OPTICS & PHOTONICS International Congress 2014

OPIC 2014
Advance Program

同時開催：OPTICS & PHOTONICS International Exhibition 2014

http://opicon.jp/

統括主催

一般社団法人　**OPTICS & PHOTONICS International** 協議会

■開催日:　2014年4月22日(火）～25日（金）
■会　　場:　パシフィコ横浜･会議センター

統括主催

一般社団法人OPTICS & PHOTONICS INTRENATIONAL協議会（OPI協議会）

専門国際会議主催

レーザー学会、宇都宮大学オプティクス教育研究センター，名古屋大学赤崎研究センター，レーザー学会「マイクロ固体フォトニクス」専門委員会，日本原子力学会、レーザ加工学会

後援

文部科学省，経済産業省，農林水産省，厚生労働省，国土交通省，日本経済団体連合会

協賛・協力

産業技術総合研究所，新エネルギー・産業技術総合開発機構，科学技術振興機構，日本原子力研究開発機構、理化学研究所、プラズマ・核融合学会，応用物理学会日本光学会，ALPROT，光産業技術振興協会，レーザー技術総合研究所，日本フォトニクス協議会，光拠点ネットワーク，横浜観光コンベンション・ビューロー、SPIE（米国），OSA（米国），メッセシュトゥットガルト（独），PIDA（台），KAPID（韓国），Photonics Media，OPTRONICS

開催趣旨

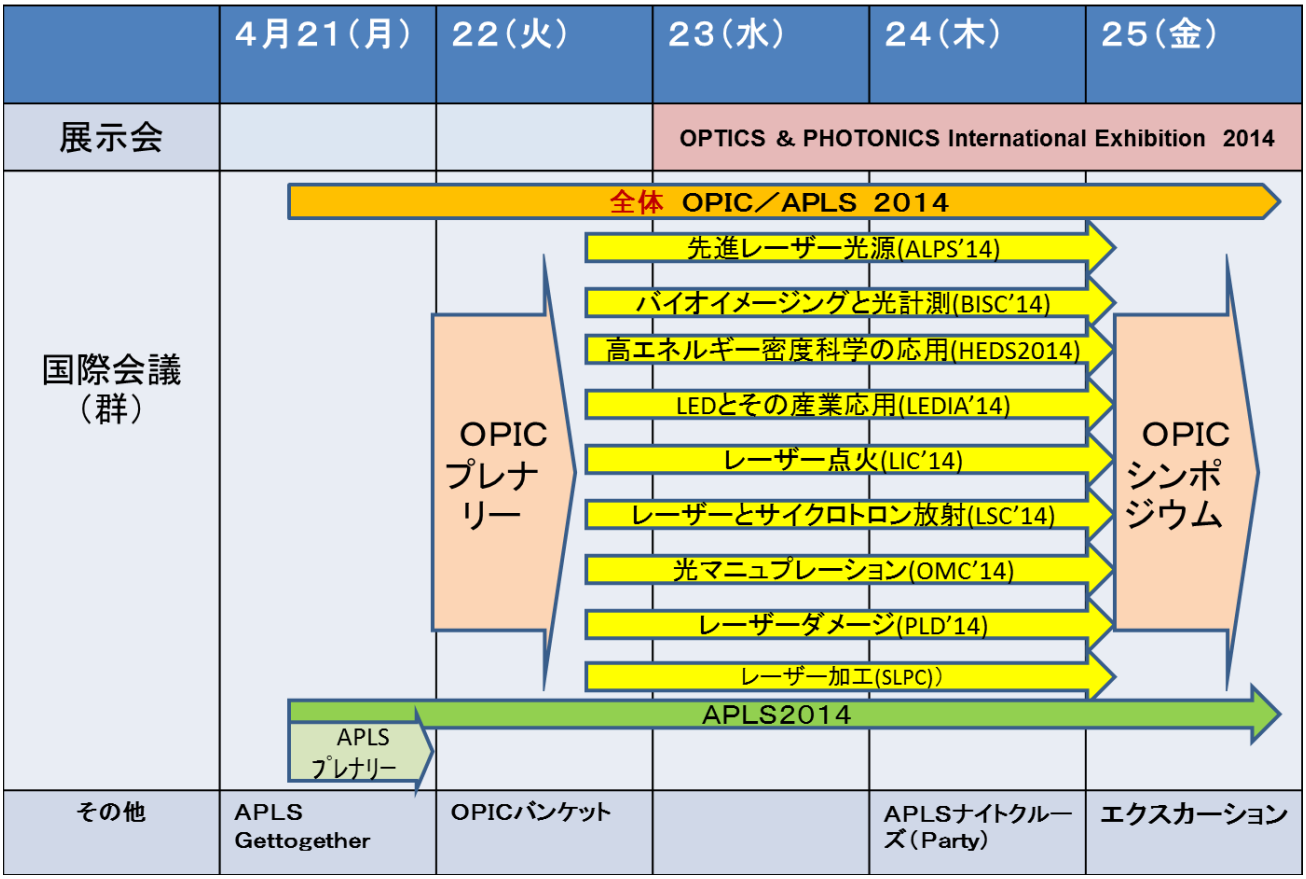
本国際会議（OPIC）は世界各国の光・レーザー技術を基盤とした学術および産業の最先端を集結し、学術発表と技術展示を併設することにより光・レーザー技術によりもたらされる具体的な未来社会への指針を得ることを目的として毎年開催している。
OPICは光・レーザー関連産業界（インダストリー）と学界（アカデミア）との連携・協力を促進し、さらに光技術・光産業の振興により、科学技術に立脚した我が国の産業を継続的に発展させるため、日本の学術研究者の総力を挙げて開催する唯一の光関連の国際会議と位置付けている。2012年の第1回開催以来毎年4月にパシフィコ横浜で開催し、2014年は第3回目の開催となる。

同時開催
The 9th Asia Pacific Laser Symposium (APLS2014)
第9回アジア太平洋レーザーシンポジウム
開催日2014年4月21日－25日
主催：レーザー学会、韓国光学会、中国光学会

OPIC2014と、同時開催の第9回APLS2014は相互のりいれを行います。参加費は共通で**OPIC2014の参加登録者は4月21日のAPLS2014プレナリーに参加可能**です。また**APLS2014の参加登録者はOPIC2014のプレナリーおよび専門国際会議に無料**で参加できます。
(APLSバンケット、ナイトクルーズは有料になります。)

会議日程

4月21日(月)	APLS2014プレナリーセッション
	APLS Get together
4月22日(火)	OPIC2014プレナリーセッション
	専門国際会議
	OPICバンケット
4月23日(水)	専門国際会議, ポスターセッション
4月24日(木)	専門国際会議, ポスターセッション
	ALPSナイトクルーズ
4月25日(金)	OPICシンポジウム
	APLSエクスカーション



