

SPIE. BIOPHOTONICS
SOUTH AMERICA



INTERNATIONAL
YEAR OF LIGHT
2015

2015

BIOPHOTONICS SOUTH AMERICA.

**TECHNICAL
PROGRAM**

**CO-LOCATED WITH
IPA CONGRESS 2015**

**IPA (International Photodynamic Association)
Conference 2015**

An international event held every two years, organized by the IPA. One registration gives you access to both events.

IPA CONGRESS

Copacabana Palace Hotel
Rio de Janeiro, Brazil
23-26 May 2015

23-25 May 2015
Copacabana Palace Hotel
Rio de Janeiro, Brazil

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2015 BIOPHOTONICS SOUTH AMERICA

23-25 May 2015
Copacabana Palace Hotel
Rio de Janeiro, Brazil

2015 SYMPOSIUM CHAIRS



Cristina Kurachi
Univ. de São Paulo (Brazil)



Katarina Svanberg
Lund Univ. (Sweden) and South
China Normal Univ. (China)



Bruce Tromberg
Beckman Laser Institute and
Medical Ctr., Univ. of California,
Irvine (USA)

2015 SYMPOSIUM CO-CHAIR



**Vanderlei Salvador
Bagnato**
Univ. de São Paulo (Brazil)

COSPONSORS:

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LOCAL COMMITTEE:

Christina Kurachi
Vanderlei S. Bagnato
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Natalia M. Inada
Sebastiao Pratavieira

University of Sao Paulo - Sao Carlos
Institute of Physics, Department of Physics
and Material Science

On behalf of SPIE and the Organizing Committee, we cordially welcome you to SPIE Biophotonics South America. This new symposium is co-located with the 15th biennial congress of the International Photodynamic Association.

Biophotonics employs the science and technology of photonics to improve the understanding of biological effects and to solve relevant problems in medicine, biology, biotechnology, and environmental research. This fast-growing field includes frontier basic science, technological developments, translational research, and clinical applications, and has yielded several new technologies that are now present in laboratories and clinics worldwide, with more high-potential applications currently under development. In recognition of the global impact of light-based technology, 2015 will be the UNESCO's International Year of Light, which will commemorate and raise awareness of the contributions of optical science to humankind. The Biophotonics South America symposia will be an enthusiastic participant in this worldwide celebration.

This symposium includes both oral and poster presentations with manuscripts published in the proceedings of SPIE. In addition to contributed work, distinguished international experts in the field of biomedical optics will present invited talks.

We hope you enjoy your stay in Rio!

SPIE. BIOPHOTONICS
SOUTH AMERICA

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IN CELEBRATION OF:



**INTERNATIONAL
YEAR OF LIGHT
2015**

Join SPIE in the celebration of the 2015 International Year of Light, which recognizes the importance of the role of light and light-based technologies in our lives, our futures, and in the development of society.

PROCEEDINGS OF SPIE

Full paid registration includes one online proceedings volume.

- Online Proceedings Volume—online access to a single proceedings volume via the SPIE Digital Library. Available as papers are posted.

SPECIAL EVENTS

FREE TUTORIALS

Friday 22 May · Location: Carioca Room

All registered attendees are welcome to attend.

9:00 to 10:30

Vanderlei Bagnato, Cristina Kurachi
Univ. de São Paulo (Brazil)

Light-matter interaction for non-physicists

10:30 to 12:00

Katarzyna Matczyszyn
Wroclaw Univ. of Technology (Poland)

Basis of Photochemistry

14:00 to 15:30

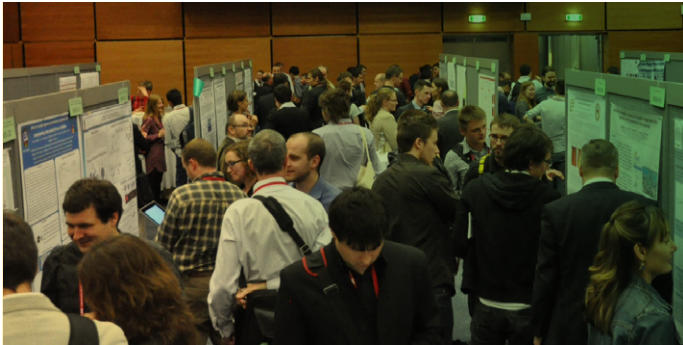
Michael Hamblin
Wellman Ct. for Photomedicine (USA)

Basis of Photobiology and Photomedicine

15:30 to 17:00

Bruce Tromberg
Beckman Laser Institute and Medical Ctr.,
Univ. of California, Irvine (USA)

Optical Spectroscopy and Imaging in Medicine



POSTER VIEWING/COFFEE

Authors will be present during the Poster Session 17:00 to 18:30 hours Saturday and Sunday to answer questions and provide in-depth discussion regarding their papers.

Open to all paid conference attendees.

CONFERENCE DINNER

Sunday 24 May · 19:00 to 21:00 hours

Relax and network with your peers at this conference dinner.

Admission not included with paid conference registration, tickets R\$150 (US\$60).

PLENARY PRESENTATIONS

Saturday 23 May · 14:00 to 14:30 · Location: Crystal Room



Herch Moyses Nussenzveig
UFRJ (Brazil)

Light and life

Sunday 24 May · 9:30 to 10:00



Tuan Vo-Dinh
Fitzpatrick Institute for Photonics, Duke Univ. (USA)

Plasmonic nanosensors and nanoprobe: harnessing the power of photonics for medical diagnostics and therapy

Sunday 24 May · 14:00 to 14:30



Zhongping Chen
Beckman Laser Institute and Medical Clinic (USA)

Acoustic radiation force optical coherence elastography

Monday 25 May · 9:30 to 10:00



Igor Meglinski
Univ. of Otago (New Zealand)

Polarized light in optical biopsy: enabling technologies towards tissue characterization and imaging

Monday 25 May · 14:00 to 14:30



Sharmila Anandasabapathy
Baylor College of Medicine (USA)

Global endoscopy: opportunities and challenges in endoscopic imaging and early cancer detection

DAILY SCHEDULE

FRIDAY 22 MAY	SATURDAY 23 MAY	SUNDAY 24 MAY	MONDAY 25 MAY		
Morning					
FREE TUTORIAL: Light-matter interaction for non-physicists , Vanderlei Bagnato, Cristina Kurachi, Univ. de São Paulo (Brazil), 9:00 to 10:30		PLENARY PRESENTATION II: Plasmonic nanosensors and nanoprobe: harnessing the power of photonics for medical diagnostics and therapy , Tuan Vo-Dinh, Fitzpatrick Institute for Photonics, Duke Univ. (USA), 9:30 to 10:00	PLENARY PRESENTATION IV: Polarized light in optical biopsy: enabling technologies towards tissue characterization and imaging , Igor Meglinski, Alexander Doronin, Callum Macdonald, Michael Eccles, Univ of Otago (New Zealand), 9:30 to 10:00		
		SESSIONS 3 AND 4 RUN CONCURRENTLY	SESSIONS 7 AND 8 RUN CONCURRENTLY		
FREE TUTORIAL: Basis of Photochemistry , Katarzyna Matczyszyn, Wroclaw Univ. of Technology (Poland), 10:30 to 12:00	SESSION 1: Tissue Microscopy Session Chair: Herch Moysés Nussenzveig, UFRJ (Brazil), 10:30 to 12:05	SESSION 3: Tissue Optics , Session Chair: Stefan Andersson-Engels, Lund Univ. (Sweden), 10:30 to 12:05	SESSION 4: Photodiagnosis , Session Chair: Bruce J. Tromberg, Beckman Laser Institute and Medical Clinic (USA), 10:30 to 12:05	SESSION 7: Spectroscopy I , 10:30 to 11:50	SESSION 8: Tissue Optics II , Session Chair: Timothy C. Zhu, The Univ. of Pennsylvania Health System (USA), 10:30 to 11:35
Afternoon					
	Lunch Break, 12:05 to 14:00	Lunch Break, 12:05 to 14:00	Lunch Break, 12:00 to 14:00		
FREE TUTORIAL: Basis of Photobiology and Photomedicine , Michael Hamblin, Wellman Ct. for Photomedicine (USA), 14:00 to 15:30	PLENARY PRESENTATION I Light and life , Herch Moysés Nussenzveig UFRJ (Brazil), 14:00 to 14:30	PLENARY PRESENTATION III Acoustic radiation force optical coherence elastography , Zhongping Chen, Beckman Laser Institute and Medical Clinic (United States), 14:00 to 14:30	PLENARY PRESENTATION V Global endoscopy: opportunities and challenges in endoscopic imaging and early cancer detection , Sharmila Anandasabapathy, Baylor College of Medicine (USA), 14:00 to 14:30		
		SESSIONS 5 AND 6 RUN CONCURRENTLY			
FREE TUTORIAL: Optical Spectroscopy and Imaging in Medicine , Bruce Tromberg, Beckman Laser Institute and Medical Ctr., Univ. of California, Irvine (USA), 15:30 to 17:00	SESSION 2: NanoBiophotonics Session Chair: Tuan Vo-Dinh, Duke Univ. (USA), 15:00 to 16:45	SESSION 5: Clinical Applications , Session Chair: Katarina Svanberg M.D., Lund Univ. Hospital (Sweden), 15:00 to 16:35	SESSION 6: Instrumentation , Session Chair: Airton A. Martin, Univ. do Vale do Paraíba (Brazil), 15:00 to 16:35	Session 9: Spectroscopy II, Session Chair: Zhongping Chen, Beckman Laser Institute and Medical Clinic (United States), 15:00 to 16:35	
Evening					
	Posters, 17:00 to 18:30	Posters, 17:00 to 18:30			
		Conference Dinner, 19:00 to 21:00			

