M. Wagner, Fachhochschule Aalen (Germany); W. S. L. Strauss, Univ. Ulm (Germany); H. Schneckenburger, Fachhochschule Aalen (Germany) . . . . . [6633-04]

15.30: **Fluorescence tomography of biological tissue based on ultrasound tagging technique,** M. Kobayashi, T. Mizumoto, D. Q. Trinh, Tohoku Institute of Technology (Japan); M. Takeda, Tohoku Univ. (Japan) . . . . [6633-05]

15.45: **Imaging growth of thick engineered tissues with fluorescence diffuse optical tomography,** Y. Bérubé-Lauzière, J. Desrochers, P. Vermette, R. Fontaine, Univ. de Sherbrooke (Canada) . . . . . [6633-06]

Coffee Break . . . . . 16.00 to 16.30

Conference 6633 continues page 17

Poster presenters may post their poster papers Monday morning and will need to remove their posters immediately following the poster session that afternoon. Poster authors must be at their papers during the poster session from 15.00-16.00 to discuss the poster with session attendees.

Conf. 6626 (MI)

Chair: **Kai Licha**, Bayer Schering Pharma AG (Germany)

✔ **Activatable quantum dots for mouse noninvasive fluorescence imaging,** I. F. Texier Nogues, J. Marchand, E. Heinrich, A. Da Silva, Commissariat à l'Energie Atomique (France) . . . . . [6626-22]

✔ **Molecular targeting as a contrast agent mechanism for fluorescence endoscopy,** A. J. Healey, R. Bendiksen, A. Tornes, E. W. Johannesen, GE Healthcare Bio-Sciences (Norway) . . . . . [6626-23]

✔ **Ethidium bromide as a probe of mtDNA replication in living cells,** A. M. Villa, P. Fusi, C. Pozzi, M. Valtorta, Univ. degli Studi di Milano Bicocca (Italy); G. Amicarelli, D. Adlerstein, DiaSorin S.p.A. (Italy); S. M. Doglia, Univ. degli Studi di Milano Bicocca (Italy) . . . . . [6626-24]

✔ **Correlation between direct microscopy and FDG-PET in the study of cerebral brain flow in rats,** O. Blagosklonov, Univ. de Franche-Comte (France) and Jean Minjoz Univ. Hospital (France); G. I. Podoprigora, S. V. Pushkin, Y. R. Nartsissov, Institute of Cytochemistry and Molecular Pharmacology (Russia); L. Comas, J. Cardot, H. Boulahdour, Univ. de Franche-Comte (France) . . . . . [6626-25]

✔ **Multiresolution transform denoising and segmentation of single molecule motility image series,** F. von Wegner, T. Ober, O. Friedrich, R. H. A. Fink, Ruprecht-Karls-Univ. Heidelberg (Germany); M. Vogel, Harvard Univ. (USA) and Ruprecht-Karls-Univ. Heidelberg (Germany) . . . . . [6626-26]

✔ **Fluorescence diffuse tomography for detection of RFP-expressed tumors in small animals,** I. V. Turchin, Institute of Applied Physics (Russia); A. P. Savitsky, A.N. Bach Institute of Biochemistry (Russia); V. A. Kamensky, V. I. Plehanov, A. G. Orlova, M. S. Kleshnin, M. V. Shirmanova, I. I. Fix, Institute of Applied Physics (Russia); V. O. Popov, A.N. Bach Institute of Biochemistry (Russia) . . . . [6626-27]

✔ **Tumor vascular permeability correlated with acute response to antivascular therapy assessed by time domain fluorescence imaging,** U. Sunar, D. J. Hall, Univ. of California/ San Diego (USA) . . . . . [6626-28]

✔ **Three-dimensional optical metrology and models for non-contact diffuse optical tomography of small animals,** Y. Bérubé-Lauzière, M. Comtois, Univ. de Sherbrooke (Canada) . . . . . [6626-29]

■ *End of Conference*

Conf. 6627 (OCT)

Chair: **Peter E. Andersen**, Danmarks Tekniske Univ. (Denmark)

✔ **Depth-resolved simplified characterization of collagen depletion in dermis with polarization sensitive optical coherence tomography applicable to non-laboratory conditions,** V. Tougbaev, T. Eom, W. Shin, B. Yu, Y. Lee, C. Kee, D. Ko, J. Lee, Gwangju Institute of Science and Technology (South Korea) . . . . . [6627-53]

✔ **Optical coherence tomography using a dynamically-focusing tunable micro-lens,** K. Aljasem, A. Werber, S. Reichelt, H. Zappe, Albert-Ludwigs-Univ. Freiburg (Germany) . . . . . [6627-55]

✔ **Slit-lamp adapted OCT for the visualization of retinal structures,** G. Hüttmann, Univ. zu Lübeck (Germany); C. Winter, P. Koch, Thorlabs GmbH (Germany); H. Müller, E. Lankenau, Univ. zu Lübeck (Germany) . . . . . [6627-57]

✔ **Full field common path optical coherence tomography with annular aperture,** I. S. Abdulhalim II, R. Friedman, L. Liraz, Ben-Gurion Univ. of the Negev (Israel) . . . . . [6627-58]

✔ **Maximum likelihood estimation of depth reflectances in time-domain optical coherence tomography,** C. Flueraru, S. S. Sherif, S. Chang, Y. Mao, National Research Council Canada (Canada) . . . . . [6627-59]

✔ **The effects of Gaussian beams on optical coherence tomography,** C. Liu, National Chiao Tung Univ. (Taiwan); C. Cheng, C. Chiu, I. Hsu, Chung Yuan Christian Univ. (Taiwan) . [6627-60]

✔ **Absorption effects in optical coherence tomography modeling,** T. Chow, Nanyang Technological Univ. (Singapore); J. C. Y. Kah, National Univ. of Singapore (Singapore); B. Ng, Nanyang Technological Univ. (Singapore); C. J. R. Sheppard, National Univ. of Singapore (Singapore) . . . . . [6627-61]

✔ **Diffractive optical coherent microtomography,** S. G. Vertu, E. Maeda, M. Ochiai, I. Yamada, J. Delaunay, The Univ. of Tokyo (Japan); O. Haeberlé, Univ. de Haute Alsace (France); Y. Okamoto, Chiba Univ. (Japan) . . . . . [6627-62]

✔ **Effects of path-length gating to scattered light: a Monte Carlo analysis of a focused beam in OCT system,** C. Tjokro, Singapore-Massachusetts Institute of Technology Alliance (Singapore); T. Chow, Nanyang Technological Univ. (Singapore); J. C. Y. Kah, National Univ. of Singapore (Singapore); C. J. R. Sheppard, National Univ. of Singapore (Singapore) and Singapore-Massachusetts Institute of Technology Alliance (Singapore) . . . . . [6627-64]

✔ **Optical coherence tomography (OCT) imaging and computer aided diagnosis of human cervical tissue specimens,** F. Bazant-Hegemark, Gloucestershire Royal Hospital (United Kingdom) and Cranfield Univ. (United Kingdom); N. Stone, M. D. Read, Gloucestershire Royal Hospital (United Kingdom); K. McCarthy, Gloucestershire Hospitals NHS Foundation Trust (United Kingdom); L. J. Ritchie, Cranfield Univ. (United Kingdom); R. K. Wang, Oregon Health & Science Univ. (USA) . . . . . [6627-65]

✔ **Logarithmic transformation technique for exact signal recovery in frequency domain optical coherence tomography,** C. S. Sekhar, R. A. Leitgeb, A. H. Bachmann, M. A. Unser, École Polytechnique Fédérale de Lausanne (Switzerland) . . . . . [6627-66]

✔ **Spectroscopic Fourier domain optical coherence tomography,** M. R. Hofmann, C. Kasseck, K. Lehmann, N. C. Gerhardt, Ruhr-Univ. Bochum (Germany) . . . . . [6627-67]

✔ **Using a piezoelectric fiber stretcher to remove the depth ambiguity in optical Fourier domain imaging,** S. Vergnole, G. Lamouche, M. L. Dufour, B. Gauthier, National Research Council (Canada) . . . . . [6627-68]

✔ **Differential-phase optical low coherence reflectometer for surface profile measurement,** H. Huang, National Yang-Ming Univ. (Taiwan); W. Kuo, National Taiwan Normal Univ. (Taiwan); S. Chang, Yuan Ze Univ. (Taiwan); C. Ho, National United Univ. (Taiwan); C. Chou, National Yang-Ming Univ. (Taiwan) . . . [6627-69]

✔ **Signal-to-noise analysis of Fizeau-based Fourier domain optical coherence tomography,** P. A. Shilyagin, V. M. Gelikonov, G. V. Gelikonov, Institute of Applied Physics (Russia) . . . . . [6627-70]

Coffee Break . . . . . 16.00 to 16.30

Monday 18 June • ✔ Posters

Poster presenters may post their poster papers Monday morning and will need to remove their posters immediately following the poster session that afternoon. Poster authors must be at their papers during the poster session from 15.00-16.00 to discuss the poster with session attendees.

Conf. 6630 (CMI)

Chair: **Tony Wilson**, Univ. of Oxford (United Kingdom)

✔ **Simultaneous imaging of confocal fluorescence and Raman spectrum,** M. Ahn, Korea Advanced Institute of Science and Technology (South Korea) . . [6630-36]

✔ **Improvement of axial resolution in confocal microscopy using heterodyne illumination,** S. Lee, Korea Advanced Institute of Science and Technology (South Korea) . . . . . [6630-37]

✔ **Design of high efficiency and simple multi-channel spectral detector for confocal scanning microscopy,** I. Song, S. Lee, D. Gweon, Korea Advanced Institute of Science and Technology (South Korea) . . . . . [6630-38]

✔ **Intravital multiphoton microscopy for imaging hepatobiliary function,** F. Li, T. Sun, C. Dong, National Taiwan Univ. (Taiwan) . . . . . [6630-39]

✔ **Multifocal multispectral descanned detection in 2-PLSM,** T. Bergmann, M. Tiemann, J. Martini, K. Tönsing, D. Anselmetti, Bielefeld Univ. (Germany) . . . . . [6630-40]

✔ **Fiber laser-based light source for CARS microspectroscopy,** E. R. Andresen, C. K. Nielsen, J. Thøgersen, S. R. Keiding, Åarhus Univ. (Denmark) . . . . . [6630-41]

✔ **Spatially resolved fluorescence correlation spectroscopy based on electron multiplying CCD,** M. Matsumoto, T. Sugiura, K. Minato, Nara Institute of Science and Technology (Japan) . . . . . [6630-42]

✔ **Evaluation of a new method for the determination of experimental PSF of a wide-field microscope using white-light and a linear sensor,** M. P. Macedo, Instituto Superior de Engenharia de Coimbra (Portugal); A. J. Barata, A. G. Fernandes, C. M. B. A. Correia, Univ. de Coimbra (Portugal) . . . . . [6630-43]

✔ **A time-gated hyperspectral fluorescence lifetime imaging microscope,** H. B. Manning, D. M. Owen, E. Auksorius, P. de Beule, C. B. Talbot, C. W. Dunsby, I. H. Munro, A. I. Magee, M. A. A. Neil, P. M. W. French, Imperial College London (United Kingdom) . . [6630-44]

✔ **Fast three-dimensional random access multi-photon microscopy for functional recording of neuronal activity,** P. Saggau, Baylor College of Medicine (USA); D. Reddy, Rice Univ. (USA) . [6630-45]

✔ **Biological applications of microscope profiler,** S. Han, Veeco Tucson Inc. (USA); E. L. Novak, Veeco Instruments Inc. (USA); J. Reed, M. A. Teitell, J. K. Gimzewski, Univ. of California/Los Angeles (USA) . . . . . [6630-46]

Coffee Break . . . . . 16.00 to 16.30

Conf. 6631 (NOI)

Chair: **Christian D. Depeursinge**, École Polytechnique Fédérale de Lausanne (Switzerland)

✔ **Monte Carlo simulation of photon transillumination time of flight,** P. Vacas-Jacques, M. Strojnik, Ctr. de Investigaciones en Óptica, A.C. (Mexico); G. Paez, Ctr. de Investigaciones en Optica, A.C. (Mexico) . . . . . [6631-42]

✔ **Characterization and optimization of an integrating sphere based detector for the estimation of tissue optical properties,** D. F. Moscu, J. E. Hayward, T. J. Farrell, M. S. Patterson, McMaster Univ. (Canada) and Juravinski Cancer Ctr. (Canada) . . . . . [6631-43]

✔ **Laser-Doppler spectrum decomposition method: experimental validation,** N. S. Zolek, Physik-Tech Bundesanstalt (Poland); A. Liebert, Institute of Biocybernetics and Biomedical Engineering (Poland); R. Maniewski, Physik-Tech Bundesanstalt (Poland) . . . . . [6631-44]

✔ **Image transmission by multimode optical fiber for microendoscopy,** T. Rozzi, A. Lucesoli, Univ. Politecnica delle Marche (Italy) . . . . . [6631-45]

✔ **Time-gated real-time pump-probe imaging spectroscopy,** R. Ferrari, C. D'Andrea, A. L. Bassi, G. Valentini, R. Cubeddu, Politecnico di Milano (Italy) . . . . . [6631-46]

✔ **All-reflective digital microscope system for rapid histological and immunofluourescent imaging of tissue,** R. J. Filkins, S. Yazdanfar, K. Tasimi, K. Kenny, E. Dixon, G. Abramovich, M. Meyers, M. Montalto, GE Global Research (USA) . . [6631-47]

✔ **Flexible hollow polycarbonate fiber for endoscopic infrared laser treatment,** M. Nakazawa, Shimadzu Corp. (Japan); Y. Shi, Fudan Univ. (China); K. Iwai, Sendai National College of Technology (Japan); Y. Matsuura, Tohoku Univ. (Japan); X. Zhu, Fudan Univ. (China); M. Miyagi, Sendai National College of Technology (Japan) . . . . . [6631-48]

✔ **Determination of agar tissue phantoms depth profiles with pulsed photothermal radiometry,** M. Milanic, B. B. Majaron, Jozef Stefan Institut (Slovenia); S. J. Nelson, Beckman Laser Institute (USA) . . . . . [6631-49]

✔ **Design and implementation of detection schemes for spectral photoplethysmography and photo-acoustics,** I. S. Abdulhalim II, G. Tsvilikhovski, B. Epstein, Ben-Gurion Univ. of the Negev (Israel) . . . . . [6631-50]

✔ **Automated slide-screening platform for histo/pathology,** R. Daum, TILL Photonics GmbH (Germany); R. Biandu, Ludwig-Maximilians-Univ. München (Germany); R. Uhl, TILL Photonics GmbH (Germany) . . . . . [6631-51]

✔ **Single point and imaging measurements of the optical clearing process,** J. G. Enfield, J. W. O'Doherty, M. J. Leaahy, Univ. of Limerick (Ireland) . . . . . [6631-52]

✔ **High-resolution image acquisition using a compact microlens-coupled detector,** D. Unholtz, R. B. Schulz, W. Semmler, J. Peter, Deutsches Krebsforschungszentrum (Germany) . . . . . [6631-53]

✔ **The application of a long period grating sensors to human respiratory plethysmography,** T. D. P. Allsop, K. Carroll, D. J. Webb, I. Bennion, Aston Univ. (United Kingdom); M. Miller, Univ. Hospital Birmingham NHS Trust (United Kingdom) . . . . . [6631-55]

✔ **Imaging correlography applied to high resolution retinal imaging,** B. Thurin, L. Diaz-Santana, City Univ. (United Kingdom) [6631-56]

✔ **Light scattering application for bacterial cell monitoring during cultivation process,** I. Y. Kotsyumbas, I. M. Kushnir, State Scientific-Research Control Institute of Veterinary Preparations and Fodder Additives (Ukraine); R. O. Bilyy, Institute of Cell Biology (Ukraine); V. B. Getman, A. I. Bilyi, Ivan Franko National Univ. of L'viv (Ukraine) . . . . . [6631-57]

✔ **A new optical system for 3-dimensional mapping of the cornea,** S. M. B. Franco, J. B. Almeida, Univ. do Minho (Portugal) . . [6631-59]

✔ **Advanced coherent 3D micro-imaging,** M. Kanka, R. Riesenberg, Institut für Physikalische Hochtechnologie e.V. (Germany) . . . . [6631-62]

Coffee Break . . . . . 16.00 to 16.30

Conf. 6632 (TLA)

Chair: **Alfred Vogel**, Univ. zu Lübeck (Germany)

✔ **Photodynamic therapy of murine non-malanoma skin carcinomas with diode laser after topical application of aluminum phthalocyanine chloride,** M. Kyriazi, E. Alexandratou, D. M. Yova, National Technical Univ. of Athens (Greece); M. Rallis, Univ. of Athens (Greece); T. A. Trebst, CeramOptec GmbH (Germany) . . . . . [6632-20]

✔ **Characterization of biophysical properties of rabbit auricle reshaped via diode laser (? =980 nm),** T. A. El Tayeb, The German Univ. in Cairo (Egypt) . . . . . [6632-50]

✔ **Computerized thermal qualification tool (CTQT) for in-vitro low-water-content,** F. A. Canestri, Agilent Technologies Deutschland GmbH (Germany) . . . . . [6632-51]

✔ **The photons propagation into non trivial geometry biological tissue,** I. Krasnikov, A. Seteikin, Amur State Univ. (Russia) . . [6632-52]

✔ **The role of autofluorescence colonoscopy in diagnosis and management of solitary rectal ulcer syndrome,** A. Z. Kawczyk-Krupka, W. Latos, A. E. Ledwon, A. Kosciarz-Grzesiok, A. Misiak, S. Kwiatek, A. Sieron, Medical Univ. of Silesia, Katowice (Poland) . . . . . [6632-53]

✔ **Regulation of mesenchymal stromal cells differentiation by a blue laser irradiation,** T. Kushibiki, K. Awazu, Osaka Univ. Japan) . . . . . [6632-54]