Committee Members

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Robert L. Byer（Chair, Stanford University, USA）
Andreas Ostendorf（Chair,　Ruhr-University Bochum, Germany）

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松浦祥次郎（日本原子力研究開発機構理事長）
Edward Moses（米国）
Gérard Mourou（フランス）
John Collier（英国）
Jongmin Lee（韓国）
Jie Zhang（中国）
Reinhart Poprawe（ドイツ）

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平等拓範（分子科学研究所）
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原　勉　（浜松ホトニクス 中央研究所所長）
三木哲也（電気通信大学名誉教授）
緑川克美（理化学研究所）
三間圀興（光産業創成大学院大学）

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西澤紘一（諏訪東京理科大学）
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森　勇介（大阪大学）
八木重典（レーザー学会）
鷲尾邦彦（パラダイムレーザーリサーチ）

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近藤宣之（日本レーザー）
中井哲哉（ソーラボジャパン）
中村　強（トルンプ）

PLENARY SESSIONS

OPIC2014初日の2013年4月22日(火)にプレナリーセッションを開催します。光・レーザー技術について、各専門会議からレビュー講演をいただきます。

POSTER SESSION

各専門会議では、オーラルプレゼンテーションの他にポスターセッションを予定しています。詳しくは、各会議のCall for Papersをご覧ください。

OPIC 特別シンポジウム (4月25日(金) 9:45-14:30 展示会場 アネックスホール)

「光と物質の相互作用に基づく革新的光システムの構築にむけて」

公式言語: 英語

参加登録

Registration Fees (Member*)

	Before/On Mar. 20, 2014	After Mar. 21, 2014 & On-Site
Conference (General)	¥40, 000	¥45, 000
(Student, Retiree)	¥18, 000	¥21, 000

*) Member of organizer, sponsor and cooperative societies

Registration Fees (Non-Member)

	Before/On Mar. 20, 2014	After Mar. 21, 2014 & On-Site
Conference (General)	¥45, 000	¥50, 000
(Student, Retiree)	¥21, 000	¥23, 000

(4月21日(月)のAPLS2014も聴講可能です。)

OPIC2014は以下の団体よりご支援を頂いております。

□Financial Support

公益財団法人天田財団、公益財団法人コニカミノルタ科学技術振興財団、
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公益財団法人日本硝子工学助成会、公益財団法人井上科学振興財団

□Sponsor Ship

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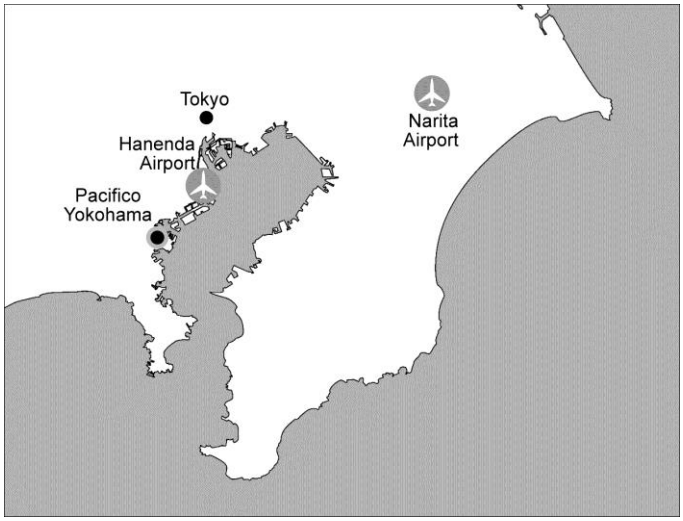
場所　パシフィコ横浜 会議センター

〒220-0012 横浜市西区みなとみらい1-1-1
Tel:045-221-2166
http://www.pacifico.co.jp/english/index.html



一般社団法人OPTICS & PHOTONICS INTRENATIONA協議会
OPIC2014事務局　小椋／窪田／柴崎／上野
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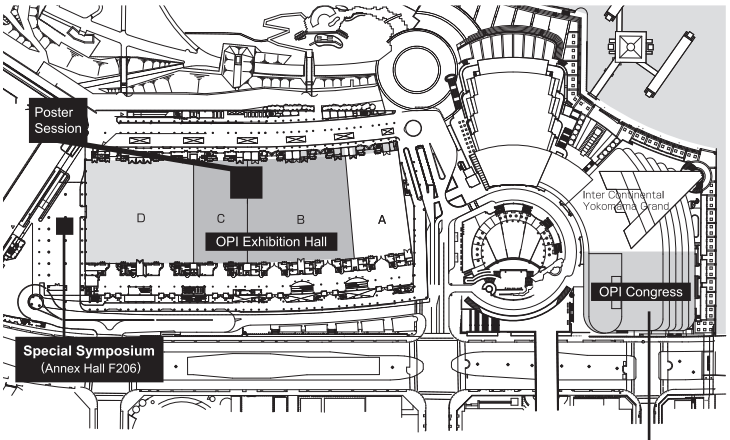
〒162-0814 東京都新宿区新小川町5-5　サンケンビル1F
オプトロニクス社気付
TEL 03-5228-3541　FAX 03-3269-2551

Pacifico Yokohama



Conference Center

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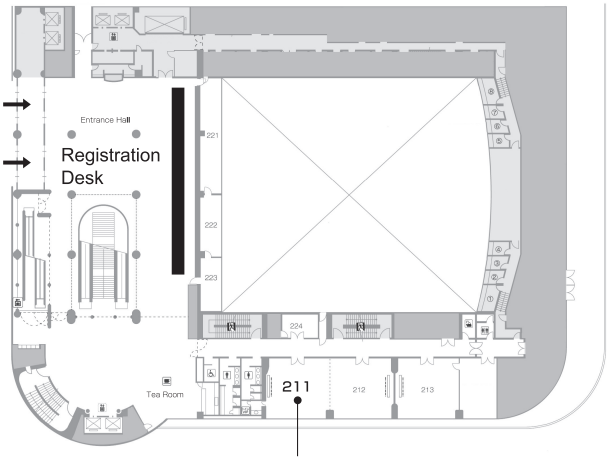
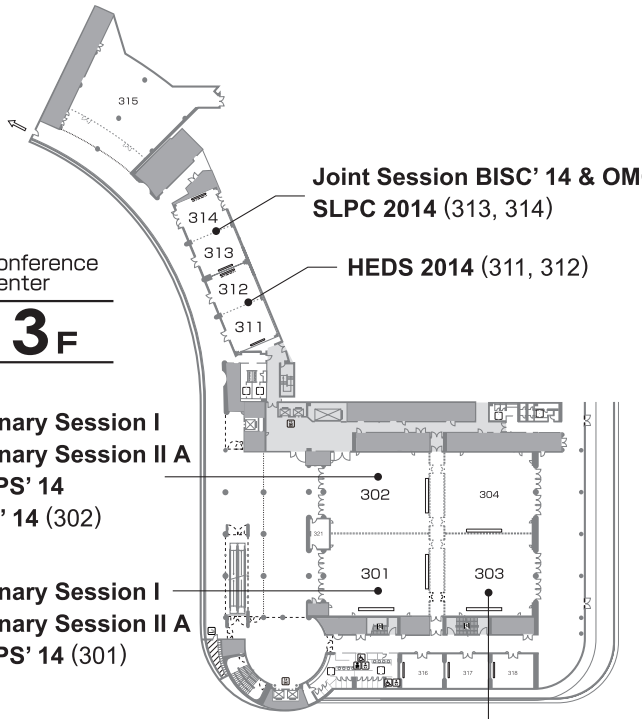