CONFERENCE 9531

LOCATION: PALM ROOM

Saturday - Monday 23 - 25 May 2015 • Proceedings of SPIE Vol. 9531

Biophotonics South America

Conference Chairs: **Cristina Kurachi D.D.S.**, Univ. de São Paulo (Brazil); **Katarina Svanberg M.D.**, Lund Univ. Hospital (Sweden); **Bruce J. Tromberg**, Beckman Laser Institute and Medical Clinic (United States)

Conference Co-Chair: **Vanderlei Salvador Bagnato**, Univ. de São Paulo (Brazil)

Program Committee: **Lilian Tan Moriyama**, Univ. de São Paulo (Brazil); **Natalia Mayumi Inada**, Univ. de São Paulo (Brazil); **Sebastião Pratavieira**, Univ. de São Paulo (Brazil)

SATURDAY 23 MAY

SESSION 1

LOCATION: PALM ROOM SAT 10:30 TO 12:05

Tissue Microscopy

Session Chair: **Herch Moysés Nussenzveig**, UFRJ (Brazil)

- 10:30: **Optical coherence tomography for tissue imaging** (*Invited Paper*), Arnaud Dubois, Lab. Charles Fabry (France) [9531-1]
- 10:50: **Double Stokes Mueller polarimetry to reveal ordered molecular structures within biological tissue**, Masood Samim, Serguei Krouglov, Virginijus Barzda, Univ. of Toronto (Canada) [9531-2]
- 11:05: **Time lapse microscopy of oxidative stress in lung endothelial cells**, Mahsa Ranji, Zahra Ghaniyan, Univ. of Wisconsin-Milwaukee (United States); Morales Delgado, Ioannis N. Papadopoulos, Salma Farahi, Demetri Psaltis, Ecole Polytechnique Fédérale de Lausanne (Switzerland) [9531-3]
- 11:20: **Delivery of ultrashort spatially focused pulses through a multimode fiber for two photon endoscopic imaging**, Christophe Moser, Edgar E. Ganesh G. Konduri, Medical College of Wisconsin (United States) [9531-4]
- 11:35: **Image correlation based method for the analysis of collagen fibers patterns**, Ramon G. Rosa, Sebastião Pratavieira, Cristina Kurachi D.D.S., Univ. de São Paulo (Brazil) [9531-5]
- 11:50: **Tissue characterization using polarization-sensitive second harmonic generation microscopy**, Danielle Tokarz, Princess Margaret Cancer Ctr. (Canada); Richard Cisek, Ahmad Golaraei, Serguei Krouglov, Univ. of Toronto Mississauga (Canada); Roya Navab, Carolyn Niu, Princess Margaret Cancer Ctr. (Canada); Kazuhiro Yasufuku, Toronto General Hospital (Canada); Ming-Sound Tsao, Shingo Sakashita, Princess Margaret Cancer Ctr. (Canada); Sylvia Asa, Toronto General Hospital (Canada); Virginijus Barzda, Univ. of Toronto Mississauga (Canada); Brian C. Wilson, Princess Margaret Cancer Ctr. (Canada) [9531-6]
- Lunch Break Sat 12:05 to 14:00

PLENARY PRESENTATION I

LOCATION: SAT 14:00 TO 14:30



Light and life

Herch Moysés Nussenzveig
UFRJ (Brazil)
[9531-7]

SESSION 2

LOCATION: PALM ROOM SAT 15:00 TO 16:45

NanoBiophotonics

Session Chair: **Tuan Vo-Dinh**, Duke Univ. (United States)

- 15:00: **Non-linear optical visualisation of DNA liquid crystal phases**, Katarzyna Matczyszyn, Joanna Olesiak-Banska, Katarzyna Brach, Wroclaw Univ. of Technology (Poland); Marta Gordel, Wroclaw Univ. of Technology (Poland) and Ecole Normale Supérieure de Cachan (France); Josph Zys, Ecole Normale Supérieure de Cachan (France); Marek Samoc, Wroclaw Univ. of Technology (Poland) [9531-9]
- 15:15: **EGFR-specific nanoprobe biodistribution in mouse models**, Samia B. Fashir, Michael A. Hupman, Dalhousie Univ. (Canada); Maiara L. Castilho, Univ. do Vale do Paraíba (Brazil); Christopher L. D. Lee, Dalhousie Univ. (Canada); Leandro J. Raniero, Univ. do Vale do Paraíba (Brazil); Ian Alwayn, Kevin C. Hewitt, Dalhousie Univ. (Canada) [9531-10]
- 15:30: **Beyond the diffraction limit: subwavelength biophotonics and nanofluidics**, Ahmet A. Yanik, Univ. of California, Santa Cruz (United States) [9531-11]
- 15:45: **Nanoparticle-based contrast agents for dental optical coherence tomography**, Ana K. S. Braz, Renato E. de Araujo, Univ. Federal de Pernambuco (Brazil); Guanying Chen, Tymish Y. Ohulchansky, Earl J. Bergey, Shobha Shukla, Univ. at Buffalo (United States); Anderson S. L. Gomes, Univ. at Buffalo (United States) and Univ. Federal de Pernambuco (Brazil); Paras N. Prasad, Univ. at Buffalo (United States) [9531-12]
- 16:00: **Optoacoustic spectroscopy measurements of water-soluble iron oxide nanoparticles**, Herve K. Nguendon Kenhagho, Daniel C. Gallego, Univ. Carlos III de Madrid (Spain); Leisha M. Armijo, Yekaterina I. Brandt, Marek Osifski, The Univ. of New Mexico (United States); Horacio R. Lamela Rivera, Univ. Carlos III de Madrid (Spain) [9531-13]
- 16:15: **In vivo luminescence imaging and tomography using upconverting nanoparticles as contrast agents**, Stefan Andersson-Engels, Monirehalsadat Mousavi, Hugo Söderlund, Lund Univ. (Sweden); Haichun Liu, National Univ. of Singapore (Singapore) [9531-14]
- 16:30: **Plasmonic cell transfection using micropylam arrays**, Nabih Saklayen, Marinus Huber, Daryl I. Vulis, Harvard Univ. (United States); Marinna Madrid, Harvard School of Engineering and Applied Sciences (United States); Valeria Nuzzo, ECE Paris (France); Eric Mazur, Harvard School of Engineering and Applied Sciences (United States) [9531-15]

POSTERS-SATURDAY

LOCATION: POSTER ROOM SAT 17:00 TO 18:30

Conference attendees are invited to attend the poster session on Saturday. Authors of poster papers will be present to answer questions concerning their papers. Attendees are required to wear their conference registration badges to the poster sessions. Coffee will be served.

Poster authors: please put up your poster before the lunch break on Saturday and plan to stand with your poster during the poster session. Please remove your poster following the poster session.

Comparative clinical study using laser and led-therapy for orofacial pain relief: dental hypersensitivity and cervicogenic headache, Rosane F. Z. Lizarelli, NILO - Nucleo Integrado de Laser em Odontologia (Brazil); Renata C. A. Pizzo, Jose Geraldo Speciali, Vanderlei S. Bagnato, Univ. de São Paulo (Brazil) [9531-63]

Studying of light scattering in aqueous samples should collagen in curcuma pigments presence and nanoparticles, Francisleia Maria L. Silva, Cláudia Adriana Sousa Melo, Cleânio da Luz Lima, Univ. Federal do Piauí (Brazil) [9531-64]

Methylene blue photodynamic therapy in rats wound healing: 21 days follow-up, Vanda S. Carneiro, Marleny E. M. Gerbi, Univ. Federal de Pernambuco (Brazil); Maria Helena C. V. Catão, Univ. Estadual da Paraíba (Brazil); Natália C. Araújo, Rebeca F. Menezes, Univ. Federal de Pernambuco (Brazil) [9531-65]

Clinical study on orofacial photonic hydration using phototherapy and biomaterials, Rosane F. Z. Lizarelli, Natalia DelPadre Grandi, NILO - Nucleo Integrado de Laser em Odontologia (Brazil); Clovis Grecco, Univ. de São Paulo (Brazil); Luciana Almeida-Lopes, NUPEN - Nucleo de Pesquisa e Ensino de Fototerapia nas Ciências da Saúde (Brazil) [9531-66]

Study of near-infrared spectroscopy in porcine mandible focusing to characterize porosity inside bone, Monique A. Nascimento, Aya Sugiura, Patricia A. Ana, Emery C. Lins, Univ. Federal do ABC (Brazil) [9531-67]

Optical proprieties of human radicular dentin: ATR-FTIR characterization, Jose Quinto, Instituto de Pesquisas Energéticas e Nucleares (Brazil) and FMU Laureate (Brazil); Claudia B. Zamataro, Derly A. Dias, Carolina Benetti, Denise M. Zezell, Instituto de Pesquisas Energéticas e Nucleares (Brazil) [9531-68]

Blue led irradiation to hydration of skin, Priscila C. Menezes, Rosane de Fátima Zanirato Lizarelli, Michelle B. Requena, Vanderlei S. Bagnato, Univ. de São Paulo (Brazil) [9531-69]

Excited stated dynamics in self-assembled photosensitizer films, Gustavo T. Valente, Marciana P. Uliana, Cristina Kurachi D.D.S., Univ. de São Paulo (Brazil); Kleber T. de Oliveira, Univ. Federal de São Carlos (Brazil); Francisco E. Gontijo Guimarães, Univ. de São Paulo (Brazil) [9531-70]

