

Date and Time	September 11 (Monday) / 10:50-12:30
Place	Room B (Manarola)
Session Title	[MB-I] THz Source I
Session Chairs	Kiwon Moon (ETRI, Korea) Alexander Mayorov (Nat'l Univ. of Singapore, Singapore)

MB-I-1

10:50-11:10

[Invited] Introduction into Nonlinear THz Photonics: Basis and their Potential Applications

Alexey Balakin, Peter Solyankin, and Alexander Shkurinov

M. V. Lomonosov Moscow State Univ., Russia

MB-I-2

11:10-11:30

[Invited] Control of Terahertz Yield and Field Vector Orientation in a Two-Colour Femtosecond Filament

O. G. Kosareva¹, N. A. Panov¹, V. A. Andreeva¹, D. E. Shipilo¹, M. N. Esaulkov¹, P. M. Solyankin¹, A. P. Shkurinov¹, Y. Chen², S. L. Chin³, V. A. Makarov¹, and A. B. Savel'ev¹

¹*Lomonosov Moscow State Univ., Russia*, ²*Shanghai Jiao Tong Univ., China*, ³*Universite Laval, Quebec, Canada*

MB-I-3

11:30-11:50

[Invited] Development and Application of Powerful and Stable THz Gyrotrons

M. Glyavin

Inst. of Applied Physics RAS, Russia

MB-I-4

11:50-12:10

[Invited] Off-Axis THz Parametric Oscillator

Yu-Chung Chiu and Yen-Chieh Huang

Nat'l Tsing Hua Univ., Taiwan

MB-I-5

12:10-12:30

[Invited] Magnetophotonics with Mie Resonances in Nanoantennas

Barsukova M.G.¹, Shorokhov A.S.¹, Musorin A.I.¹, Neshev D.N.², Kivshar Y.S.², and Fedyanin A.A.¹

¹*Lomonosov Moscow State Univ., Russia*, ²*The Australian Nat'l Univ., Australia*

Date and Time	September 11 (Monday) / 10:50-12:30
Place	Room C (Vernazza B)
Session Title	[MC-I] Ultrashort Pulsed Laser Processing
Session Chair	Ya Cheng (Shanghai Inst. of Optics and Fine Mechanics, China)

MC-I-1

10:50-11:10

[Invited] A 2 kW Single-Mode Fiber Laser using Bidirectional-Pump Scheme

Fan Zhang, Wenyu Zheng, Pengyang Shi, and Xinhai Zhang

*Southern Univ. of Science and Tech., China***MC-I-2**

11:10-11:30

[Invited] Tailored Femtosecond Bessel Beam for High Aspect-Ratio through Hole DrillingKoji Sugioka¹, Fei He^{1,2}, and Ya Cheng²¹*RIKEN Center for Advanced Photonics, Japan*, ²*Chinese Academy of Sciences, China***MC-I-3**

11:30-11:50

[Invited] Periodic Nano-Texturing by Interference Femtosecond Laser Processing Technique

Y. Nakata, M. Yoshida, K. Osawa, and N. Miyanaga

*Osaka Univ., Japan***MC-I-4**

11:50-12:10

[Invited] Processing of Materials with Shaped Femtosecond Laser PulsesW. Chu¹, Y. Tan¹, and Y. Cheng^{1,2}¹*Chinese Academy of Sciences, China*, ²*East China Normal Univ., China***MC-I-5**

12:10-12:30

[Invited] Multiscale Laser Sintering Technology for Various Applications

D. Kim

POSTECH, Korea

Date and Time	September 11 (Monday) / 10:50-12:30
Place	Room D (Cornelia)
Session Title	[MD-I] Laser-Matter Interaction I
Session Chair	Seong-Hee Park (Korea Univ., Korea)

MD-I-1

10:50-11:10

[Invited] The Multi-Functional High Power Laser Platform in NLHPLP

Jianqiang Zhu, Jian Zhu, Xuechun Li, Baoqiang Zhu, Weixin Ma, Dean Liu, Cheng Liu, Xingqiang Lu, Wei Fan, Zhigang Liu, Dongfeng Zhao, Shenlei Zhou, Yanli Zhang, Li Wang, Mingying Sun, Bingyan Wang, Zhaoyang Jiao, Lei Ren, Guowen Zhang, Jie Miao, and Zunqi Lin
Shanghai Inst. of Optics and Fine Mechanics, China

MD-I-2

11:10-11:30

[Invited] High Intensity ($>10^{22}$ W/cm²), High Contrast ($<10^{-11}$), Repetitive (0.1 Hz) J-KAREN-P Laser Facility at QST

H. Kiriya, M. Nishiuchi, A. S. Pirozhkov, Y. Fukuda, H. Sakaki, A. Sagisaka, N. P. Dover, K. Kondo, K. Nishitani, K. Ogura, M. Mori, Y. Miyasaka, M. Kando, and K. Kondo
Nat'l Inst.s for Quantum and Radiological Science and Tech., Japan

MD-I-3

11:30-11:50

[Invited] Efficient Coupling of Sub-PW Laser Pulse with Solid Target at PEARL Facility

A. Soloviev¹, K. Burdonov¹, S. N. Chen^{1,2}, A. Ereemeev¹, S. Pikuz³, G.V. Pokrovskiy³, T. A. Pikuz³, G. Revet^{1,2}, A. Sladkov¹, V. Ginzburg¹, E. Khazanov¹, A. Kuzmin¹, D. K. Batheja⁴, S. Mironov¹, R. Osmanov¹, I. Shaykin¹, A. Shaykin¹, I. Yakovlev¹, M. Starodubt¹, and J. Fuchs^{1,2}
¹Inst. of Applied Physics of the Russian Academy of Sciences, Russia, ²Université Paris-Saclay, France, ³Joint Inst. for High Temperatures Russian Academy of Science (RAS), Russia, ⁴Inst. of Physics of the Czech Academy of Sciences, Czech Republic

MD-I-4

11:50-12:10

[Invited] Particle Acceleration by the High Intensity ($<10^{22}$ W/cm²), High Contrast ($<10^{-11}$), Repetitive (0.1 Hz) J-KAREN- P Laser

M. Nishiuchi¹, H. Kiriya¹, H. Sakaki¹, N.P. Dover¹, A. S. Pirozhkov¹, Y. Fukuda¹, K. Kondo¹, T. Miyahara^{1,2}, A. Sagisaka¹, M. A. Alkhimova³, T. A. Pikuz^{3,4}, A. Ya. Faenov⁴, K. Ogura¹, T. Zh. Esirkepov¹, Y. Watanabe², J. Koga¹, S. V. Bulanov¹, M. Kando¹, and K. Kondo¹
¹Nat'l Inst.s for Quantum and Radiological Science and Tech. (QST), Japan, ²Kyushu Univ., Japan, ³Russian Academy of Sciences, Russia, ⁴Osaka Univ., Japan

MD-I-5

12:10-12:30

[Invited] Laser Pulses Interaction with Solid and Liquid Materials: Applications to Biomedical, Mechanical and Chemical Top Technologies

Ion N. Mihailescu and Carmen Ristoscu
INFLPR, Romania

Date and Time	September 11 (Monday) / 13:45-15:20
Place	Room B (Manarola)
Session Title	[MB-II] THz Source II
Session Chair	Olga Kosareve (Lomonosov MSU, Physics Faculty, Russia)

MB-II-1

13:45-14:05

[Invited] On-Chip Picosecond Pulses in 2DEG and Graphene

A. S. Mayorov¹, J. B. Wu², N. Hunter², O. Sydoruk³, C. Russell², C. D. Wood², D. Mistry², L. H. Li², W. Muchenje², M. C. Rosamond², L. Chen², E. H. Linfield², A. G. Davies², and J. E. Cunningham²
¹Nat'l Univ. of Singapore, Singapore, ²Univ. of Leeds, UK, ³Imperial College London, UK

MB-II-2

14:05-14:25

[Invited] Tunable Continuous Wave Terahertz Generation using Monolithic Integrated Dual-Mode DFB Laser

Hyun-Soo Kim, Eui Su Lee, Donghun Lee, Kiwon Moon, Sang-Pil Han, Il-Min Lee, and Kyung Hyun Park
 ETRI, Korea

MB-II-3

14:25-14:45

[Invited] Nano-Electrode Photonic Devices for the Generation and Detection of Pulse and Continuous-Wave THz Radiation