Secretariat (211)



Joint Session BISC' 14 & OMC' 14
SLPC 2014 (313, 314)

HEDS 2014 (311, 312)

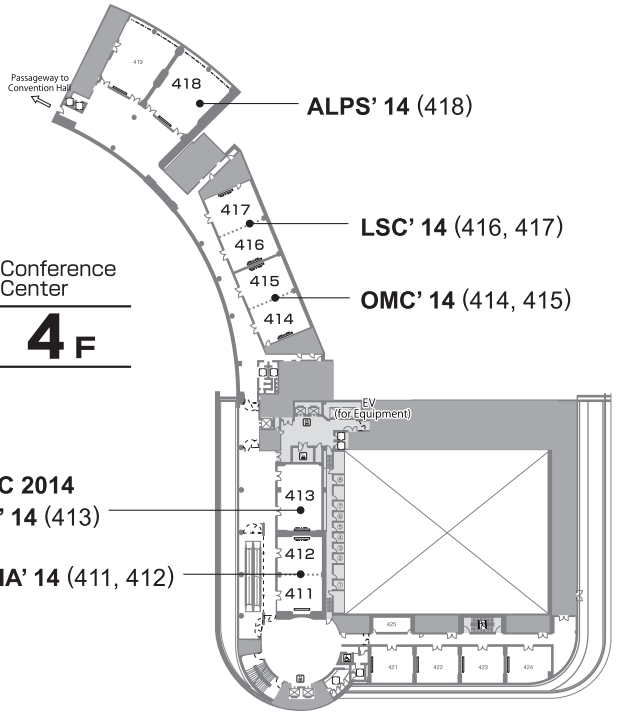
Conference Center

3 F

Plenary Session I
Plenary Session II A
ALPS' 14
LIC' 14 (302)

Plenary Session I
Plenary Session II A
ALPS' 14 (301)

Plenary Session II B
Joint Session LIC' 14 & PLD' 14
BISC' 14 (303)



ALPS' 14 (418)

LSC' 14 (416, 417)

OMC' 14 (414, 415)

Conference Center

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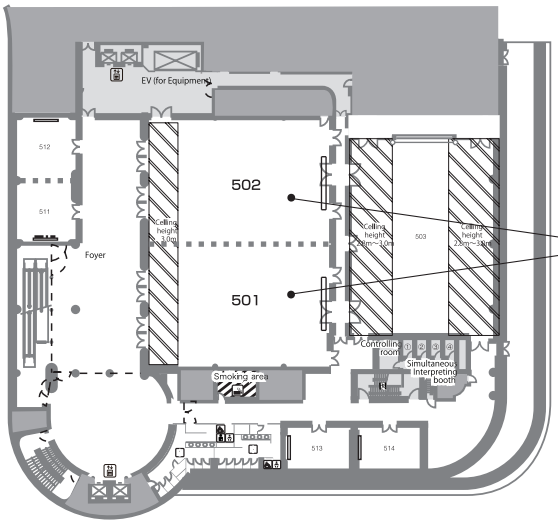
SLPC 2014
PLD' 14 (413)

LEDIA' 14 (411, 412)



Banguet
(501, 502)

Conference Center

5 F

Plenary Special Sessions　　4月22日（火）

Plenary Session I

Opening Remarks　　**9:30-9.40**

主催者挨拶　OPIC2014組織委員長　　**中井貞雄**（レーザー学会会長、大阪大学名誉教授）

Keynote Speeches by Congress Chairs　　**9:40-10:40**

1) VCSEL Photonics -Small and Smart-　　**伊賀健一**（東京工業大学 前学長）

2) Accelerator on a Chip and the Path to Coherent X-rays

Robert L. Byer　(Stanford University, USA)

3) Optical Tweezers as an Engineering Tool　**Andreas Ostendorf**

(Ruhr-University Bochum, Germany)

Special Talk　　**11:30-12:10**

High-Field Laser and High Energy Physics　　**鈴木　厚人**（高エネルギー加速研究機構）

Plenary Session II　　**13:30-15:10**

セッションA　(301+302)

1) レーザー光源（ALPS）
　神成文彦（慶應義塾大学）

2) 光マニュピュレーション（OMC）
　尾松孝茂（千葉大学）

3) レーザーダメージ（PLD）
　實野孝久（大阪大学）

4) レーザー点火（LIC）
　平等拓範（分子研）

5) バイオイメージング（BISC）
　谷田貝豊彦（宇都宮大学）

セッションB (303)

6) LED 産業応用（LEDIA）
　天野浩（名古屋大学）

7) 高エネルギー密度科学（HEDS）
　兒玉了祐（大阪大学）

8) レーザーとシンクロトロン放射（LSC）
　疇地宏（大阪大学）

9) レーザー加工（SLPC）
　Reinhart Poprawe
　(Fraunhofer Inst. for Laser Tech.)