Efficacy of the photodynamic inactivation of oral microorganisms with the use of curcumin associated to blue LED (λ 450nm \pm 5nm): in vitro study, Gustavo M. Pires-Santos, Susana C. P. Oliveira-Sampaio, Juliana S. C. Monteiro, Isabele C. V. Castro, Univ. Federal da Bahia (Brazil); Fátima A. A. Zanin, Instituto Brugnera e Zanin (Brazil); Antonio L. Pinheiro, Univ. Federal da Bahia (Brazil) [9531-71]

In vitro evaluation of the efficacy of lethal photosensibilization of oral microorganisms with Photogen associated to red LED (λ 640nm \pm 5nm), Gustavo M. Pires-Santos, Cristiane B. Rosa, Juliana S. C. Monteiro, Fernando J. P. Sampaio, Susana C. P. S. Oliveira, Univ. Federal da Bahia (Brazil); Aldo Brugnera, Instituto Brugnera e Zanin (Brazil); Vanderlei S. Bagnato, Univ. de São Paulo (Brazil); Antonio L. Pinheiro, Univ. Federal da Bahia (Brazil) . . [9531-72]

Evaluation of the effectiveness of photodynamic therapy in the treatment of endodontic deciduous teeth: controlled clinical trial, Ana Carolina C. da Mota, Univ. Nove de Julho (Brazil) [9531-73]

Influence of collection geometry in the fluorescence collected by optical fibers in turbid media, Mônica A. Caracanhas, José Dirceu Vollet-Filho, Lilian T. Moriyama, Sebastião Pratavieira, Vanderlei S. Bagnato, Univ. de São Paulo (Brazil) [9531-74]

Widefield fluorescence imaging and photodynamic therapy in a single LED-based device, Mirian D. Stringasci, Hilde H. Buzzá, José Dirceu Vollet-Filho, Clovis Grecco, Univ. de São Paulo (Brazil); Anderson L. Zanchin, MMOptics (Brazil); Sebastião Pratavieira, Vanderlei S. Bagnato, Univ. de São Paulo (Brazil) [9531-75]

Asymmetry and irregularity border as discrimination factor between melanocytic lesions, David A. Sbrissa, Institute of Physics of São Carlos - University of São Paulo, São Carlos, São Paulo (Brazil); Vanderlei S. Bagnato, Cristina Kurachi, Luciano F. Costa, Institute of Physics of São Carlos - University of São Paulo (Brazil); Gabriela A. Salvio, Hospital Amaral Carvalho (Brazil); Gonzalo Travieso, Institute of Physics of São Carlos - University of São Paulo (Brazil) [9531-76]

Low intensity laser can decrease the mitochondrial activity of tumor cells, Tatiana D. Schalch, Univ. Nove de Julho (Brazil); Maria Helena Fernandes, João Costa Rodrigues, Univ. do Porto (Portugal); Simone A. Moraes, Katia L. Vale, Raquel A. Mesquita-Ferrari, Sandra K. Bussadori, Kristianne Porta S. Fernandes, Univ. Nove de Julho (Brazil) [9531-77]

Puchellin intracellular trafficking process studied by fluorescence correlation spectroscopy, Fernando M. Tsutae, Heline H. Teixeira Moreira, Mohammad Sadraeian, Ana Paula Uliian de Araujo, Francisco E. Gontijo Guimarães, Univ. de São Paulo (Brazil) [9531-78]

Raman spectroscopy analysis of highwavenumber region of oral squamous cell carcinoma and oral dysplasia, Luis Felipe C. Carvalho D.D.S., Univ. do Vale do Paraíba (Brazil) and Dublin Institute of Technology (Ireland); Bruno M. Pera, Univ. do Vale do Paraíba (Brazil); Franck Bonnier D.D.S., Dublin Institute of Technology (Ireland); Kate O'Callaghan D.D.S., Stephen Flint D.D.S., Trinity College Dublin (Ireland); Airton A. Martin, Laurita Santos, Univ. do Vale do Paraíba (Brazil); Jeff O'Sullivan D.D.S., Trinity College Dublin (Ireland); Hugh J. Byrne D.D.S., Fiona M. Lyng D.D.S., Dublin Institute of Technology (Ireland) . . [9531-79]

Optical coherence tomography analysis of prevention of dental erosion in primary teeth, Patricia F. Cassimiro-Silva, Clívia B. Bezerra, Pâmela Jamille B. da Silva, Univ. Federal de Pernambuco (Brazil); Ana Marly A. Maia, Univ. Estadual da Paraíba (Brazil); Mirella E. Massa, Anderson S. L. Gomes, Univ. Federal de Pernambuco (Brazil) [9531-80]

Biostimulation of the membrane protein Na, K-ATPase by low intensity laser, Gustavo S. M. Campos, Rosângela Itri, Pietro Ciancaglini, Univ. de São Paulo (Brazil) [9531-81]

Detection and analysis of tooth wear using laser speckle images, Nelson H. Koshiji, Carolina C. Bortoletto, Renato A. Prates, Sandra K. Bussadori, Marcelo T. Oliveira, Alessandro M. Deana, Univ. Nove de Julho (Brazil) . [9531-82]

Attenuation coefficient of light in skin of BALB/c and C57BL/6 mice, Camila R. Silva, Claudinei Francisco M. Camargo, Débora P. Aureliano, Lucas R. De Pretto, Anderson Zanardi de Freitas, Martha S. Ribeiro, Instituto de Pesquisas Energéticas e Nucleares (Brazil) [9531-83]

Study of the vitamins A, E and C esters penetration into the skin by confocal Raman spectroscopy, Débora B. Isensee, Borys M. Mogilevych, João L. Rangel, Univ. do Vale do Paraíba (Brazil); Valeska Cristina Martinello, Carine Dal Pizzol, grupo boticário (Brazil); Carlos Eduardo de Oliveira Praes, O Boticário (Brazil); Airton A. Martin D.D.S., Univ. do Vale do Paraíba (Brazil) [9531-84]

Grey hair analysis by confocal Raman spectroscopy, Daniele C. Matsuo, Borys M. Mogilevych, João L. Rangel, Débora B. Isensee, Priscila P. Favero, Airton A. Martin, Univ. do Vale do Paraíba (Brazil) [9531-85]

Laser phototherapy effects on muscle relaxation prior to articulator mounting in central relation, Rosely Cordon, CEPI FOU SP (Brazil) . . . [9531-86]

Portable widefield imaging device for ICD-detection of the sentinel lymph node, Angelo B. Govone, Pablo A. Gómez García, Daniel V. Magalhães, Cristina Kurachi D.D.S., Univ. de São Paulo (Brazil) [9531-87]

Evaluation of cotton-fabric bleaching using hydrogen peroxide and blue LED, Bruno Pereira de Oliveira, Lilian T. Moriyama, Vanderlei S. Bagnato, Univ. de São Paulo (Brazil) [9531-88]

Analysis of the spectral variability of the human skin by in vivo confocal Raman spectroscopy, Karen J. S. Grancianinov, Borys M. Mogilevych, João L. Silva, Laurita Santos, Mariane P. Sousa, Airton A. Martin, Univ. do Vale do Paraíba (Brazil) [9531-89]

Histological and biomechanical evaluation of the effect of low level lasers on skin wound healing in rats, Rodrigo Labat Marcos, Univ. Nove de Julho (Brazil) and Univ. de Mogi das Cruzes (Brazil) and Univ. de Lorraine (France); Rachel Barbará M. Dalmaso, Romildo Torres-Silva, Fernando Henrique Cardoso de Sá, Lana Maria Alvares, Patrícia De Almeida, Fernando Gredinare Foster, Rodney Capp Pallotta, Univ. Nove de Julho (Brazil); Jacques Magdalou, Univ. de Lorraine (France); Rodrigo A. B. Lopes-Martins, Univ. de Mogi das Cruzes (Brazil) [9531-90]

The importance of technological advance in the search for quality in health care, Rosely Cordon, CEPI FOU SP (Brazil) [9531-91]

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Effects of low level laser in the morphology of the skeletal muscle fiber during compensatory hypertrophy in plantar muscle of rats, Stella Maris L. Terena, Kristianne Porta S. Fernandes, Sandra K. Bussadori, Agnelo N. Alves, Raquel A. Mesquita-Ferrari, Univ. Nove de Julho (Brazil) [9531-92]

Optimization of parameters for photoinactivation of *E. faecalis* using factorial design, Larissa S. Amaral, Joyce L. Gonçalves, Janice R. Perussi, Univ. de São Paulo (Brazil) [9531-93]

Kinetics of photobleaching of methylene blue in collagen matrix measured with CCD camera, Nasser A. Daghestanli, Giovanna Lepore, Iseli L. Nantes, Erica Miranda, Lucca Cassiavilani, Univ. Federal do ABC (Brazil) [9531-94]

Study of limitation in visualizing dental root canals of bovine specimens imaged by dental transillumination, Camila Provassi, Sergio A. P. Pires, Cristine L. Grandisoli, Patrícia A. Ana, Univ. Federal do ABC (Brazil); Denise M. Zezell, Instituto de Pesquisas Energéticas e Nucleares (Brazil); Emery C. Lins, Univ. Federal do ABC (Brazil) [9531-95]

Confocal Raman study of aging process in diabetes mellitus human volunteers, Liliane P. Pereira, Syed M. Ali, Claudio A. Tellez, Priscila P. Favero, Laurita Santos, Airtón A. Martin, Univ. do Vale do Paraíba (Brazil) [9531-96]