✔ **The influence of intravenous laser irradiation of blood on some metabolic and functional parameters in intact rabbits and experimental cerebral ischemia,** N. I. Nechipurenko, L. A. Vasilevskaya, Institute of Neurology, Neurosurgery & Physiotherapy (Belarus); J. I. Musienko, Belarusian Medical Academy for Postgraduate Education (Belarus); G. Maslova, Belarusian State Univ. (Belarus) . . . . . [6632-55]

✔ **Near-infrared light propagation in human head: comparison between finite element code data and Monte Carlo simulations,** C. Mansouri, Groupe ISAIP-ESAIP (France); J. L'Huillier, Ecole Nationale Supérieure d'Arts et Métiers (France); A. Humeau, Groupe ISAIP-ESAIP (France) . . . . . [6632-56]

Coffee Break . . . . . 16.00 to 16.30

Conf. 6627 (OCT)

SESSION 6

Room 5 . . . . . Mon. 16.30 to 18.15

Advances in OCT System Technology I

Chair: **James G. Fujimoto**, Massachusetts Institute of Technology (USA)

16.30: **Simultaneous optical coherence and multiphoton microscopy of skin-equivalent tissue models *(Invited Paper)*,** J. K. Barton, The Univ. of Arizona (USA); S. Tang, R. Lim, Univ. of California/Irvine (USA); B. J. Tromberg, Beckman Laser Institute and Medical Clinic (USA) . . . . . [6627-26]

17.00: **High-Speed, auto-focusing optical coherence microscopy system for cellular resolution imaging of human tissues,** A. D. Aguirre, Massachusetts Institute of Technology (USA) and Harvard Medical School (USA); J. G. Fujimoto, Massachusetts Institute of Technology (USA) . . . . . [6627-27]

17.15: **Measurement of axial position of spherical objects in a multiple delay element C-scan OCT,** L. Plesea, A. G. Podoleanu, M. Gomez, Univ. of Kent at Canterbury (United Kingdom) . . . . . [6627-28]

17.30: **Filter bank approach to enhance signal processing for FD OCT,** B. Hofer, B. Povaĭay, B. M. Hermann, A. Unterhuber, Cardiff Univ. (United Kingdom); G. Matz, F. Hlawatsch, Vienna Univ. of Technology (Austria); W. Drexler, Cardiff Univ. (United Kingdom) [6627-30]

17.45: **Pushing the usable bandwidth of ophthalmic ultra-high resolution Optical Coherence Tomography,** A. Unterhuber, B. Povaĭay, B. Hofer, B. M. Hermann, Cardiff Univ. (United Kingdom); E. J. Fernández, Univ. de Murcia (Spain) and Cardiff Univ. (United Kingdom); J. E. Morgan, Cardiff Univ. (United Kingdom); C. Glittenberg, S. Binder, Ludwig Boltzmann Institut (Austria); W. Drexler, Cardiff Univ. (United Kingdom) . . . . [6627-31]

18.00: **Single- vs. two-camera based spectral-domain polarization-sensitive OCT systems,** B. Baumann, E. Götzinger, M. Pircher, C. K. Hitzenberger, Medizinische Univ. Wien (Austria) . . . . . [6627-32]

Conference 6627 continues page 18.

Conf. 6630 (CMI)

SESSION 6

Room 4A . . . . . Mon. 16.30 to 18.30

Microscopy in Dermatology

Chair: **Peter T. C. So**, Massachusetts Institute of Technology (USA)

16.30: **Two-photon microscopy of non-melanoma skin cancer: initial experience and diagnostic criteria ex vivo *(Invited Paper)*,** M. B. Ericson, Göteborg Univ. (Sweden) and Consultant (Sweden); J. Paoli, Göteborg Univ. (Sweden); A. Odu, Linköping Univ. (Sweden); M. Smedh, A. K. Wennberg, Göteborg Univ. (Sweden) . . . . . [6630-29]

17.00: **Multiphoton tomograph DermaInspect(r): non invasive powerful tool for in vivo evaluation of the human skin compounds,** R. Le Harzic, Fraunhofer-Institut für Biomedizinische Technik (Germany); R. Bückle, JenLab GmbH (Germany); A. Ehlers, Fraunhofer-Institut für Biomedizinische Technik (Germany); A. Colonna, L'Oreal (Germany); C. Hadjur, F. Leroy, F. Flament, R. Bazin, B. Piot, L'Oreal (France); I. Riemann, K. König, Fraunhofer-Institut für Biomedizinische Technik (Germany) . . . . . [6630-30]

17.15: **Adjustable mirror arm for in-vivo two-photon microscopy,** N. Koop, M. Ehrke, G. Hüttmann, Univ. zu Lübeck (Germany) . . . . . [6630-31]

17.30: **Spectrally encoded confocal imaging in vivo through a handheld probe,** C. Boudoux, Massachusetts Institute of Technology (USA); D. Yelin, W. Y. Oh, M. S. Shishkov, B. E. Bouma, G. J. Tearney, Harvard Medical School (USA) . . . . . [6630-32]

17.45: **Utilizing nonlinear optical microscopy to investigate the development of early cancer in nude mice in vivo,** C. Wang, F. Li, S. Lin, W. Lo, C. Dong, National Taiwan Univ. (Taiwan) . . . . . [6630-33]

18.00: **Investigation of depilatory mechanism by use of multiphoton fluorescent microscopy,** C. Lin, J. Lee, S. Lin, S. Jee, C. Dong, National Taiwan Univ. (Taiwan) . . . . . [6630-34]

18.15: **Multiphoton Microscopy for the Investigation of trans-cutaneous drug delivery,** F. Stracke, Fraunhofer-Institut für Biomedizinische Technik (Germany); M. Schneider, B. Weiss, C. Lehr, U. F. Schäfer, Univ. des Saarlandes (Germany); K. König, Fraunhofer-Institut für Biomedizinische Technik (Germany) . . . . . [6630-35]

■ *End of Conference*

Conf. 6631 (NOI)

SESSION 4

Room 11 . . . . . Mon. 16.30 to 18.15

Interferometry Holography

Chair: **Christian D. Depeursinge**, École Polytechnique Fédérale de Lausanne (Switzerland)

16.30: **Lipid particle detection by means digital holography and lateral shear interferometry,** L. Miccio, Istituto Nazionale di Ottica Applicata (Italy); A. Finizio, S. M. De Nicola, Istituto di Cibernetica Eduardo Caianiello (Italy); P. Ferraro, Istituto Nazionale Ottica Applicata (Italy) [6631-16]

16.45: **Erythrocytes analysis with a digital holographic microscope,** B. Rappaz, École Polytechnique Fédérale de Lausanne (Switzerland); A. Barbul, Tel-Aviv Univ. (Israel); F. Charrière, J. G. Köhn, École Polytechnique Fédérale de Lausanne (Switzerland); R. Korenstein, Tel-Aviv Univ. (Israel); C. D. Depeursinge, P. J. Magistretti, P. P. Marquet, École Polytechnique Fédérale de Lausanne (Switzerland) . . . . . [6631-17]

17.00: **Single-pulsed digital holographic topometry,** S. Hirsch, Ctr. of Advanced European Studies and Research (Germany); S. Heintz, Ctr. of Advanced European Studies and Research (Germany) and Furtwangen Univ. (Germany); A. Thelen, N. Gisbert, Ctr. of Advanced European Studies and Research (Germany); P. Hering, Univ. Düsseldorf (Germany) and Ctr. of Advanced European Studies and Research (Germany) . [6631-18]

17.15: **Optical imaging of the surface profiles of biological cells and tissues with nanometer resolution,** C. Lai, I. Hsu, Chung Yuan Christian Univ. (Taiwan) . . . . . [6631-19]

17.30: **High-resolution adaptive holographic interferometer for biomedical application,** G. E. Dovgalenko, ITT Technical Institute (USA); A. Dagdanova, Eastern Virginia Medical School (USA) . . . . . [6631-21]

17.45: **New spectral imaging techniques for blood oximetry in the retina,** G. D. Muyo Nieto, I. Alabboud, Heriot-Watt Univ. (United Kingdom); D. Mordant, A. I. McNaught, Cheltenham General Hospital (United Kingdom); A. R. Harvey, Heriot-Watt Univ. (United Kingdom) . . . . . [6631-22]

18.00: **Real time assessment of RF cardiac tissue ablation with optical spectroscopy,** S. G. Demos, Lawrence Livermore National Lab. (USA) and Univ. of California/Davis (USA); S. Sharareh, Biosense Webster, Inc. (USA) . . . . . [6631-23]

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Conf. 6632 (TLA)

SESSION 2

Room B12 . . . . . Mon. 16.30 to 17.30

Laser Treatment of Vascular Malformations

Chair: **Raimund Hibst**, Univ. Ulm (Germany)

16.30: **Surgical treatment of cerebral ischemia by means of diode laser: first experimental results and comparison with theoretical model,** T. Lo Feudo, C. Bellecci, P. Gaudio, M. Gelfusa, Univ. degli Studi di Roma/Tor Vergata (Italy); C. D. Signorelli, G. Iofrida, F. Signorelli, A. Giaquinta, Univ. degli studi Magna Græcia di Catanzaro (Italy) . . . . . [6632-07]

16.45: **Optical coherence tomography investigations of endoluminal vein treatment after radiofrequency and laser light application,** R. Sroka, O. Meissner, K. Hunger, G. Barbaryka, C. Burgmeier, R. Blagova, W. Beyer, T. J. Beck, B. Steckmeier, C. Schmedt, Ludwig-Maximilians-Univ. München (Germany) . . . . [6632-08]

17.00: **The effects of intense pulsed light on blood vessels investigated by mathematical modeling,** W. Bäumler, Univ. Regensburg (Germany); G. Shafirstein, Univ. of Arkansas for Medical Sciences (USA)[6632-09]

17.15: **Interaction of a dual-wavelength laser system with cutaneous blood vessels,** B. B. Majaron, M. Milanic, Institut JoŽef Stefan (Slovenia); S. J. Nelson, Univ. of California/Irvine (USA) . . . . . [6632-10]

SESSION 3

Room B12 . . . . . Mon. 17.30 to 18.15

Tissue Optics

Chair: **Martin Frenz**, Univ. Bern (Switzerland)

17.30: **A novel 3D modeling and simulation technique in thermotherapy predictive analysis on biological tissue,** F. Fanjul-Vélez, J. L. Arce-Diego, Univ. de Cantabria (Spain); O. G. Romanov, A. L. Tolstik, Belarusian State Univ. (Belarus) . . . . [6632-11]

17.45: **Space-time modeling of the photon diffusion in a three-layered model: application to the study of muscular oxygenation,** C. Mansouri, Groupe ISAIP-ESAIP (France); J. L'huillier, Ecole Nationale Supérieure d'Arts et Métiers (France); A. Humeau, Groupe ISAIP-ESAIP (France) . . . . . [6632-13]

18.00: **Laser stokes polarimetry for the characterization of bio-materials using liquid crystal variable retarders,** S. Firdous, Sr., Pakistan Institute of Engineering and Applied Sciences (Pakistan) [6632-14]

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Conf. 6633 (BOLS)

SESSION 2

Room BO.R2 . . . . . Mon. 16.30 to 17.30

Understanding Life Processes: Innovative Analysis, Detection and Diganostic Methods II

Chair: **Markus Sauer**, Univ. Bielefeld (Germany)

16.30: **Metal-enhanced fluorescence *(Invited Paper)*,** J. Enderlein, Eberhard Karls Univ. Tübingen (Germany) [6633-07]

17.00: **Axially resolved polarization microscopy of membrane dynamics in living cells,** M. Wagner, P. Weber, H. Schneckenburger, Fachhochschule Aalen (Germany) . . . . . [6633-08]

17.15: **Direct detection of singlet oxygen generated by UVA irradiation in phospholipids, human cells, and skin,** J. Baier, T. Maisch, W. Bäumler, Univ. Regensburg (Germany) . . . . . [6633-09]

Conference 6633 continues page 19

Conf. 6627 (OCT)

SESSION 7

Room 5 . . . . . Tues. 09.00 to 10.00

System Architecture

Chair: **Adrian G. Podoleanu**, Univ. of Kent at Canterbury (United Kingdom)

09.00: **MEMS based non-rotatory circumferential scanning optical probe for endoscopic optical coherence tomography,** Y. Xu, National Univ. of Singapore (Singapore) and Institute of Microelectronics (Singapore); J. Singh, Institute of Microelectronics (Singapore); H. S. Jason, K. Ramakrishna, N. Chen, C. T. Kuan, National Univ. of Singapore (Singapore) [6627-33]

09.15: **Doppler spectral optical coherence tomography with optical frequency comb,** M. Wojtkowski, A. Szkulmowska, M. Szkulmowski, T. Bajraszewski, W. T. Fojt, A. Kowalczyk, Mikolaja Kopernika Univ. (Poland) . . . . . [6627-34]

09.30: **Optical coherence tomography controlled femtosecond laser microsurgery system,** O. Massow, Laser Zentrum Hannover e.V. (Germany); F. G. Will, Rowiak GmbH (Germany); H. Lubatschowski, Laser Zentrum Hannover e.V. (Germany) . . . [6627-35]

09.45: **Coherent amplified Fourier domain optical coherence tomography,** J. Zhang, B. Rao, Z. Chen, Univ. of California/Irvine (USA) . . . . . [6627-36]

Coffee Break . . . . . 10.00 to 10.30

Conference 6627 continues page 20.

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Conf. 6631 (NOI)

SESSION 5

Room B12 . . . . . Tues. 09.15 to 10.00

Imaging and Sensing

Chair: **Christian D. Depeursinge**, École Polytechnique Fédérale de Lausanne (Switzerland)

09.15: **Laser Doppler perfusion imaging with a high-speed CMOS-camera,** M. Draijer, E. Hondebrink, W. Steenbergen, T. G. van Leeuwen, Univ. Twente (Netherlands) . . . . . [6631-25]

09.30: **Real time diffuse reflectance polarization spectroscopy imaging to evaluate skin microcirculation,** J. W. O'Doherty, Univ. of Limerick (Ireland); J. Henricson, Univ. Hospital Linköping (Sweden); G. E. Nilsson, WheelsBridge AB (Sweden); M. J. Leahy, Univ. of Limerick (Ireland); C. Anderson, Univ. Hospital Linköping (Sweden) . . . . . [6631-26]

09.45: **Polarimetric surface plasmon resonance imaging biosensor,** A. Duval, F. Bardin, A. Aide, A. Bellemain, J. Moreau, M. T. G. Canva, Institut d'Optique (France) . . . . . [6631-27]

Coffee Break . . . . . 10.00 to 10.30

Conference 6631 continues page 20.

Conf. 6632 (TLA)

SESSION 4

Room 11 . . . . . Tues. 09.00 to 10.00

PDT Basics and Antimicrobial Treatment

Chairs: **Heyke C. Diddens**, Univ. zu Lübeck (Germany); **Tanja Gabrecht**, Ecole Polytechnique Fédérale de Lausanne (Switzerland)

09.00: **Oxygen consumption in photodynamic inactivation of bacteria: the role of singlet oxygen,** T. Maisch, J. Baier, B. Franz, R. Szeimies, M. Landthaler, W. Bäumler, Univ. Regensburg (Germany) . . [6632-15]

09.15: **Photodynamic therapy combined with an antiseptic for treatment of local infections,** H. C. Diddens, Univ. zu Lübeck (Germany) . . . . . [6632-16]

09.30: **Investigations on the laser light induced decomposition of indocyanine green (IGC),** W. Bäumler, E. Engel, R. Schraml, R. Vasold, Univ. Regensburg (Germany) . . . . . [6632-17]

09.45: **Frequency domain, time-resolved, and spectroscopic investigations of photosensitizers encapsulated in liposomal phantoms,** O. Mermut, J. Bouchard, J. Cormier, I. Noiseux, M. L. Vernon, Institut National d'Optique (Canada); K. R. Diamond, M. S. Patterson, McMaster Univ. (Canada) . . . . . [6632-18]

Coffee Break . . . . . 10.00 to 10.30

Conference 6632 continues page 20.

Conf. 6633 (BOLS)

SESSION 3

Room BO.R2 . . . . . Tues. 09.00 to 10.30

Understanding Life Processes: Innovative Analysis, Detection and Diganostic Methods III

Chair: **Arthur E. T. Chiou**, National Yang-Ming Univ. (Taiwan)

09.00: **Improvements of laser biomedical spectroscopy and imaging *(Invited Paper),*** V. V. Tuchin, Saratov State Univ. (Russia) . . . . . [6633-10]

09.30: **High throughput high content live cell screening platform,** R. Uhl, TILL Photonics GmbH (Germany); H. Harz, S. Neogy, Ludwig-Maximilians-Univ. München (Germany) . . . . . [6633-11]

09.45: **Techniques and applications of digital holographic microscopy for life cell imaging,** B. Kemper, P. Langehanenberg, J. Schnekenburger, G. von Bally, Univ. Münster (Germany) . . . . . [6633-12]

Coffee Break . . . . . 10.00 to 10.30

Conference 6633 continues page 20.