Conferences　　4 月 22 日（火）－25 日（金）

■ALPS'14 ： The 3rd Advance Lasers and Photon Sources 2014　　**<先進レーザーと光源技術>**

主催：レーザー学会、　Conference Chair：神成文彦(慶応大学)

■BISC'14 ： Biomedical Imaging and Sensing Conference 2014　**<バイオイメージングと光計測>**

主催：宇都宮大学光学教育センター　Conference Chair：谷田貝豊彦（宇都宮大学）

■HEDS2014 ： International Conference on High Energy Density Science 2014

<高エネルギー密度科学の応用>

主催：レーザー学会、　Conference Chair：兒玉了祐(大阪大学)

■LEDIA'14 ： Conference on LED and Its Industrial Application'14　**<LED とその産業応用>**

主催：名古屋大学赤崎研究センター　Conference Chair：天野浩(名古屋大学)

■LIC'14 ： The 2nd Laser Ignition Conference 2014　**<レーザー点火>**

主催：レーザー学会「マイクロ固体フォトニクス」専門委員会、

Conference Chair：平等拓範(分子科学研究所)

■LSC'14 ： The 1st Conference on Laser and Synchrotron Radiation Combination Experiment 2014 〈レーザーとシンクロトロン放射〉

主催：大阪大学レーザーエネルギー学研究センター

Conference Chair：疇地宏（大阪大学）

■OMC'14 ： The 1st Optical Manipulation Conference 〈光マニュピュレーション〉

主催：応用物理学会 Conference Chair：尾松孝茂(千葉大学)

■PLD'14 ： The 3rd Pacific-rim Laser Damage Conference 〈レーザーダメージ〉

主催：SPIE, Inst. of Laser Eng. Osaka Univ., SIOM Chinese Academy of Science

Conference Chair：實野孝久（大阪大学）

■SLPC2014 ： The 1st Smart Laser Processing Conference 〈レーザ加工〉

主催：レーザ加工学会, Japan Laser Processing Society

Conference Chair ：岡本康寛（岡山大学）

OPIC2014専門国際会議プログラム

先進レーザーと光源技術 …… 9

ALPS'14 ： The 3rd Advance Lasers and Photon Sources 2014

バイオイメージングと光計測 …… 16

BISC'14 ： Biomedical Imaging and Sensing Conference 2014

高エネルギー密度科学の応用 …… 19

HEDS2014 ： International Conference on High Energy Density Science 2014

LEDとその産業応用 …… 22

LEDIA'14 ： Conference on LED and Its Industrial Application'14

レーザー点火 …… 26

LIC'14 ： The 2nd Laser Ignition Conference 2014

レーザーとシンクロトロン放射 …… 28

LSC'14 ： The 1st Conference on Laser and Synchrotron Radiation Combination Experiment 2014

光マニュピュレーション …… 30

OMC'14 ： The 1st Optical Manipulation Conference

レーザーダメージ …… 33

PLD'14 ： The 3rd Pacific-rim Laser Damage Conference

レーザ加工 …… 36

SLPC2014 ： The 1st Smart Laser Processing Conference

OPIC2014特別シンポジウム …… 40

Advance Lasers and Photon Sources'14

ALPS'14

Tuesday, April 22

16:00-18:00 ALPS1：Photonic Researches in Asia Room 301+302

Chair: F. Kannari, Conference Chair of ALPS'14, Keio Univ., Japan

ALPS1-1 16:00 **(Invited) Generation of Few-cycle Infrared Pulses from Degenerate Dual-pump OPCPA**
P. Lu
Huazhong Univ., China

ALPS1-2 16:30 **(Invited) Attosecond-jitter Ultrafast Lasers and Their Applications**
J. Kim
KAIST, Korea

ALPS1-3 17:00 **(Invited) High Power Red Semiconductor Laser for Display Application**
T. Yagi, K. Kuramoto, H. Mitsuyama, and K. Kadoiwa
Mitsubishi Electric Corp., Japan

----- OPIC Banquet (Room 501& 502) (18:00-20:00) -----

Wednesday, April 23

9:00-12:30 ALPS2: High Peak Power Lasers Room 301

Chair: H. Kiriyama, Program Committee Member
Japan Atomic Energy Agency, Japan

ALPS2-1 9:00 **(Invited) High Peak Power Laser System Based on Hybrid CPA and OPCPA Amplification**
X. Liang
Shanghai Institute of Optics and Fine Mechanics
Chinese Academy, China

ALPS2-2 9:30 **X-ray Coherent Mirage Phenomenon in Two-Stage X-ray Lasers**
T. Pikuz[1,2], A. Faenov[1,2], S. Magnitskyi[3], N. Nagorskyi[2], M. Tanaka[1], M. Ishino[1], M. Nishikino[1], Y. Fukuda[1], M. Kando[1], Y. Kato[4], and T. Kawachi[1]
[1] Japan Atomic Energy Agency, Japan, [2] Russian Academy of Sciences, Russia, [3]Moscow State Univ., Russia [4] The Graduate School for the Creation of New Photonics Industries, Japan

ALPS2-3 9:45 **HiLASE Multislab 100 J/10 Hz Laser System**
A. Lucianetti, M. Divoky, O. Slezak, M. Sawicka, J. Pilar, V. Jambunathan, and T. Mocek
HiLASE Project, Institute of Physics ASCR, Czech Republic

ALPS2-4 10:00 **Insertable Pulse Cleaning Module for High-intensity Ultrashort-pulse Lasers**
A. Yogo[1,2], K. Kondo[1], M. Mori[1], H. Kiriyama[1], K. Ogura[1], T. Shimomura[1], N. Inoue[3], Y. Fukuda[1], H. Sakaki[1], S. Jinno[1], M. Kanasaki[1,4], and P. R. Bolton[1]
[1]Japan Atomic Energy Agency, Japan, [2]Osaka Univ., Japan, [3]Hitachi Zosen Co., Japan, [4] Kobe Univ., Japan

ALPS2-5 10:15 **(Invited) Development of High Contrast 0.1 Hz 4 PW CPA Laser**
S. K. Lee[1,2], J. H. Sung[1,2], T. M. Jeong [1,2], and C. H. Nam[1,2]
[1]Institute for Basic Science, Republic of Korea [2] Gwangju Institute of Science and Technology, Republic of Korea

9:00-12:30 ALPS3: Optical Frequency Comb Room 418

Chair: H. Inaba, Program Committee Member, AIST, Japan

ALPS3-1 9:00 **(Invited) Graphene Devices for Ultra-low Noise Optical Frequency Combs**
C.-C. Lee and T. R. Schibli
Univ. Colorado at Boulder, USA

ALPS3-2 9:30 **Research on Key Technologies of High Repetition Rate Optical Frequency Comb**
X. Wang and Y. Hu
Beijing Institute of Technology, China

ALPS3-3 9:45 **A Novel Narrow-linewidth Laser System for Optical Clocks by Stabilization to an Optical Frequency Comb**
K. Hosaka, S. Okubo, H. Inaba, D. Akamatsu, M. Yasuda, A. Onae, and F.-L. Hong
AIST, Japan