Effect of laserphototherapy on human alveolar bone repair: microtomographic and histomorphometrical analysis, Márcia Maria A. Romão, Univ. de São Paulo (Brazil) and Univ. Nove de Julho (Brazil); Márcia M. Marques, Maria Stella Moreira D.D.S., Univ. de São Paulo (Brazil); Arthur R. Cortes D.D.S., Reinaldo Abdala, Univ. Nove de Julho (Brazil); Cesar A. Lascala D.D.S., Univ. de São Paulo (Brazil) [9531-97]

Multifunctional luminomagnetic bioimaging contrast agents for medical imaging, L. Chris Mimun, Chris Rightsell, G. A. Kumar, Francisco J. Pedraza III, Sergio A. Montelongo, Teja Guda, The Univ. of Texas at San Antonio (United States); Vinayak P. Dravid, Northwestern Univ. (United States); Dhiraj K. Sardar, The Univ. of Texas at San Antonio (United States) [9531-98]

Optimization of chlorin e6 activation utilizing upconversion energy transfer, Francisco J. Pedraza III, Julio C. Avalos, L. Chris Mimun, Dhiraj K. Sardar, The Univ. of Texas at San Antonio (United States) [9531-99]

The effect of phototherapy after a single application for the treatment of temporomandibular joint dysfunction associated with fibromyalgia, Mariana M. da Silva, Univ. Nove de Julho (Brazil); Regiane Albertini, Unifesp (Brasil); Ernesto Cesar Pinto Leal Junior, Sandra Kalil Bussadori, Paulo De Tarso, Rodolfo de Paula Vieira, Universidade Nove de Julho (Brasil); Andrey Jorge Serra, Universidade (Brasil) and Universidade Nove de Julho (Brasil) [9531-100]

Biochemical differentiation between the trypanosoma cruzi and leishmania amazonensis by FT - IR, Josafá C. Aguiar, Josane Mittmann, Paulo Caetano, Juliana Strixino, Leandro J. Raniero, Univ. do Vale do Paraíba (Brazil) [9531-101]

Laserphototherapy effect on the activity of alkaline phosphatase of osteoblasts under different concentrations of alendronate and zoledronic acid, Mariana A. Brozoski, Ivana M. A. Diniz, Maria Cristina Z. Deboni, Márcia M. Marques, Maria da Graça Naclerio-Homem, Univ. de São Paulo (Brazil) [9531-102]

Influence of 660nm diode laser irradiation on human stem cells of deciduous dental pulp (SHEDs), Leila S. Ferreira D.D.S., Univ. de São Paulo (Brazil) and Univ. Ibirapuera (Brazil); Carlos M. Maranduba, Univ. Federal de Juiz de Fora (Brazil); Sueli Patrícia Harumi Myiagi de Cara D.D.S., Univ. de São Paulo (Brazil) and Univ. Cruzeiro do Sul (Brazil); Fernando S. Silva, Univ. Federal de Juiz de Fora (Brazil); Cacio Moura-Netto D.D.S., Univ. Paulista (Brazil); Márcia M. Marques D.D.S., Univ. de São Paulo (Brazil) [9531-103]

Application of time-resolved, intensified camera for fluorescence lifetime imaging of small animals, Piotr Sawosz, Stanislaw Wojtkiewicz, Michal Kacprzak, Institute of Biocybernetics and Biomedical Engineering (Poland); Elzbieta Zieminska, Mossakowski Medical Research Ctr. (Poland); Roman Maniewski, Adam Liebert, Institute of Biocybernetics and Biomedical Engineering (Poland) [9531-104]

Band deconvolution analysis of infrared spectra of the saliva for monitoring physiological stress in athletes, Paulo Caetano, Josafá C. Aguiar, Juliana Strixino, Leandro J. Raniero, Univ. do Vale do Paraíba (Brazil) [9531-105]

Analysis of membrane negative electrical charges and the bond profile of the mannose binding lectin in sickle cells using cationic quantum dots, Carinna N. Lima, Paulo E. Cabral Filho, Beate S. Santos, Adriana Fontes, Patrícia M. M. F. Moura, Univ. Federal de Pernambuco (Brazil) [9531-106]

Shrinkage of porcine cutaneous specimen after formalin fixation and histopathology preparation: utilising OCT for dimensional change measurements, Dara B. Rashed, Eastman Dental Institute (United Kingdom) [9531-107]

Evaluation of effects of refractive index change on new OCT oral instrument using different porcine tissue models, Dara B. Rashed, Eastman Dental Institute (United Kingdom) [9531-108]

Characterization of caries progression on dentin after irradiation with Nd:YAG laser by FTIR spectroscopy and fluorescence imaging, Patrícia A. Ana, Adrienne M. M. Brito D.D.S., Univ. Federal do ABC (Brazil); Denise M. Zezell, Instituto de Pesquisas Energéticas e Nucleares (Brazil); Emery C. Lins, Univ. Federal do ABC (Brazil) [9531-109]

Fiber spectroscopy for cancer diagnostics in-vivo, Viacheslav Artyushenko, art photonics GmbH (Germany) [9531-110]

Application of quantum dots in the diagnosis of neglected diseases, Kilmara H. G. Carvalho, Aluizio G. Brasil Júnior, Univ. do Estado de Amazonas (Brazil); Cynarha D. C. Silva, Andresa P. Oliveira, Valeria Pereira, Maria Edileuza F. Brito, Fundação Oswaldo Cruz (Brazil); Regina Celia B. Q. Figueiredo, Adriana Fontes, Beate S. Santos, Univ. Federal de Pernambuco (Brazil) [9531-111]

Automatic analysis of microscopic images of RBC aggregation, Pablo Menichini, Univ. Nacional de Rosario (Argentina); Mónica Larese, CIFASIS (Argentina); Bibiana D. Riquelme, Univ. Nacional de Rosario (Argentina) [9531-112]

In vitro analysis of erosion progression in dentine lesions after laser irradiation of Nd: YAG and fluoride using optical coherence tomography (OCT), Marcia C. Moraes, Anderson Zanardi de Freitas, Instituto de Pesquisas Energéticas e Nucleares (Brazil); Ana C. C. Aranha, Univ. de São Paulo (Brazil) [9531-113]

Photophysics of tetracarboxy-phthalocyanines and evaluation of the photodynamic efficacy in model systems, Pablo J. Gonçalves, Univ. Federal de Goiás (Brazil); Luciane M. Almeida, Univ. Estadual de Goiás (Brazil); Anderson O. Ribeiro, Univ. Federal do ABC (Brazil); Ana Livia C. Gonçalves, Lais Alonso, Antonio Alonso, Univ. Federal de Goiás (Brazil) [9531-114]

Thermographic diagnostics to discriminate skin lesions: a clinical study, Mirian D. Stringasci, Lilián T. Moriyama, Univ. de São Paulo (Brazil); Ana Gabriela Sálvio M.D., Hospital Amaral Carvalho (Brazil); Vanderlei S. Bagnato, Cristina Kurachi D.D.S., Univ. de São Paulo (Brazil) [9531-115]

SUNDAY 24 MAY

PLENARY PRESENTATION II

LOCATION: CRYSTAL ROOM..... MON 9:30 TO 10:00



**Plasmonic nanosensors and nanoprobe:
harnessing the power of photonics for
medical diagnostics and therapy**

Tuan Vo-Dinh,
Fitzpatrick Institute for Photonics, Duke Univ. (United States)
[9531-42]

Coffee Break 10:00 to 10:30

SESSIONS 3 AND 4 RUN CONCURRENTLY.

SESSION 3

LOCATION: PALM ROOM SUN 10:30 TO 12:05

Tissue Optics

Session Chair: **Stefan Andersson-Engels**, Lund Univ. (Sweden)

10:30: **Optical coherence elastography for depth-resolved biomechanical assessment of tissues**, Kirill V. Larin, Univ. of Houston (United States). [9531-17]

10:50: **Oil-based gel phantom for ultrasound and optical imaging**, Luciana C. Cabrelli, Pedro Pelissari, Lucimara P. Aggarwal, Univ. de São Paulo (Brazil); Alessandro M. Deana, Univ. Nove de Julho (Brazil); Antonio O. Carneiro, Theo Z. Pavan, Univ. de São Paulo (Brazil). [9531-18]

11:05: **Quantitative mapping of retinal blood flow from dynamic fluorescein enhanced fluorescence imaging**, Kenneth M. Tichauer, Micah Guthrie, Logan Hones, Lagnojita Sinha, Illinois Institute of Technology (United States); Keith St. Lawrence, Western Univ. (Canada); Jennifer J. Kang-Mieler, Illinois Institute of Technology (United States) [9531-19]

11:20: **Retrieving the absorption coefficient of epidermis through the trigonometric parametrization of the diffuse reflectance curves**, Freddy J. Narea, Aarón A. Muñoz Morales, Iraida Graterol, Univ. de Carabobo (Venezuela) [9531-20]

11:35: **Clinical Study of ex vivo photoacoustic imaging in endoscopic mucosal resection tissues**, Brian C. Wilson, Liang Lim, Univ. Health Network (Canada); Norman E. Marcon M.D., Catherine J. Streutker M.D., Vladimir V. Iakovlev M.D., St. Michael's Hospital (Canada); Ralph S. Dacosta, Univ. Health Network (Canada); Maria Cirocco, St. Michael's Hospital (Canada); F. Stuart Foster, Sunnybrook Health Sciences Ctr. (Canada) [9531-21]

11:50: **Evaluation of the variable depth resolution of active dynamic thermography on human skin**, Nicholas J. Prindeze, Hilary A. Hoffman, Bonnie C. Carney, Jeremy G. Ardanuy, Alex J. George, Lauren T. Moffatt, Jeffrey W. Shupp M.D., MedStar Washington Hospital Ctr. (United States) [9531-22]