Kiwon Moon, Il-Min Lee, Eui Su Lee, Dong Woo Park, Hyun Soo Kim, Jeong-Woo Park, Sang-Pil Han, Kyeong Sun Choi, and Kyung Hyun Park
 ETRI, Korea

MB-II-4

14:45-15:05

[Invited] Resonant Tunneling Diodes for THz Applications

Jaeyoung Kim¹, Toshikazu Mukai¹, Sebastian Diebold², Masayuki Fujita², and Tadao Nagatsuma²
¹ROHM Co., Ltd., Japan, ²Osaka Univ., Japan

Date and Time	September 11 (Monday) / 13:45-15:20
Place	Room C (Vernazza B)
Session Title	[MC-II] Extreme Ultrashort Pulse Source
Session Chair	Minglie Hu (Tianjin Univ., China)

MC-II-1

13:45-14:05

[Invited] Next Generation High Harmonic Sources

E. J. Takahashi, N. Kanda, Y. Fu, B. Xue, and K. Midorikawa
RIKEN, Japan

MC-II-2

14:05-14:25

[Invited] Atmospheric Applications of Ultrashort-Pulse Lasers

Pavel Polynkin
Univ. of Arizona, USA

MC-II-3

14:25-14:45

[Invited] High Order Harmonic Generation by Tunable Laser Mid-Infrared Pulsed in Solids: New Opportunities for Spectroscopy of Electron Band Structure

A. B. Fedotov^{1,2}, A. A. Lanin^{1,2}, E. A. Stepanov^{1,2}, and A. M. Zheltikov^{1,2,3}

¹*M. V. Lomonosov Moscow State Univ., Russia*, ²*Russian Quantum Center, Russia*, ³*Texas A&M Univ., USA*

MC-II-4

14:45-15:00

Anomalous Broadening and Shift of Emission Lines in Femtosecond Laser Induced Plasma Filament

A. Ilyin^{1,2}, S. Golik^{1,2}, K. Shmirko^{1,2}, A. Mayor^{1,2}, and D. Proschenko^{2,3}

¹*Inst. of Automation and Control Processes, Russia*, ²*Far Eastern Federal Univ., Russia*, ³*Maritime State Univ., Russia*

MC-II-5

15:00-15:15

Novel Array Detectors for Overcoming the Dosimetry Challenges of Measuring Laser Accelerated Short Pulse Charged Particle Beams – Overview of the ELIDOSE Project

R. A. Vasilache¹, M. A. Popovici², M. Straticiu³, D. C. Dumitras⁴, C. E. Matei⁴, and M. Petrus⁴

¹*Canberra Packard Ltd., Romania*, ²*Politechnica Univ. of Bucharest, Romania*, ³*IFIN-HH, Romania*, ⁴*INFLPR, Romania*

Date and Time	September 11 (Monday) / 13:45-15:20
Place	Room D (Cornelia)
Session Title	[MD-II] Laser-Matter Interaction II
Session Chair	Alexey Kucherik (Stoletov Vladimir State Univ., Russia)

MD-II-1

13:45-14:05

[Invited] High Intensity x-ray Laser - Matter InteractionsByoung-ick Cho^{1,2}¹GIST, Korea, ²IBS, Korea**MD-II-2**

14:05-14:25

[Invited] Laser-Induced Damage Thresholds of Metals: Comparison of Air and Water Environments

A. V. Bulgakov, S. V. Starinskiy, and Yu. G. Shukhov

*S.S Kutateladze Inst. of Thermophysics SB RAS, Russia***MD-II-3**

14:25-14:45

[Invited] High Power THz Radiation from Laser-Plasma Interaction

Min Sup Hur

*UNIST, Korea***MD-II-4**

14:45-15:05

[Invited] Investigating Optical Properties of Metals and Alloys in Solid and Liquid State with High Temperature Ellipsometry

M. Schmid, S. Zehnder, P. Cam, P. Schwaller, and B. Neuenschwander

*Bern Univ. of Applied Science, Switzerland***MD-II-5**

15:05-15:20

The Role and Characteristics of Intra-Band Absorption in Ablation of Optical Crystals by Ultra-Short Laser Pulses: Dominating MechanismsSergey Klimontov^{1,2}, Stéphane Guizard³, Nikita Fedorov⁴, Allan Bildé³, and Alexandros Mouskeftraras²¹General Physics Inst. of the Russian Academy of Sciences, Russia, ²Nat'l Research Nuclear Univ."MEPhI", Russia, ³Laboratoire des Solides Irradiés, Ecole Polytechnique, France, ⁴Université

Bordeaux I, France

Date and Time	September 11 (Monday) / 15:35-17:10
Place	Room B (Manarola)
Session Title	[MB-III] Photoacoustic Imaging and Sensing
Session Chair	Chulhong Kim (POSTECH, Korea)

MB-III-1

15:35-15:55

[Invited] Combined Photoacoustic and Near-Infrared Optical Tomography for Quantitative Blood Oxygenation Measurements

L. Ulrich¹, L. Ahnen², K. G. Held¹, M. Jaeger¹, S. Sanchez Majos², M. Wolf², H.G Akarcay¹, and M. Frenz¹

¹Univ. of Bern, Switzerland, ²Univ. Hospital Zurich, Switzerland

MB-III-2

15:55-16:15

[Invited] Listening to Light and Seeing Through: In Vivo Multiscale Photoacoustic Imaging

Chulhong Kim

POSTECH, Korea

MB-III-3

16:15-16:35

[Invited] Principal Spectrum Decomposition in Photoacoustic Imaging

B. Wang and C. Ma

Tsinghua Univ., China

MB-III-4

16:35-16:55

[Invited] Molecular Photoacoustic Imaging

Changho Lee^{1,2}

¹Chonnam Nat'l Univ. Medical School, Korea, ²Hwasun Hospital, Korea

Date and Time	September 11 (Monday) / 15:35-17:10
Place	Room C (Vernazza B)
Session Title	[MC-III] Biophotonics V
Session Chair	Jeehyun Kim (Kyungpook Nat'l Univ., Korea)

MC-III-1

15:35-15:55

[Invited] Optical Multiplexing of Off-Axis Digital Holograms and its Applications

Natan T. Shaked

*Tel Aviv Univ., Israel***MC-III-2**

15:55-16:15

[Invited] Comprehensive Label-Free Intracoronary Optical Imaging

H. Yoo

*Hanyang Univ., Korea***MC-III-3**

16:15-16:35

[Invited] Intraoperative Optical Coherence Tomography Probe with Augmented Reality for Surgical Applications

Muhammad Faizan Shirazi and Jeehyun Kim

*Kyungpook Nat'l Univ., Korea***MC-III-4**

16:35-16:50

[Invited] Subtractive and Additive Processing of Biocompatible Materials using Femtosecond Laser

Mitsuhiro Terakawa, Akimichi Shibata, Manan Machida, and Yasutaka Nakajima

Keio Univ., Japan

Date and Time	September 11 (Monday) / 15:35-17:10
Place	Room D (Cornelia)
Session Title	[MD-III] Advanced Display
Session Chair	Osamu Matoba (Kobe Univ., Japan)

MD-III-1

15:35-15:55

[Invited] Highly Efficient Top Emission OLED Devices for Display Application

Mi Jin Park and Jang Hyuk Kwon

Kyung Hee Univ., Korea

MD-III-2

15:55-16:15

[Invited] Recent Researches on Three-Dimensional Screen for Projection-Type Three-Dimensional Display

Sung-Wook Min and Young Min Kim

Kyung Hee Univ., Korea

MD-III-3

16:15-16:35

[Invited] Multi-Modal Aerial Information Display for Next Generation Digital Signage

H. Yamamoto, T. Okamoto, and R. Kujime

Utsunomiya Univ. and JST, ACCEL, Japan

MD-III-4

16:35-16:55

[Invited] Ultra Wide Vision for Immersive Live Broadcasting

Jeongil Seo, Joo Myoung Seok, Yongju Cho, Hyun Cheol Kim, and Sangwoo Ahn

ETRI, Korea

MD-III-5

16:55-17:15

[Invited] Switchable Micro-Lens Array for 3D Displays and 3D Imaging

M. -K. Park, K. -I. Joo, H. Park, S. -D. Lee, and H. -R. Kim

Kyungpook Nat'l Univ., Korea

Date and Time	September 11 (Monday) / 17:25-18:45
Place	Room B (Manarola)
Session Title	[MB-IV] THz Spectroscopy
Session Chair	Kee Won Moon (ETRI, Korea)

