Contents

ix  Conference Committee

PHOTO-MECHANICAL INTERACTIONS I

7897 04  Mechanisms of femtosecond laser cell surgery in the low-density plasma regime [7897-03]
K. Kuetemeyer, R. Rezgui, H. Lubatschowski, A. Heisterkamp, Laser Zentrum Hannover e.V. (Germany)

7897 06  Ultrafast laser assisted microinjection enables distinct spatial localization pattern in cells and retina [7897-05]
L. Gu, S. Shivalingaiah, S. K. Mohanty, The Univ. of Texas at Arlington (United States)

7897 07  Endovenous laser ablation with TM-fiber laser [7897-06]
M. F. Somunyudan, N. Topaloglu, Bogazici Univ. (Turkey); M. U. Ergenoglu, Yeditepe Univ. Hospital (Turkey); M. Gulsoy, Bogazici Univ. (Turkey)

PHOTO-MECHANICAL INTERACTIONS II

7897 08  Assessing mechanical properties with intravascular or endoscopic optical coherence tomography [7897-07]
G. Lamouche, National Research Council Canada (Canada); H. Azarnoush, National Research Council Canada (Canada) and McGill Univ. (Canada); S. Vergnole, V. Pazos, C.-E. Bisaillon, P. Debergue, National Research Council Canada (Canada); B. Boulet, McGill Univ. (Canada); R. Diraddo, National Research Council Canada (Canada)

7897 0A  Non-invasive optical modulation of local vascular permeability [7897-09]
M. Choi, C. Choi, KAIST (Korea, Republic of)

7897 0B  Laser-induced detachment and re-orientation of cells [7897-10]
L. Gu, N. Ingle, S. K. Mohanty, The Univ. of Texas at Arlington (United States)

TERAHERTZ FREQUENCY INTERACTIONS

7897 0C  Terahertz pulsed imaging in vivo (Invited Paper) [7897-11]
E. Pickwell-MacPherson, Hong Kong Univ. of Science and Technology (Hong Kong, China)

7897 0D  THz techniques for human skin measurement [7897-12]
Y. Guan, Nagoya Univ. (Japan); K. Mizukoshi, POLA Chemical Industries, Inc. (Japan); K. Suizu, Nagoya Univ. (Japan); K. Kawase, Nagoya Univ. (Japan) and RIKEN (Japan)
Gene expression profile of Jurkat cells exposed to high power terahertz radiation

J. E. Grundt, Air Force Research Lab. (United States); C. C. Roth, General Dynamics Advanced Information Systems, Inc. (United States); B. D. Rivest, M. L. Doroski, J. Payne, B. L. Ibey, Air Force Research Lab. (United States); G. J. Wilmink, Air Force Research Lab. (United States) and National Academy of Sciences (United States)

Accelerating thermal deposition modeling at terahertz frequencies using GPUs

M. Doroski, M. Knight, J. Payne, J. E. Grundt, B. L. Ibey, R. Thomas, W. P. Roach, G. J. Wilmink, Air Force Research Lab. (United States)

Bioheat model evaluations of laser effects on tissues: role of water evaporation and diffusion

D. Nagulapally, R. P. Joshi, Old Dominion Univ. (United States); R. J. Thomas, Air Force Research Lab. (United States)

Effects of He-Ne laser irradiation on red blood cells in vitro

V. H. Ghadage, G. R. Kulkarni, Univ. of Pune (India)

Temperature increase of ex vivo corneas from multiple 2.01-micron incident laser pulses

E. Kelly, T. Johnson, Colorado State Univ. (United States)

Characterizing temperature-dependent photo-oxidation to explain the abrupt transition from thermal to non-thermal laser damage mechanisms at 413 nm

M. L. Denton, C. D. Clark III, G. D. Noojin, TASC, Inc. (United States); L. E. Estlack, Conceptual MindWorks (United States); A. C. Schenk, C. W. Burney, B. A. Rockwell, R. J. Thomas, Air Force Research Lab. (United States)

Detection of familial adenomatous polyposis with polarized spectroscopic imaging and oral vascular density