Lunch Break 12:05 to 14:00

SESSION 4

LOCATION: RIO ROOM SUN 10:30 TO 12:05

Photodiagnosis

Session Chair: **Bruce J. Tromberg**,
Beckman Laser Institute and Medical Clinic (United States)

11:05: **A simple dental caries detection system using full spectrum of laser-induced fluorescence**, Renata M. Rocha-Cabral, Instituto de Pesquisas Energéticas e Nucleares (Brazil); Fausto M. Mendes M.D., Univ. de São Paulo (Brazil); Lucia R. Teixeira, Instituto de Pesquisas Energéticas e Nucleares (Brazil) and Univ. Federal de Pernambuco (Brazil) and Inst. Materno Infantil Professor Fernando Figueira (Brazil); Edison P. Maldonado, Denise M. Zezell, Instituto de Pesquisas Energéticas e Nucleares (Brazil) [9531-24]

11:20: **Cadmium-free quantum dot nanoparticles as a novel fluorescence probe for in vivo imaging**, Elnaz Yaghini, Univ. College London (United Kingdom); Helen Turner, Imad Naasani, Lesley Smith, Nanoco Technologies Ltd. (United Kingdom); Alexander J. MacRobert, Univ. College London (United Kingdom) [9531-25]

11:35: **Optical diagnostic and photodynamic therapy of early stage cancer using double integrating sphere**, Shamaraz Firdous Sr., Pakistan Institute of Engineering and Applied Sciences (Pakistan). [9531-26]

11:50: **Combined phosphorescence-holographic approach for singlet oxygen detection in biological media**, Irina V. Semenova, Ioffe Physical-Technical Institute (Russian Federation); Andrew V. Belashov, Ioffe Physical-Technical Institute (Russian Federation) and National Research Univ. of Information Technologies, Mechanics and Optics (Russian Federation); Dina M. Beltukova, Ioffe Physical-Technical Institute (Russian Federation) and Saint-Petersburg State Polytechnical Univ. (Russian Federation); Nikolai V. Petrov, National Research Univ. of Information Technologies, Mechanics and Optics (Russian Federation); Oleg S. Vasyutinskii, Ioffe Physical-Technical Institute (Russian Federation) and Saint-Petersburg State Polytechnical Univ. (Russian Federation) [9531-27]

CONFERENCE 9531

LOCATION: PALM AND RIO ROOMS

PLENARY PRESENTATION III

LOCATION: CRYSTAL ROOM SUN 14:00 TO 14:30



Acoustic radiation force optical coherence elastography (Invited Paper)

Zhongping Chen,
Beckman Laser Institute and Medical Clinic (United States)
[9531-28]

SESSIONS 5 AND 6 RUN CONCURRENTLY.

SESSION 5

LOCATION: PALM ROOM SUN 15:00 TO 16:35

Clinical Applications

Session Chair: **Cristina Kurachi D.D.S.,** Univ. de São Paulo (Brazil)

15:00: **Applications of long-range optical coherence tomography in the head, neck, and upper airway** (*Invited Paper*), Brian J Wong M.D., Giriraj Sharma M.D., Bryan Lemieux, Joe C Jing, Max Wiedmann, Zhongping Chen, Beckman Laser Institute and Medical Clinic (United States) [9531-29]

15:20: **Blood vessels detection during brain needle biopsy using a Monte Carlo based sub-diffuse tomography algorithm**, Julien Pichette, Andréanne Goyette, Marie-Andrée Tremblay, Audrey Laurence, Ecole Polytechnique de Montréal (Canada); Michael Jermyn, McGill Univ. (Canada) and Ecole Polytechnique de Montréal (Canada); Kelvin Mok, Montreal Neurological Hospital and Institute (Canada); Keith D. Paulsen, Thayer School of Engineering at Dartmouth (United States); David W. Roberts M.D., Dartmouth Hitchcock Medical Ctr. (United States); Kevin Petrecca, Montreal Neurological Hospital and Institute (Canada); Brian C. Wilson, Ontario Cancer Institute (Canada); Frédéric Leblond, Ecole Polytechnique de Montréal (Canada) [9531-30]

15:35: **Radiation dosimetry imaging through gated optical detection of Cerenkov emission**, Brian W Pogue, Rongxiao Zhang, Adam Glaser, Jacqueline Andreozzi, David J Gladstone, Thayer School of Engineering at Dartmouth (United States); Lesley A Jarvis, Geisel School of Medicine (United States) [9531-31]

15:50: **Evaluation of eye tissue elasticity by means of sound propagation velocity measuring in vivo**, Joao Crispim, Adriano Bogar, Norma Allemann, Univ. Federal de São Paulo (Brazil); Jarbas Caiado Castro Neto, Univ. de São Paulo (Brazil); Wallace Chamon, Univ. Federal de São Paulo (Brazil) [9531-32]

16:05: **Fluorescence spectroscopy for assessment of liver transplantation grafts concerning graft viability and patient survival**, José D. Vollet Filho, Marina R. da Silveira, Orlando Castro-e-Silva M.D., Vanderlei S. Bagnato, Cristina Kurachi D.D.S., Univ. de São Paulo (Brazil) [9531-33]

16:20: **Trans-rectal diffuse optical tomography to monitor photocoagulation during interstitial photothermal therapy of focal prostate cancer**, Brian C. Wilson, Univ. Health Network (Canada) and Univ. of Toronto (Canada); Jie He, Israel Veilleux, Univ. of Toronto (Canada); Daqing Piao, Oklahoma State Univ. (United States); Robert A. Weersink, Univ. Health Network (Canada) ... [9531-34]

SESSION 6

LOCATION: RIO ROOM SUN 15:00 TO 16:35

Instrumentation

Session Chair: **Airton A. Martin,** Univ. do Vale do Paraíba (Brazil)

15:00: **Conjugated polymer sensors for biology and medicine** (*Invited Paper*), Ifor D. Samuel, Ashu K. Bansal, Shuoben Hou, Eric M. Bowman, Univ. of St. Andrews (United Kingdom) [9531-35]

15:20: **Android phone controlled compact imaging system for biosensing applications**, Khalid M. Arif, Steven Matthews, Adam Naqvi, Massey Univ. (New Zealand) [9531-36]

15:35: **Compact handheld multispectral fluorescence lifetime imaging (FLIM) endoscope for in vivo imaging of oral cancer**, Shuna Cheng, Rodrigo Cuenca Martinez, Bilal H. Malik, Joey M. Jabbour, Yi-Shing L. Cheng D.D.S., John Wright D.D.S., Brian E. Applegate, Kristen C. Maitland, Javier A. Jo, Texas A&M Univ. (United States) [9531-37]

15:50: **Exploring automatic optical tweezers system on the evaluation of erythrocytes elasticity**, Diogenes S. Moura, Univ. Federal Rural de Pernambuco (Brazil); Diego C. N. Silva, Ajoke J. Williams, Marcos A. C. Bezerra, Adriana Fontes, Renato E. de Araujo, Univ. Federal de Pernambuco (Brazil) [9531-38]

16:05: **A compact multi-wavelength optoacoustic system based on high-power diode lasers for biomedical applications**, Luca Leggio, Omar E. de Varona, Pedro Escudero, Univ. Carlos III de Madrid (Spain); Leisha M. Armijo, Yekaterina I. Brandt, The Univ. of New Mexico (United States); Guillermo Carpintero del Barrio, Univ. Carlos III de Madrid (Spain); Marek Osirski, The Univ. of New Mexico (United States); Horacio R. Lamela Rivera, Univ. Carlos III de Madrid (Spain) [9531-39]

16:20: **Development of an in situ controllable polymerization tool and process for hydrogel used to replace nucleus pulposus**, Dominique Pioletti, Andreas Schmocker, Azadeh Khouzabi, Cédric M. El Maleh, Pierre-Etienne Bourban, Ecole Polytechnique Fédérale de Lausanne (Switzerland); Constantin Schizas, Ctr. Hospitalier Univ. Vaudois (Switzerland); Benjamin Gantenbein-Ritter, Samantha Chand, Univ. Bern (Switzerland); Christophe Moser, Ecole Polytechnique Fédérale de Lausanne (Switzerland) [9531-41]

POSTERS-SUNDAY

LOCATION: POSTER ROOM. SUN 17:00 TO 18:30

Conference attendees are invited to attend the poster session on Sunday. Authors of poster papers will be present to answer questions concerning their papers. Attendees are required to wear their conference registration badges to the poster sessions. Coffee will be served.

Poster authors: please put up your poster before the lunch break on Sunday and plan to stand with your poster during the poster session. Please remove your poster following the poster session.