Conf. 6627 (OCT)

SESSION 8

Room 5 . . . . . Tues. 10.30 to 12.15

Advances in OCT System Technology II

Chair: **Constantinos Pitris**, Univ. of Cyprus (Cyprus)

10.30: **Endoscopes for spectral radar OCT,** E. Lankenau, Univ. zu Lübeck (Germany); K. Eder, Fraunhofer-Institut für Produktionstechnologie (Germany); D. Boller, P. Koch, Thorlabs GmbH (Germany); G. Hüttmann, Univ. zu Lübeck (Germany) . . . . . [6627-63]

10.45: **Increase of the imaging depth in linear OCT systems,** G. Hüttmann, V. Hellemanns, Univ. zu Lübeck (Germany); P. Koch, Thorlabs-HL (Germany) [6627-38]

11.00: **In vivo imaging of mouse cornea by dual-channel detection based full-filed OCT,** M. Akiba, K. Chan, Yamagata Promotional Organization for Industrial Technology (Japan) . . . . . [6627-39]

11.15: **Design criteria in choosing optimized OCT scanning regimes,** C. C. Rosa, Univ. do Porto (Portugal) and Instituto de Engenhariade Sistemas e Computadores do Porto (Portugal); J. A. Rogers, P. Justin, Ophthalmic Technologies Inc. (Canada); R. B. Rosen, The New York Eye and Ear Infirmary (USA); A. G. Podoleanu, Univ. of Kent at Canterbury (United Kingdom) . . . . . [6627-40]

11.30: **Doppler calibration method for spectral-domain OCT spectrometers,** D. J. Faber, D. M. de Bruin, H. de Vries, T. G. van Leeuwn, Univ. van Amsterdam (Netherlands) . . . . . [6627-42]

11.45: **Static depth dependant dispersion compensation in a real-time static delay line grating based correlation OCT system,** L. Froehly, P. Sandoz, L. Furfaro, M. Ouadour, Univ. de Franche-Comté (France) . . . . . [6627-43]

12.00: **Extended focus Fourier domain optical coherence microscopy assists developmental biology,** M. L. Villiger, École Polytechnique Fédérale de Lausanne (Switzerland); M. Beleut, C. Brisken, Swiss Institute for Experimental Cancer Research (Switzerland); T. Lasser, R. A. Leitgeb, École Polytechnique Fédérale de Lausanne (Switzerland) . . . . . [6627-44]

Lunch/Exhibition Break . . . . . 12.15 to 13.30

Conference 6627 continues page 21.

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SESSION 6

Room B12 . . . . . Tues. 10.30 to 12.30

Fluorescence

Chair: **Christian D. Depeursinge**, École Polytechnique Fédérale de Lausanne (Switzerland)

10.30: **Rigid and flexible multiphoton fluorescence endoscopes,** S. Schenkl, A. Ehlers, Fraunhofer-Institut für Biomedizinische Technik (Germany); R. Le Harzic, JenLab GmbH (Germany); I. Riemann, D. Sauer, Fraunhofer-Institut für Biomedizinische Technik (Germany); B. Messerschmidt, Grintech GmbH (Germany); M. Kaatz, Friedrich-Schiller-Univ. Jena (Germany); K. König, Fraunhofer-Institut für Biomedizinische Technik (Germany) . . . . . [6631-28]

10.45: **Combined Raman spectroscopy-optical coherence tomography,** C. A. Patil, Vanderbilt Univ. (USA); N. Bosschaart, Univ. Twente (Netherlands); D. J. Faber, Univ. van Amsterdam (Netherlands); T. G. van Leeuwen, Univ. Twente (Netherlands); A. Mahadevan-Jansen, Vanderbilt Univ. (USA) . . . . . [6631-29]

11.00: **High-resolution imaging using random fluorescent probes,** P. Lecaruyer de Lainsecq, E. Fort, Univ. Paris VII (France); S. Fort, Univ. Paris-Sud-XI (France); N. Tran Hong, Institute of Physics & Electronics (Vietnam) . . . . . [6631-30]

11.15: **Two-photon, two-color in vivo flow cytometry to noninvasively monitor multiple circulating cell lines,** E. R. Tkaczyk, C. F. Zhong, J. Y. Ye, K. Luker, G. D. Luker, J. R. Baker, Jr., T. B. Norris, Univ. of Michigan (USA)[6631-31]

11.30: **Fluorescence imaging of experimental rheumatoid arthritis in vivo using a fast flying-spot scanner,** J. Berger, J. Voigt, F. Seifert, B. Ebert, R. Macdonald, Physikalisch-Technische Bundesanstalt (Germany); I. Gemeinhardt, O. Gemeinhardt, J. Schnorr, M. Taupitz, Charité-Univ. Medizin Berlin (Germany); A. Vater, S. Vollmer, K. Licha, M. Schirner, Bayer Schering Pharma AG (Germany) . . . . . [6631-32]

11.45: **Spectroscopic imaging in the near field with an aperture less solid-immersion lens system,** T. Merz, R. W. Kessler, Reutlingen Univ. (Germany) . . . . [6631-33]

12.00: **Evaluation of a fiber-optic fluorescence spectroscopy system to assist neurosurgical tumor resections,** M. A. Ilias, F. Westermark, M. Brantmark, Linköping Univ. (Sweden); S. Andersson-Engels, Lunds Univ. (Sweden); K. Wårdell, Linköping Univ. (Sweden) . . . . . [6631-34]

12.15: **Combination of panoramic and fluorescence endoscopic images to obtain tumor spatial distribution information useful for bladder cancer detection,** S. Olijnyk, Y. Hernandez-Mier, W. W. Blondel, C. Daul, D. Wolf, École Nationale Supérieure d'Electricité et de Mécanique - Nancy (France) . . . . . [6631-35]

Lunch/Exhibition Break . . . . . 12.30 to 13.30

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SESSION 5

Room 11 . . . . . Tues. 10.30 to 12.15

PDT: Preclinical and Clinical Studies

Chair: **Herbert G. Stepp**, Ludwig-Maximilians-Univ. München (Germany)

10.30: **Photodynamic therapy of non melanoma skin cancer murine model by topical application of a novel mTHPC liposomal formulation,** E. Alexandratou, M. Kyriazi, National Technical Univ. of Athens (Greece); T. A. Trebst, CeramOptec GmbH (Germany); S. Gräfe, biolitec AG (Germany); D. M. Yova, National Technical Univ. of Athens (Greece) . . . . . [6632-19]

10.45: **Photodynamic therapy of bladder cancer: a phase I study using hexyl-aminolevulinate,** M. J. Bader, D. Zaak, Ludwig-Maximilians-Univ. München (Germany); M. Ehlers, M. Kriegmair, MTC GmbH (Germany); T. Pongratz, W. Beyer, C. G. Stief, H. G. Stepp, Ludwig-Maximilians-Univ. München (Germany) . . . . [6632-21]

11.00: **Photodynamic therapy for the treatment of Crohn's disease: preclinical and clinical results *(Invited Paper)*,** L. Favre, D. Vekub, Ctr. Hospitalier Univ. Vaudois (Switzerland); F. Borle, École Polytechnique Fédérale de Lausanne (Switzerland); D. Bachmann, Ctr. Hospitalier Univ. Vaudois (Switzerland); T. Gabrecht, École Polytechnique Fédérale de Lausanne (Switzerland) and Ctr. Hospitalier Univ. Vaudois (Switzerland); H. Bouzourene, Ctr. Hospitalier Univ. Vaudois (Switzerland); G. A. Wagnières, H. van den Bergh, École Polytechnique Fédérale de Lausanne (Switzerland); P. Michetti, M. Ortner, Ctr. Hospitalier Univ. Vaudois (Switzerland)[6632-22]

11.30: **Interstitial PDT of glioblastoma with 5-ALA: clinical studies and method for measurement of sensitizer concentration *(Invited Paper)*,** W. Beyer, T. J. Beck, R. Sroka, J. Mehrkens, W. Rachinger, Ludwig-Maximilians-Univ. München (Germany); W. Stummer, Heinrich-Heine-Univ. Dusseldorf (Germany); F. Kreth, R. Baumgartner, H. G. Stepp, Ludwig-Maximilians-Univ. München (Germany) . . . . . [6632-23]

12.00: **Spectroscopic monitoring of topically applied temoporfin for photodynamic therapy,** N. Bendsoe, K. Svanberg, S. Andersson-Engels, Lund Univ. Hospital (Sweden) . . . . . [6632-24]

Lunch/Exhibition Break . . . . . 12.15 to 13.30

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SESSION 4

Room BO.R2 . . . . . Tues. 10.30 to 12.30

Understanding Life Processes: Innovative Analysis, Detection and Diganostic Methods IV

Chair: **Michael Schmitt**, Friedrich-Schiller-Univ. Jena (Germany)

10.30: **Autofocus algorithms for digital-holographic microscopy,** P. Langehanenberg, B. Kemper, G. von Bally, Univ. Münster (Germany) . . . . . [6633-13]

10.45: **Analysis of cellular structure and dynamics with digital holography microscopy,** P. P. Marquet, Ctr. Hospitalier Univ. Vaudois (Switzerland); T. Colomb, F. Charrière, École Polytechnique Fédérale de Lausanne (Switzerland); J. G. Kühn, Ecole Polytechnique Fédérale de Lausanne (Switzerland); Y. Emery, Lyncée Tec SA (Switzerland); B. Rappaz, P. Jourdain, P. J. Magistretti, École Polytechnique Fédérale de Lausanne (Switzerland) . . . . . [6633-14]

11.00: **Dynamic in vivo analysis of drug induced actin cytoskeleton degradation by digital holographic microscopy,** J. Schnekenburger, I. Bredebusch, W. Domschke, G. von Bally, B. Kemper, Univ. Münster (Germany) . . . . . [6633-15]

11.15: **Multicolor single molecule spectroscopy for the study of complex interactions and dynamics,** P. Tinnefeld, D. Fetting, R. Kasper, Bielefeld Univ. (Germany) . . . . . [6633-16]

11.30: **High resolution spectral optical coherence microscopy assists diabetes research,** R. A. Leitgeb, M. L. Villiger, T. Lasser, École Polytechnique Fédérale de Lausanne (Switzerland); P. Meda, Univ. de Genève (Switzerland); W. Pralong, École Polytechnique Fédérale de Lausanne (Switzerland) . . . . . [6633-17]

11.45: **Ultrafast dynamics in a live cell irradiated by femtosecond laser pulses,** H. Kawano, C. Hara, The Institute of Physical and Chemical Research (Japan); T. G. Etoh, Kinki Univ. (Japan); A. Miyawaki, The Institute of Physical and Chemical Research (Japan) [6633-18]

12.00: **Non-linear and ultra high-speed imaging for explorations of the murine and human heart,** L. Kaestner, P. Lipp, Univ. des Saarlandes (Germany) [6633-19]

12.15: **Improving the optical contrast of backscattering signal in reflectance-based imaging with gold nanoshells,** J. C. Y. Kah, National Univ. of Singapore (Singapore); T. Chow, Nanyang Technological Univ. (Singapore); M. C. Olivo, National Cancer Ctr. Singapore (Singapore); B. Ng, Nanyang Technological Univ. (Singapore); C. J. R. Sheppard, National Univ. of Singapore (Singapore) . . . . [6633-20]

Lunch/Exhibition Break . . . . . 12.30 to 13.30

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Tuesday 19 June • 13.30 to 16.00

Conf. 6627 (OCT)

SESSION 9

Room 5 . . . . . Tues. 13.30 to 15.00

Retinal Imaging II

Chair: **Christoph K. Hitzenberger**, Medizinische Univ. Wien (Austria)

13.30: **Correcting ocular aberations with a high stroke deformable mirror,** S. G. Tuohy, A. Bradu, Univ. of Kent (United Kingdom); A. G. Podoleanu, Univ. of Kent at Canterbury (United Kingdom); N. Chateau, Imagine Eyes (France) . . . . . [6627-45]

13.45: **Quantification of the photoreceptor layer thickness: normative data and macular hole patients,** B. A. Sander, Copenhagen Univ. Hospital Glostrup (Denmark); T. M. Jørgensen, Technical Univ. of Denmark (Denmark) . . . . . [6627-46]

14.00: **Scattering optical coherence angiography with 1-um swept source optical coherence tomography,** Y. Yasuno, Univ. of Tsukuba (Japan); Y. Hong, Univ. of Tsukuba (Japan) and Korea Advanced Institute of Science and Technology (Japan); S. Makita, M. Yamanari, Univ. of Tsukuba (Japan); M. Akiba, Yamagata Promotional Organization for Industrial Technology (Japan); M. Miura, Tokyo Medical Univ. Kasumigaura Hospital (Japan) and Univ. of Tsukuba (Japan); T. Yatagai, Univ. of Tsukuba (Japan) . . . . . [6627-47]

14.15: **Optical coherence angiography for the retina and choroid,** S. Makita, Univ. of Tsukuba (Japan); Y. Hong, Univ. of Tsukuba (Japan) and KAIST (South Korea); M. Miura, Tokyo Medical Univ. Kasumigaura Hospital (Japan) and Univ. of Tsukuba (Japan); M. Yamanari, T. Yatagai, Y. Yasuno, Univ. of Tsukuba (Japan) . . . . . [6627-48]

14.30: **In-vivo 3-D imaging of age-related macular degeneration using optical frequency domain imaging at 1050 nm,** D. M. de Bruin, Massachusetts General Hospital (USA); J. F. DeBoer, Harvard Medical School (USA) and Wellman Ctr. for Photomedicine (USA); D. L. Burnes, J. Loewenstein, C. Kerbage, G. N. Maguluri, B. H. Park, Massachusetts General Hospital (USA); A. Yun, Harvard Medical School (USA) and Wellman Ctr. for Photomedicine (USA) . . . . . [6627-49]

14.45: **Three-dimensional high speed OCT at 1050 nm vs. 800 nm: Reduced scattering for enhanced penetration and through cataracts and into choroidal tissue,** B. Považay, B. M. Hermann, A. Unterhuber, Cardiff Univ. (United Kingdom); H. Sattmann, Medical Univ. Vienna (Austria); F. Zeiler, Ludwig Boltzmann Institut (Austria); J. E. Morgan, Cardiff Univ. (United Kingdom); C. Falkner-Radler, C. Glittenberg, S. Binder, Ludwig Boltzmann Institut (Austria); W. Drexler, Cardiff Univ. (United Kingdom) . . . . . [6627-50]

Poster Viewing . . . . . 15.00 to 16.00

Coffee Break . . . . . 16.00 to 16.30

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SESSION 7

Room B12 . . . . . Tues. 13.30 to 15.00

Assorted Novel Technologies

Chair: **Christian D. Depeursinge**, École Polytechnique Fédérale de Lausanne (Switzerland)

13.30: **Laser interference measurement of glucose in liquids,** H. M. El Ghandoor, Ain Shams Univ. (Egypt) . . . . . [6631-36]

13.45: **Combination of time-domain optical brain imaging and DC magnetoencephalography for studying neurovascular coupling,** H. Wabnitz, T. Sander, Physikalisch-Technische Bundesanstalt (Germany); A. Liebert, Institute of Biocybernetics and Biomedical Engineering (Poland); M. Möller, Hochschule für Technik und Wirtschaft des Saarlandes (Germany); S. Leistner, B. Mackert, Charité Universitätsmedizin Berlin (Germany); R. Macdonald, L. Trahms, Physikalisch-Technische Bundesanstalt (Germany) . . . . . [6631-37]

14.00: **A novel optical detector concept for dedicated and multi-modality in vivo small animal imaging,** J. Peter, R. B. Schulz, D. Unholtz, W. Semmler, Deutsches Krebsforschungszentrum (Germany) . . . . . [6631-38]

14.15: **Optical vibrocardiography for non contact monitoring of the cardiac activity: correlation with heart sounds from phonocardiography,** L. Scalise, M. De Melis, U. Morbiducci, E. P. Tomasini, Univ. Politecnica delle Marche (Italy) . . . . . [6631-39]

14.30: **Observation of IPL spectra using detector system incorporating broadband optical filters,** D. M. Clarkson, Univ. Hospitals Coventry and Warwickshire NHS Trust (United Kingdom) . [6631-40]

14.45: **Wavelet-based terahertz local tomography,** X. Yin, The Univ. of Adelaide (Australia) . . . . . [6631-41]

■ *End of Conference*

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SESSION 6

Room 11 . . . . . Tues. 13.30 to 15.00

Ophthalmology: Cornea and Retina

Chair: **Holger Lubatschowski**, Laser Zentrum Hannover e.V. (Germany)

13.30: **Temperature control during diode laser welding in a human cornea,** F. Rossi, P. Matteini, R. Pini, Istituto di Fisica Applicata Nello Carrara (Italy); L. Menabuoni, Azienda USL 4 (Italy) . . . . . [6632-25]

13.45: **Femtosecond laser keratoplasty: reducing side effects and improving penetration depth,** K. Plamann, V. Nuzzo, O. Albert, G. A. Mourou, École Nationale Supérieure de Techniques Avancées (France); M. Savoldelli, Hôpital Hôtel Dieu (France); D. Donate, Hôpital Hôtel Dieu (France) and Hôpital Édouard Herriot (France); J. Legeais, Hôpital Hôtel Dieu (France) . . . . . [6632-26]

14.00: **Femtosecond refractive eye surgery: study of laser parameters for even more efficiency and safety,** R. Le Harzic, Fraunhofer-Institut für Biomedizinische Technik (Germany); C. Wüllner, Wavelight Laser Technologie AG (Germany); D. Bruneel, Univ. Jean Monnet Saint-Etienne (France); C. Donitzky, Wavelight Laser Technologie AG (Germany); K. König, Fraunhofer-Institut für Biomedizinische Technik (Germany) . . . . . [6632-27]

14.15: **Retinal temperature determination during laser photocoagulation *(Invited Paper)*,** R. Brinkmann, Univ. zu Lübeck (Germany); J. U. Stalljohann, B. Weber, Medizinisches Laserzentrum Lübeck GmbH (Germany); K. Schlott, J. Kandulla, R. Birngruber, Univ. zu Lübeck (Germany) . . . . [6632-28]

14.45: **Interferometric optical online dosimetry for selective retina treatment (SRT),** H. Stoehr, L. Ptaszynski, A. Fritz, R. Brinkmann, Univ. zu Lübeck (Germany) . . . . . [6632-29]

Conference 6632 continues page 26.