MB-IV-1

17:25-17:45

[Invited] THz Near-Field Microscopy

Haewook Han
POSTECH, Korea

MB-IV-2

17:45-18:05

[Invited] Graphene in Strong Electromagnetic Fields

Yu. A. Sergeev, I. V. Oladyskin, S. B. Bodrov, A. I. Korytin, M. D Tokman, and A. N. Stepanov
Inst. of Applied Physics of the Russian Academy of Sciences, Russia

MB-IV-3

18:05-18:25

[Invited] Extreme Nonlinear Optics in the THz Regime

T. Ozaki
INRS-EMT, Canada

MB-IV-4

18:25-18:45

[Invited] Enhanced Crystalization of Polymer by High-Power THz Radiation

C. Otani¹, H. Hoshina¹, H. Suzuki¹, M. Nagai², K. Kawase², A. Irizawa², and G. Isoyama²
¹RIKEN, Japan, ²Osaka Univ., Japan

Date and Time	September 11 (Monday) / 17:25-18:45
Place	Room C (Vernazza B)
Session Title	[MC-IV] Biophotonics VI
Session Chair	Valery Tuchin (Saratov Nat'l Research State Univ., Russia)

MC-IV-1

17:25-17:45

[Invited] Optical Study of the Interaction of Fe₂O₃ Nanoparticles with Human Erythrocytes and Their Effect on Blood Microrheology

 A. E. Lugovtsov¹, E. A. Shirshin¹, V. I. Kochubey^{2,3}, V. V. Tuchin^{2,3,4}, and A. V. Priezzhev¹
¹*M.V. Lomonosov Moscow State Univ., Russia*, ²*Saratov Nat'l Research State Univ., Russia*,

³*Nat'l Research Tomsk State Univ., Russia*, ⁴*Inst. of Precision Mechanics and Control RAS, Russia*
MC-IV-2

17:45-18:05

[Invited] Time-Dependent Analysis and Noise Suppression of Surface Enhanced Raman Spectroscopy using Optical Code Modulation

 Wonkyoung Lee^{1,2}, Bong Kyu Kim¹, and Ki-Hun Jeong²
¹*ETRI, Korea*, ²*KAIST, Korea*
MC-IV-3

18:05-18:20

Optical Clearing of Costal Cartilage on $\lambda=532$ nm and 1.56 μ m

 Yu. Alexandrovskaya^{1,2}, K. Sadovnikov³, and E. Sobol^{1,2}
¹*Inst. of Applied Physics of the Russian Academy of Sciences, Russia*, ²*Inst. of Photon Technologies, Federal Scientific Research Centre "Crystallography and Photonics" of the Russian Academy of Sciences, Russia*, ³*M.V. Lomonosov M Moscow State Univ., Russia*
MC-IV-4

18:20-18:35

The Changes of Cerebral Hemodynamics during Dexmedetomidine Induced Sedation in a Rat Model

 Seonghyun Kim¹, Jayyoung Bae¹, Teo Jeon Shin², and Jae Gwan Kim¹
¹*GIST, Korea*, ²*Seoul Nat'l Univ., Korea*

Date and Time	September 11 (Monday) / 17:25-18:45
Place	Room D (Cornelia)
Session Title	[MD-IV] Advanced lasers and photonic devices
Session Chair	Tetsuya Kawanishi (Waseda Univ., Japan)

MD-IV-1

17:25-17:45

[Invited] Radio-Over-Fiber for Future Mobile and Advanced ImagingTetsuya Kawanishi^{1,2}, Atsushi Kanno², and Naokatsu Yamamoto²¹Waseda Univ., Japan, ²Nat'l Inst. of Information and Communications Tech., Japan**MD-IV-2**

17:45-18:05

[Invited] Defective WTe₂ Microflakes for Femtosecond Fiber Laser Mode-LockingJ. H. Lee¹, J. Koo¹, J. Lee¹, Y. I. Jhon², J. Park³, and Y. M. Jhon²¹Univ. of Seoul, Korea, ²KIST, Korea, ³KOPTI, Korea**MD-IV-3**

18:05-18:25

[Invited] High-Speed Transmission using Directly Modulated Lasers

Hoon Kim, S. H. Bae, M. Kim, and Y. Chung

KAIST, Korea

MD-IV-4

18:25-18:45

[Invited] Pulsed Sodium Guide Star Laser based on Raman Fiber Amplifiers

Yan Feng, Lei Zhang, and Xuezhong Yang

Chinese Academy of Sciences, China

Date and Time	September 12 (Tuesday) / 10:50-12:30
Place	Room D (Cornelia)
Session Title	[TB-I] Novel Laser Architecture
Session Chairs	Hong Jin Kong (KAIST, Korea) Yung-Fu Chen (Nat'l Chiao Tung Univ., Taiwan)

TB-I-1

10:50-11:10

[Invited] Efficient 810-nm LED-Side-Pumped Nd:YAG Laser

Kuan-Wei Su, Chun-Yu Cho, and Yung-Fu Chen

Nat'l Chiao Tung Univ., Taiwan

TB-I-2

11:10-11:30

[Invited] Room-Temperature-Bonding Technique for Developing New Laser and Wavelength-Conversion Devices

Ichiro Shoji

Chuo Univ., Japan

TB-I-3

11:30-11:50

[Invited] Broad Expansion of Optical Frequency Combs by Self-Raman Scattering in Coupled-Cavity Self-Mode-Locked Monolithic Lasers

Y. F. Chen¹, M. T. Chang¹, H. C. Liang², and K. W. Su¹

¹*Nat'l Chiao Tung Univ., Taiwan*, ²*Nat'l Taiwan Ocean Univ., Taiwan*

TB-I-4

11:50-12:10

[Invited] Tailoring Laser Beam Profiles from a Dual-Cavity Laser Configuration

J. W. Kim, D. J. Kim, and S. H. Noh

Hanyang Univ., Korea

TB-I-5

12:10-12:30

[Invited] High Power Fiber Lasers and Beam Combining Technology

B. He, Y. Qi, Y. Yang, H. Shen, Z. Quan, X. Chen, K. Liu, and J. Zhou

Shanghai Inst. of Optics and Fine Mechanics, Chinese Academy of Sciences, China

Date and Time	September 12 (Tuesday) / 10:50-12:30
Place	Room C (Vernazza B)
Session Title	[TC-I] Biophotonics I
Session Chair	Hongki Yoo (Hanyang Univ., Korea)

TC-I-1

10:50-11:10

[Invited] Optical Fiber Methods for Deep Brain Calcium Signal Measurements in Behaving Mice

Zhongyang Qi¹, Jingfeng Zhou^{2,3}, Qiru Feng³, Rui Lin³, QingchunGuo¹, Hui Gong¹, Qingming Luo¹, Shaoqun Zeng¹, Minmin Luo^{3,4}, and Ling Fu¹

¹Huazhong Univ. of Science and Tech., China, ²Peking Univ., China, ³Nat'l Inst. of Biological Sciences, China, ⁴Tsinghua Univ., China

TC-I-2

11:10-11:30

[Invited] Monitoring of Anesthesia Depth by Near-Infrared Spectroscopy

D. Choi, J. Bae, S. Kim, and J. G. Kim

GIST, Korea

TC-I-3

11:30-11:50

[Invited] Functional Near Infrared Spectroscopy as a Clinical Diagnostic Tool

Beop-Min Kim

Korea Univ., Korea

TC-I-4

11:50-12:10

[Invited] Brain Activations Associated with Online Video Game Playing: A Functional Near Infrared Spectroscopy Study

Yue Li^{1,2}, Lei Zhang¹, Ke-hong Long², Hui Gong¹, and Hao Lei^{1,2}

¹Huazhong Univ. of Science and Tech., China, ²Wuhan Inst. of Physics and Mathematics, Chinese Academy of Sciences, China

TC-I-5

12:10-12:30

[Invited] Skull Optical Clearing for Accessing to Cerebral Hemodynamics

Dan Zhu

Huazhong Univ. of Science and Tech., China

Date and Time	September 12 (Tuesday) / 10:50-12:30
Place	Room D (Cornelia)
Session Title	[TD-I] Laser-Matter Interaction III
Session Chair	Vadim Veiko (ITMO Univ., Russia)

TD-I-1

10:50-11:10

[Invited] Laser-Assisted Deposition of Colloidal Nanoparticles Forcreation Fractal Bimetallic Structures