Innovative parameters obtained for digital analysis of microscopic images to evaluate in vitro hemorheological action of anesthetics, Bibiana D. Riquelme, Univ. Nacional de Rosario (Argentina) and Instituto de Física Rosario (Argentina); Analía I. Alet, Sabrina Basso, Marcela Delannoy, Nicolas Alet, Univ. Nacional de Rosario (Argentina); Mabel D'Arrigo, Univ. Nacional de Rosario (Argentina) and Instituto de Física Rosario (Argentina); Horacio V. Castellini, Univ. Nacional de Rosario (Argentina) [9531-23]

In-vivo, percutaneous, needle based, optical coherence tomography of renal masses, Peter G. K. Wagstaff M.D., Daniel M. de Bruin, Patricia J. Zondervan M.D., Otto M. van Delden M.D., Ton G. van Leeuwen, Academisch Medisch Centrum (Netherlands); R. Jeroen A. van Moorselaar M.D., Vrije Univ. Medical Ctr. (Netherlands); Jean J. M. C. H. de la Rosette M.D., M. Pilar Laguna Pes M.D., Academisch Medisch Centrum (Netherlands) [9531-116]

Fluorescence diagnosis of upper respiratory tract infections, Kate C. Blanco, Natalia M. Inada, Cristina Kurachi D.D.S., Vanderlei S. Bagnato, Univ. de São Paulo (Brazil) [9531-117]

Plasmonic enhancement in the photoinactivation of Escherichia Coli using Rose Bengal and gold nanoparticles, Heike Kagel, Julia H. G. Humme, Fachhochschule für Technik und Wirtschaft Berlin (Germany); Edvaldo A. R. Rosa, Pontifícia Univ. Católica do Paraná (Brazil); Rozane F. Turchiello, Arandi G. Bezerra, Univ. Tecnológica Federal do Paraná (Brazil) [9531-118]

Fluorescent liposomes to probe how DOTAP lipid concentrations can change red blood cells homeostasis, Anna Livia L. Matos, Goreti Pereira, Beate S. Santos, Adriana Fontes, Univ. Federal de Pernambuco (Brazil) [9531-119]

Analysis of photodynamic cream effect in dental caries using optical coherence tomography, Patricia Babosa, Univ. Cruzeiro do Sul (Brazil); Anderson Zanardi de Freitas, Instituto de Pesquisas Energéticas e Nucleares (Brazil); Giselle R. de Sant'Anna, Univ. Cruzeiro do Sul (Brazil) [9531-120]

Micro energy-dispersive x-ray fluorescence spectrometry study of dentin coating with nanobiomaterials, Luis E. Soares, Sidnei Nahorny, Fernanda R. Marciano, Univ. do Vale do Paraíba (Brazil); Hudson Zanin, Instituto Nacional de Pesquisas Espaciais (Brazil); Anderson de Oliveira Lobo, Univ. do Vale do Paraíba (Brazil) [9531-121]

The decontamination of oral mouth by antimicrobial photodynamic therapy, Alessandra Nara S. Rastelli D.D.S., Emanuelle T. Carreira, Univ. de São Paulo (Brazil); Clóvis Wesley O. Souza, Univ. Federal de São Carlos (Brazil); Adilson César A. Bernardi, Ctr. Univ. Araraquara (Brazil); Vanderlei S. Bagnato, Univ. de São Paulo (Brazil) [9531-122]

Assembly and characterization of a fluorescence lifetime spectroscopy system for skin lesions diagnostic, Marcelo Saito Nogueira, Sebastião Pratavieira, Camila de Paula D'Almeida, Cristina Kurachi D.D.S., Univ. de São Paulo (Brazil) [9531-123]

In vivo quantitative tumor classification using targeted SERS nanoparticles, Santa Borel, Univ. of Toronto (Canada); Carl J. Fisher, Univ. of Toronto (Canada); Patrick Z. McVeigh, Gang Zheng, Univ. of Toronto (Canada); Brian C. Wilson, Univ. of Toronto (Canada) and Ontario Cancer Institute (Canada) [9531-124]

Monitoring the variation of blood glucose by diffuse reflection spectrophotometry, Iraidá Graterol, Aarón A. Muñoz Morales, Jose Ostos, Freddy J. Narea, Univ. de Carabobo (Venezuela) [9531-125]

Photopolymerization method and device to treat aneurysms, Nikos Stergiopoulos, Andreas Schmockler, Ecole Polytechnique Fédérale de Lausanne (Switzerland); Pascal Mossiman, Ctr. Hospitalier Univ. Vaudois (Switzerland); Blaise Robert, Dominique Pioletti, Christophe Moser, Ecole Polytechnique Fédérale de Lausanne (Switzerland) [9531-126]

The ablation threshold of Er:Cr:YSGG laser radiation in bone tissue, Carolina Benetti, Denise M. Zezell, Instituto de Pesquisas Energéticas e Nucleares (Brazil) [9531-127]

Optical coherence tomography applied to the evaluation of wear of composite resin for posterior teeth, Claudia C. B. O. Mota, Univ. Federal de Pernambuco (Brazil) and Associação Caruaruense de Ensino Superior e Técnico (Brazil); Bruna A. Guerra, Brena S. A. Machado, Adolfo J. Cabral, Anderson S. L. Gomes, Univ. Federal de Pernambuco (Brazil) [9531-128]

Adapting smartphones for low-cost optical medical imaging, Sebastião Pratavieira, José D. Vollet-Filho, Pablo A. Gómez García, Kate C. Blanco, Fernanda M. Carbinatto, Natalia M. Inada, Vanderlei S. Bagnato, Cristina Kurachi D.D.S., Univ. de São Paulo (Brazil) [9531-129]

Diagnosis of occlusal caries lesions in primary molars started in default for spreading of coherent light speckle, Sílvia Regina Garcia Oliván, Sandra K. Bussadori, Alessandro M. Deana, Univ. Nove de Julho (Brazil) [9531-130]

FT Raman spectroscopy in the study of human teeth under medications demineralization, Giselle R. de Sant'Anna, Evelyn Nascimento, Univ. Cruzeiro do Sul (Brazil); Edson A. P. Santos, Univ. do Vale do Paraíba (Brazil); Amanda G. Higa, Cruzeiro do Sul University-UNICSUL (Brazil); Ana Maria do Espírito Santo, Univ. Federal de São Paulo (Brazil); Airton A. Martin D.D.S., Univ. do Vale do Paraíba (Brazil) [9531-131]

Evaluation of the molecular mechanisms of bacterial resistance in Pseudomonas aeruginosa by FTIR microspectroscopy, Icaro M. Barbosa, Paula C. Rodrigues, Rogerio Philippov, Airton A. Martin, Univ. do Vale do Paraíba (Brazil) [9531-132]

Effects of infrared laser on the bone repair assessed by x-ray microtomography (µCT) and histomorphometry, Alessandra R. Paolillo, Univ. Federal de São Carlos (Brazil) and Univ. de São Paulo (Brazil); Fernanda R. Paolillo, Alessandro M. H. Silva, Univ. de São Paulo (Brazil); Rodrigo B. Reiff, Univ. Federal de São Carlos (Brazil); Vanderlei S. Bagnato, José M. Alves, Univ. de São Paulo (Brazil) [9531-133]

New speckle analysis algorithm for flow visualization in optical coherence tomography images, Lucas R. De Pretto, Gesse Eduardo C. Nogueira, Anderson Zanardi de Freitas, Instituto de Pesquisas Energéticas e Nucleares (Brazil) [9531-134]

New speckle analysis method for optical coherence tomography signal based on autocorrelation, Lucas R. De Pretto, Gesse Eduardo C. Nogueira, Anderson Zanardi de Freitas, Instituto de Pesquisas Energéticas e Nucleares (Brazil) [9531-135]

Determination of radiation levels without producing damage to blood cells, Lisbeth Martinez, Constanza Parra, Juan Manuel Quiroga, Univ. Manuela Beltrán (Colombia) [9531-136]

Healing of burns with synthetic membrane and low intensity laser therapy, Daniela F. Silva, Mariana T. Gomes, Natália P. Piccolo, Gabriela R. S. Campos, Cristiane M. França, Raquel A. Mesquita-Ferrari, Kristianne Porta S. Fernandes, Univ. Nove de Julho (Brazil) [9531-137]

Comparative analysis of gingival phenotype in animal and human experimental models using optical coherence tomography in a non-invasive approach, Claudia C. B. O. Mota, Univ. Federal de Pernambuco (Brazil) and Associação Caruaruense de Ensino Superior e Técnico (Brazil); Luana O. Fernandes, Daniela S. Feitosa, Luciana S. A. de Melo, Renata Cimões, Anderson S. L. Gomes, Univ. Federal de Pernambuco (Brazil) [9531-139]

Enhancing the optical contrast in tissue slide analysis using Red, Green and Blue LEDs as microscope light source, Felipe F. Navascues, Ramon G. T. Rosa, Sebastião Pratavieira, Cristina Kurachi D.D.S., Vanderlei S. Bagnato, Univ. de São Paulo (Brazil) [9531-141]

In situ visualization of dermal collagen dynamics during skin burn healing using second-harmonic-generation microscopy, Takeshi Yasui, Eiji Hase, Univ. of Tokushima (Japan); Ryosuke Tanaka, Osaka Univ. (Japan); Tetsuo Iwata, Univ. of Tokushima (Japan); Shuichiro Fukushima, Tsutomu Araki, Osaka Univ. (Japan) [9531-142]

Optical fluorescence spectroscopy to detect hepatic necrosis after normothermic ischemia: animal model, Jorge L. Fernandez, Univ. de São Paulo (Brazil); Renan Romano, Univ. de São Paulo (Brazil); José D. Vollet-Filho, Sebastião Pratavieira, Cristina Kurachi D.D.S., Vanderlei S. Bagnato, Orlando Castro-e-Silva M.D., Ajith K. Sankarankutty M.D., Univ. de São Paulo (Brazil) [9531-143]