Conf. 6633 (BOLS)

SESSION 5

Room BO.R2 . . . . . Tues. 13.30 to 14.30

Understanding Life Processes: Innovative Analysis, Detection and Diganostic Methods V

Chair: **Michael Schmitt**, Friedrich-Schiller-Univ. Jena (Germany)

13.30: **Tip-enhanced Raman scattering: pushing the limits of structural analysis *(Invited Paper)*,** V. Deckert, Institute for Analytical Sciences Dortmund (Germany) . . . . . [6633-21]

14.00: **Wide field surface plasmon-enhanced total internal reflexion fluorescence microscopy: application to live cell imaging,** V. Studer, Y. Goulam-Houssen, E. Le Moal, A. Simon, Z. Lenkei, E. Fort, École Supérieure de Physique et de Chimie Industrielles (France) . . . . . [6633-22]

14.15: **Surface-enhanced Raman scattering substrates based on nanometre scale structures on butterfly wings,** J. J. Moger, N. L. Cornes, G. Winter, P. Vukusic, C. P. Winlove, The Univ. of Exeter (United Kingdom) . . . . . [6633-23]

SESSION 6

Room BO.R2 . . . . . Tues. 14.30 to 16.00

Engaging Life Processes: New Photonics Micromanipulation Tools I

Chair: **Josef A. Käs**, Univ. Leipzig (Germany)

14.30: **Recent progresses in optical trap-and-stretch of red blood cells *(Invited Paper)*,** A. E. T. Chiou, G. B. Liao, Y. Chen, A. V. Karmenyan, C. Lin, National Yang-Ming Univ. (Taiwan) . . . . . [6633-24]

15.00: **Lasers as unique tools for cell manipulation *(Invited Paper)*,** K. Schütze, P.A.L.M. Microlaser Technologies GmbH (Germany) . . . . . [6633-25]

15.30: **Studying red blood cell agglutination by measuring electrical and mechanical properties with a double optical tweezers,** A. Fontes, H. P. Fernandes, A. A. de Thomas, L. C. Barbosa, M. d. L. Barjas-Castro, C. L. Cesar, Univ. Estadual de Campinas (Brazil) . . . . . [6633-26]

15.45: **Automated microinjection system for adherent cells,** S. Youoku, Y. Suto, M. Ando, A. Ito, Fujitsu Labs. (Japan) . . . . . [6633-27]

Coffee Break 16.00

Conference 6633 continues page 27.

Tuesday 19 June • ✔ Posters

Poster presenters may post their poster papers Tuesday morning and will need to remove their posters immediately following the poster session that afternoon. Poster authors must be at their papers during the poster session from 15.00-16.00 to discuss the poster with session attendees.

Conf. 6628 (DOS)

Chair: **Dietrich Schweitzer**, Friedrich-Schiller-Univ. Jena (Germany)

✔ **Multifocal multiphoton microscopy using a novel field of view zoom scanning protocol,** L. Liu, L. Wang, J. Qu, Z. Lin, Z. Fu, H. Niu, Shenzhen Univ. (China) . . . . . [6628-11]

✔ **Glass based fluorescence reference materials,** A. Engel, C. R. Otterman, V. Rupertus, SCHOTT AG (Germany); U. Resch-Genger, K. Hoffmann, Bundesanstalt für Materialforschung und -prüfung (Germany); U. Kynast, Fachhochschule Muenster (Germany) [6628-24]

✔ **Reflectance spectrophotometry as intraoperative assessment of perfusion in rectal anastomosis: a feasibility study,** A. Karliczek, Martini Hospital (Netherlands) and Groningen Univ. Medical Ctr. (Netherlands); D. A. Benaron, Spectros Corp. (USA); P. Baas, A. van der Stoel, Martini Hospital (Netherlands); T. Wiggers, Groningen Univ. Medical Ctr. (Netherlands); G. M. van Dam, Groningen Univ. Medical Ctr. (Netherlands) and BioOptical Imaging Ctr. Groningen (Netherlands) [6628-42]

✔ **In vivo measurement of the carotenoid level using portable resonance Raman spectroscopy,** Y. Shao, J. Qu, Y. He, Shenzhen Univ. (China) . . . . . [6628-43]

✔ **A diffusion approximation model of light transport in multi-layered skin tissue,** M. I. Makropoulou-Loukogiannaki, E. Kaselouris, E. A. Drakaki, A. A. Serafetinides, National Technical Univ. of Athens (Greece) . . . . . [6628-44]

✔ **Intracellular protein mass spectroscopy using mid-infrared laser ionization,** K. Awazu, S. Suzuki, Osaka Univ. (Japan) . . . . . [6628-49]

✔ **Time-resolved diffuse optical spectroscopy of small tissue samples,** P. Taroni, D. Comelli, A. Farina, A. Pifferi, Politecnico di Milano (Italy); A. Kienle, Univ. Ulm (Germany) . . . . . [6628-50]

✔ **Single photon spectrometer for biomedical application: new developments,** S. S. Tudisco, L. L. Lanzanò, F. F. Musumeci, S. S. Privitera, A. A. Scordino, Instituto Nazionale di Fisica Nucleare (Italy) and Univ. di Catania (Italy); G. G. Fallica, M. M. Mazzillo, D. D. Sanfilippo, G. G. Valvo, STMicroelectronics (Italy) . . . . . [6628-51]

✔ **Optical spectroscopy of phosphatic urinary calculi,** I. H. Yarynovska, A. I. Bilyi, Ivan Franko National Univ. of L'viv (Ukraine) . . . . . [6628-52]

✔ **Detection of abnormalities in tissue equivalent phantoms by multi-probe laser reflectometry,** P. P. S., M. Kumaravel, M. Singh, Indian Institute of Technology Madras (India) . . . . . [6628-53]

✔ **Application in the surgery planning of brain atlas of the three-dimension,** H. Xiao, F. Dai, X. Chen, South China Normal Univ. (China) . . . . . [6628-54]

✔ **Contact probe pressure effects in skin multi-spectral photoplethysmography,** J. Spigulis, L. Gailite, A. Lihachev, Latvijas Univ. (Latvia) . . . . . [6628-55]

✔ **White-light time-resolved reflectance spectroscopy for monitoring constituents concentrations in layered diffusive media,** A. Giusto, C. D'Andrea, L. Spinelli, D. Contini, A. Torricelli, Politecnico di Milano (Italy); F. Martelli, G. Zaccanti, Univ. degli Studi di Firenze (Italy); R. Cubeddu, Politecnico di Milano (Italy) [6628-56]

✔ **Spectroscopic measurement of adipose tissue thickness and comparison with ultrasound imaging,** D. Geraskin, H. Boeth, RheinAhrCampus (Germany); M. Kohl-Bareis, Univ. of Applied Sciences Koblenz (Germany) . . . . . [6628-58]

✔ **Phosphorescence quenching in the vicinity of gold nanoparticles,** M. Ringler, T. Soller, Ludwig-Maximilians-Univ. München (Germany); M. Wunderlich, Y. Markert, H. Josel, A. Nichtl, K. Kürzinger, Roche Diagnostics GmbH (Germany); T. A. Klar, J. Feldmann, Ludwig-Maximilians-Univ. München (Germany) . . . . . [6628-59]

✔ **Light-induced autofluorescence of animal skin used in tissue optical modeling,** I. Bliznakova, E. G. Borisova, Institute of Electronics (Bulgaria); P. Troyanova, National Oncological Ctr. (Bulgaria); L. Avramov, Institute of Electronics (Bulgaria) . . . . . [6628-60]

✔ **Fluorescence study of bovine serum albumin and Ti and Sn oxide nanoparticles interactions,** D. M. Togashi, D. McMahon, P. Dunne, J. McManus, A. G. Ryder, National Univ. of Ireland/Galway (Ireland) . . . . . [6628-61]

Conf. 6629 (DOI)

Chair: **Rinaldo Cubeddu**, Politecnico di Milano (Italy)

✔ **Functional imaging of autoregulation,** R. L. Barbour, SUNY/Downstate Medical Ctr. (USA) and NIRx Medical Technologies, LLC (USA); Y. Pei, NIRx Medical Technologies, LLC (USA); M. Farber, SUNY/Downstate Medical Ctr. (USA); H. L. Graber, SUNY/Downstate Medical Ctr. (USA) and NIRx Medical Technologies, LLC (USA); Y. Xu, D. Sreedharan, SUNY/Downstate Medical Ctr. (USA); C. H. Schmitz, NIRx Medical Technologies, LLC (USA); G. T. Voelbel, G. R. Wylie, J. Lengenfelder, J. DeLuca, Kessler Medical Rehabilitation Research and Education Corp. (USA) [6629-23]

✔ **High frequency oscillations in brain hemodynamic response,** A. Akin, Bogaziçi Univ. (Turkey); H. Bolay, Gazi Univ. (Turkey) [6629-50]

✔ **Analysis of skin recovery from mechanical indentation using diffuse lighting and digital imaging,** N. T. Clancy, M. J. Leahy, Univ. of Limerick (Ireland); G. E. Nilsson, C. Anderson, Linköpings Univ. (Sweden) . . . . . [6629-51]

✔ **Filtering effect to improving the reconstructed image quality of diffuse optical imaging,** M. Pan, Tung Nan Institute of Technology (Taiwan); C. Chen, L. Chen, M. Pan, National Central Univ. (Taiwan) . . . . . [6629-52]

✔ **Time-gated, intensified CCD camera for imaging of a non-homogenous medium at null source-detector separation,** P. L. Sawosz, M. Kacprzak, A. Liebert, R. Maniewski, Institute of Biocybernetics and Biomedical Engineering (Poland) . . . . . [6629-53]

✔ **Development of a computer vision binocular system for non-contact small animal model skin cancer tumour imaging,** D. S. Gorpas, M. Kyriazi, K. Politopoulos, D. M. Yova, National Technical Univ. of Athens (Greece) . . . [6629-54]

✔ **Three dimensional near infrared tomography of the breast,** M. E. Eames, Univ. of Exeter (United Kingdom); B. W. Pogue, Dartmouth College (USA); H. Dehghani, Univ. of Exeter (United Kingdom) . . . . . [6629-56]

✔ **Monitoring muscle metabolic indexes by time-domain near infrared spectroscopy during knee flex-extension induced by functional electrical stimulation,** A. Torricelli, D. Contini, L. Spinelli, R. Cubeddu, Politecnico di Milano (Italy); F. Molteni, Ctr. di riabilitazione Villa Beretta, Ospedale Valduce (Italy); S. Ferrante, A. Pedrocchi, G. Ferrigno, Politecnico di Milano (Italy) . . . . . [6629-57]

✔ **Continuous performance test assessed with time-domain functional near infrared spectroscopy,** A. Torricelli, D. Contini, L. Spinelli, M. Caffini, M. Butti, G. Baselli, A. M. Bianchi, Politecnico di Milano (Italy); A. Bardoni, IRCCS E. Medea (Italy); S. Cerutti, R. Cubeddu, Politecnico di Milano (Italy) . . . . . [6629-58]

✔ **Measurement of the phase function of phantoms and biological media with a 2 axis goniometer,** R. Michels, A. Kienle, Univ. Ulm (Germany) . . . . . [6629-59]

✔ **An instrument for small animal 3D-diffuse and fluorescence optical imaging,** P. Poulet, Univ. Louis Pasteur (France) . . . . . [6629-60]

✔ **Spatial resolved diffuse reflection as a tool for determination of size and embedding depth of blood vessels,** A. V. Bykov, M.V. Lomonosov Moscow State Univ. (Russia) and Univ. of Oulu (Finland); A. V. Priezzhev, M.V. Lomonosov Moscow State Univ. (Russia); R. A. Myllylä, Univ. of Oulu (Finland) . . . . . [6629-61]

✔ **Optical tomography of small tissue volumes with the ERT: frequency-domain sensitivity analysis,** X. Gu, Columbia Univ. (USA); U. Netz, J. Beuthan, Charité-Univ. Medicine Berlin (Germany); A. H. Hielscher, Columbia Univ. (USA) [6629-62]

✔ **Transmission RF diffuse optical tomography instrument for human breast imaging,** K. Lee, S. D. Konecky, A. Corlu, R. Choe, T. Durduran, A. G. Yodh, Univ. of Pennsylvania (USA) . [6629-63]

✔ **Correction of dead-time related distortions in time-correlated single photon counting at high count rates,** H. Wabnitz, Physikalisch-Technische Bundesanstalt (Germany); M. Möller, Hochschule für Technik und Wirtschaft des Saarlandes (Germany); W. Becker, Becker & Hickl GmbH (Germany); R. Macdonald, Physikalisch-Technische Bundesanstalt (Germany) [6629-64]

✔ **A new cerebral hemorrhage auto-segment mechanism,** T. Shen, Beijing Institute of Technology (China) . . . . . [6629-65]

✔ **Approach to estimating low contrast inclusion with a priori guidance,** M. Pan, C. Chen, L. Chen, National Central Univ. (Taiwan); M. Pan, Tung Nan Institute of Technology (Taiwan) . . . . . [6629-66]

Tuesday 19 June • ✔ Posters

Poster presenters may post their poster papers Tuesday morning and will need to remove their posters immediately following the poster session that evening. Poster authors must be at their papers during the poster session from 15.00-16.00 to discuss the poster with session attendees.

Conf. 6632 (TLA)

Chair: **Alfred Vogel**, Univ. zu Lübeck (Germany)

✔ **Mechanisms in photodynamic therapy: photosensitizers and cellular localization on K562 cells,** R. Ion, Institutul National de Cercetare (Romania) and Valahia Univ. (Romania); M. Neagu, G. Manda, C. Constantin, Victor Babes National Institute (Romania); M. Calin, National Institute of R&D for Optoelectronics (Romania) . . [6632-57]

✔ **Photodynamic therapy as a method of choice in the treatment of multifocal oral leukoplakia,** A. Z. Kawczyk-Krupka, W. Latos, A. Kosciarz-Grzesiok, A. Misiak, A. E. Ledwon, S. Kwiatek, A. Sieron, Medical Univ. of Silesia, Katowice (Poland) . . . . . [6632-58]

✔ **Real-time evaluation of tissue properties for feed-back dosimetry in interstitial photodynamic therapy,** J. Axelsson, A. Johansson, Lunds Tekniska Högskola (Sweden); J. Swartling, T. Johansson, Spectracure AB (Sweden); S. Pålsson, Lunds Univ. (Sweden); J. Stensson, Spectracure AB (Sweden); K. Svanberg, N. Bendsoe, Lund Univ. Hospital (Sweden); S. Svanberg, S. Andersson-Engels, Lunds Tekniska Högskola (Sweden) . . [6632-59]

✔ **Antimicrobial activity of water-soluble cationic porphyrins,** G. V. Gyulkhandanyan, Institute of Biotechnology (Armenia); R. K. Ghazaryan, Yerevan State Medical Univ. (Armenia); A. Hovsepyan, M. Paronyan, S. S. Ghambaryan, Institute of Biotechnology (Armenia); A. G. Tovmasyan, Yerevan State Medical Univ. (Armenia); A. G. Gyulkhandanyan, Yerevan State Univ. (Armenia) . . . . . [6632-60]

✔ **Synthesis and anticancer activity of new water-soluble cationic (metallo)porphyrins,** A. G. Tovmasyan, R. K. Ghazaryan, L. Sahakyan, Yerevan State Medical Univ. (Armenia); G. Gasparyan, N. Babayan, Yerevan State Univ. (Armenia); G. V. Gyulkhandanyan, Institute of Biotechnology (Armenia) . . . . . [6632-61]

✔ **Aqueous gel as effective delivery system of 5-aminolevulinic acid,** V. M. Negrimovsky, N. A. Sakharova, Organic Intermediates and Dyes Institute (Russia); N. I. Kazachkina, A. A. Pankratov, R. I. Yakubovskaya, P. A. Hertzen Moscow Research Oncological Institute (Russia); E. A. Lukyanets, G. N. Vorozhtsov, Organic Intermediates and Dyes Institute (Russia)[6632-62]

✔ **Photodynamic therapy for the choroidal neovascularization,** M. Budzinskaya, T. Kiseleva, S. Shevchik, V. B. Loschenov II, A.M. Prokhorov General Physics Institute (Russia); S. G. Kuzmin, G. N. Vorozhtsov, Organic Intermediates and Dyes Institute (Russia) . . . . . [6632-63]

✔ **Adjuvant photodynamic therapy (PDT) with photosensitizer photosens for superficial bladder cancer,** O. Apolikhin, I. Chernyshev, D. Altunin, Ministry of Health (Russia); S. G. Kuzmin, Organic Intermediates and Dyes Institute (Russia); G. N. Vorozhtsov, I.M. Sechenov Moscow Medical Academy (Russia) . . [6632-64]

✔ **Results of photodynamic therapy in the combined treatment of the choroidal metastasis,** V. Likhvantseva, E. Osipova, M. Petrenko, O. Merzlyakova, Russian Academy of Sciences (Russia); S. G. Kuzmin, G. N. Vorozhtsov, Organic Intermediates and Dyes Institute (Russia) . . . . . [6632-65]

✔ **Mid-infrared porcine cornea ablation measurements and the role of water absorption,** E. Spyratou, M. I. Makropoulou-Loukogiannaki, C. Bacharis, A. A. Serafetinides, National Technical Univ. of Athens (Greece) . . . . . [6632-66]

✔ **Optoacoustic online temperature determination during retinal laser photocoagulation,** K. Schlott, Univ. zu Lübeck (Germany) and Medizinisches Laserzentrum Lübeck GmbH (Germany); J. U. Stalljohann, B. Weber, Medizinisches Laserzentrum Lübeck GmbH (Germany); J. Kandulla, K. Hermann, R. Birngruber, R. Brinkmann, Univ. zu Lübeck (Germany) . . . . . [6632-67]

✔ **Dynamics and detection of laser induced microbubbles in the retinal pigment epithelium (RPE),** A. Fritz, L. Ptaszynski, H. Stoehr, R. Brinkmann, Univ. zu Lübeck (Germany) . . . . . [6632-68]

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Conf. 6633 (BOLS)

Chair: **Jürgen Popp**, Friedrich-Schiller-Univ. Jena (Germany)

✔ **Evaluation of drug release from PLGA nanospheres containing betametazon,** M. E. Khosroshahi, J. Tavakoli, M. Enayati, S. Shafiei, Amirkabir Univ. of Technology (Iran) . . [6633-49]