ALPS3-4 10:00 **Optical Frequency Comb Using Stretched Pulse Mode-locked Er-doped Ultrashort Pulse Fiber Laser Using Carbon Nanotube Polyimide Film**
T. Nagaike[1], M. Aramaki[1], Y. Sakakibara[2], E. Omoda[2], H. Kataura[1], and N. Nishizawa[1]
[1]Nagoya Univ., Japan, [2]AIST, Japan

ALPS3-5 10:15 **RF Noise Measurement of a Microcavity Kerr Comb Generated by Dual Pumping**
R. Suzuki, T. Kato, T. Kobatake, and T. Tanabe
Keio Univ., Japan

ALPS3-6 10:30 **Ultra-Broadband Dual-comb Spectroscopy of C_2H_2**
K. Iwakuni[1], S. Okubo[2], H. Inaba[2], K. Hosaka[2], A. Onae[2], H. Sasada[1], and F.-L. Hong[2]

[1)]Keio Univ., Japan, [2)]AIST, Japan

----- Break (10:45-11:15)-----

ALPS2: High Peak Power Lasers (cont.) Room 301

Chair: N Miyanaga, Program Committee Member, Osaka Univ., Japan

ALPS2-6 11:15 **(Invited) The Apollon 10 PW Project: An Upcoming Ultra Intense Facility**
J. P. Zou[1)], C. L. Blanc[1)], D. N. Papadopoulos[1)], G. Chériaux[2)], P. Georges[3)], G. Mennerat[4)], F. Druon[3)], A. Pellegrina[1,3)], P. Ramirez[1,3)], F. Giambruno[1,2)], A. Fréneaux[1,2)], F. Leconte[1,2)], D. Badarau[1)], J.M. Boudenne[1)], P. Audebert[1)], D. Fournet[1)], T. Valloton[1)], C. Greverie[1)], J. L. Paillard[1)], J. L. Veray[1)], M. Pina[1)], P. Monot[4)], P. Martin[4)], F. Mathieu[1)], J. P. Chambaret, and F. Amiranoff[1)]
[1)]Laboratoire pour l'Utilisation des Lasers Intenses, CNRS, Ecole Polytechnique, Palaiseau, France, [2)]Laboratoire d'Optique Appliquée, ENSTA ParisTech, CNRS, Palaiseau, France, [3)]Laboratoire Charles Fabry, Institut d'Optique, CNRS, Univ Paris Sud, Palaiseau, France, [4)]CEA, Iramis, SPAM, Saclay, France

ALPS2-7 11:45 **First-principles Description of the Optical Response of α-quartz Exposed to Ultrashort Intense Laser Pulses**
K.-M. Lee[1)], C. M. Kim[1,2)], S. A. Sato[3)], T. Otobe[4)], Y. Shinohara[3,5)], K. Yabana[3)], and T. M. Jeong[1,2)]
[1)]Gwangju Institute of Science and Technology, Republic of Korea, [2)]Institute of Basic Science, Republic of Korea, [3)]Univ. Tsukuba, Japan, [4)]Japan Atomic Energy Agency, Japan, [5)]Max-Planck-Institute für Mikrostrukturphysik, Germany

ALPS2-8 12:00 **Yb^{3+}-doped Lu_2O_3 Ceramic Thin-disk Laser**
H. Nakao[1)], T. Inagaki[1)], A. Shirakawa[1)], K. Ueda[1)], H. Yagi[2)], and T. Yanagitani[2)]
[1)]Univ. Electro-Communications, Japan, [2)]Konoshima Chemical Co., Ltd., Japan

ALPS2-9 12:15 **High-Pulse-Energy Yb:YAG Thin Disk Kerr-lens Mode-locked Oscillator for Intra-cavity High Harmonic Generation**
N. Kanda[1,2)], A. A. Eilanlou[1)], T. Imahoko[3)], T. Sumiyoshi[3)], Y. Nabekawa[1)], M. K.-Gonokami[2)], and K. Midorikawa[1,2)]
[1)]RIKEN, Japan, [2)]Univ. Tokyo, Japan, [3)]Cyber Laser Inc., Japan

11:15-12:30 ALPS4 : Pulse Shaping Room 418

Chair: Y. Kobayashi, Program Committee Member, Univ. Tokyo, Japan

ALPS4-1 11:15 **(Invited) High-energy Optical Parametric Waveform Synthesizer**
O. D. Mücke[1,3)], G. Cirmi[1,3)], S. Fang[1,3)], G. M. Rossi[1,3)], S.-H. Chia[1,3)], F. X. Kärtner[1-4)], C. Manzoni[5)], P. Farinello[5)], and G. Cerullo[5)]
[1)]Deutsches Elektronen-Synchrotron DESY, Germany, [2)]Univ. Hamburg, Germany, [3)]The Hamburg Center for Ultrafast Imaging, Germany [4)]Massachusetts Institute of Technology, USA, [5)]IFN-CNR, Italy

ALPS4-2 11:45 **Long-term Stable Passive Synchronization between Two-color Mode-locked Lasers with Temperature Stabilization**
D. Yoshitomi and K. Torizuka
AIST, Japan

ALPS4-3 12:00 **Generation and Pulse Shaping of Ultrashort Infrared Pulses through Different Frequency Mixing using Polarization Shaped Super-Continuum Pulses**
R. Fujii, F. Isa, K. Yoshikiyo, K. Hirosawa, and F. Kannari
Keio Univ., Japan

ALPS4-4 12:15 **Phase-locked Raman sidebands generated by two-phonon interference**
H. Nishioka
Univ. Electro-Communications, Japan

----- Lunch Break (12:30-13:30)-----

13:30-15:00 ALPS5 : Nonlinear Optics Room 301

Chair: H. Minamide, Steering Committee Member, RIKEN, Japan

ALPS5-1 13:30 **(Invited) Quality Evaluation of Quasi-phase-matching Devices by Simple Diffraction Measurement**
P. P. Dwivedi, H. J. Choi, B. J. Kim, and M. Cha
Pusan National Univ., Republic of Korea

ALPS5-2 14:00 **Difference Frequency Generation in MgO:PPLN with a Thermal Waveguide**
I.-H. Bae[1)], H. S. Moon[2)], S. K. Kim[1)], and D.-H. Lee[1)]

13:30-17:30 ALPS7: Photon Science Room 418

Chair: Y. Kato, The Graduate School for the Creation of New Photonics Industries, Japan

ALPS7-1 13:30 **(Invited) Time-domain Multiplexing for Hybrid Quantum Information Processing**
A. Furusawa
Univ. Tokyo

ALPS7-2 14:00 **(Invited) The Progress on the Optical Frequency Standard of Trapped and Cold Ca^+**
K. Gao
China Academy of Sciences, China