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- CdTe quantum dots-transferrin Bioconjugates as fluorescent probes for cancer cells**, Paulo E. Cabral Filho, Ana Paula M. Ramos, Univ. Federal de Pernambuco (Brazil); Pedro M. P. J. Cunha, Raquel P. Costa, Univ. de Coimbra (Portugal); Giovannina A. L. Pereira, Univ. Federal de Pernambuco (Brazil); M. Margarida C. A. Castro, Carlos F. G. C. Galdes, Ana L. C. Cardoso, Maria Conceição P. de Lima, Univ. de Coimbra (Portugal); Beate S. Santos, Adriana Fontes, Univ. Federal de Pernambuco (Brazil) [9531-144]
- Simplified variant of an optical chip to evaluate aggregation of red blood cells**, Martín A. Toderi Cicchini, Bibiana D. Riquelme, Horacio V. Castellini, Univ. Nacional de Rosario (Argentina) [9531-145]
- Nonlinear ellipse rotation method for biophotonics images applications**, Jorge A. Coura Gomes, Emerson C. Barbano, Maria L. Miguez, Sérgio C. Zilio, Lino Misoguti, Univ. de São Paulo (Brazil) [9531-146]
- Fluorescence imaging system for detection of Propionibacterium acnes**, Mardoqueu M. da Costa, Univ. de São Paulo (Brazil); Carla R. Fontana, Univ. Estadual Paulista "Júlio de Mesquita Filho" (Brazil); Luciene M. B. Ázar, UNICEP São Carlos (Brazil); Liliã Ventura, Univ. de São Paulo (Brazil) [9531-147]
- Comparison between two portable devices for widefield PpIX fluorescence during Cervical Intraepithelial Neoplasia treatment**, Fernanda M. Carbinatto, Natália M. Inada, Univ. de São Paulo (Brazil); Wellington Lombardi M.D., Natália F. Cossetin, Cinthia Varoto, Ctr. Univ. Araraquara (Brazil); Cristina Kurachi D.D.S., Vanderlei S. Bagnato, Univ. de São Paulo (Brazil) [9531-148]
- Validation of a new real-time in-situ optical coherence tomography with modified oral probe by comparing with the certified CE marking optical coherence tomography dermatology probe**, Dara B. Rashed, Eastman Dental Institute (United Kingdom) [9531-149]
- Identification of atherosclerosis using aminolevulinic gold nanoparticle assay in faecal specimens**, Karina O. Gonçalves, Mônica N. da Silva, Univ. Federal de São Paulo (Brazil); Lília C. Courrol, Univ. Federal de São Paulo (Brazil) and Instituto de Pesquisas Energéticas e Nucleares (Brazil) [9531-150]
- Characterization of probe contact effects on diffuse reflectance spectroscopy measurements**, Nina Reistad, Aylin Ahadi, Stefan Andersson-Engels, Lund Univ. (Sweden); Mallory Mayjonade, Lund Univ. (Sweden) and Ecole Nationale Supérieure de Mécanique et d'Aérotechnique (France) [9531-151]
- UV protection of Euglenids: computation of the electromagnetic response**, Andres E. Dolinko, Univ. de Buenos Aires (Argentina); Claudio I. Valencia, Univ. Autónoma de Baja California (Mexico); Diana C. Skigin, Marina E. Inchaussandague, Analia Tolivia, Visitación Conforti, Univ. de Buenos Aires (Argentina) [9531-152]
- Gastrointestinal tract disease diagnosis by hyperspectral endoscope**, Sheng C. Liu, Peking Univ. (China) [9531-153]
- Time-resolved and steady-state fluorescence spectroscopy for the assessment of skin photoaging process**, Camila de Paula D'Almeida, Carolina de Paula Campos, Marcelo Saito Nogueira, Sebastião Pratavieira, Cristina Kurachi D.D.S., Univ. de São Paulo (Brazil) [9531-154]
- Study of Lumineer's interfaces by means of optical coherence tomography**, Erica Andrade Borges, Anderson S. L. Gomes, Univ. Federal de Pernambuco (Brazil) [9531-155]
- Diffuse reflectance imaging to predict heterogeneities in turbid optical phantom**, Thereza C. Fortunato, Cristina Kurachi D.D.S., Vanderlei S. Bagnato, Lillian T. Moriyama, Univ. de São Paulo (Brazil) [9531-156]
- Portable fluorescence microendoscope system for smartphones and imaging processing software**, Pablo A. Gómez García, Cristina Kurachi D.D.S., Sebastião Pratavieira, Univ. de São Paulo (Brazil) [9531-157]
- Onycomycosis diagnosis using fluorescence and infrared imaging systems**, Ana Paula Silva, Thereza C. Fortunato, Mirian D. Stringasci, Cristina Kurachi D.D.S., Vanderlei S. Bagnato, Natalia M. Inada, Univ. de São Paulo (Brazil) [9531-158]
- Fluorescence for Optimization of Skin Cancer PDT Treatment**, Kate C. Blanco, Lillian T. Moriyama, Natalia M. Inada, Univ. de São Paulo (Brazil); Ana Gabriela Sálvio M.D., Hospital Amaral Carvalho (Brazil); Cristina Kurachi D.D.S., Vanderlei S. Bagnato, Univ. de São Paulo (Brazil) [9531-159]
- Preparation and optimization of aminolevulinic acid with gold nanoparticles for photothermal and photodynamic therapies applications**, Karina O. Gonçalves, Univ. Federal de São Paulo (Brazil); Thiago C. da Silva, Ricardo E. Samad, Instituto de Pesquisas Energéticas e Nucleares (Brazil); Lília C. Courrol, Univ. Federal de São Paulo (Brazil) [9531-160]
- Development of automated prototype for studying the effect of solar aging on sunglasses**, Leonardo M. Gomes, Liliã Ventura, Univ. de São Paulo (Brazil) [9531-161]
- Diffuse reflectance spectroscopy of liver tissue**, Nina Reistad, Stefan Andersson-Engels, Jan Nilsson, Christian Sturesson, Oskar Vilhelmsson Timmermand, Lund Univ. (Sweden) [9531-162]
- OCT imaging for non-invasive assessment of hemangioma vascular lesions in children**, Lucia R. Teixeira, Instituto de Pesquisas Energéticas e Nucleares (Brazil) and Inst. Materno Infantil Professor Fernando Figueira (Brazil); Anne Latrive, Instituto de Pesquisas Energéticas e Nucleares (Brazil); Anderson S. L. Gomes, Univ. Federal de Pernambuco (Brazil); Denise M. Zezell, Instituto de Pesquisas Energéticas e Nucleares (Brazil) [9531-163]
- Fluorescence multi-scale endoscopy and its applications in the study and diagnosis of gastro-intestinal diseases**, Pablo Aurelio Gómez García, Univ. de São Paulo (Brazil) [9531-164]
- Laser speckle contrast imaging of blood flow from anesthetized mice: correcting drifts in measurements due to breathing movements**, Gesse Eduardo C. Nogueira, Instituto de Pesquisas Energéticas e Nucleares (Brazil); Márcio A. C. Ribeiro, Univ. de São Paulo (Brazil); Juliane C. Campos, Júlio C. B. Ferreira, Univ. de São Paulo (Brazil) [9531-165]
- Examination of the variation of the optical diffusion properties in nanophosphor materials for use in biomedical imaging and instrumentation**, Panagiotis F. Liaparinos, Ioannis S. Kandarakis, Technological Educational Institute of Athens (Greece) [9531-166]

MONDAY 25 MAY

PLENARY PRESENTATION IV

LOCATION: CRYSTAL ROOM..... SUN 9:30 TO 10:00



**Polarized light in optical biopsy:
enabling technologies towards tissue
characterization and imaging**

**Igor Meglinski, Alexander Doronin, Callum
Macdonald, Michael Eccles,**
Univ of Otago (New Zealand)
[9531-16]

Coffee Break 10:00 to 10:30

SESSIONS 7 AND 8 RUN CONCURRENTLY.

SESSION 7

LOCATION: PALM ROOM..... MON 10:30 TO 11:50

Spectroscopy I

Session Chair: **Dr. Denise Zezell**, Univ. de São Paulo (Brazil)

10:30: **Fabry-Perot microstructured polymer optical fibre sensors for opto-acoustic endoscopy** (*Invited Paper*), Christian F. B. Broadway, Daniel C. Gallego, Univ. Carlos III de Madrid (Spain); Getinet T. Woyessa, Technical Univ. of Denmark (Denmark); Andreas Pospori, Aston Univ. (United Kingdom); Guillermo Carpintero del Barrio, Univ. Carlos III de Madrid (Spain); Ole Bang, DTU Fotonik (Denmark); Kate Sugden, Aston Univ. (United Kingdom); Horacio R. Lamela Rivera, Univ. Carlos III de Madrid (Spain) [9531-43]

10:50: **The intracellular trafficking pathway of Antibody-conjugated Pulchellin in HIV-infected cells by confocal microscopy**, Mohammad Sadraeiian, Fernando M. Tsutae, Heline H. T. Moreira, Ana Paula Ulian de Araujo, Univ. de São Paulo (Brazil); Seth H. Pincus, Louisiana State Univ. (United States); Francisco E. Gontijo Guimarães, Univ. de São Paulo (Brazil) [9531-44]

11:05: **In vitro evaluation of ionizing radiation effects in bone tissue by FTIR spectroscopy and dynamic mechanical analysis (DMA)**, Denise M. Zezell, Marcelo N. Veloso, Carolina Benetti, Derly A. Dias, Rodolfo Politano, Instituto de Pesquisas Energéticas e Nucleares (Brazil); Thiago M. Pereira, Univ. Federal de São Paulo (Brazil) [9531-45]

11:20: **Combined Infrared-Fluorescence sensing platform for advanced breath analysis**, Paula R. Fortes, Univ. Estadual de Campinas (Brazil); João F. S. Petrucci, Univ. Estadual Paulista "Júlio de Mesquita Filho" (Brazil); Andreas Wilk, Felicia Seichter, Univ. Ulm (Germany); Arnaldo A. Cardoso, Univ. Estadual Paulista "Júlio de Mesquita Filho" (Brazil); Ivo M. Raimundo, Univ. Estadual de Campinas (Brazil); Boris Mizaikoff, Univ. Ulm (Germany) ... [9531-46]