A. Basiri, The Catholic Univ. of America (United States); D. L. Edelstein, F. M. Giardiello, The Johns Hopkins Univ. (United States); J. C. Ramella-Roman, The Catholic Univ. of America (United States) and The Johns Hopkins Univ. (United States)

Determining the optical properties in a fibrous turbid medium

A. Shuaib, G. Yao, Univ. of Missouri-Columbia (United States)

Detection of cancer cells in prostate tissue with time-resolved fluorescence spectroscopy

C. E. Gerich, J. Opltz, Fraunhofer-Institut für Zerstörungsfreie Prüfverfahren (Germany); M. Toma, M. Sergon, S. Füssel, Universitätsklinikum Carl Gustav Carus Dresden (Germany); R. Nanke, J. Fehre, Siemens AG (Germany); M. Wirth, G. Barefton, Universitätsklinikum Carl Gustav Carus Dresden (Germany); J. Schreiber, Fraunhofer-Institut für Zerstörungsfreie Prüfverfahren (Germany)
7897 OS Behavior of optical properties of coagulated blood sample at 633 nm wavelength [7897-27]
B. Morales Cruzado, S. Vázquez y Montiel, J. A. Delgado Atencio, Instituto Nacional de Astrofísica, Óptica y Electrónica (Mexico)

SPECTROSCOPY AND TRANSPORT THEORY II

7897 OT Vibrational spectroscopy characterization of low level laser therapy on mammary culture cells: a micro-FTIR study [7897-28]
T. D. Magrini, N. Villa dos Santos, M. Pecora Milazzotto, G. Cerchiaro, H. da Silva Martinho, Univ. Federal do ABC (Brazil)

7897 OU Detection of pre-charring optical behavior at a laser catheter-tip in blood: ex vivo and in vivo study [7897-29]
M. Takahashi, A. Ito, T. Kajihara, T. Arai, Keio Univ. (Japan)

7897 OV Three-dimensional angular domain optical projection tomography [7897-30]
E. Ng, Lawson Health Research Institute (Canada) and The Univ. of Western Ontario (Canada); F. Vaseli, Lawson Health Research Institute (Canada), The Univ. of Western Ontario (Canada), and Simon Fraser Univ. (Canada); M. Roumeliotis, Lawson Health Research Institute (Canada) and The Univ. of Western Ontario (Canada); B. Kaminska, Simon Fraser Univ. (Canada); J. J. L. Carson, Lawson Health Research Institute (Canada) and The Univ. of Western Ontario (Canada)

7897 OW Angular-domain imaging of fluorescence sources within tissue phantoms [7897-31]
R. L. K. Cheng, P. Tsui, G. H. Chapman, R. Qarehbarghi, N. Pfeiffer, Simon Fraser Univ. (Canada)

7897OX Optical technique for the investigation of light transport within irradiated tissues [7897-71]
R. Ankri, H. Taitelbaum, D. Fixler, Bar-Ilan Univ. (Israel)

PHOTO-TEHERMAL INTERACTIONS II

7897 OZ Photothermal therapy of cancer cells using magnetic carbon nanoparticles [7897-33]
V. Vardarajan, L. Gu, A. Kanneganti, S. K. Mohanty, A. R. Koymen, The Univ. of Texas at Arlington (United States)

7897 10 Photothermal therapy of acute leukemia cells in the near-infrared region using gold nanorods CD-33 conjugates [7897-34]
A. Liopo, A. Conjusteau, TomoWave Labs., Inc. (United States); M. Konopleva, M. Andreeff, The Univ. of Texas M.D. Anderson Cancer Ctr. (United States); A. Oraevsky, TomoWave Labs., Inc. (United States)

7897 11 Skin damage thresholds with continuous wave laser exposures at the infrared wavelength of 1319 nm [7897-35]
J. W. Oliver, Air Force Research Lab. (United States); C. A. Harbert, G. D. Noojin, I. D. Noojin, K. J. Schuster, A. D. Shingledecker, D. J. Stolarski, TASC, Inc. (United States); S. S. Kumru, Air Force Research Lab. (United States)
**PHOTO-CHEMICAL INTERACTIONS**