[1)]KRISS, Republic of Korea, [2)]Pusan National Univ., Republic of Korea

ALPS5-3 14:15 **Suppression of Parasitic Green Light in Optical Parametric Oscillator by Engineered Quasi-Phase-Matching Structures**
H. H. Lim[1)], S. Kurimura[1)], and N. E. Yu[2)]
[1)]NIMS, Japan, [2)] Gwangju Institute of Science and Technology, Republic of Korea

ALPS5-4 14:30 **Laser-induced Breakdown and Damage Generation in Second Harmonic Generation by Periodically Poled $LiTaO_3$ Crystal**
O. A. Louchev[1)], H. Hatano[2)], N. Saito[1)], S. Wada[1)], and K. Kitamura[2)]
[1)]RIKEN, Japan, [2)]NIMS, Japan

ALPS5-5 14:45 **Dispersion Tolerance of Phase Sensitive Amplifier using PPLN waveguide**
M. Asobe[1)], T. Umeki[2)], and H. Takenouchi[2)]
[1)]Tokai Univ. Japan, [2)]NTT Photonics Labs., Japan

ALPS7-3 14:30 **Ultrafast Coherent Control Meets Ultracold Systems**
N. Takei[1,2,3)], C. Sommer[1,2,3)], H. Goto[1)], K. Koyasu[1,2,3)], H. Chiba[1,3,4)], Y. Okano[1)], G. Pupillo[3,5)], C. Genes[3,6)], M. Weidemüller[3,7)], and K. Ohmori[1,2,3)]
[1)]NINS, Japan, [2)]SOKENDA, Japan, [3)]CREST-JST, Japan, [4)]Iwate Univ., Japan, [5)]Univ. Strasbourg and CNRS, France, [6)]Univ. Innsbruck, Austria, [7)]Univ. Heidelberg, Germany

ALPS7-4 14:45 **Lifetime Measurement for Autoionizing Transition with Isolated Attosecond Pulse**
H. Mashiko[1)], T. Yamaguchi[1,2)], K. Oguri[1)], A. Suda[2)], and H. Gotoh[1)]
[1)]NTT Basic Research Labs., Japan, [2)]Tokyo Univ. Science, Japan

----- Break (15:00-15:30) -----

15:30-17:45 ALPS6 : THz Light Sources Room 301

Chair: H. Nishioka, Steering Committee Chair, Univ. Electro-Communications., Japan

ALPS6-1 15:30 **(Invited) THz Wave Generation Using Quasi-phase Matched Devices**
N. E. Yu
Gwangju Institute of Science and Technology, Republic of Korea

ALPS6-2 16:00 **Effective THz Detection Using a Periodically Poled $LiNbO_3$**
K. Nawata[1)], T. Notake[1)], H. Ishizuki[2)], F. Qi[1)], Y. Takida[1)], S. Fan[1)], S. Hayashi[1)], T. Taira[2)], and H. Minamide[1)]
[1)]RIKEN, Japan, [2)]NINS, Japan

ALPS6-3 16:15 **Coherent Monochromatic Terahertz-wave Pulse Detection by using Nonlinear Parametric Up-conversion**
S. Hayahi[1)], K. Nawata[1)], K. Kawase[2,1)], and H. Minamide[1)]
[1)]RIKEN, Japan, [2)]Nagoya Univ., Japan

ALPS6-4 16:30 **Effects of Bias Voltage in THz Wave Generations using a Laser Chaos**
F. Kuwashima[1)], T. Shirao[1)], M. Tani[2)], K. Kurihara[2)], M. Hangyo[3)], T. Nagashima[3)]
[1)]Fukui Univ. of Technology, Japan, [2)]Univ. Fukui, Japan, [3)]Osaka Univ., Japan

ALPS6-5 16:45 **Laser Pulse Duration Dependence of THz Emission from Laser Produced Cluster Plasmas**
K. Mori[1)], M. Hashida[1)], T. Nagashima[2)], S. Inoue[1)], S. Tokita[1,2)], M. Hangyo[2)], and S. Sakabe[1)]
[1)]Kyoto Univ., Japan, [2)]Osaka Univ., Japan

ALPS6-6 17:00 **Ultra-broadband Terahertz Time-domain Spectroscopic Ellipsometry**
M. Yamashita, H. Takahashi, and C. Otani
RIKEN, Japan

ALPS6-7 17:15 **Terahertz-wave Balanced Detection at Room Temperature for Precise Frequency-resolved Measurement**

ALPS7: Photon Science (cont.) Room 418

Chair: Y. Nagata, Steering Committee Member, RIKEN, Japan

ALPS7-5 15:30 **(Invited) Ultrafast Probing of Molecules by Pump-probe Coincidence Momentum Imaging and Laser Assisted Electron Diffraction**
K. Yamanouchi,
Univ. Tokyo

ALPS7-6 16:00 **(Invited) Generation of Coherent Continua in Soft X Rays using a Carrier-envelope Phase-controlled Few-cycle Infrared Light Source**
N. Ishii[1)], K. Kaneshima[1)], H.Geiseler[1)], K. Kitano[1)], T. Kanai[1)], S. Watanabe[2)], and J. Itatani[1)]
[1)]Univ. Tokyo, [2)]Tokyo Univ. Science

ALPS7-7 16:30 **(Invited) Monolithic Ge Lasers for Si CMOS**
J. Michel, Y. Cai, Z. Han, L. Zhang, W. Yu, and L. C. Kimerling
Massachusetts Institute of Technology, USA

ALPS7-8 17:00 **(Invited) SPASER (Plasmonic Laser And Amplification)**
M. Stockman
Georgia State Univ., USA

Y. Takida, T. Notake, K. Nawata, F. Qi, S. Fan, S. Hayashi, and H. Minamide
RIKEN, Japan

ALPS6-8 17:30 **Parabolic Pulse Amplification using Double-clad Yb-doped Fiber Toward High-power THz Generation**
J. Hamazaki[1)], H. Mogi[2)], N. Sekine[1)], S. Ashihara[2)], and I. Hosako[1)]
[1)]NICT, Japan, [2)]Tokyo Univ. Agriculture and Technology, Japan

Thursday, April 24

9:00-12:30 ALPS8: High Power Lasers Room 301
Chair: S. Sakabe, Program Committee Member, Kyoto Univ., Japan

ALPS8-1 9:00 **Thermal-lens-free Cooling Concept Alternatives for High Peak/High Average Power Solid State Lasers**
K.-I. Ueda[1-5)]
[1)]Univ. Electro-Communications, Japan, [2)]Osaka Univ., Japan, [3)]Hamamatsu Photonics K.K., Japan, [4)]Institute of Applied Physics, Russia, [5)]Toyota Physical and Chemical Research Institute, Japan