11:35: **Assessment of mango fruit ripening using fluorescence spectroscopy**, Rahat Ullah, National Institute of Lasers & Optronics (Pakistan) [9531-47]

11:50: **Optoacoustic processing algorithms for intravascular imaging using polymer optical interferometric ultrasonic sensors**, Pablo González, Ehsan Dadrasnia, Omar E. de Varona, Horacio R. Lamela Rivera, Univ. Carlos III de Madrid (Spain) [9531-49]

Lunch Break 12:00 to 14:00

SESSION 8

LOCATION: RIO ROOM MON 10:30 TO 11:35

Tissue Optics II

Session Chair: **Timothy C. Zhu**,
The Univ. of Pennsylvania Health System (United States)

10:30: **Frequency components in time-resolved optical signals measured on the surface of the head for assessment of cerebral autoregulation** (*Invited Paper*), Michal Kacprzak, Piotr Sawosz, Institute of Biocybernetics and Biomedical Engineering (Poland); Wojciech Weigl, Uppsala Univ. Hospital (Sweden); Adam Liebert, Institute of Biocybernetics and Biomedical Engineering (Poland) [9531-50]

10:50: **Infrared irradiation of skin for the development of non-invasive health monitoring technologies**, Gregory E. Triplett, Hisham Abdussamad Abbas, Univ. of Missouri-Columbia (United States) [9531-51]

11:05: **In-vitro visualization of deep blood vessels using laser speckle imaging and PCA**, Roger Chiu, Univ. de Guadalajara (Mexico); Angel Cruz-Arias, Ruben Ramos-Garcia, Julio C. Ramirez-San-Juan, Instituto Nacional de Astrofísica, Óptica y Electrónica (Mexico) [9531-53]

11:20: **3D Monte carlo radiation transfer modeling of photodynamic therapy**, Catherine L. Campbell, Christian T. A. Brown, Kenneth Wood, Univ. of St. Andrews (United Kingdom); Ronan M. Valentine, Ninewells Hospital and Medical School (United Kingdom); Harry Moseley, Univ. of Dundee (United Kingdom) [9531-54]

CONFERENCE 9531

LOCATION: RIO ROOM

PLENARY PRESENTATION V

LOCATION: CRYSTAL ROOM..... MON 14:00 TO 14:30



Global endoscopy: opportunities and challenges in endoscopic imaging and early cancer detection

Sharmila Anandasabapathy,
Baylor College of Medicine (United States)
[9531-55]

SESSION 9

LOCATION: RIO ROOM MON 15:00 TO 16:35

Spectroscopy II

Session Chair: **Zhongping Chen,**
Beckman Laser Institute and Medical Clinic (United States)

15:00: **Multiplexing intracellular redox potential and pH measurements in 3D breast cancer tumour models using SERS nanosensors** (*Invited Paper*), Lauren E. Jamieson, The Univ. of Edinburgh (United Kingdom); Aleksandra Jaworska, Jagiellonian Univ. in Krakow (Poland); Pierre O. Bagnaninchi, Jing Jiang, Kate Fisher, The Univ. of Edinburgh (United Kingdom); David J. Harrison, Univ. of St. Andrews (United Kingdom); Colin J. Campbell, The Univ. of Edinburgh (United Kingdom)..... [9531-56]

15:20: **Biochemical changes in cutaneous squamous cell carcinoma submitted to PDT using ATR-FTIR spectroscopy**, Cássio A. Lima, Instituto de Pesquisas Energéticas e Nucleares (Brazil) and Univ. de São Paulo (Brazil); Carolina Benetti, Instituto de Pesquisas Energéticas e Nucleares (Brazil) and Univ. Federal do ABC (Brazil); Viviane P. Goulart, Instituto de Pesquisas Energéticas e Nucleares (Brazil); Pedro A. Castro, Instituto de Pesquisas Energéticas e Nucleares (Brazil) and Faculdade de Tecnologia de São Paulo (Brazil); Luciana Corrêa, Univ. de São Paulo (Brazil); Denise M. Zezell, Instituto de Pesquisas Energéticas e Nucleares (Brazil)..... [9531-57]

15:35: **Optical diagnosis of HCV infection in human blood sera using Raman spectroscopy**, Mushtaq Ahmed, Muhammad Bilal, National Institute of Lasers & Optronics (Pakistan); Haq Nawaz, Univ. of Agriculture, Faisalabad (Pakistan); Muhammad Saleem, National Institute of Lasers & Optronics (Pakistan). [9531-58]

15:50: **Applications of Raman spectroscopy in life science**, Airton A. Martin, Claudio A. Téllez, Said M. Ali, Lazaro P. Medeiros, Renata A. Canevari, Univ. do Vale do Paraíba (Brazil)..... [9531-59]

16:05: **Optical pathology diagnosis of brain cancer by native fluorescence and Stokes shift spectroscopy**, Yan Zhou M.D., The General Hospital of the Air Force, PLA (China); Cheng-Hui Liu, The City College of New York (United States); Yong He, Beijing Normal Univ. (China); Xinguang Yu M.D., Gangge Cheng M.D., Peng Wang M.D., Cheng Shu M.D., The General Hospital of the Air Force, PLA (China); Yang Pu, Robert R. Alfano, The City College of New York (United States)..... [9531-60]

16:20: **Localization of subsurface fluorescent lesions using surface spectral measurements**, Kolbein Kolste, Stephen C. Kanick, Thayer School of Engineering at Dartmouth (United States); Pablo A. Valdes, Brigham and Women's Hospital (United States) and Boston Children's Hospital (United States); Brian C. Wilson, Univ. of Toronto (Canada); David W. Roberts M.D., Dartmouth Hitchcock Medical Ctr. (United States); Frédéric Leblond, Ecole Polytechnique de Montréal (Canada); Keith D. Paulsen, Thayer School of Engineering at Dartmouth (United States)..... [9531-61]

16:35: **Human dental enamel sterilization by gamma radiation aimed in situ use**, Claudia B. Zamataro, Instituto de Pesquisas Energéticas e Nucleares (Brazil); Carolina Benetti, Instituto de Pesquisas Energéticas e Nucleares (Brazil) and Univ. Federal do ABC (Brazil); Cássio A. Lima, Instituto de Pesquisas Energéticas e Nucleares (Brazil) and Univ. de São Paulo (Brazil); Marcelo N. Veloso, Denise M. Zezell, Instituto de Pesquisas Energéticas e Nucleares (Brazil); Patricia A. Ana, Univ. Federal do ABC (Brazil)..... [9531-62]

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Venue

SPIE Biophotonics South America will take place in this glamorous Art Deco landmark overlooking Copacabana Beach

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Saturday 23 May	8:30 to 17:00
Sunday 24 May	8:30 to 17:00
Monday 25 May	8:30 to 17:00

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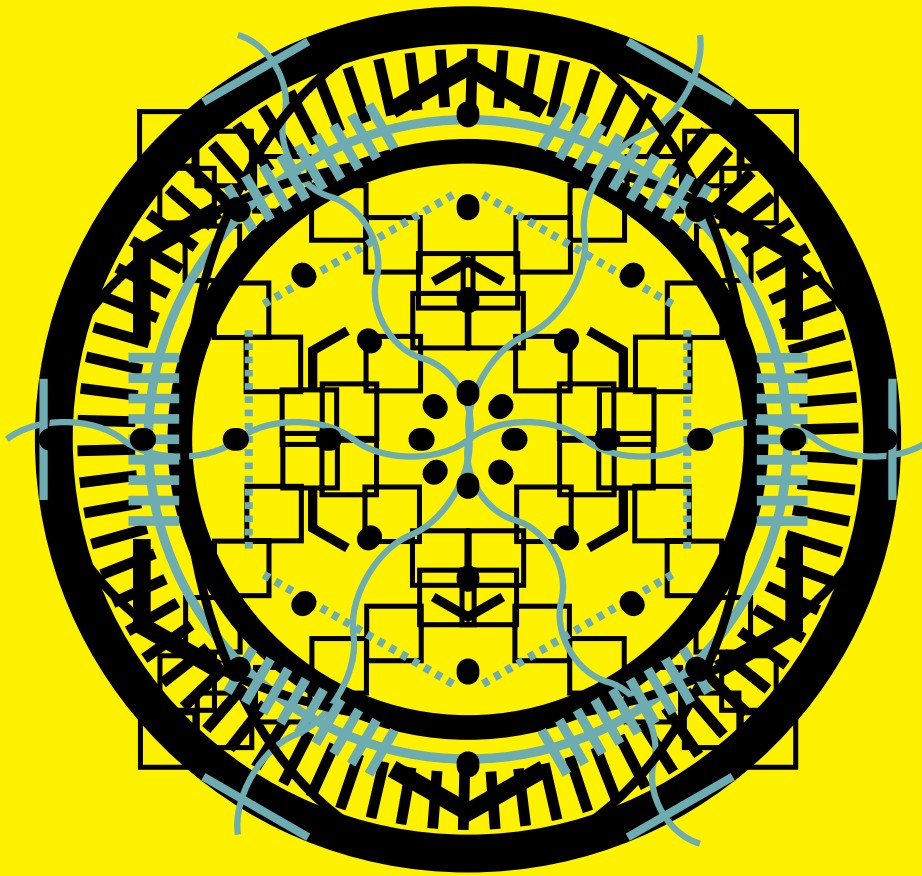
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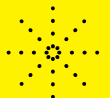
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