✔ **A field test study of our non-invasive thermal image analyzer for deceptive detection,** S. Sumriddetchkajorn, A. Somboonkaew, National Electronics and Computer Technology Ctr. (Thailand); T. Sodsong, I. Promduang, N. Sumriddetchkajorn, Office of the Council of State (Thailand) . . . . . [6633-50]

✔ **Singlet oxygen luminescence reveals oxygen depletion in albumin suspension,** J. Baier, M. Loibl, J. Regensburger, T. Maisch, W. Bäumler, Univ. Regensburg (Germany) . . . . . [6633-51]

✔ **Development and performance characteristics of flash lamp pumped Yb:YAG, Cr:Tm:Ho:YAG, Er:Tm:Ho:YLF laser sources and investigation of their potential biological applications,** A. A. Serafetinides, D. N. Papadopoulos, N. K. Karadimitriou, B. J. Klinkenberg, National Technical Univ. of Athens (Greece) . . . [6633-52]

✔ **A fiber optic sensor for measuring respiratory changes in chest-circumference,** M. Pinchas, A. Avraham, A. Babchenko, I. Faib, S. Mizrahi, M. Nitzan, Jerusalem College of Technology (Israel) . . . . . [6633-53]

✔ **Spontaneous ultra-weak photon emission from human hands varies diurnally,** M. Cifra, Czech Technical Univ. in Prague (Czech Republic) and Institute of Photonics and Electronics of Academy of Sciences (Czech Republic); E. P. A. Van Wijk, International Institute of Biophysics (Germany); R. Van Wijk, Univ. Utrecht (Netherlands) . [6633-54]

✔ **Spectral analysis of photoinduced delayed luminescence from human skin in vivo,** F. F. Musumeci, Univ. di Catania (Italy) and LNS-INFN (Italy); L. L. Lanzanò, Instituto Nazionale di Fisica Nucleare (Italy) and Univ. di Catania (Italy); S. S. Privitera, LNS-INFN (Italy) and Univ. di Catania (Italy); S. S. Tudisco, Instituto Nazionale di Fisica Nucleare (Italy); A. A. Scordino, Instituto Nazionale Di Fisica Nucleare (Italy) . . . . . [6633-55]

✔ **Improving spFRET by confining molecules in nanopipettes,** J. Vogelsang, S. Doose, M. Sauer, P. Tinnefeld, Univ. Bielefeld (Germany) [6633-56]

✔ **Analyzing the influence of contact-induced quenching processes on Förster resonance energy transfer,** R. Brune, S. Doose, M. Sauer, Univ. Bielefeld (Germany) . . . . . [6633-57]

✔ **Sonoluminescence from ultrasound contrast agent microbubbles,** P. A. Campbell, P. A. Prentice, Univ. of Dundee (United Kingdom) . . . . . [6633-58]

✔ **Time-resolved diffuse optical spectroscopy of wood,** C. D'Andrea, A. Farina, D. Comelli, A. Pifferi, P. Taroni, G. Valentini, R. Cubeddu, Politecnico di Milano (Italy) . . . . . [6633-59]

✔ **Discrimination of normal and colorectal cancer using Raman spectroscopy and fluorescence,** Y. Wang, Shenyang Ligong Univ. (China)[6633-60]

✔ **MUSES: MUlti SEnsors Sphere,** S. S. Tudisco, L. L. Lanzanò, Instituto Nazionale di Fisica Nucleare (Italy) and Univ. di Catania (Italy); F. F. Musumeci, Univ. di Catania (Italy); S. S. Privitera, Instituto Nazionale di Fisica Nucleare (Italy) and Univ. di Catania (Italy); A. A. Scordino, Instituto Nazionale Di Fisica Nucleare (Italy) and Univ. di Catania (Italy) . . . . . [6633-61]

✔ **Methods of the probe luminescence in the detection of the dynamically structured state of human serum albumin,** A. G. Melnikov, Saratov State Univ. (Russia) . . . . . [6633-62]

✔ **Raman spectroscopy as an analytic tool for non-destructive investigation,** P. Roesch, S. Reitzenstein, M. A. Strehle, D. Berg, Friedrich-Schiller-Univ. Jena (Germany); M. Baranska, H. Schulz, E. Rudloff, Bundesanstalt für Züchtungsforschung an Kulturpflanzen (Germany); J. Popp, Friedrich-Schiller-Univ. Jena (Germany) . . . . . [6633-64]

✔ **Raman spectroscopic characterization of secondary metabolites in plants,** K. R. Strehle, P. Roesch, Friedrich-Schiller-Univ. Jena (Germany); H. Schulz, Bundesanstalt für Züchtungsforschung an Kulturpflanzen (Germany); J. Popp, Friedrich-Schiller-Univ. Jena (Germany) and Institut für Physikalische Hochtechnologie e.V. (Germany) . . . . . [6633-65]

✔ **SERS as analytical tool for detection of bacteria,** D. Cialla, P. Roesch, Friedrich-Schiller-Univ. Jena (Germany); J. Popp, Friedrich-Schiller-Univ. Jena (Germany) and Institute of Photonic Technology (Germany) . . . . . [6633-66]

Tuesday 19 June • ✔ Posters

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Conf. 6628 (DOS)

✔ **Depth retrieval of a fluorescent inclusion inside a tissue-simulating phantom using picosecond time-resolved imaging,** R. Bourayou, T. Betz, Charité-Univ. Medicine Berlin (Germany); J. Voigt, J. Berger, Physikalisch-Technische Bundesanstalt (Germany); J. M. Steinbrink, Charité-Univ. Medizin Berlin (Germany); R. Macdonald, B. Ebert, Physikalisch-Technische Bundesanstalt (Germany) . . . . . [6628-62]

✔ **Clinical and pathophysiological aspects of hyperglycemia by ATR-FTIR spectroscopy,** N. S. Eikje, K. Aizawa, T. Sota, Waseda Univ. (Japan) . . . . . [6628-63]

✔ **Excitation emission matrix measurements support use of a broad excitation range for the determination of cardiovascular risk from skin autofluorescence,** M. Koetsier, H. L. Lutgers, T. P. Links, A. J. Smit, R. Graaff, Groningen Univ. Medical Ctr. (Netherlands) . . . . . [6628-65]

✔ **Spectroscopic study of demineralization and restoration processes in dental enamel,** T. N. Sokolova, E. L. Surmenko, Saratov State Technical Univ. (Russia); V. V. Tuchin, Saratov State Univ. (Russia); A. Kishen, National Univ. of Singapore (Singapore); Y. V. Chebotarevsky, Saratov State Technical Univ. (Russia) [6628-66]

✔ **Ocular fundus diagnostics and treatment in pseudo-transformed light with digital processing of the image,** T. N. Sokolova, Saratov State Technical Univ. (Russia); I. B. Soloveychik, V. Y. Maximov, Saratov Regional Ophthalmologic Hospital (Russia); E. L. Surmenko, Saratov State Technical Univ. (Russia) . . . . . [6628-67]

✔ **Intra-operative probe for brain cancer: feasibility study,** M. Vu Thi, Univ. Paris-Sud II (France) . . . . . [6628-68]

✔ **Pancreatic tissue assessment using fluorescence and reflectance spectroscopy,** M. Chandra, Univ. of Michigan (USA); D. Heidt, D. Simeone, B. McKenna, J. Scheiman, Univ. of Michigan Medical School (USA); M. Mycek, Univ. of Michigan (USA) . . . . . [6628-69]

✔ **Reconstruction of stratum corneum profile of porcine ear skin after tape stripping using UV/VIS spectroscopy,** A. P. Popov, Univ. of Oulu (Finland); J. Lademann, Humboldt Univ zu Berlin (Germany); A. V. Priezzhev, M.V. Lomonosov Moscow State Univ. (Russia); R. A. Myllylä, Univ. of Oulu (Finland) . . . . . [6628-70]

Conf. 6629 (DOI)

✔ **Fluorescence lifetime imaging through turbid media reconstructed in the Fourier domain using time gated imaging data,** V. Y. Soloviev, Univ. College London (United Kingdom); K. Tahir, J. A. McGinty, D. S. Elson, M. A. A. Neil, A. Sardini, J. V. Hajnal, Imperial College London (United Kingdom); S. R. Arridge, Univ. College London (United Kingdom); P. M. W. French, Imperial College London (United Kingdom) . . . . . [6629-67]

✔ **Near infra-red imaging through a scattering medium using the NOISE technique,** A. M. Cuddihy, B. M. Hennelly, R. O'Neill, C. Markham, National Univ. of Ireland/Maynooth (Ireland) . . . . . [6629-68]

Conf. 6632 (TLA)

✔ **Influence of choroidal perfusion on retinal temperature increase during retinal laser treatments,** K. Herrmann, Univ. zu Lübeck (Germany); C. Flöhr, Univ. Eye Hospital (Germany); J. U. Stalljohann, Medizinisches Laserzentrum Lübeck GmbH (Germany); G. Apiou-Sbirlea, Air Liquide (France); J. Kandulla, Univ. zu Lübeck (Germany); R. Birngruber, R. Brinkmann, Medizinisches Laserzentrum Lübeck GmbH (Germany) . . . . . [6632-69]

✔ **Cationic colloidal gold assisting delivery of macromolecular fluoresceins into target CHO-K1 cells by focused femtosecond laser,** Z. Li, Z. Zhang, Xi'an Jiaotong Univ. (China); G. Hüttmann, Univ. zu Lübeck (Germany) [6632-72]

Coffee Break . . . . . 16.00 to 16.30

Poster presenters may post their poster papers Monday morning and will need to remove their posters immediately on Wednesday at the end of the conference. Poster authors must be at their papers during the poster session from 16.30-17.30 to discuss the poster with session attendees.

Conf. 6633 (BOLS)

✔ **Characterization of silver nanoparticles deposited by an enzyme,** T. Schüler, R. Möller, Friedrich-Schiller-Univ. Jena (Germany); A. Steinbrück, W. Fritzsche, Institut für Physikalische Hochtechnologie e.V. (Germany); J. Popp, Friedrich-Schiller-Univ. Jena (Germany) and Institue of Photonic Technology (Germany) . . . . . [6633-67]

✔ **Towards an understanding of the mode of action of fluoroquinolone drugs,** U. Neugebauer, Friedrich-Schiller-Univ. Jena (Germany); U. Schmid, K. Baumann, Technische Univ. Braunschweig (Germany); U. Holzgrabe, Univ. Würzburg (Germany); M. Schmitt, J. Popp, Friedrich-Schiller-Univ. Jena (Germany)[6633-68]

✔ **Raman label for DNA detection by means of SERRS,** K. K. Hering, R. Möller, J. Popp, Friedrich-Schiller-Univ. Jena (Germany)[6633-69]

✔ **Physical limits to autofluorescence signals recordings in the rat olfactory bulb in vivo: a Monte Carlo study,** B. L'Heureux, H. Gurden, L. Pinot, R. Mastrippolito, F. Lefebvre, P. Lanièce, F. Pain, Univ. Paris-Sud II (France) . . . . . [6633-70]

✔ **Towards ultra-stable fluorescent dyes for single-molecule spectroscopy,** R. Kasper, Bielefeld Univ. (Germany) . . . . . [6633-71]

✔ **Two photon microscopy for studies of xenobiotics in human skin,** C. Simonsson, M. Smedh, C. Jonsson, M. B. Ericson, A. Karlberg, Göteborg Univ. (Sweden) . . . . . [6633-72]

✔ **Uncovering of melanin fluorescence in human skin tissue,** M. Scholz, G. Stankovic, G. S. Seewald, D. Leupold, LTB Lasertechnik Berlin GmbH (Germany) . . . . . [6633-73]

✔ **Image reconstruction of the location of macro-inhomogeneity in random turbid medium by using artificial neural networks,** B. A. Veksler, Cranfield Univ. (United Kingdom); A. V. Kovaleva, Saratov State Univ. (Russia); I. V. Meglinski, Cranfield Univ. (United Kingdom); I. L. Maksimova, Saratov State Univ. (Russia) . . . . . [6633-74]

✔ **Photoinduced electron transfer (PET)-probes for the study of enzyme activity at the ensemble and single-molecule level,** S. Henkenjohann, S. Doose, P. Tinnefeld, M. Sauer, Bielefeld Univ. (Germany) . . . . . [6633-75]

✔ **Towards a real-time technology for the identification of native bioaerosols,** M. Krause, P. Roesch, Friedrich-Schiller-Univ. Jena (Germany); M. Lankers, rap.ID Particle Systems GmbH (Germany); H. Thiele, Kayser-Threde GmbH (Germany); J. Popp, Friedrich-Schiller-Univ. Jena (Germany) and Insitute for Physical Hightechnology (Germany) . . . . . [6633-76]

✔ **Drug search: in situ UV Raman microscopic localization of anti malaria active agents in plant material,** T. Frosch, L. Zedler, M. Schmitt, Friedrich-Schiller-Univ. Jena (Germany); T. Noll, G. Bringmann, Univ. Würzburg (Germany); J. Popp, Friedrich-Schiller-Univ. Jena (Germany)[6633-77]

✔ **A parallel approach for sub-wavelength molecular surgery using gene-specific positioned metal nanoparticles as laser light antennas,** A. Csaki, G. Festag, F. Garwe, Institut für Physikalische Hochtechnologie e.V. (Germany); G. Maubach, Institute of Bioengineering and Nanotechology (Singapore); K. Mrasek, Friedrich-Schiller-Univ. Jena (Germany); I. Riemann, Fraunhofer-Institut für Biomedizinische Technik (Germany); T. Schüler, A. Steinbrück, Institut für Physikalische Hochtechnologie e.V. (Germany); A. Weise, Friedrich-Schiller-Univ. Jena (Germany); K. König, Fraunhofer-Institut für Biomedizinische Technik (Germany); W. Fritzsche, Institut für Physikalische Hochtechnologie e.V. (Germany) . . . . . [6633-78]

✔ **Investigation of biotic and abiotic soil components by means of various spectroscopic methods,** A. Walter, P. Roesch, S. Jezewski, M. Reinicke, E. Kothe, Friedrich-Schiller-Univ. Jena (Germany); J. Popp, Friedrich-Schiller-Univ. Jena (Germany) and Institut für Physikalische Hochtechnologie, Jena (Germany) . . . [6633-79]

✔ **Characterization of human plasma by means of vibrational spectroscopy,** M. K. Harz, R. Claus, P. Roesch, C. Bockmeyer, K. Kentouche, Friedrich-Schiller-Univ. Jena (Germany); H. Deigner, Univ. of East Anglia Norwich (United Kingdom); J. Popp, Friedrich-Schiller-Univ. Jena (Germany)[6633-80]

✔ **Retinal image quality with the different types of intraocular lenses including new idea of the hybrid IOLs,** D. Siedlecki, M. Zajac, J. Nowak, Politechnika Wroclawska (Poland) . . . [6633-81]

✔ **Peptide-based optical contrast agents for targeting of intestinal malignancies,** A. Frey, N. Röckendorf, N. Fujimoto, K. Wehry, Research Ctr. Borstel (Germany); M. Bürger, Gesellschaft für Silizium Mikrosysteme mbH (Germany); J. Helfmann, Laser- und Medizin-Technologie GmbH Berlin (Germany) . . . . . [6633-82]

✔ **Objective evaluation of linear feature orientation in a two-dimensional image: applications on skin imaging,** G. N. Stamatas, A. Nkengne, A. Lopes, C. Bertin, A. Rossi, Johnson & Johnson Consumer France S.A.S. (France) . . . . . [6633-83]

✔ **Development of microfluidic structures for high throughput flow cytometric characterization of blood cells,** A. Kummrow, H. Yildirim, Physikalisch-Technische Bundesanstalt (Germany); J. Theisen, Technische Univ. Berlin (Germany); K. Brattke, Physikalisch-Technische Bundesanstalt (Germany); C. Sprenger, M. Schmidt, Technische Univ. Berlin (Germany); J. Neukammer, Physikalisch-Technische Bundesanstalt (Germany) . . . . . [6633-84]

✔ **Highly sensitive detection of target molecules using a new fluorescence-based bead assay,** S. Scheffler, D. Strauss, M. Sauer, Univ. Bielefeld (Germany) . . . . . [6633-85]

✔ **Protein chip analysis by probing time-resolved UV-fluorescence,** P. M. Schellenberg, Institut für Physikalische Hochtechnologie e.V. (Germany); R. Dietrich, Schott Jenaer Glas GmbH (Germany); W. Fritzsche, Institut für Physikalische Hochtechnologie e.V. (Germany); K. O. Greulich, P. Grigaravicius, Fritz Lipmann Institute (Germany); U. Horn, Hans-Knöll-Institute (Germany); D. Knoll, Schott Jenaer Glas GmbH (Germany); S. Peters, Institut für Physikalische Hochtechnologie e.V. (Germany) . . . . [6633-86]

✔ **Useful sun strategy based on light-converting materials,** R. N. Khramov, Institute for Theoretical and Experimental Physics (Russia); G. Cheremisin, B. M. Sinelnikov, V. A. Vorobiev, IQlink Ky (Finland) . . . . . [6633-87]

✔ **Diffractometry analysis of human and rat erythrocytes deformability under ischemia,** A. E. Lugovtsov, A. V. Priezzhev, S. Y. Nikitin, V. B. Koshelev, M.V. Lomonosov Moscow State Univ. (Russia) . . . . . [6633-88]

✔ **Ultraweak delayed luminescence of dry seeds,** R. Neurohr, G. A. Stanciu, Univ. Politehnica Bucuresti (Romania) . . . . . [6633-89]

✔ **Preparation and optical characterization of core-shell bi-metal nanoparticles,** A. Steinbrueck, A. Csáki, G. Festag, T. Schüler, W. Fritzsche, Institut für Physikalische Hochtechnologie e.V. (Germany) . . . . [6633-90]

✔ **Luminescent nanoparticles for molecular medicine,** H. Hummel, V. Weiler, Philips Research Labs. (Germany); W. Hoheisel, Bayer Technology Services GmbH (Germany); C. Walter, M. Haase, Univ. Osnabrück (Germany) . . . . . [6633-91]