A. O. Kucherik¹, D. N. Bukharov¹, S. M. Arakelyan¹, S. V. Kutrovskaia^{1,2}, A. V. Osipov¹,
A. V. Istratov¹, T. A. Vartanyan³, T. E. Itina⁴, and A. V. Kavokin^{2,5,6,7}

¹Stoletovs Vladimir State Univ., Russia, ²Russian Quantum Center, Russia, ³ITMO Univ., Russia,
⁴Université de Lyon, France, ⁵Univ. of Southampton, UK, ⁶St. Petersburg State Univ., Russia,
⁷CNR-SPIN, Italy

TD-I-2

11:10-11:30

[Invited] Milligram-per-Second Femtosecond Laser Production of Se Nanoparticle Inks and Ink-Jet Printing of Anti-Bacterial and Sensing Nanophotonic 2D-Patterns

Andrey Ionin¹, Anastasia Ivanova^{1,2}, Roman Khmel'nitskii¹, Yury Klevkov¹, Sergey Kudryashov^{1,2,3},
Alexey Levchenko¹, Nikolay Mel'nik¹, Alena Nastulyavichus¹, Andrey Rudenko¹, Irina Saraeva¹,
Nikita Smirnov¹, Dmitry Zayarny¹, Sergey Gonchukov², Eteri Tolordava⁴, and Anatoly Baranor⁵

¹Lebedev Physical Inst., Russia, ²Nat'l research nuclear Univ. MEPhI (Moscow Engineering Physics
Inst., Russia, ³ITMO Univ., Russia, ⁴N.F. Gamaleya Federal Research Centre of Epidemiology and
Microbiology, Russia, ⁵M.V. Lomonosov Mosc

TD-I-3

11:30-11:50

[Invited] Photolytic Formation of NV Centers in Diamond

V. V. Kononenko, V. M. Gololobov, T. V. Kononenko, T. A. Semenov, I. I. Vlasov, A. A. Khomich,
V. A. Shershulin, and V. I. Konov

General Physics Inst. of RAS, Russia

TD-I-4

11:50-12:10

[Invited] Pulsed Laser Nanofabrication of Advanced Nanophotonic Structures

Yu.Kulchin¹, O. Vitrik^{1,2}, and A. Kuchmizhak^{1,2}

¹Far Eastern Branch of Russian Academy of Science (FEB RAS), Russia, ²Far Eastern Federal
Univ. (FEFU), Russia

TD-I-5

12:10-12:30

[Invited] Periodically Poled MgO Doped LiNbO₃ and LiTaO₃ for Coherent Light Frequency Conversion

V. Ya. Shur^{1,2}, A. R. Akhmatkhanov^{1,2}, I. S. Baturin^{1,2}, D. S. Chezganov^{1,2}, M. A. Chuvakova¹, and A. A. Esin¹

¹Ural Federal Univ., Russia, ²Labfer Ltd., Russia

Date and Time	September 12 (Tuesday) / 13:45-15:20
Place	Room B (Manarola)
Session Title	[TB-II] Power Scaling Strategy
Session Chair	Tomas Mocek (HiLASE Centre of Excellence, Czech Republic)

TB-II-1

13:45-14:05

[Invited] Disk Lasers with Multi-Beam Pumping

I. A. Shcherbakov and V. B. Tsvetkov

A.M. Prokhorov General Physics Inst. RAS, Russia

TB-II-2

14:05-14:25

[Invited] Current Status of Kungang Laser: Coherent 2 Beam Combination using Pre-Pulsed SBS-PCM at High Power Laser System

Hong Jin Kong¹, Sangwoo Park¹, Sangwoo Park¹, Seongwoo Cha¹, Hwihyeong Lee¹,
Seong Woong Choi², Jumsool Kim², and Bong Ju lee³

¹KAIST, Korea, ²Laser spectronix, Korea, ³Handong Global Univ., Korea

TB-II-3

14:25-14:45

[Invited] Picosecond Diode Pumped Lasers of High Peak and Average Power

N. G. Mikheev, V. B. Morozov, A. N. Olenin, I. V. Tulin, D. I. Ustinov, and D. V. Yakovlev

M.V. Lomonosov Moscow State Univ., Russia

TB-II-4

14:45-15:05

[Invited] Technology and Applications of Kilowatt Average Power DPSSLs

T. Mocek

HiLASE Centre of Excellence, Inst. of Physics, Czech Republic

TB-II-5

15:05-15:20

Exploring Antiphase Dynamics of an Orthogonally-Polarized Dual-Wavelength Passively Q-Switched Nd:YLF Laser

Hsing-Chih Liang and Shun-An Gu

Nat'l Taiwan Ocean Univ., Taiwan

Date and Time	September 12 (Tuesday) / 13:45-15:20
Place	Room C (Vernazza B)
Session Title	[TC-II] Biophotonics II
Session Chairs	Jae Gwan Kim (GIST, Korea) Dan Zhu (Huazhong Univ. of Science and Tech., China)

TC-II-1

13:45-14:05

[Invited] Creation and Improvement of Tissue Optical Windows for Laser Probing and Treatment using Immersion Optical Clearing

Valery V. Tuchin

*Nat'l Research Tomsk State Univ., Russia***TC-II-2**

14:05-14:25

[Invited] Detection of Circulating Tumor DNA with Closed-Loop PCR-based Surface Plasmonic Resonance Sensor

W. Na, J. Kim, D. Jang, C. H. Lee, C. Seo, and S. Shin

*Korea Univ., Korea***TC-II-3**

14:25-14:45

[Invited] Two-Photon Tomography of the Nail Fold: Novel Insights into the Relevance of Perivascular Tissue Parameters for Cardiovascular Disease DiagnosisE. Shirshin¹, Y. Gurfinkel², N. Omelyanenko³, D. Lysukhin¹, B. Yakimov¹, J. Lademann⁴, M. Darwin⁴, and A. Priezzhev¹¹*Lomonosov Moscow State Univ., Russia*, ²*Moscow Univ. Clinic, Russia*, ³*Priorov Central Inst. of Traumatology and Orthopedics, Russia*, ⁴*Center of Experimental and Applied Cutaneous Physiology, Charité–Universitätsmedizin, Germany***TC-II-4**

14:45-15:05

[Invited] Laser Trapping and Manipulation of Live CellsA. V. Priezzhev¹, Kisung Lee^{1,2}, A. N. Semenov¹, F. Yaya², and C. Wagner²¹*M.V. Lomonosov Moscow State Univ., Russia*, ²*Saarland Univ., Germany***TC-II-5**

15:05-15:20

Laser Tweezers Combined with Microfluidics and Fluorescence Microscopy for Detecting Macromolecule Adsorption on Single Red Blood CellsF. Yaya^{1,2}, K. Lee¹, E. Shirshin³, A. V. Priezzhev³, T. Podgorski², and C. Wagner¹¹*Univ. of Saarland, Germany*, ²*Univ. of Grenoble Alpes, France*, ³*Lomonosov Moscow State Univ., Russia*

Date and Time	September 12 (Tuesday) / 13:45-15:20
Place	Room D (Cornelia)
Session Title	[TD-II] Laser-Matter Interaction IV
Session Chair	Minsup Hur (UNIST, Korea)

TD-II-1

13:45-14:05

[Invited] Laser-Assisted Periodic Nanostructure Formation in Dielectric Materials: Formation Mechanisms

Tatiana E. Itina^{1,2}, Hongfeng Ma¹, Anton Rudenko¹, Stephane Mottin¹, Vadim. P. Veiko², Maksim M. Sergeev², and Roman A. Zakoldaev²

¹UMR CNRS 5516/Univ. of Lyon, France, ²ITMO Univ., Russia

TD-II-2

14:05-14:25

[Invited] Role of Laser-Induced Thermal Stresses in Material Modification: Comparative Analysis for Lasers of Different Pulse Duration

N. M. Bulgakova¹, M. V. Shugaev², Y. P. Meshcheryakov³, and V. P. Zhukov^{4,5}

¹HiLASE Centre, Czech Republic, ²Univ. of Virginia, USA, ³Design and Tech. Branch of Lavrentyev Inst. of Hydrodynamics SB RAS, Russia, ⁴Inst. of Computational Technologies SB RAS, Russia, ⁵Novosibirsk State Technical Univ., Russia

TD-II-3

14:25-14:45

[Invited] Laser Ultrasonic Mediated Crystalline Phase Formation in a Thin Film

J. Wuenschell and H. Helvajian

The Aerospace Corporation, USA

TD-II-4

14:45-15:05

[Invited] Rapid Electronic and Sub-ps Structural Transitions in Ultrafast Laser Irradiated Transition Metals