7897 12 Metal nanoparticles amplify photodynamic effect on skin cells in vitro [7897-37]
B. Bauer, Univ. of Gothenburg (Sweden); S. Chen, M. Käll, L. Gunnarsson, Chalmers Univ. of Technology (Sweden); M. B. Ericson, Univ. of Gothenburg (Sweden)

7897 13 Laser injury and in vivo multimodal imaging using a mouse model [7897-38]
G. M. Pocock, Air Force Research Lab. (United States); A. Boretsky, P. Gupta, The Univ. of Texas Medical Branch at Galveston (United States); J. W. Oliver, Air Force Research Lab. (United States); M. Motamedi, The Univ. of Texas Medical Branch at Galveston (United States)

7897 14 Optical control of urinary bladder contraction using femtosecond-pulsed laser [7897-39]
J. Yoon, M. Choi, C. Choi, KAIST (Korea, Republic of)

7897 16 No effect of femtosecond laser pulses on DNA, protein, M13, or E. coli [7897-41]
J. C. Wigle, A. Holwitt, Air Force Research Lab. (United States); G. D. Noojin, TASC, Inc. (United States); L. E. Estlack, Conceptual MindWorks, Inc. (United States); K. E. Sheldon, B. A. Rockwell, Air Force Research Lab. (United States)

7897 17 Correlating computational docking predictions with Raman spectroscopy for β-lactoglobulin-porphyrin complexes [7897-42]
J. Parker, L. Brancaleon, The Univ. of Texas at San Antonio (United States)

**IMAGING I**

7897 18 Rotating wall vessel system designed for fluorescent imaging [7897-43]
T. J. Tayag, Texas Christian Univ. (United States); S. D. Dimitrijevich, Univ. of North Texas Health Science Ctr. at Fort Worth (United States); L. C. Del Gallego, P. Kumar, Texas Christian Univ. (United States)

7897 19 Characterization of tissue scaffolds using optics and ultrasound [7897-44]
N. T. Huynh, The Univ. of Nottingham (United Kingdom); N. G. Parker, Univ. of Leeds (United Kingdom); D. He, H. Ruan, B. R. Hayes-Gill, M. L. Mather, J. A. Crowe, F. R. A. J. Rose, The Univ. of Nottingham (United Kingdom); M. J. W. Povey, Univ. of Leeds (United Kingdom); S. P. Morgan, The Univ. of Nottingham (United Kingdom)

7897 1B Validation of artificial skin equivalents as in vitro testing systems [7897-46]
R. Schmitt, RWTH Aachen Univ. (Germany) and Fraunhofer Institute for Production Technology (Germany); U. Marx, Fraunhofer Institute for Production Technology (Germany); H. Walles, L. Schober, Fraunhofer Institute for Interfacial Engineering and Biotechnology (Germany)

**IMAGING II**

7897 1D Electrospun fiber alignment using the radon transform [7897-48]
N. J. Schaub, Michigan Technological Univ. (United States); R. J. Gilbert, Michigan Technological Univ. (United States) and Rensselaer Polytechnic Institute (United States); S. J. Kirkpatrick, Michigan Technological Univ. (United States)
EFFECTS OF LIGHT ON CELLS AND TISSUES

7897 1G Optical methods for diagnostics and feedback control in laser-induced regeneration of spine disc and joint cartilages (Invited Paper) [7897-51]
E. Sobol, A. Sviridov, A. Omelitchenko, O. Baum, Institute on Laser and Information Technologies (Russian Federation) and Arcuo Medical Inc. (United States); A. Baskov, I. Borchshenko, Ctr. for Vertebrology and Orthopedics (Russian Federation) and Arcuo Medical Inc. (United States); V. Golubev, Ctr. for Vertebrology and Orthopedics (Russian Federation); V. Baskov, Ctr. for Vertebrology and Orthopedics (Russian Federation) and Arcuo Medical Inc. (United States)