✔ **Studying sigma54-dependent transcription at the single-molecule level using alternating-laser excitation (ALEX) specroscopy,** M. Heilemann, K. Lymperopoulos, Univ. of Oxford (United Kingdom); S. Wigneshweraraj, M. M. Buck, Imperial College London (United Kingdom); A. N. Kapanidis, Univ. of Oxford (United Kingdom) . . . . . [6633-92]

✔ **The luminescent manifestation of the DNA: tribetamid interaction,** A. O. Dudko, National Taras Shevchenko Univ. of Kyiv (Ukraine) . . . . . [6633-93]

Conf. 6627 (OCT)

SESSION 10

Room 5 . . . . . Tues. 16.30 to 17.30

Polarisation sensitive OCT

Chair: **Johannes F. DeBoer**, Massachusetts General Hospital (USA)

16.30: **Polarization sensitive OCT in patients with macula and nerve head disorders *(Invited Paper)*,** C. K. Hitzenberger, E. Götzinger, M. Pircher, B. Baumann, S. Michels, W. Geitzenauer, C. Vass, U. Schmidt-Erfurth, Medizinische Univ. Wien (Austria) . . [6627-51]

17.00: **Polarization-sensitive Fourier-domain optical coherence tomography for the imaging the anterior segment disorder of the eyes,** M. Miura, Tokyo Medical Univ. Kasumigaura Hospital (Japan) and Univ. of Tsukuba (Japan); M. Yamanari, Univ. of Tsukuba (Japan); Y. Watabnabe, H. Mori, Tokyo Medical Univ. (Japan) and Univ. of Tsukuba (Japan); T. Iwasaki, Tokyo Medical Univ. (Japan); A. E. Elsner, Indiana Univ. (USA); K. Kawana, T. Oshika, T. Yatagai, Y. Yasuno, Univ. of Tsukuba (Japan) . . . . . [6627-52]

17.15: **Mueller coherency matrix method for contrast image in tissue polarimetry,** J. L. Arce-Diego, F. Fanjul-Vélez, D. Pereda-Cubián, Univ. de Cantabria (Spain) . . . . . [6627-54]

■ *End of Conference*

Conf. 6632 (TLA)

SESSION 7

Room 11 . . . . . Tues. 16.30 to 17.30

Ophthalmology: Lens

Chair: **Ralf Brinkmann**, Univ. zu Lübeck (Germany)

16.30: **Ophthalmic drug delivery utilizing two-photon absorption: a novel approach to treat posterior capsule opacification,** H. Kim, J. K. Träger, M. Zorn, N. Haberkorn, N. Hampp, Philipps-Univ. Marburg (Germany) . . . . . [6632-30]

16.45: **Materials for intraocular lenses enabaling photo-controlled tuning of focal length in vivo,** J. K. Träger, H. Kim, Philipps-Univ. Marburg (Germany); N. Hampp, Philipps-Univ. Marburg (Germany) and University of Marburg (Germany) . . . . . [6632-31]

17.00: **Fs-Lentotomie: changing the accommodation amplitude of presbyopic human crystalline lenses by fs laser pulses,** S. Schumacher, Laser Zentrum Hannover e.V. (Germany); U. Oberheide, Laserforum Koln e.V. (Germany); H. Theuer, M. Fromm, T. Ripken, Laser Zentrum Hannover e.V. (Germany); G. Gerten, Laserforum Koln e.V. (Germany); W. A. Ertmer, Univ. Hannover (Germany); H. Lubatschowski, Laser Zentrum Hannover e.V. (Germany) . . . . . [6632-32]

17.15: **Femtosecond laser-induced cavitations in the lens of the human eye,** L. Kessel, J. Nymand, M. Harbst, Copenhagen Univ. Hospital Glostrup (Denmark); M. v. d. Poel, Danmarks Tekniske Univ. (Denmark); M. Larsen, Univ. of Copenhagen (Denmark) and Kennedy Institute - National Eye Clinic (Denmark) . . . . . [6632-33]

Conference 6632 continues page 27.

Wednesday 20 June • 09.00 to 10.00

Conf. 6628 (DOS)

SESSION 1

Room B13 . . . . . Wed. 09.00 to 10.00

Devices and Methods for Clinical Application I

Chair: **Ralf Brinkmann**, Univ. zu Lübeck (Germany)

09.00: **A robust spectral sensor for point-of-care diagnostics,** S. Schönfelder, H. S. Bartos, R. Peters, Boehringer Ingelheim microParts GmbH (Germany) . . . . . [6628-01]

09.15: **Spectroscopic imaging using acousto-optic tuneable filters,** M. Bouhifd, M. P. Whelan, European Commission (Italy) . . . . . [6628-02]

09.30: **Human maxillary sinus monitoring using tunable diode laser spectroscopy,** L. Persson, M. Andersson, T. Svensson, M. Cassel-Engquist, K. Svanberg, S. Svanberg, Lund Univ. (Sweden) [6628-03]

09.45: **Spatially-resolved in-vivo measurement system for estimating the optical properties of tissue in the wavelength range 1000-1700nm,** P. Hjalmarsson, S. N. Thennadil, Newcastle Univ. (United Kingdom) . . . . . [6628-04]

Coffee Break . . . . . 10.00 to 10.30

Conference 6628 continues page 28.

Conf. 6629 (DOI)

SESSION 1

Room 5 . . . . . Wed. 09.00 to 10.00

New Technologies

Chair: **Andreas H. Hielscher**, Columbia Univ. (USA)

09.00: **Wavelet-based model reduction applied to fluorescence diffuse optical tomography,** A. Frassati, A. DaSilva, J. Dinten, Lab. d'Electronique de Technologie de l'Information (France); D. Georges, Institut National Polytechnique de Grenoble (France) . . . . . [6629-01]

09.15: **Digital signal processor based dynamic optical tomography imaging system,** A. H. Hielscher, J. M. Lasker, J. M. Masciotti, Columbia Univ. (USA); C. Schmitz, SUNY/Downstate Medical Ctr. (USA); Y. Li, A. Bur, C. J. Fong, Columbia Univ. (USA) . . . . . [6629-02]

09.30: **Speckle pattern characterization by circular statistics,** M. C. Péron, E. Deléchelle, Univ. Paris 12 Val-de-Marne (France); S. Guyot, École Polytechnique (France) . . . . . [6629-03]

09.45: **Phantom study on contrast mechanisms in time-domain fluorescence imaging,** O. Steinkellner, D. Grosenick, A. J. Hagen, Physikalisch-Technische Bundesanstalt (Germany); R. Ziegler, T. Nielsen, Philips Research Labs. (Germany); R. Macdonald, H. H. Rinneberg, Physikalisch-Technische Bundesanstalt (Germany) . . . . . [6629-04]

Coffee Break . . . . . 10.00 to 10.30

Conference 6629 continues page 28.

Conf. 6632 (TLA)

SESSION 8

Joint Session with WLT—German Scientific Laser Society

Room 11 . . . . . Wed. 09.00 to 10.00

Laser Catapulting

Chairs: **Alfred Vogel**, Univ. zu Lübeck (Germany); **Karsten König**, Fraunhofer-Institut für Biomedizinische Technik (Germany)

09.00: **Laser micromanipulation of cells and tissue *(Invited Paper, Presentation Only),*** K. Schütze, P.A.L.M. Microlaser Technologies GmbH (Germany) . . . . . [WLT-83]

09.30: **Principles of laser catapulting of live cells,** A. Vogel, N. Linz, V. Horneffer, Univ. zu Lübeck (Germany) . . . . . [6632-34]

09.45: **Laser microbeams as versatile tools for for stem cell purification and clonal expansion,** A. Buchstaller, Ludwig-Maximilians-Univ. München (Germany); Y. Niyaz, P.A.L.M. Microlaser Technologies GmbH (Germany); S. Soria-Lopez, Ludwig-Maximilians-Univ. München (Germany); K. Schütze, P.A.L.M. Microlaser Technologies GmbH (Germany) . . . . . [6632-35]

Coffee Break . . . . . 10.00 to 10.30

Conference 6632 continues page 28.

Conf. 6633 (BOLS)

SESSION 7

Room BO.R2 . . . . . Wed. 09.00 to 11.00

Engaging Life Processes: New Photonics Micromanipulation Tools II

Chair: **Hans-Peter Berlien**, Elisabeth Klinik (Germany)

09.00: **Optical deformability as a new cell marker *(Invited Paper),*** J. A. Käs, Univ. Leipzig (Germany) . . . . . [6633-28]

09.30: **Live cell opto-perforation by femtosecond laser pulses,** J. Baumgart, Laser Zentrum Hannover e.V. (Germany); W. Bintig, A. Ngezahayo, W. A. Ertmer, Univ. Hannover (Germany); H. Lubatschowski, A. Heisterkamp, Laser Zentrum Hannover e.V. (Germany) . . . . . [6633-29]

09.45: **Automatic segmentation of cell nuclei in bladder tissue for karyometric analysis,** V. R. Korde, College of Optical Sciences/The Univ. of Arizona (USA); H. G. Bartels, J. Ranger-Moore, J. K. Barton, The Univ. of Arizona (USA) . . . . . [6633-30]

Coffee Break . . . . . 10.00 to 10.30

Conference 6633 continues page 28.

Conf. 6628 (DOS)

SESSION 2

Room B13 . . . . . Wed. 10.30 to 12.15

FLIM and 2-Photon Excitation

Chair: **Dietrich Schweitzer**, Friedrich-Schiller-Univ. Jena (Germany)

10.30: **Monitoring cellular metabolic pathways by wavelength- and time-resolved intracellular autofluorescence *(Invited Paper)*,** Y. Wu, W. Zheng, J. Y. Qu, Hong Kong Univ. of Science and Technology (Hong Kong China) . . . . . [6628-05]

11.00: **Spectral and time-resolved studies on ocular structures,** D. Schweitzer, Friedrich-Schiller-Univ. Jena (Germany); S. Jentsch, Fachhochschule Jena (Germany); S. Schenke, C. U. Biskup, Friedrich-Schiller-Univ. Jena (Germany); E. R. Gaillard, Northern Illinois Univ. (USA); M. Hammer, Friedrich-Schiller-Univ. Jena (Germany) . . . . . [6628-06]

11.15: **Multi-spectral FLIM of tissue autofluorescence,** W. Becker, V. Katsoulidou, A. Bergmann, Becker & Hickl GmbH (Germany) [6628-07]

11.30: **Multiphoton imaging and fluorescence lifetime studies on unstained cells and tissue at cryogenic conditions,** M. Stark, D. Dörr, A. Ehlers, D. Sauer, Fraunhofer-Institut für Biomedizinische Technik (Germany); R. Bückle, S. Martin, F. Ehrhart, J. Baunach, A. Katsen-Globa, H. Zimmermann, JenLab GmbH (Germany); K. König, Fraunhofer-Institut für Biomedizinische Technik (Germany) . . . . . [6628-08]

11.45: **Intrinsic optical signals of brains in rats during loss of tissue viability: effect of brain temperature,** S. Kawauchi, S. Sato, H. Ooigawa, H. Nawashiro, M. Kikuchi, National Defense Medical College (Japan) . . . . . [6628-09]

12.00: **Sensing metabolic activity in tissue engineered constructs,** M. Chandra, R. H. Wilson, W. Lo, K. Vishwanath, K. Izumi, S. Feinberg, M. Mycek, Univ. of Michigan (USA) . . . . . [6628-10]

Lunch/Exhibition Break . . . . . 12.15 to 13.15

Conference 6628 continues page 29.

Conf. 6629 (DOI)

SESSION 2

Room 5 . . . . . Wed. 10.30 to 12.30

Image Reconstruction

Chair: **Hamid Dehghani**, Univ. of Exeter (United Kingdom)

10.30: **Evaluation of the image reconstruction algorithm for near infrared topography by virtual head phantom *(Invited Paper)*,** H. Kawaguchi, E. Okada, Keio Univ. (Japan) . . . . . [6629-05]

11.00: **Near-surface sensitivity suppression way for diffuse reflective optical tomography: simulation and a phantom study,** K. Fukuda, Tokyo Metropolitan College of Industrial Technology (Japan); M. Fujii, Sophia Univ. (Japan) . . . . . [6629-06]

11.15: **Novel method for depth-resolved brain functional imaging by time-domain NIRS,** D. Contini, L. Spinelli, A. Torricelli, A. Pifferi, R. Cubeddu, Politecnico di Milano (Italy) . . . . . [6629-07]

11.30: **Spatial a priori information in fluorescence molecular tomography by use of spectrally resolved fluorescence emission,** J. Axelsson, J. Svensson, S. Andersson-Engels, Lunds Tekniska Högskola (Sweden) [6629-08]

11.45: **Wavelength optimization in multispectral diffuse optical tomography considering uncertainties in absorption spectra,** B. Brendel, T. Nielsen, Philips Research Labs. (Germany) . [6629-09]

12.00: **Optimized determination of absorption changes from moments of time-of-flight distributions for a two-layer tissue model,** A. Liebert, Institute of Biocybernetics and Biomedical Engineering (Poland); H. Wabnitz, C. Elster, Physikalisch-Technische Bundesanstalt (Germany) . . . . . [6629-10]

12.15: **Depth selective diffuse optical computed topography: simulations and phantom experiments,** M. Fujii, A. Kawanaka, K. Nakayama, Sophia Univ. (Japan) . . . . . [6629-11]

Lunch/Exhibition Break . . . . . 12.30 to 13.30

Conference 6629 continues page 29

Conf. 6632 (TLA)

SESSION 9

Joint Session with WLT—German Scientific Laser Society

Room 11 . . . . . Wed. 10.30 to 12.35

Focussed Laser Effects I

Chairs: **Karsten König**, Fraunhofer-Institut für Biomedizinische Technik (Germany); **Alfred Vogel**, Univ. zu Lübeck (Germany)

10.30: **Simulation of ultrashort pulse induced optical breakdown plasmas generated at high numerical aperture focusing,** C. L. Arnold, Laser Zentrum Hannover e.V. (Germany); W. A. Ertmer, Univ. Hannover (Germany); H. Lubatschowski, Laser Zentrum Hannover e.V. (Germany) . . . . . [6632-36]

10.45: **Femtosecond laser-induced nanocavitation,** N. Linz, S. Freidank, Univ. zu Lübeck (Germany); G. Paltauf, Karl-Franzens-Univ. Graz (Austria); A. Vogel, Univ. zu Lübeck (Germany) . . . . . [6632-37]

11.00: **Luminescent high-energy density femtosecond plasmas in bulk aqueous materials,** A. Vogel, N. Linz, S. Freidank, Univ. zu Lübeck (Germany); G. Paltauf, Karl-Franzens-Univ. Graz (Austria) [6632-38]

11.15: **Laser micromachining in living cells *(Invited Paper, Presentation Only)*,** F. S. Pavone, Univ. degli Studi di Firenze (Italy) . . . . . [WLT-84]

11.45: **Laser nanosurgery for stem cell research *(Presentation Only)*,** A. Heisterkamp, Laser Zentrum Hannover e.V. (Germany) . . . . . [WLT-82]

12.10: **Femtosecond laser nanoprocessing for manipulation of stem cells *(Presentation Only)*,** K. König, IBMT St. Ingbert (Germany) . . . . . [WLT-77]

12.10: **Influence of laser parameters on femtosecond near-infrared opto-injection of living cells *(Presentation Only)*,** C. Peng, R. E. Palazzo, I. Wilke, Rensselaer Polytechnic Institute (USA) . . . . . [WLT-199]

12.20: **Effects of pulse duration and pulse energy on laser microbeam-induced cell lysis and membrane permeabilization,** A. N. Hellman, Univ. of California/Irvine (USA); K. R. Rau, Tata Institute of Fundamental Research (India); P. A. Quinto-Su, V. Venugopalan, Univ. of California/Irvine (USA) . . . . . [6632-39]

Lunch/Exhibition Break . . . . . 12.30 to 13.30

Conference 6632 continues page 29.