H. Zhang¹, C. Li^{1,2}, E. Bévilion¹, J. P. Colombier¹, and R. Stoian¹

¹Université Jean Monnet, France, ²Xi'an Inst. of Optics and Precision Mechanics, China

TD-II-5

15:05-15:20

Pulsed Laser Synthesis of Bioactive Thin Layers with Antimicrobial Properties

Carmen Ristoscu¹, Laura Floroian², Natalia Mihailescu¹, Anita Visan¹, Ana Janković³, Mariana Carmen Chifiriuc⁴, and Ion N. Mihailescu¹

¹Nat'l Inst. for Lasers, Plasma and Radiation Physics, Romania, ²Transilvania Univ. of Brasov, Romania, ³Univ. of Belgrade, Romania

Date and Time	September 12 (Tuesday) / 15:40-17:15
Place	Room B (Manarola)
Session Title	[TB-III] Visible & Mid-IR Lasers
Session Chair	Ji Won Kim (Hanyang Univ., Korea)

TB-III-1

15:40-16:00

[Invited] Laser-Diode Pumped Pulsed Visible Praseodymium Lasers

Haohai Yu

Shandong Univ., China

TB-III-2

16:00-16:20

[Invited] Monoclinic Double Tungstate Thin-Disk lasers at 2 microns

X. Mateos^{1,2,3}, P. Loiko⁴, S. Lamrini³, K. Scholle³, P. Fuhrberg³, S. Vatik⁵, I. Vedin⁵, M. Aguiló²,
F. Díaz², U. Griebner¹, and V. Petrov¹

¹Max Born Inst. for Nonlinear Optics and Short Pulse Spectroscopy, Germany, ²Universitat Rovira i Virgili (URV), Spain, ³LISA laser products OHG, Germany, ⁴ITMO Univ., Russia, ⁵Inst. of Laser Physics, Siberian Branch of Russian Academy of Sciences, Russia

TB-III-3

16:20-16:40

[Invited] Power Scaling of In-Band Pumped Holmium Doped Solid-State Lasers at ~ 2 μm

D. Y. Shen^{1,2}, Y. G. Zhao^{1,2}, W. C. Yao¹, and Z. H. Shao¹

¹Fudan Univ., China, ²Jiangsu Normal Univ., China

Date and Time	September 12 (Tuesday) / 15:40-17:15
Place	Room C (Vernazza B)
Session Title	[TC-III] Optical Sensors
Session Chairs	Avishay Eyal (Tel Aviv Univ., Israel) Kwang Yong Song (Chung-Ang Univ., Korea)

TC-III-1

15:40-16:00

[Invited] Distributed Fiber-Optic Sensing with Ultra-High Spatial Resolution by using Linear Optical Sampling Technique

Xinyu Fan, Shuai Wang, Qingwen Liu, and Zuyuan He
Shanghai Jiao Tong Univ., China

TC-III-2

16:00-16:20

[Invited] The Statistical Properties of Distributed Acoustic Sensing

A. Eyal, H. Gabai, and I. Shpatz
The-Aviv Univ., Israel

TC-III-3

16:20-16:40

[Invited] Development and Evaluation of Resonator Fiber Optic Gyroscopes

H. Ma, H. Li, Y. Lin, and Z. Jin
Zhejiang Univ., China

TC-III-4

16:40-17:00

[Invited] Fiber-Optic Guided Acoustic-Wave Brillouin Scattering Properties and Sensing Application

Neisei Hayashi¹, Yosuke Mizuno², Kentaro Nakamura², Sze Yun Set¹, and Shinji Yamashita¹
¹*The Univ. of Tokyo, Japan*, ²*Tokyo Inst. Tech., Japan*

TC-III-5

17:00-17:15

Non-Enzymatic Sensors based on in Situ Laser-Induced Synthesis of Copper and Copper- Gold Nano-Sized Microstructures

I. I. Tumkin, M. S. Panov, E. M. Khairullina, and V. A. Kochemirovsky
Saint Petersburg State Univ., Russia

Date and Time	September 12 (Tuesday) / 15:40-17:15
Place	Room D (Cornelia)
Session Title	[TD-III] Holographic Display
Session Chair	Hirotsugu Yamamoto (Utsunomiya Univ., Japan)

TD-III-1

15:40-16:00

[Invited] Phase-Mode Holographic Three-Dimensional Display by Optimized Binary Phase Modulation

O. Matoba, S. Harada, and T. Uemae

Kobe Univ., Japan

TD-III-2

16:00-16:20

[Invited] Recent Progress on Mesh-based Computer Generated Hologram

Jae-Hyeung Park

Inha Univ., Korea

TD-III-3

16:20-16:40

[Invited] Viewing-zone Scanning Holographic Display Employing MEMS-SLM

Y. Takaki

Tokyo Univ. of Agriculture and Tech., Japan

TD-III-4

16:40-17:00

[Invited] Implementation of Spatially-Expanded 360 Degree Viewable Holographic Display

Yongjun Lim, Keehoon Hong, Eun-Young Chang, Hayan Kim, Minsik Park, and Jinwoong Kim

ETRI, Korea

TD-III-5

17:00-17:20

[Invited] Polarization-Encoded Multi-Focal 3D Display

Soon-gi Park

KIST, Korea

Date and Time	September 13 (Wednesday) / 10:10-11:50
Place	Room B (Manarola)
Session Title	[WB-I] Nonlinear optics and photonics I
Session Chair	Fabian Rotermund (KAIST, Korea)

WB-I-1

10:10-10:30

[Invited] Polarization Singularities Nucleation in the Self-Focusing of an Elliptically Polarized Laser Beam in Kerr Medium and Isotropic Phase of Nematic Liquid Crystal

V. A. Makarov, K. S. Grigoriev, N. A. Panov, O. G. Kosareva, and G. M. Shishkov
M. V. Lomonosov Moscow State Univ., Russia

WB-I-2

10:30-10:50

[Invited] Efficient Second and Third Harmonic Generations in Magnetic Metamaterials

Iman Sajedian, Inki Kim, and Junsuk Rho
POSTECH, Korea

WB-I-3

10:50-11:10

[Invited] Slowdown of Light in Free Space via Rayleigh Anomaly

Kyoung-Youm Kim¹ and Alan X. Wang²
¹*Sejong Univ., Korea*, ²*Oregon State Univ., USA*

WB-I-4

11:10-11:25

Kerr Soliton Combs in Crystalline Microresonators with a Regular Multifrequency Diode Lasers

N. G. Pavlov^{1,2}, G. Lihachev^{2,3}, S. Koptyaev⁴, A. S. Voloshin², and M. L. Gorodetsky^{2,3}
¹*Moscow Inst. of Physics and Tech., Russia*, ²*Russian Quantum Center, Russia*, ³*M. V. Lomonosov Moscow State Univ., Russia*, ⁴*Samsung R&D Inst. Russia, Russia*

WB-I-5

11:25-11:45

[Invited] Broadband Nonlinear Photonics in Graphene

F. Rotermund
KAIST, Korea

Date and Time	September 13 (Wednesday) / 10:10-11:50
Place	Room C (Vernazza B)
Session Title	[WC-I] Ultrafast Characterization and Femtosecond Fiber Laser
Session Chair	Pavel Polynkin (Univ. of Arizona, USA)

WC-I-1

10:10-10:30

[Invited] Self-Referenced Waveform Measurement of Ultrashort Mid-Infrared Pulses

T. Fuji, H. Shirai, and Y. Nomura
Inst. for Molecular Science, Japan

WC-I-2

10:30-10:50

[Invited] Optical Tracing and Tailoring Phase of Acoustic Phonons

H. Jeong¹, A. J. Minnich², C. J. Stanton³, and Y. D. Jho¹
¹GIST, Korea, ²California Inst. of Tech., USA, ³Univ. of Florida, USA

WC-I-3

10:50-11:10

[Invited] Low-Noise Mode-Locked Fiber Lasers and their High-Precision Applications

Jungwon Kim
KAIST, Korea

WC-I-4

11:10-11:30

[Invited] High Power Femtosecond Fiber Laser and its Nonlinear Frequency Conversion

Minglie Hu
Tianjin Univ., China

WC-I-5

11:30-11:50

[Invited] Low-Dimensional Material-based In-Line Saturable Absorbers for Ultrafast Fiber Laser Applications