ALPS8-2 9:15 **High Peak Power Sub-100 fs Diode-Pumped Yb-ion Lasers: Going from kW to MW**
H. Zhao and A. Major
Univ. Manitoba, Canada

ALPS8-3 9:30 **Toward a Compact High-energy Femtosecond Oscillator**
D. H. Song[1)], W. B. Cho[1)], H. W. Lee[1)], D. H. Shin[1)], D.-K. Ko[2)], and M. Y. Jung[1)]
[1)]Electronics and Telecommunications Research Institute, Republic of Korea, [2)]Gwangju Institute of Science and Technology, Republic of Korea

ALPS8-4 9:45 **Power Scaling in Diode-end-pumped Nd:YVO_4 Laser with Multiple Doping Concentrations**
Y.-J. Huang, K.-W. Su, and Y.-F. Chen
National Chiao Tung Univ., Taiwan

ALPS8-5 10:00 **Femtosecond Mode-locked Nd^{3+}-doped $Ba(Zr,Mg,Ta)O_3$ Ceramic Laser**
Y. Higashi[1)], T. Tomita[1)], J. Fuse[1)], H. Nakao[1)], A. Shirakawa[1)], K. Ueda[1)], A. A. Kaminskii[2)], S. Kuretake[3)], Y. Kintaka[3)], K. Murayama[3)], and N. Tanaka[3)]
[1)]Univ. Electro-Communications, Japan, [2)]Russian Academy of Sciences, Russia, [3)]Murata Manufacturing Co., Ltd., Japan

ALPS8-6 10:15 **High Power Nd:YAG Ceramic Thin Disc Laser for Advanced Laser Machining**
H. Fujita[1)], K. Iyama[1,3)], K. Tsubakimoto[1)], H. Yoshida[1)], M. Fujita[2)], N. Miyanagaa[1)], and T. Kawashima[3)]
[1)]Osaka Univ. Japan, [2)]Institute for Laser Technology, Japan, [3)]Hamamatsu Photonics K.K., Japan

----- Break (10:30-11:00)-----

ALPS8: High Power Lasers (cont.) Room 301
Chair: A. Suda, Steering Committee Member, Tokyo Univ. of Science, Japan

9:00-10:45 ALPS9: Bio-photonics Room 418
Chair: T. Kushibiki, National Defense Medical College, Japan

ALPS9-1 9:00 **(Invited) Nonlinear Coherent Raman Imaging using Fast and Wide Spectral Tuning Mode-locked Laser**
M. Hashimoto
Osaka Univ., Japan

ALPS9-2 9:30 **Saturated Excitation (SAX) Microscopy with an Optimized Excitation Modulation for 3D Sub-diffraction-limit Imaging**
Y. Yonemaru, M. Yamanaka, K. Uegaki, N. I. Smith, S. Kawata, and K. Fujita
Osaka Univ., Japan

ALPS9-3 9:45 **Some Information of Laser Induced-sound Vibration Properties in Biological Tissue**
S. Sano, K. Kashima, and Y. Hashishin
Kinki Univ, Japan

ALPS9-4 10:00 **Femtosecond Laser Treatment of Neovascularizations in Norway Brown Rat Cornea: *In-vivo***
M. S. Sidhu1[2)], H.-S. Lee[1)], S.-C. Jeoung[1)]
[1)]Korea Research Institute of Standard and Science, Republic of Korea, [2)]Univ. Science and Technology, Republic of Korea

ALPS9-5 10:15 **Necessity of Two Photon Technology in Optogenetics**
T. Kushibiki, S. Okawa, T. Hirasawa, and M. Ishihara
National Defense Medical College, Japan

ALPS9-6 10:30 **Investigation of Optimal Pulse Structure of Quantum Cascade Laser with Peak Wavelength of 5.7 μm for Less-invasive Ablation of Atherosclerotic Plaques**
K. Hashimura, K. Ishii, and K. Awazu
Osaka Univ., Japan

----- Break (10:45-11:15)-----

ALPS8-7 11:00 **(Invited) High-Power and High-efficiency 9xx-nm Laser Diodes for Pumping Applications**
T. Morita, N. Kageyama, T. Nagakura, K. Torii, M. Takauji, J. Maeda, and H. Yoshida
Hamamatsu Photonics K.K., Japan

ALPS8-8 11:30 **High-gain and High-peak-power Operation of a Yb:YAG Planar Waveguide Laser Amplifier**
T. Takasaki, Y. Watanabe, and T. Yanagisawa
Mitsubishi Electric Corp., Japan

ALPS8-9 11:45 **180 W of High Average Power at 1 kHz, 532 nm from Nd:YAG Laser in Long Term Operation**
Y. Tamaoki[1,2], Y. Kato[1,2], K. Iyama[1,2], T. Kawashima[1,2], and N. Miyanaga[3]
[1]Hamamatsu Photonics K.K., Japan, [2]Advanced Laser and Process Technology Research Association (ALPROT), Japan, [3]Osaka Univ., Japan

ALPS8-10 12:00 **Q-switched Operation of Nd:YAG Vortex Lasers**
D.J.Kim, and J.W.Kim
Hanyang Univ. Ansan, Republic of Korea

ALPS8-11 12:15 **A Femtosecond Ti:Sapphire Laser Pumped Directly with a Green Diode Laser**
A. Hosaka, S. Sawai, K. Hirosawa, and F. Kannari
Keio Univ., Japan

11:15-12:15 ALPS10: High energy lasers Room 418
Chair: K. Oguri, Program Committee Member, NTT Basic Research Labs.

ALPS10-1 11:15 **Single-shot Diffractive Imaging at 13.9 nm**
K. H. Lee[1], H. Yun[1], J. H. Sung[1,2], S. K. Lee[1,2], T. M. Jeong[1,2], H. T. Kim[1,2], and C. H. Nam[1,2]
[1]Institute for Basic Science, Republic of Korea, [2]Gwangju Institute of Science and Technology, Republic of Korea

ALPS10-1 11:15 **Single-shot Diffractive Imaging at 13.9 nm**
K. H. Lee[1], H. Yun[1], J. H. Sung[1,2], S. K. Lee[1,2], T. M. Jeong[1,2], H. T. Kim[1,2], and C. H. Nam[1,2]
[1]Institute for Basic Science, Republic of Korea, [2]Gwangju Institute of Science and Technology, Republic of Korea

ALPS10-2 11:30 **Sub-mW Vacuum-UV Harmonic Source for Pump-probe Photoelectron Imaging**
S. Adachi[1,2], M. Sato[1], Y.-I. Suzuki[1], T. Suzuki[1,2]
[1]Kyoto Univ., Japan, [2]RIKEN, Japan