Conf. 6633 (BOLS)

SESSION 7 Continued

10.30: **Axial optical trapping and position detection through a dielectric interface for an arbitrary beam,** A. A. R. Neves, A. Fontes, L. C. Barbosa, Univ. Estadual de Campinas (Brazil); A. Camposeo, R. Cingolani, Univ. degli Studi di Lecce (Italy); D. Pisignano, Istituto per la Microelettronica e Microsistemi (Italy); C. L. Cesar, Univ. Estadual de Campinas (Brazil) . . . . . [6633-31]

10.45: **Vascular end-to-side soldering using a dye-enhanced albumin solder,** S. Bogni, A. Alfieri, M. Reinert, M. A. Constantinescu, E. Knall, A. Bregy, M. Frenz, Univ. Bern (Switzerland) . . . . . [6633-32]

SESSION 8

Room BO.R2 . . . . . Wed. 11.00 to 12.30

From Lab to Bedside: Biomedical Optics in Clinical Routine I

Chair: **Gert von Bally**, Univ. Münster (Germany)

11.00: **Photodynamic therapy: state-of-the-art and further perspectives *(Invited Paper)*,** H. Berlien, Elisabeth Klinik (Germany) . . . . . [6633-33]

11.30: **Skin cancer imaging and evaluation by multidimensional non-linear microscopy,** R. Cicchi, S. Sestini, V. De Giorgi, D. Stambouli, P. Carli, D. Massi, F. S. Pavone, Univ. degli Studi di Firenze (Italy) [6633-34]

11.45: **In vivo micro-lesion of single dendrite with femtosecond laser pulses,** L. Sacconi, Univ. degli Studi di Firenze (Italy); R. Panteri, Univ. Campus Bio-Medico (Italy); A. Masi, Univ. degli Studi di Firenze (Italy); G. Diana, Istituto Superiore di Sanità (Italy); M. Buffelli, Univ. degli Studi di Verona (Italy); F. Keller, Univ. Campus Bio-Medico (Italy); F. S. Pavone, Univ. degli Studi di Firenze (Italy) . . . . . [6633-35]

12.00: **Online-visualization in cartilage tissue engineering by two-photon microscopy,** K. Liefeith, R. Schade, S. Grohmann, Institut fur Bioprozess- und Analysenmesstechnik e.V. (Germany); J. Martini, K. Tönsing, D. Anselmetti, Bielefeld Univ. (Germany) . . . . . [6633-36]

12.15: **Raman spectroscopic investigations of cellular components in liquor cerebrospinalis,** M. K. Harz, M. Kiehntopf, P. Roesch, E. Straube, T. Deufel, J. Popp, Friedrich-Schiller-Univ. Jena (Germany) . . . . [6633-37]

Lunch/Exhibition Break . . . . . 12.30 to 13.30

Conference 6633 continues page 29

Conf. 6628 (DOS)
SESSION 3

Room B13 . . . . . Wed. 13.30 to 16.00

Tissue Characterization by Optical Methods

Chair: **Maryann Fitzmaurice**, Case Western Reserve Univ. (USA)

13.30: **Detection of early bronchial cancer by autofluorescence bronchoscopy: from spectroscopic studies to videoendoscopy *(Invited Paper)*,** B. Lovisa, T. Gabrecht, École Polytechnique Fédérale de Lausanne (Switzerland); B. Weber, Richard Wolf GmbH (Germany); H. van den Bergh, G. A. Wagnieres, École Polytechnique Fédérale de Lausanne (Switzerland) . . . . . [6628-12]

14.00: **Multiple fluorophore-analysis (MFA) for qualitative tissue diagnosis in the oral cavity,** R. Pauli, C. Betz, M. Havel, R. Sroka, H. G. Stepp, A. Leunig, Ludwig-Maximilians-Univ. München (Germany) . . . . . [6628-13]

14.15: **Reflectance spectrophotometry as intraoperative assessment of microperfusion in esophageal anastomosis: a feasibility study,** A. Karliczek, Groningen Univ. Medical Ctr. (Netherlands) and Martini Hospital (Netherlands); D. A. Benaron, Spectros Corp. (USA); P. Baas, A. van der Stoel, Martini Hospital (Netherlands); T. Wiggers, J. Plukker, G. M. van Dam, Groningen Univ. Medical Ctr. (Netherlands) . . . . . [6628-14]

14.30: **FTIR biochemical imaging of the prostate: an in vitro proof of concept study,** M. Isabelle, Gloucestershire Hospitals NHS Foundation Trust (United Kingdom); J. J. Aning, Gloucestershire Royal Hospital (United Kingdom); H. W. Gilbert, A. W. S. Ritchie, Gloucestershire Hospitals NHS Foundation Trust (United Kingdom); N. Stone, Gloucestershire Royal Hospital (United Kingdom) . . . . . [6628-15]

14.45: **Cardiac tissue characterization via optical spectroscopy techniques,** B. Lin, D. L. Matthews, Univ. of California/Davis (USA); S. G. Demos, Lawrence Livermore National Lab. (USA) . . . . . [6628-16]

15.00: **Variation of skin autofluorescence with age and gender in humans,** R. Graaff, H. L. Lutgers, A. M. Van Roon, M. Koetsier, T. P. Links, Groningen Univ. Medical Ctr. (Netherlands); H. J. G. Bilo, Isala Clinics, Zwolle (Netherlands); A. J. Smit, Groningen Univ. Medical Ctr. (Netherlands) . . . . . [6628-17]

15.15: **Analysis of breast tissue calcifications using FTIR spectroscopy,** R. N. Baker, N. Shepherd, Gloucestershire Royal Hospital (United Kingdom); K. D. Rogers, Cranfield Univ. (United Kingdom); N. Stone, Gloucestershire Royal Hospital (United Kingdom) . . . . . [6628-18]

15.30: **Optical spectroscopy for therapeutic guidance in breast conserving therapy,** M. D. Keller, S. K. Majumder, Vanderbilt Univ. (USA); M. C. Kelley, Vanderbilt Univ. Medical Ctr. (USA); A. Mahadevan-Jansen, Vanderbilt Univ. (USA)[6628-19]

15.45: **Detecting skin malignancy using elastic light scattering spectroscopy,** M. Canpolat, A. Akman, A. Ciftcioglu, E. Alpsoy, Akdeniz Univ. (Turkey) . . . . . [6628-20]

Coffee Break . . . . . 16.00 to 16.30

Conference 6628 continues page 31

Conf. 6629 (DOI)
SESSION 3

Room 5 . . . . . Wed. 13.30 to 16.15

Tissue Optical Properties

Chair: **Jean-Michel Tualle**, Ctr. National de la Recherche Scientifique (France)

13.30: **Assessment of collagen absorption and related potential diagnostic applications *(Invited Paper)*,** P. Taroni, A. Giusto, A. Pifferi, Politecnico di Milano (Italy); N. S. Shah, Univ. of California/Irvine (USA); L. Spinelli, A. Torricelli, R. Cubeddu, Politecnico di Milano (Italy) . . . . . [6629-12]

14.00: **Influence of cell shape on the optical properties of human erythrocytes,** M. C. Meinke, Charité-Univ. Medizin Berlin (Germany); M. Friebel, Laser- und Medizin-Technologie GmbH, Berlin (Germany); G. J. Müller, Charité-Univ. Medizin Berlin (Germany) . . . . . [6629-13]

14.15: **Detection and characterization of an optical inhomogeneity by diffuse photon-pairs density wave in a multiple-scattering medium,** L. Yu, National Yang-Ming Univ. (Taiwan); J. Wu, L. Su, National Central Univ. (Taiwan); C. Chen, Y. Chan, National Yang-Ming Univ. (Taiwan); C. Chou, National Yang-Ming Univ. (Taiwan) and National Central Univ. (Taiwan) [6629-14]

14.30: **Depth-resolution by continuous-wave imaging,** E. B. Aksel, A. Akin, Bogaziçi Univ. (Turkey) . . . . . [6629-15]

14.45: **CW and time domain procedures for accurate calibration of optical properties of liquid diffusive media at NIR wavelengths,** F. Martelli, Univ. degli Studi di Firenze (Italy); L. Spinelli, A. Farina, A. Pifferi, A. Torricelli, R. Cubeddu, Politecnico di Milano (Italy); G. Zaccanti, Univ. degli Studi di Firenze (Italy) . . . . . [6629-16]

15.00: **Determination of the optical properties of turbid media by measurement of the spatially and spectrally resolved reflectance,** M. Pilz, A. Kienle, Univ. Ulm (Germany) . [6629-17]

15.15: **Light attenuation through turbid slabs calculated by solutions of the Maxwell equations,** J. Schäfer, A. Kienle, F. K. Forster, Institut für Lasertechnologien in der Medizin und Messtechnik (Germany); A. Strey, Univ. Ulm (Germany)[6629-18]

15.30: **Path-length correction for the haemoglobin-concentration measurement using the skull cranial window by multi-spectral imaging analysis,** K. Sakaguchi, S. Furukawa, Keio Univ. (Japan); T. Katsura, K. Yamazaki, H. Kawaguchi, A. Maki, Hitachi, Ltd. (Japan); E. Okada, Keio Univ. (Japan) . . . . . [6629-19]

15.45: **Time-resolved measurement of the scattered light with an interferometric method based on the use of a camera,** D. Ettori, K. Zarychta, E. Tinet, S. Avrillier, J. Tualle, Ctr. National de la Recherche Scientifique (France) . . . . . [6629-20]

16.00: **Determination of the optical properties of anisotropic biological media using isotropic and anisotropic diffusion models,** A. Kienle, Univ. Ulm (Germany); C. Wetzel, Institut für Lasertechnologien in der Medizin und Messtechnik (Germany); A. L. Bassi, D. Comelli, P. Taroni, A. Pifferi, Politecnico di Milano (Italy) . . . . . [6629-21]

Coffee Break . . . . . 16.15 to 17.00

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Conf. 6632 (TLA)
SESSION 10

Room 11 . . . . . Wed. 13.30 to 16.00

Joint Session with WLT—German Scientific Laser Society

Nanoparticle and Chromophore Assisted Cell Surgery

Chair: **Gereon Hüttmann**, Univ. zu Lübeck (Germany)

13.30: **Mechanisms of selective nanophotothermolysis with gold nanoparticles,** V. K. Pustovalov, Belarussian Institute of System Analysis (Belarus); A. S. Smetannikov, A.V. Luikov Heat and Mass Transfer Institute (Belarus); V. P. Zharov, Univ. of Arkansas for Medical Sciences (USA) . . . . . [6632-40]

13.45: **Selective protein knockout by laser-induced heating of gold nanoparticles,** M. Bever, Univ. zu Lübeck (Germany); R. Rahmanzadeh, Research Ctr. Borstel (Germany); G. Hüttmann, Univ. zu Lübeck (Germany) . . . . . [6632-41]

14.00: **Cell and protein inactivation with optical absorbers *(Invited Paper)*,** R. Rahmanzadeh, J. Gerdes, T. Scholzen, Research Ctr. Borstel (Germany); G. Hüttmann, Univ. zu Lübeck (Germany) . . . . . [6632-42]

14.30: **Laser-activated nanoparticle-directed cell elimination *(Invited Paper)*,** F. Levold, A. Limmer, Univ. Bonn (Germany); G. Hüttmann, Univ. zu Lübeck (Germany); E. Endl, Univ. Bonn (Germany) . . . . . [6632-43]

15.00: **Progress in gene transfection by the use of laser-induced stress wave,** S. Sato, National Defense Medical College (Japan); M. Terakawa, M. Obara, Keio Univ. (Japan) . . . . . [6632-44]

15.15: **Towards a selective photochemical inactivation of the progesterone receptor,** W. S. L. Strauss, Univ. Ulm (Germany); K. Raunegger, C. Hoedl, E. Haslinger, Karl-Franzens-Univ. Graz (Austria); R. W. Steiner, Univ. Ulm (Germany); H. W. Schramm, Karl-Franzens-Univ. Graz (Austria) . . . . . [6632-45]

15.30: **Efficacy of a single high dose versus multiple low doses of IIIt on wounded skin fibroblasts,** D. H. Hawkins, H. Abrahamse, Univ. of Johannesburg (South Africa) . . . . . [6632-46]

15.45: **Lab-on-a-chip: The future of single cell analysis? *(Presentation Only)*,** E. Eriksson, M. Goksör, Göteborg Univ. (Sweden) . . . . . [WLT-85]

Coffee Break . . . . . 16.00 to 16.30

Conference 6632 continues page 30.

Conf. 6633 (BOLS)
SESSION 9

Room BO.R2 . . . . . Wed. 13.30 to 15.00

From Lab to Bedside: Biomedical Optics in Clinical Routine II

Chair: **Gert von Bally**, Univ. Münster (Germany)

13.30: **Miniaturized pulse oximeter sensor for continuous vital parameter monitoring,** J. Fiala, S. Reichelt, Albert-Ludwigs-Univ. Freiburg (Germany); P. Bingger, Albert-Ludwigs-Univ. Freiburg (Germany) and Univ. Freibu (Germany); A. Werber, H. Zappe, Albert-Ludwigs-Univ. Freiburg (Germany); K. Förster, R. Klemm, C. Heilmann, F. Beyersdorf, Univ. Hospital Freiburg (Germany) . . . . . [6633-38]

13.45: **Examination of in vivo tear film stability after eye blink and the eye drying,** D. H. Szczesna, H. T. Kasprzak, Z. M. Kulas, Politechnika Wroclawska (Poland); U. Stenevi, Sahlgren's Univ. Hospital (Sweden) . . . . . [6633-39]

14.00: **Characterization of reperfusion dynamics following long-term renal ischemia in a rat model using tissue autofluorescence,** R. N. Raman, Univ. of California/Davis (USA); C. D. Pivetti, Univ. of California/Davis Medical Ctr. (USA); D. L. Matthews, Univ. of California/Davis (USA) and Lawrence Livermore National Lab. (USA); C. Troppmann, Univ. of California/Davis Medical Ctr. (USA); S. G. Demos, Lawrence Livermore National Lab. (USA) and Univ. of California/Davis (USA) . . . . . [6633-40]

14.15: **In vivo study of contrasting properties of gold nanoparticles for optical coherence tomography,** E. V. Zagaynova, Nizhny Novgorod State Medical Academy (Russia); M. V. Shirmanova, Nizhny Novgorod State Univ. (Russia); A. G. Orlova, V. A. Kamensky, Institute of Applied Physics (Russia); M. Y. Kirillin, Oulun Yliopisto (Finland); I. V. Balalaeva, Nizhny Novgorod State Univ. (Russia) . . . [6633-41]

14.30: **Optical sensor based system to monitor caries activity in children,** A. Shrestha, R. Tahir, A. Kishen, National Univ. of Singapore (Singapore) . . . . . [6633-42]

14.45: **Advanced non invasive light activated therapy for root canal disinfection,** A. Kishen, S. George, National Univ. of Singapore (Singapore) . . . . . [6633-43]

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SESSION 4

Room 5 . . . . . Wed. 16.30 to 18.00

Muscle and Vascular Imaging

Chair: **Henricus J. C. M. Sterenborg**, Erasmus Univ. Medical Ctr. (Netherlands)

16.30: **Imaging of metabolic and vascular reactivity in joints with dynamic optical tomography *(Invited Paper)*,** A. H. Hielscher, J. M. Lasker, C. J. Fong, E. Dwyer, Columbia Univ. (USA) . . . . . [6629-22]

17.00: **Non-invasive, depth-selective recovery of fluorescence signals from the adult human head by time-domain measurements,** J. M. Steinbrink, Charité-Univ. Medizin Berlin (Germany); H. Wabnitz, A. Jelzow, Physikalisch-Technische Bundesanstalt (Germany); H. Obrig, Charité-Univ. Medizin Berlin (Germany); R. Macdonald, Physikalisch-Technische Bundesanstalt (Germany) . . . . . [6629-24]

17.15: **Algorithms for muscle oxygenation monitoring corrected for adipose tissue thickness,** D. Geraskin, Univ. of Applied Sciences Koblenz (Germany); P. Platen, J. Franke, Ruhr Univ. Bochum (Germany); M. Kohl-Bareis, Univ. of Applied Sciences Koblenz (Germany) . . . . . [6629-25]

17.30: **Assessment of muscle vascular disease with diffuse light,** G. Yu, T. Durduran, C. Zhou, G. Lech, R. Choe, E. R. Mohler, A. G. Yodh, Univ. of Pennsylvania (USA) . . . . . [6629-26]

17.45: **fDOT imaging of vascular autoregulation in healthy and TBI subjects,** H. L. Graber, SUNY/Downstate Medical Ctr. (USA) and NIRx Medical Technologies, LLC (USA); M. Farber, D. Sreedharan, SUNY/Downstate Medical Ctr. (USA); Y. Pei, NIRx Medical Technologies, LLC (USA); Y. Xu, SUNY/Downstate Medical Ctr. (USA) and NIRx Medical Technologies, LLC (USA); C. H. Schmitz, NIRx Medical Technologies, LLC (USA); G. T. Voelbel, G. R. Wylie, J. Lengenfelder, J. DeLuca, Kessler Medical Rehabilitation Research and Education Corp. (USA); R. L. Barbour, SUNY/Downstate Medical Ctr. (USA) and NIRx Medical Technologies, LLC (USA) . . . . [6629-27]

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Conf. 6632 (TLA)

SESSION 11

Joint Session with WLT—German Scientific Laser Society

Room 11 . . . . . Wed. 16.30 to 18.30

Focussed Laser Effects II

Chairs: **Karsten König**, Fraunhofer-Institut für Biomedizinische Technik (Germany); **Alfred Vogel**, Univ. zu Lübeck (Germany)

16.30: **Laser-mediated perforation of plant cells,** M. M. Wehner, Fraunhofer-Institut für Lasertechnik (Germany); H. Schinkel, Fraunhofer Institut Molekularbiologie und Angewanate Oekologie (Germany); P. Jacobs, Fraunhofer-Institut für Lasertechnik (Germany); S. Schillberg, Fraunhofer Institut Molekularbiologie und Angewanate Oekologie (Germany) . . . . . [6632-47]

16.45: **Optical knocking out of single cells in tumor spheroids *(Presentation Only)*,** A. A. Uchugonova, Fraunhofer-Institut für Biomedizinische Technik (Germany) . . . . . [WLT-78]

17.00: **Dosimetry in cellular optoperforation by real-time monitoring of bubble formation,** N. Linz, V. Horneffer, S. Freidank, A. Vogel, Univ. zu Lübeck (Germany) . . . . . [6632-48]

17.15: **Cost-effective generation of nano- and microeffects in cells and tissues by ns laser pulses,** A. Vogel, N. Linz, S. Freidank, Univ. zu Lübeck (Germany); G. Paltauf, Karl-Franzens-Univ. Graz (Austria) . . . . . [6632-49]

05.30: **3D-Laser assisted processing of biocompatible polymers for biomedical applications on the cellular level *(Presentation Only)*,** M. Stark, IBMT St. Ingbert (Germany) [WLT-79]

17.45: **Laser assisted processing of cross-linked alginat hydrogel *(Presentation Only)*,** F. Ehrhart, IBMT St. Ingbert (Germany) . . . . . [WLT-80]

18.00: **New developments in femtosecond laser corneal refractive surgery *(Presentation Only)*,** R. LeHarzic, JenLab (Germany) . . . . . [WLT-81]

18.15: **Femtosecond laser scanning microscopy and surgery of epiretinal membranes *(Presentation Only)*,** M. Krause, Universitaetskliniken Homburg (Germany) . . . . . [WLT-86]

■ *End of Conference*

Conf. 6633 (BOLS)

SESSION 10

Room BO.R2 . . . . . Wed. 15.00 to 17.30

Biophotonics in Environmental and Security Research

Chair: **Jürgen Popp**, Friedrich-Schiller-Univ. Jena (Germany)

15.00: **Optical sensors in water monitoring *(Invited Paper)*,** G. Gauglitz, Univ. Tübingen (Germany) . . . . . [6633-44]