Nam Hun Park and Dong-Il Yeom
Ajou Univ., Korea

Date and Time	September 13 (Wednesday) / 10:10-11:50
Place	Room D (Cornelia)
Session Title	[WD-I] Next generation optical networks
Session Chair	Hwan Seok Chung (ETRI, Korea)

WD-I-1

10:10-10:30

[Invited] A Multi-Wavelength I/4-Shifted Distibuted Feedback Laser Diode Array for WDM-based Datacenter Networks

Su Hwan Oh, Oh Kee Kwon, Ki Soo Kim, Chul Wook Lee, Young Ahn Leem, and Eun Soo Nam
ETRI, Korea

WD-I-2

10:30-10:50

[Invited] Tunable External Cavity Laser using InP Gain-Chip and Polymer Waveguide Grating for Coherent Optical Communications

Dong Churl Kim¹, Young-Tak Han¹, Dong-Hoon Lee¹, Byung-Seok Choi¹, Sang-Ho Park¹,
Jang-Uk Shin¹, Won Seok Han¹, Yong Hwan Kwon¹, Jong-Hoi Kim¹, Ho-Sung Cho², and Yongsoon Baek¹
¹*ETRI, Korea*, ²*ELDIS, Inc., Korea*

WD-I-3

10:50-11:10

[Invited] RoF Technologies for Mobile Fronthaul and Indoor DAS Applications

Seung-Hyun Cho, Hwan Seok Chung, Minkyu Sung, Joonyoung Kim, Joon Ki Lee,
and Jong Hyun Lee
ETRI, Korea

WD-I-4

11:10-11:30

[Invited] O-Band Optical Transmission Technologies for 100G Ethernet Passive Optical Networks

H. H. Lee, K. H. Doo, K. O. Kim, S. G. Mun, S. H. Kim, J. Y. Oh, H. Park, D. Y. Kim, and H. S. Chung
ETRI, Korea

WD-I-5

11:30-11:45

Broadband Compact Polarization Splitters based on a Mode Extracting Polymer Waveguide

Guanghao Huang, Tae-Hyun Park, and Min-Cheol Oh
Pusan Nat'l Univ., Korea

Date and Time	September 14 (Thursday) / 10:10-11:45
Place	Room B (Manarola)
Session Title	[ThB-I] Nonlinear Optics and Photonics II
Session Chair	Nan Ei Yu (GIST, Korea)

ThB-I-1

10:10-10:30

[Invited] Time-Variant Metasurface as a Frequency Converting Platform

Bumki Min

KAIST, Korea

ThB-I-2

10:30-10:50

[Invited] Ultrafast Photoexcited Carrier Dynamics and Photo Response of 3D Dirac Semimetallic

Cd₃As₂

Dong Sun

Peking Univ., China

Date and Time	September 14 (Thursday) / 10:10-11:45
Place	Room C (Vernazza B)
Session Title	[ThC-I] Biophotonics III
Session Chairs	Yeh-Chan Ahn (Pukyong Nat'l Univ., Korea) Yoshiaki Yasuno (Univ. of Tsukuba, Japan)

ThC-I-1

10:10-10:30

[Invited] Twenty Years of Doppler OCT and OCT Angiography: Past, Present, and Future

Zhongping Chen

*Univ. of California, USA***ThC-I-2**

10:30-10:50

[Invited] Functional Fourier Domain Optical Coherence Tomography and its Applications

Zihua Ding, Jianrong Qiu, Ziwei Shangguan, Shanshan Yan, Wen Bao, Pei Li, and Peng Li

*Zhejiang Univ., China***ThC-I-3**

10:50-11:10

[Invited] 3D Intraoral Scanning System for Structure/diagnosis in dentistry

Joo Beom Eom, Anjin Park, Jaesung Ahn, Honglyel Jung, and Jong hyun Eom

*KOPTI, Korea***ThC-I-4**

11:10-11:30

[Invited] Motion-Free and True-Shape Three-Dimensional Retinal Imaging by Lissajous Optical Coherence Tomography

Yoshiaki Yasuno

Univ. of Tsukuba, Japan

Date and Time	September 14 (Thursday) / 10:10-11:45
Place	Room D (Cornelia)
Session Title	[ThD-I] Laser Materials
Session Chair	Valentin Petrov (Max-Born-Inst. for Nonlinear Optics and Ultrafast Spectroscopy, Germany)

ThD-I-1

10:10-10:30

[Invited] New Ba-Based Nonlinear Crystals for Frequency Conversion of Near-IR Lasers into the Mid-IR

V. Petrov¹, V. Badikov², D. Badikov², V. Laptev³, K. Mitin⁴, G. Shevyrdyaeva², N. Kostyukova^{1,5,6}, A. Boyko^{1,5,6}, E. Boursier^{7,8}, V. Panyutin¹, N. Shchebetova⁴, A. Tyazhev¹, G. Marchev¹, A. Kwasniewski⁹, D. Kolker⁵, P. Segonds^{7,8}, and B. Boulanger^{7,8}

¹Max-Born-Inst. for Nonlinear Optics and Ultrafast Spectroscopy, Germany, ²Kuban State Univ., Russia, ³Inst. of Spectroscopy, Russian Academy of Sciences, Russia, ⁴Astrophysika Nat'l Laser Centre, Russia, ⁵Novosibirsk State Univ., ⁶Special Technologies, Ltd., Russia, ⁷Universite Grenoble Alpes, France, ⁸CNRS, France, ⁹Leibniz Inst. for Crystal Growth, Germany

ThD-I-2

10:30-10:50

[Invited] Laser-Nonlinear Oxide Media Doped with Tm³⁺ Ions

L. I. Ivleva and M. E. Doroshenko

A.M. Prokhorov General Physics Inst. Russian Academy of Sciences, Russia

ThD-I-3

10:50-11:10

[Invited] Disordered Perovskite Crystals for CW and Ultrafast Laser Sources

Stefano Veronesi¹, Quiangqiang Hu², Zhitai Jia², Jian Zhang², and Xutang Tao²

¹NEST- Istituto Nanoscienze – CNR, Italy, ²State Key Laboratory of Crystal Materials & Shandong Univ., China

ThD-I-4

11:10-11:30

[Invited] Transparent Nanophase Glass-Ceramics with Cobalt Ions: Efficient Saturable Absorbers for Erbium Lasers

Pavel Loiko

ITMO Univ., Russia

Date and Time	September 14 (Thursday) / 13:05-14:40
Place	Room B (Manarola)
Session Title	[ThB-II] THz Application I
Session Chairs	Jung-il Kim (KERI, Korea) Katsuhiko Miyamoto (Chiba Univ., Japan)

ThB-II-1

13:05-13:25

[Invited] Efficient Generation and Modulation of THz Waves by using Nanostructures

Chul Kang¹, Hyung Keun Yoo², Jung Woo Leem³, Youngwoon Yoon⁴, Jae Su Yu⁴, Kiejin Lee³, Myong Kyu Oh¹, In-Wook Hwang¹, Joong Wook Lee⁵, and Chul-Sik Kee¹

¹GIST, Korea, ²Samsung Electronics, Korea, ³Sogang Univ., Korea, ⁴Kyung Hee Univ., Korea, ⁵Chonnam Nat'l Univ., Korea

ThB-II-2

13:25-13:45

[Invited] THz Metamaterials for Sensing and Communication Application

Seongsin Margaret Kim

The Univ. of Alabama, USA

ThB-II-3

13:45-14:05

[Invited] Development of Microbial Sensors Using Terahertz Split-Ring Resonator Arrays

Y. H. Ahn and S. J. Park

Ajou Univ., Korea

ThB-II-4

14:05-14:25

[Invited] Wireless Sub-Terahertz Orbital Angular Momentum Communications

Jian Wang

Huazhong Univ. of Science and Tech., China

Date and Time	September 14 (Thursday) / 13:05-14:40
Place	Room C (Vernazza B)
Session Title	[ThC-II] Biophotonics IV
Session Chair	Zhongping Chen (Univ. of California, USA)

ThC-II-1

13:05-13:25

[Invited] Spectroscopic Study of NP Influence on in vitro Development of Preimplantation Mouse Embryos

A. Karmenyan¹, A. Krivokharchenko², H. H. Chang³, E. Perevedentseva^{1,4}, L.C. Liu¹,
M. Kormacheva¹, Ashek-I-Ahmed¹, and C. L. Cheng¹

¹Nat'l Dong Hwa Univ., Taiwan, ²N.N.Semenov Inst. of Chemical Physics, RAS, Russia, ³Tzu Chi Univ., Taiwan, ⁴P.N.Lebedev Physics Inst. of RAS, Russia

ThC-II-2

13:25-13:45

[Invited] Optical-Spectroscopic Studies for Nanoparticles-Mediated Drug Delivery

E. Perevedentseva^{1,2}, Y. C. Lin^{1,3}, A. Karmenyan¹, Z. R. Lin¹, C. H. Liu¹, C. C. Chang¹, C. Y. Song¹,
N. N. Melnik², and C. L. Cheng¹

¹Nat'l Dong Hwa Univ., Taiwan, ²P.N.Lebedev Physics Inst. of Rus Acad Sci, Russia, ³Inst. of Physics, Taiwan

ThC-II-3

13:45-14:00

Microstructural Alterations in Cornea under Thermo-Mechanical Effect of 1.56 μ m Laser Radiation. Towards a New Refractive Tech.