7897 1J Stretching of red blood cells by optical tweezers quantified by digital holographic microscopy [7897-54]
N. Cardenas, The Univ. of Texas at Arlington (United States); L. Yu, Nanoscope Technologies LLC (United States); S. K. Mohanty, The Univ. of Texas at Arlington (United States)

POSTER SESSION

7897 1K Laser ultrasound characterization of normal and decayed teeth by measuring elastic properties of surface layers [7897-55]
Y. H. El-Sharkawy, A. F. ElSherif, Egyptian Armed Forces (Egypt)

7897 1L VEGF-C as a survival factor for retinal pigment epithelial cells from photothermal stress [7897-56]
B. J. Lavey, K. E. Sheldon, Air Force Research Lab. (United States); L. E. Estlack, Conceptual MindWorks, Inc. (United States); K. J. Schuster, TASC, Inc. (United States); M. D. Barnhart, U.S. Air Force Academy (United States); B. A. Rockwell, Air Force Research Lab. (United States)

7897 1M Analysis on unevenness of skin color using the melanin and hemoglobin components separated by independent component analysis of skin color image [7897-57]
N. Ojima, KAO Corp. (Japan); I. Fujiwara, Chiba Univ. (Japan); Y. Inoue, KAO Corp. (Japan); N. Tsumura, T. Nakaguchi, Chiba Univ. (Japan); K. Iwata, KAO Corp. (Japan)

7897 1N Monte Carlo simulation for light propagation in 3D tooth model [7897-58]
Y. Fu, Sharp Labs. of America, Inc. (United States); S. L. Jacques, Oregon Health & Science Univ. (United States)

7897 1Q Angular-domain spectroscopic imaging of turbid media: derivative analysis [7897-61]
F. Vasefi, Lawson Health Research Institute (Canada), The Univ. of Western Ontario (Canada), and Simon Fraser Univ. (Canada); M. Najiminaini, Lawson Health Research Institute (Canada) and Simon Fraser Univ. (Canada); E. Ng, Lawson Health Research Institute (Canada) and The Univ. of Western Ontario (Canada); A. Chamon-Reig, Lawson Health Research Institute (Canada); B. Kominska, Simon Fraser Univ. (Canada); J. J. L. Carson, Lawson Health Research Institute (Canada) and The Univ. of Western Ontario (Canada)

7897 1S FDTD multi-GPU implementation of Maxwell's equations in dispersive media [7897-63]
M. R. Zunoubi, SUNY, New Paltz (United States); J. Payne, M. Knight, Air Force Research Lab. (United States)
Human skin auto-fluorescence decay as a function of irradiance and skin type [7897-64]
M. P. Debreczeny, MPD Consulting (United States); R. Bates, R. M. Fitch, K. P. Galen, J. Ge, R. B. Dorshow, Covidien Pharmaceuticals (United States)

B. Hatano, Y. Matsumoto, Military Medicine Research Unit, Japan Self-Defense Force (Japan) and Japan Self-Defense Force Central Hospital (Japan); N. Otani, D. Saitoh, S. Tokuno, Y. Satoh, H. Nawashiro, National Defense Medical College (Japan); Y. Matsushita, Military Medicine Research Unit, Japan Self-Defense Force (Japan); S. Sato, National Defense Medical College (Japan)

Error analysis of tissue optical properties determined by double-integrating sphere system and inverse Monte Carlo method [7897-67]
T. Terada, T. Nanjo, N. Honda, K. Ishii, Osaka Univ. (Japan); K. Awazu, Osaka Univ. (Japan), Japan Science and Technology Agency (Japan), Univ. of Fukui (Japan), and Kyoto Univ. (Japan)

Optical Imaging through non-transparent small aquatic creatures with angular-domain imaging [7897-68]
R. L. K. Cheng, P. B. L. Tsui, G. Chiang, G. H. Chapman, Simon Fraser Univ. (Canada)

Photo-induced unfolding of tubulin dimers bound to meso-tetrakis (sulfonatophenyl) porphyrin [7897-69]
B. McMicken, L. Brancaleon, The Univ. of Texas at San Antonio (United States)

Author Index