15.30: **Fast and reliable identification of microorganisms by means of Raman spectroscopy,** P. Roesch, M. K. Harz, M. Krause, U. Neugebauer, Friedrich-Schiller-Univ. Jena (Germany); J. Popp, Friedrich-Schiller-Univ. Jena (Germany) and Institut für Physikalische Hochtechnologie e. V. (Germany) . . . . . [6633-45]

15.45: **A reproducible surface-enhanced Raman spectroscopy approach: online SERS measurements in a segmented microfluidic system,** K. R. Strehle, D. Cialla, Friedrich-Schiller-Univ. Jena (Germany); T. Henkel, G. Mayer, Institut für Physikalische Hochtechnologie e.V. (Germany); J. Popp, Friedrich-Schiller-Univ. Jena (Germany) and Institut für Physikalische Hochtechnologie e.V. (Germany) . . . . . [6633-46]

Coffee Break . . . . . 16.00 to 16.30

16.30: **A passive terahertz camera *(Invited Paper)*,** H. Meyer, T. May, V. Zakosarenko, S. Anders, Institut für Physikalische Hochtechnologie e.V. (Germany); G. Thorwirth, Jena-Optronik GmbH (Germany); E. Kreysa, N. Jethava, Max-Planck-Institut für Radioastronomie (Germany) . . . . . [6633-47]

17.00: **Biosensing with T-ray spectroscopy,** B. M. Fischer, D. Abbott, The Univ. of Adelaide (Australia) . . . . . [6633-48]

Closing Remarks . . . . . 17.15 to 17.30

■ *End of Conference*

Conf. 6628 (DOS)

SESSION 4

Room 11 . . . . . Thurs. 09.15 to 10.00

Devices and Methods for Clinical Application II

Chairs: **Junle Qu**, Shenzhen Univ. (China); **Ralf Brinkmann**, Univ. zu Lübeck (Germany)

09.15: **New method to detect caries via fluorescence,** J. Eberhart, Dürr Dental GmbH & Co. KG (Germany); M. Frentzen, Univ. Bonn (Germany); M. Thoms, Dürr Dental GmbH & Co. KG (Germany) and Univ. of Erlangen (Germany) . . . . . [6628-21]

09.30: **Polarization optical spectroscopy: the technique for puncture diagnosis,** V. A. Kamensky, N. M. Shakhova, P. D. Agrba, A. Mjakov, Institute of Applied Physics (Russia) . . . . . [6628-22]

09.45: **Combined fiber optical-thermal sensor for noninvasive monitoring of blood and human tissue through diffuse scattering and metabolic parameters,** V. A. Saetchnikov, E. A. Tcherniavskaia, Belarusian State Univ. (Belarus); G. Schweiger, Ruhr Univ. Bochum (Germany) . . . . . [6628-23]

Coffee Break . . . . . 10.00 to 10.30

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Conf. 6629 (DOI)

SESSION 5

Room 5 . . . . . Thurs. 08.30 to 10.00

Brain Imaging

Chairs: **Eiji Okada**, Keio Univ. (Japan); **Rainer Macdonald**, Physikalisch-Technische Bundesanstalt (Germany)

08.30: **Modeling of influence of frontal sinus on NIRS signal of brain activation,** D. Yamamoto, Keio Univ. (Japan) . . . . . [6629-28]

08.45: **Optical tomographic imaging of activation of the infant auditory cortex using perturbation Monte Carlo with anatomical a priori information,** J. K. Heiskala, Helsinki Univ. of Technology (Finland) and Consultant (Finland) and Univ. of Helsinki (Finland); K. M. Kotilahti, L. T. Lipiäinen, P. J. Hiltunen, Helsinki Univ. of Technology (Finland) and Univ. of Helsinki (Finland); P. E. Grant, Massachusetts General Hospital (USA) and Consultant (USA); I. T. Nissilä, Massachusetts General Hospital (USA) . . . . [6629-29]

09.00: **Cerebral oxygenation monitoring during cardiac bypass surgery in infants with broad band spatially resolved spectroscopy,** J. Soschiniski, Univ. of Applied Sciences Koblenz (Germany); U. Fischer, Univ. zu Köln (Germany); D. Geraskin, Univ. of Applied Sciences Koblenz (Germany); U. Mehlhorn, G. Bennink, Univ. zu Köln (Germany); M. Kohl-Bareis, Univ. of Applied Sciences Koblenz (Germany)[6629-30]

09.15: **Comparison of various methods to enhance depth selectivity in time-domain brain imaging,** H. Wabnitz, Physikalisch-Technische Bundesanstalt (Germany); A. Liebert, Institute of Biocybernetics and Biomedical Engineering (Poland); D. Contini, L. Spinelli, A. Torricelli, Politecnico di Milano (Italy) . . . . . [6629-31]

09.30: **Time-resolved non-contact diffuse optical tomography measurements with ultra-fast time-correlated single photon counting avalanche photodiodes,** Y. Bérubé-Lauzière, V. Robichaud, É. Lapointe, Univ. de Sherbrooke (Canada) . . . [6629-32]

09.45: **Transient tissue dynamics in the stimulated human brain measured by time-resolved diffusing-wave spectroscopy,** T. Gisler, J. Li, F. Jaillon, G. Dietsche, T. Elbert, B. Rockstroh, G. Maret, Univ. Konstanz (Germany) . . . . . [6629-33]

Coffee Break . . . . . 10.00 to 10.30

Conference 6629 continues this page.

Conf. 6628 (DOS)

SESSION 5

Room 11 . . . . . Thurs. 10.30 to 12.15

Drugs and Analysis of Cells and Body Liquids

Chair: **Georges A. Wagnières**, École Polytechnique Fédérale de Lausanne (Switzerland)

10.30: **Optical pharmacokinetics measurement of photosensitising drug concentrations for photodynamic therapy,** M. R. Austwick, J. Woodhams, C. Elliot-Laize, V. Chalau, A. J. MacRobert, Univ. College London (United Kingdom); I. J. Bigio, Boston Univ. (USA); S. G. Bown, Univ. College London (United Kingdom) . . . . . [6628-25]

10.45: **Study of antiangiogenic drugs by fluorescence imaging and spectroscopy of a contrast agent in mice,** G. Valentini, C. D'Andrea, R. Ferrari, A. Pifferi, R. Cubeddu, Politecnico di Milano (Italy); D. Caronia, M. Martinelli, R. Giavazzi, Istituto di Ricerche Farmacologiche Mario Negri (Italy) . . . . . [6628-57]

11.00: **Fluorescence based fast diagnostics platform for the direct and indirect immunodiagnostic analysis methods,** R. Mannila, VTT Optical Instruments (Finland); T. Pulli, H. K. Saari, K. Tappura, VTT Information Technology (Finland); J. Tuppurainen, I. Vikholm-Lundin, H. Valimaki, VTT Elektroniikka (Finland); A. Niskanen, Ani Biotech Oy (Finland) . . . . . [6628-27]

11.15: **FT-infrared spectroscopic studies of lymphoma, lymphoid, and myeloid leukemia cell lines,** J. Babrah, R. Lush, A. Rye, K. McCarthy, Gloucestershire Hospitals NHS Foundation Trust (United Kingdom); C. Bessant, Cranfield Univ. (United Kingdom); N. Stone, Gloucestershire Hospitals NHS Foundation Trust (United Kingdom) . . . . . [6628-28]

11.30: **Analysis of tissue specific progenitor cell differentiation using FT-IR,** K. Ishii, A. Kimura, T. Kushibiki, K. Awazu, Osaka Univ. (Japan) . . . [6628-29]

11.45: **Alignment techniques for preparation of protein-containing surfactant nematic cells,** M. M. Omelchenko, Institute of Physical Optics (Ukraine) . . . . . [6628-30]

12.00: **Spectral analysis of esophagus cancer using fluorescence and Raman spectroscopy,** D. Wang, Shenyang Ligong Univ. (China) . . . . . [6628-31]

Lunch/Exhibition Break . . . . . 12.15 to 13.45

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SESSION 6

Room 5 . . . . . Thurs. 10.30 to 12.30

Fluorescence Imaging

Chair: **Simon R. Arridge**, Univ. College London (United Kingdom)

10.30: **Time-of-flight non-contact fluorescence diffuse optical tomography with numerical constant fraction discrimination *(Invited Paper)*,** Y. Bérubé-Lauzière, V. Robichaud, Univ. de Sherbrooke (Canada) . . . . . [6629-34]

11.00: **Double labeling optical fluorescence tomography for rodents using a multiwavelength scheme,** R. Bourayou, Charité-Univ. Medicine Berlin (Germany); J. M. Steinbrink, Charité-Univ. Medizin Berlin (Germany); J. Klohs, R. Cordell, P. Bahmani, A. Wunder, U. Lindauer, Charité-Univ. Medicine Berlin (Germany); F. Lehmann, Dyomics GmbH (Germany); A. Villringer, U. Dirnagl, Charité-Univ. Medicine Berlin (Germany) . . . . . [6629-35]

11.15: **360° free space fluorescence molecular tomography using silhouette surface reconstruction,** T. R. Lasser, Munich Univ. of Technology (Germany); N. Deliolanis, A. Soubret, Massachussetts General Hospital (USA); J. Ripoll, Foundation for Research and Technology (Greece); V. Ntziachristos, Massachussetts General Hospital (USA) . . . . . [6629-36]

11.30: **Whole body in vivo examination of small animals by simultaneous X-Rays/optical tomography: comparison between the reconstructions obtained with different types of fluorescent labels,** A. Da Silva, T. Bordy, M. Debourdeau, J. Dinten, P. Peltie, P. Rizo, Lab. d'Electronique de Technologie de l'Information (France) . . . . . [6629-37]

11.45: **Time-domain fluorescence diffuse optical tomography in heterogeneous media,** S. Fortier, F. Leblond, ART Advanced Research Technologies Inc. (Canada) . . . . . [6629-38]

12.00: **Multi-channel time-domain fluorescence mammograph,** A. J. Hagen, O. Steinkellner, D. Grosenick, Physikalisch-Technische Bundesanstalt (Germany); M. Möller, Hochschule fur Technik und Wirtschaft des Saarlandes (Germany); R. Ziegler, T. Nielsen, Philips Research Labs. (Germany); K. Lauritsen, PicoQuant GmbH (Germany); R. Macdonald, H. H. Rinneberg, Physikalisch-Technische Bundesanstalt (Germany) . . . . . [6629-39]

12.15: **Time-resolved imaging of fluorescence inclusions in optically turbid medium,** M. Kacprzak, P. L. Sawosz, A. Liebert, R. Maniewski, Institute of Biocybernetics and Biomedical Engineering (Poland) . . . . . [6629-40]

Lunch/Exhibition Break . . . . . 12.30 to 13.30

Conference 6629 continues page 32.

Conf. 6628 (DOS)

SESSION 6

Room 14C . . . . . Thurs. 13.30 to 15.45

Radiative Transfer and Modelling

Chairs: **Karsten König**, Fraunhofer-Institut für Biomedizinische Technik (Germany); **Martin Stark**, Fraunhofer-Institut für Biomedizinische Technik (Germany)

13.30: **Object localization within turbid slab media using time-resolved transillumination contrast functions: a finite element approach,** V. M. Piron, J. L'Huillier, École Nationale Supérieure d'Arts et Métiers (France) . . . . . [6628-32]

13.45: **Semi-analytical method for rapid calculation of time-resolved reflectance from bi-layered tissue models,** R. H. Wilson, K. Vishwanath, M. Mycek, Univ. of Michigan (USA) . . . . . [6628-33]

14.00: **Computational analysis of light scattering from collagen fiber networks,** D. Arifler, Eastern Mediterranean Univ. (Cyprus); I. Pavlova, The Univ. of Texas/Austin (USA); A. Gillenwater, The Univ. of Texas M.D. Anderson Cancer Ctr. (USA); R. R. Richards-Kortum, Rice Univ. (USA) . . . . . [6628-34]

14.15: **An in vitro study on skin cancer phantoms to test diffuse reflectance spectroscopy's ability to detect depth and thickness variations at several collecting to excitation fiber separations,** M. Amouroux, Ctr. de Recherche en Automatique de Nancy (France) and Ctr. Alexis Vautrin (CAV) (France); G. Diaz Ayil, E. Pery, W. W. Blondel, F. H. Guillemin, Ctr. de Recherche en Automatique de Nancy (France) [6628-35]

14.30: **Physiological spectroscopic imaging for diagnosis of skin cancer,** K. P. Nielsen, A. Bhandari, B. Hamre, L. Zhao, PhotoSense AS (Norway); G. A. Ryzhikov, M. S. Biryulina, Geminali AS (Norway); J. J. Stamnes, PhotoSense AS (Norway); K. H. Stamnes, Balter Inc. (USA); L. Akslen, L. Rustad, Helse Bergen Haukeland Univ. Hospital (Norway) . . . . . [6628-36]

14.45: **Improvements in Alzheimer's disease diagnosis using principle components analysis (PCA) in combination with Raman spectroscopy,** J. K. J. Archer, C. D. Sudworth, The Univ. of Liverpool (United Kingdom); D. M. Mann, Univ. of Manchester (United Kingdom); R. A. Black, The Univ. of Liverpool (United Kingdom); N. Stone, Gloucestershire Royal Hospital (United Kingdom) . . . . . [6628-37]

15.00: **Reflection spectroscopy for assessment of the kinetics of bilirubin and hemoglobin in bruises,** B. Stam, J. de Wit, Univ. van Amsterdam (Netherlands); L. L. Randeberg, Norwegian Univ. of Science and Technology (Norway); M. C. G. Aalders, Univ. van Amsterdam (Netherlands) . . . . . [6628-38]

15.15: **Mathematical model and method for determination of absolute concentration of admixtures in turbid media using diffuse reflectance spectroscopy,** A. V. Lappa, K. V. Dmitriev, Chelyabinsk State Univ. (Russia) . [6628-39]

15.30: **Surface-enhanced Raman scattering (SERS) in single gold nanoparticle dimers,** M. Ringler, T. A. Klar, A. Schwemer, J. Stehr, Ludwig-Maximilians-Univ. München (Germany); A. Nichtl, K. Kürzinger, Roche Diagnostics GmbH (Germany); G. Raschke, Ludwig-Maximilians-Univ. München (Germany); R. T. Phillips, Univ. of Cambridge (United Kingdom); J. Feldmann, Ludwig-Maximilians-Univ. München (Germany) . . . . . [6628-40]

Coffee Break . . . . . 16.00 to 16.30

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SESSION 7

Room 14C . . . . . Thurs. 16.30 to 19.00

Breast Imaging

Chair: **Brian W. Pogue**, Dartmouth College (USA)

16.30: **fDOT for in vivo follow-up of tumor development in mice lungs *(Invited Paper)*,** A. Koenig, L. Hervé, A. Da Silva, J. Dinten, J. Boutet, M. Berger, Lab. d'Electronique de Technologie de l'Information (France); V. Josserand, ANIMAGE (France); J. Coll, Institut Albert Bonniot (France); P. Peltié, P. Rizo, Lab. d'Electronique de Technologie de l'Information (France) . . . . . [6629-41]

17.00: **MRI-guided NIR spectroscopy of breast cancer tumors: pilot studies,** B. W. Pogue, Dartmouth College (USA) . . . . . [6629-42]

17.15: **The twente photoacoustic mammoscope (PAM): first clinical results,** S. Manohar, S. Vaartjes, J. v. Hespen, J. Klaase, F. v. d. Engh, W. Steenbergen, T. G. van Leeuwen, Univ. Twente (Netherlands) [6629-43]

17.30: **Breast cancer detection, characterization, and therapy monitoring using diffuse optical methods,** R. Choe, S. D. Konecky, A. Corlu, K. Lee, C. Zhou, T. Durduran, M. A. Rosen, M. D. Schnall, B. J. Czerniecki, J. C. Tchou, B. Chance, A. G. Yodh, Univ. of Pennsylvania (USA) . . . . . [6629-44]

17.45: **Diffuse correlation/wave spectroscopy for measurement of cerebral blood flow at the intensive care unit,** T. Durduran, C. Zhou, B. Eldow, R. Choe, G. Yu, S. Kasner, B. Cucchiara, J. H. Greenberg, J. A. Detre, A. G. Yodh, Univ. of Pennsylvania (USA) . . . . . [6629-45]

18.00: **Rapid intraoperative diagnosis of sentinel node metastases in breast cancer using elastic scattering spectroscopy scanning,** M. R. Austwick, W. D. Chicken, S. Somasundaram, B. R. Clark, A. Mosse, M. Falzon, G. Kocjan, Univ. College London (United Kingdom); I. J. Bigio, Boston Univ. (USA); S. G. Bown, M. Keshtgar, Univ. College London (United Kingdom) . . . . . [6629-46]

18.15: **Monitoring hemodynamic responses to antivascular therapy and ionizing radiation assessed by diffuse optical spectroscopies,** U. Sunar, Univ. of California/San Diego (USA); S. Makonnen, C. Zhou, H. Wang, G. Yu, T. Durduran, W. M. F. Lee, A. G. Yodh, Univ. of Pennsylvania (USA) . . . . . [6629-47]

18.30: **Radiotherapy dosimetry assessment with optical projection tomography,** G. Zacharakis, Foundation for Research and Technology-Hellas (Greece); A. Papadakis, Univ. Hospital of Heraklion (Greece); F. Zacharopoulou, Univ. General Hospital of Herakleion (Greece); A. Garofalakis, Foundation for Research and Technology-Hellas (Greece); T. Maris, Univ. General Hospital of Herakleion (Greece); J. Ripoll, Foundation for Research and Technology-Hellas (Greece) . . . . . [6629-48]

18.45: **Early prediction of treatment response of head and neck cancers with diffuse optical spectroscopies,** U. Sunar, Univ. of California/San Diego (USA); S. Kim, R. Choe, H. Poptani, H. Quon, T. Durduran, C. Zhou, G. Yu, S. Nioka, B. Chance, A. G. Yodh, Univ. of Pennsylvania (USA) . . . . . [6629-49]

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