O. Baum¹, A. Yuzhakov^{1,2}, A. Omelchenko^{1,2}, V. Zaitsev², A. Bolshunov³, V. Siplivy³, and E. Sobol^{1,2}

¹Inst. Photonic Technologies of Federal Scientific Research Centre "Crystallography and Photonics" of RAS, Russia, ²Inst. of Applied Physics Russian Academy of Sciences, Russia, ³Federal State Scientific Inst. "Research Inst. of Eye Diseases", Russia

ThC-II-4

14:00-14:15

Optical Trapping and Diffuse Light Scattering Techniques for in vitro Assessing the Effect of Albumin and Fibrinogen Synergy on Red Cells Aggregation in Blood Plasma

A. N. Semenov¹, K. Lee^{1,2}, H. Lee³, A. E. Lugovtsov¹, F. Yaya², C. Wagner², S. Shin³,
and A. V. Priezhev¹

¹M.V. Lomonosov Moscow State Univ., Russia, ²Saarland Univ., Germany, ³Korea Univ., Korea

ThC-II-5

14:15-14:35

[Invited] Applications of Inverse Scattering Principles with Digital Holography

Y. K. Park

KAIST, Korea

Date and Time	September 14 (Thursday) / 13:05-14:40
Place	Room D (Cornelia)
Session Title	[ThD-II] Ultrafast Laser Tech.
Session Chair	Guang-Hoon Kim (KERI, Korea)

ThD-II-1

13:05-13:25

[Invited] Wideband Ultrashort Pulse Fiber Lasers and Their Applications

Norihiro Nishizawa, Jin Lei, and Masahito Yamanaka

*Nagoya Univ., Japan***ThD-II-2**

13:25-13:45

[Invited] Yb³⁺-Doped CaF₂-LaF₃ Ceramics for High Power Ultrashort Pulse LasersAkira Shirakawa¹, Shotaro Kitajima¹, Kentaro Yamakado¹, Ken-ichi Ueda¹, and Hitoshi Ishizawa²¹*Univ. of Electro-Communications, Japan*, ²*NIKON Corporation, Japan***ThD-II-3**

13:45-14:00

High-Power Ultrafast MOPA Laser System based on Yb:YAG Elements of Advanced Geometries

I. Kuznetsov, I. Mukhin, E. Perevezentsev, M. Volkov, and O. Palashov

*Inst. of Applied Physics of the Russian Academy of Science, Russia***ThD-II-4**

14:00-14:15

Comparative Analysis of Evanescent Field Interaction with Carbon Nanotubes in the Q-Switched Yb:KYW Planar Waveguide LaserJun Wan Kim¹, Sun Young Choi², Jieun Bae³, Xavier Mateos⁴, Francesc Díaz⁴, Uwe Griebner⁵, Valentin Petrov⁵, Guang-Hoon Kim¹, and Fabian Rotermund³¹*KERI, Korea*, ²*Universität Hamburg, Germany*, ³*KAIST, Korea*, ⁴*Universitat Rovira i Virgili (URV), Spain*, ⁵*Max Born Inst. for Nonlinear Optics and Short Pulse Spectroscopy, Germany***ThD-II-5**

14:15-14:35

[Invited] Characterization of Thermal Effect in Quasi-Phase-Matched Nonlinear CrystalSunao Kurimura¹ and Hwan Hong Lim²¹*Nat'l Inst. for Materials Science, Japan*, ²*Inst. for Molecular Science, Japan*

Date and Time	September 14 (Thursday) / 15:00-16:35
Place	Room B (Manarola)
Session Title	[ThB-III] THz Application II
Session Chair	Chul-Sik Kee (GIST, Korea)

ThB-III-1

15:00-15:20

[Invited] The Talbot Effect Revisited: Studies in the Terahertz RangeB. Knyazev^{1,2}, V. Cherkassky², Yu. Choporova^{1,2}, B. Goldenberg¹, Kameshkov^{1,2}, and V. Pavelyev^{3,4}¹*Budker Inst. of Nuclear Physics SB RAS, Russia*, ²*Novosibirsk State Univ., Russia*, ³*Samara Univ., Russia*, ⁴*Image Processing Systems Inst. of the Russian Academy of Sciences, Russia***ThB-III-2**

15:20-15:40

[Invited] Sub-THz Vacuum Devices based on Grating and CW ImagingJung-Il Kim, Geun-Ju Kim, Jeong-Hun Lee, Sang-Hoon Kim, Yong-Seok Lee, and Insoo S. Kim
*KERI, Korea***ThB-III-3**

15:40-16:00

[Invited] Long Distance Propagation by THz Pulse

T. -I. Jeon

*Korea Maritime and Ocean Univ., Korea***ThB-III-4**

16:00-16:20

[Invited] Accelerator based THz Sources and Its Applications in Japan

H. Ohgaki

*Kyoto Univ., Japan***ThB-III-5**

16:20-16:40

[Invited] THz Parametric Source and its Applications

Kodo Kawase and Kosuke Murate

Nagoya Univ., Japan

Date and Time	September 14 (Thursday) / 15:00-16:35
Place	Room C (Vernazza B)
Session Title	[ThC-III] Laser-Matter Interaction V
Session Chair	Alexander Bulgakov (Kutateladze Inst. of Thermophysics, Russia)

ThC-III-1 15:00-15:20

[Invited] Laser-Induced Porous Glass Densification – the Way for Integral Sensors Fabrication

Veiko V. P.¹, Zakoldaev R. A.¹, Segeev M. M.¹, Sivers A. N.¹, Antropova T. V.², and Itina T. E.^{1,3}

¹ITMO Univ., Russia, ²Inst. of Silicate Chemistry, Russian Academy of Sciences, Russia, ³UMR CNRS 5516/UJM/Univ. of Lyon, France

ThC-III-2 15:20-15:35

Laser Created Functional Microstructures

E. Stankevičius, M. Garliauskas, E. Daugnoraitė, and G. Račiukaitis

Center for Physical Sciences and Tech., Lithuania

ThC-III-3 15:35-15:50

Fabrication of Mechanical Traps for Atomic Force Microscopy Investigations of Living Cells by Ultrashort Pulse Laser Ablation

Inam Mirza¹, Jan Pokorný¹, Yoann Levy¹, Radek Machulka², Ondrej Haderka²,
Nadezhda M. Bulgakova¹, and Tomas Mocek¹

¹Inst. of Physics CAS, Czech Republic, ²Palacký Univ., Czech Republic

ThC-III-4 15:50-16:05

The Laser-Induced Synthesis of Linear Carbon Chains Stabilized by Noble Metal Particles

A. V. Osipov, A. O. Kucherik, S. V. Kutrovskaya, and S. M. Arakelian

Stoletovs Vladimir State Univ., Russia

ThC-III-5 16:05-16:20

Nanoscale Heat Transfer in Laser Interference Ablation by Ultrashort Pulses

Mindaugas Gedvilas, Simonas Indrišiūnas, Bogdan Voisiat, Evaldas Stankevičius,
and Gediminas Račiukaitis

Center for Physical Sciences and Tech., Lithuania

Date and Time	September 14 (Thursday) / 15:00-16:35
Place	Room D (Cornelia)
Session Title	[ThD-III] Micro-and nanophotonics I
Session Chair	Choon-Gi Choi (ETRI, Korea)

ThD-III-1

15:00-15:20

[Invited] Laser Manipulation of Single-Wall Carbon Nanotubes

Satoru Shoji

*The Univ. of Electro-Communications JST, Japan***ThD-III-2**

15:20-15:40

[Invited] Highly Transparent and Conductive Glass Electrodes using Nanoscale Conducting Channels

T. H. Lee, B. R. Lee, K. R. Son, J. H. Park, and T. G. Kim

*Korea Univ., Korea***ThD-III-3**

15:40-16:00

[Invited] Design of Graphene-Integrated Silicon Electro-Optic Modulators based on Isotropic and Anisotropic Graphene ModelsJin-Soo Shin¹, Kwang Hyo Chung², Bong Kyu Kim², and Jin Tae Kim²¹KAIST, Korea, ²ETRI, Korea**ThD-III-4**

16:00-16:20

[Invited] Exciton-Polaritons in Nanostructured Semiconductors

Chang-Hee Cho

DGIST, Korea

Date and Time	September 15 (Friday) / 09:00-10:40
Place	Room B (Manarola)
Session Title	[FB-I] THz Bio
Session Chair	Seung Jae Oh (Yonsei Univ., Korea)

FB-I-1

09:00-09:20

[Invited] Terahertz Molecular Fingerprint of Cancer DNA

Joo-Hiuk Son and Hwayeong Cheon

Univ. of Seoul, Korea

FB-I-2

09:20-09:40

[Invited] CMOS Biosensor using Picosecond Dynamics of Water Molecule

Y. Ogawa and T. Suzuki

Kyoto Univ., Japan

FB-I-3

09:40-10:00

[Invited] Biomedical Imaging Technology using THz Wave

Seung Jae Oh, Young Bin Ji, and Jin Such Suh

Yonsei Univ. College of Medicine, Korea

FB-I-4

10:00-10:20

[Invited] In-Vivo THz Sensing of Tear Film and Corneal Tissue

A. Angeluts¹, A. Balakin¹, M. Mischenko¹, I. Ozheredov¹, M. Prokopchuk¹, T. Saphonova²,
P. Solyankin¹, and A. Shkurinov¹

¹*Moscow State Univ., Russia*, ²*Research Inst. of Eye Diseases, Russia*

FB-I-5

10:20-10:40

[Invited] THz Spectroscopy and Imaging of Blood

Chi-Kuang Sun

Nat'l Taiwan Univ., Taiwan

Date and Time	September 15 (Friday) / 09:00-10:40
Place	Room C (Vernazza B)
Session Title	[FC-I] Laser Diagnostics and Spectroscopy I
Session Chair	Chang Geun Ahn (ETRI, Korea)

FC-I-1

09:00-09:20

[Invited] Correlative Optical Imaging in the Far-Field and Near-Field Regimes: Architecture, Applications and Perspectives

S. G. Stanciu, D. E. Tranca, R. Hristu, and G. A. Stanciu
Univ. Politehnica of Bucharest, Romania

FC-I-2

09:20-09:40

[Invited] VOCs Emitted from Seeds Germinated with Heavy Metals Measured by Optical Spectroscopy Technique

C. Achim (Popa)¹ and D. C. Dumitras^{1,2}

¹*Nat'l Inst. for Laser, Plasma and Radiation Physics, Romania*, ²*Univ. "Politehnica" of Bucharest, Romania*

FC-I-3

09:40-10:00

[Invited] Control of CdTe Quantum Dots Photostability

A. S. Tsipotan¹, A. S. Aleksandrovsky², and V. V. Slabko¹

¹*Siberian Federal Univ., Russia*, ²*Russian Academy of Sciences, Russia*

FC-I-4

10:00-10:20

[Invited] Non-Destructive Detection Capability of Laser Diagnostics based Optical Coherence Tomography for Agricultural Applications

Mansik Jeon

Kyungpook Nat'l Univ., Korea

FC-I-5

10:20-10:40

[Invited] Designing Microcavity Laser Diodes by using Transformation Optics

Muhan Choi¹, Yushin Kim², Jung-Wan Ryu³, Inbo Kim¹, and Bumki Min²

¹*Kyungpook Nat'l Univ., Korea*, ²*KAIST, Korea*, ³*Inst. for Basic Science, Korea*

Date and Time	September 15 (Friday) / 09:00-10:40
Place	Room D (Cornelia)
Session Title	[FD-I] Micro-and nanophotonics II
Session Chair	Katsuhiko Miyamoto (Chiba Univ., Japan)

FD-I-1

09:00-09:20

[Invited] First Observation of the Number-Density-Dependent Growth of Plasmonic Nanobubbles

Takashi Nakajima

Kyoto Univ., Japan

FD-I-2

09:20-09:40

[Invited] Holographic Manipulation of Femtosecond Laser Pulses for Advanced Material Processing

S. Hasegawa and Y. Hayasaki

Utsunomiya Univ., Japan

FD-I-3

09:40-10:00

[Invited] Mid-Infrared Active Plasmonics in Graphene

M. S. Jang

KAIST, Korea

FD-I-4

10:00-10:20

[Invited] Simple Field Enhancement Formulation for Gold Bipyramids for Application in Two-Photon Luminescence and Scattering

James W. M. Chon and Stuart J. Flanders

Swinburne Univ. of Tech., Australia

FD-I-5

10:20-10:40

[Invited] Plasmonics and Metamaterials for Imaging and Hologram Applications

Choon-Gi Choi^{1,2}

¹*ETRI, Korea*, ²*Univ. of Science and Tech., Korea*

Date and Time	September 15 (Friday) / 11:00-12:20
Place	Room C (Vernazza B)
Session Title	[FC-II] Laser Diagnostics and Spectroscopy II
Session Chair	Moo-Han Choi (Kyungpook Nat'l Univ., Korea)

FC-II-1

11:00-11:20

[Invited] Laser-Induced Wavelength-Controlled Self-Assembly of Colloidal Quasiresonant Nanoparticles: Chance to Overcome the Diffraction Limit

V. V. Slabko¹, A. S. Tsipotan¹, and A. S. Aleksandrovsky²

¹*Siberian Federal Univ., Russia*, ²*Russian Academy of Sciences, Russia*

FC-II-2

11:20-11:40

[Invited] Photoacoustic Spectroscopy Technologies for Non-invasive Detection of Glucose in Human Body

C. G. Ahn, J. Y. Sim, C. Huh, K. H. Chung, E. J. Jeong, and B. K. Kim

ETRI, Korea

FC-II-3

11:40-11:55

Effect of Photon Lifetime in Silicon Nanowire Ensembles on Efficiency of Raman Scattering and Third-Harmonic Generation

L. A. Golovan¹, S. V. Zaboltnov^{1,2,3}, N. B. Tkachenko¹, D. E. Presnov¹, L. A. Osminkina¹, and A. I. Efimova¹

¹*M. V. Lomonosov Moscow State Univ., Russia* ²*Nat'l Research Center 'Kurchatov Inst.', Russia*

³*FNBIC, Moscow Inst. of Physics and Tech., Russia*

FC-II-4

11:55-12:10

Nanoscale Chemical Mapping: Photo-Induced Force Microscopy and Photothermal-Induced Resonance Microscopy

J. Jahng, H. Kwon, and E. S. Lee

KRISS, Korea

Date and Time	September 15 (Friday) / 11:00-12:20
Place	Room D (Cornelia)
Session Title	[FD-II] Micro-and nanophotonics III
Session Chair	Mun Seok Jeong (Sungkyunkwan Univ., Korea)

FD-II-1

11:00-11:20

[Invited] High Resolution Imaging with Electron Beam Assisted (EXA) Microscopy for Bio Technology

Yoshimasa Kawata, Masahiro Fukuta, and Wataru Inami

Shizuoka Univ., Japan

FD-II-2

11:20-11:40

[Invited] Terahertz Nanophotonics and its Sensing Applications

H. -R. Park¹ and D. S. Kim²

¹*Chungbuk Nat'l Univ., Korea*, ²*Seoul Nat'l Univ., Korea*

FD-II-3

11:40-12:00

[Invited] Terahertz Vortex Generation and its Applications

Katsuhiko Miyamoto^{1,2}, Fabian Rotermund¹, and Takashige Omatsu^{1,2}

¹*Chiba Univ., Japan*, ²*KAIST, Korea*

FD-II-4

12:00-12:20

[Invited] Resonant Tip Enhanced Raman Scattering Imaging of Defects in 2 Dimensional WS₂ Monolayer

Chanwoo Lee¹, Seung Mi Lee², and Mun Seok Jeong¹

¹*Sungkyunkwan Univ., Korea*, ²*KRISS, Korea*