ALPS10-3 11:45 **Coherent Muonium Lyman-α Resonance Radiation Source Based on a Diode-pumped Fiber and Solid-state Laser System**
N. Saito[1], Y. Oishi[2], K. Miyazaki[1], K. Okamura[1], O. A. Louchev[1], M. Iwasaki[2], and S. Wada[1]
[1]Center for Advanced Photonics, Japan, [2]RIKEN, Japan

ALPS10-4 12:00 **Development of High Sensitive Laser Absorption Spectroscopy for Plasma Wind Tunnel using High Power Laser**
R. Morita, M. Matsui , and Y. Yamagiwa
Shizuoka Univ., Japan

----- Lunch Break & Poster Session (12:30-15:15)-----

15:15-17:15 ALPS11: Fiber Lasers Room 301
Chair: N. Nishizawa, Program Committee Chair, Nagoya Univ.,Japan

ALPS11-1 15:15 **(Invited) High-power Divided Pulse Amplification of Er-Doped Fiber Laser**
Q. Ru, Z. Zeng, L. Li, W. Li, and H. Zeng
East China Normal Univ., China

ALPS11-2 15:45 **(Invited) High Power Mid IR Fiber Frequency Combs**
M. E. Fermann, K. Lee, A. Mills, J. Jiang, and C. Mohr
IMRA America Inc., USA

ALPS11-3 16:15 **Phase-locked Q-switched Multicore Fiber Laser with Saturable Absorber**
K. Sato, T. Kubouchi, H. Yamada, and A. Shirakawa
Univ. Electro-Communications, Japan

ALPS11-4 16:30 **Power-Maximized Broadband Wavelength-swept Fiber Optical Parametric Oscillator**
J. Lei and S.Yamashita
Univ. Tokyo,

ALPS11-5 16:45 **Improvement of Sensitivity and Penetration Depth in Ultrahigh-resolution Optical Coherence Tomography using High Power Supercontinuum Source at 1.7 μm Wavelength**
H. Kawagoe[1], S. Ishida[1], M. Aramaki[1], Y. Sakakibara[2], E. Omoda[2], H. Kataura[2], and N. Nishizawa[1]
[1]Nagoya Univ., Japan, [2]AIST, Japan

ALPS11-6 17:00 **Recent Progress on Kumgang Laser – 0.4 J/10 kHz/10 ns (4 kW) Coherent Beam Combination Laser using Self-controlled Stimulated Brillouin Scattering Phase conjugate mirrors (SBS-PCMs)**
H. J. Kong[1], S. Park[1], S. Cha[1], J. S. Kim[2], and B. J. Lee[3]
[1]KAIST, Republic of Korea, [2]Laser Spectronix, Republic of Korea [3]HGU, Republic of Korea

17:15-17:45 Closing Room 301

Closing Remarks

17:15 N. Nishioka, Univ. Electro-Communications, Japan

13:00-15:00 ALPS: Poster Session Exhibition Hall C

ALPS-p01 **High-peak and High-average-power Linearly Polarized Tunable CW and Q-switched Lasers Based on Yb-doped Rod PCF**
H. Yoshida, K. Tsubakimoto, H. Fujita, and N. Miyanaga
Osaka Univ., Japan

ALPS-p02 **Characteristics of a Talbot Cavity for Coherent Combination of a Laser-diode-array-pumped Nd:YVO_4 Waveguide Laser Array**
K. Hirosawa[1)], F. Kannari[1)], and T. Yanagisawa [2)]
[1)]Keio Univ., Japan, [2)]Mitsubishi Electric, Japan

ALPS-p03 **Filled-aperture, Single detector Coherent Beam Combining Technique Using Simple Algorithms**
H. Chosrowjan[1,3)], S. Taniguchi[1,3)], M. Fujita[1,2,3)], K. Tsubakimoto[2)], H. Yoshida2), N. Miyanaga2), and Y. Izawa[1)]
[1)]Institute for Laser Technology, Japan, [2)]Osaka Univ., Japan, [3)]ALPROT, Japan

ALPS-p04 **335 W, 15 kHz, 4.8 ns Green Laser from Harmonic Converted Nd:YAG MOPA**
K. Tsubakimoto, H. Yoshida, H. Fujita, and N. Miyanaga
Osaka Univ., Japan

ALPS-p05 **Motheye Optics utilizing Nanoimprint**
S. Endoh and N. Kaneko
Dexerials Corp., Japan

ALPS-p06 **Calorimetric Measurement for Tandem Pumped Ytterbium Doped Fiber Amplifiers**
H. Jeong[1)], Y. Chang[2)], and J. Nilsson[2)]
[1)]Korea Institute of Industrial Technology, Republic of Korea, [2)]Univ. Southampton, UK

ALPS-p07 **Temperature Dependences of Small Signal Gain for Nd/Cr:YAG Ceramic**
Y. Honda[1)], S. Motokoshi[2)], T. Jitsuno[1)], N. Miyanaga[1)], K. Fujioka[1)], M. Nakatsuka[2)], M. Yoshida[3)]
[1)]Osaka Univ., Japan [2)]Institute for Laser Technology, Japan, 3)Kinki Univ., Japan

ALPS-p08 **Recyclable Air Fuel Cells Using Sintered Mg Nanopastes for Solar Energy Cycle**
T. Saiki[1)], S. Uchida[2)], T. Karita[1)], K. Nakamura[1)], Y. Nishikawa[1)], S. Taniguchi[3)], and Y. Iida[1)]
[1)]Kansai Univ., Japan, [2)]The Graduate School for the Creation of New Photonics Industries, Japan, [3)]Institute for Laser Technology, Japan

ALPS-p09 Laser Sintering of Nanopastes with Reduced Metal Nanoparticles Prepared by Laser Ablation in Liquids
T. Saiki, M. Yoshida, Y. Koga, K. Ri, and Y. Iida
Kansai Univ., Japan

ALPS-p10 **Influence of Sweep Frequency on Sensitivity Enhancement of Wavelength Modulation Spectroscopy for Laser Plasma Diagnostics**
Y. Sato, R. Morita, M. Matsui, and Y. Yamagiwa
Shizuoka Univ., Japan

ALPS-p11 **Amplification of High Repetitive Pulse Laser Using Nd/Cr:YAG Ceramic Active Mirror Amplifier**
Y. Nishino, T. Saiki, T. Nakamachi, K. Fujioka, M. Nakatsuka, and Y. Iida
Kansai Univ., Japan

ALPS-p12 **Passively Q-switched Pr^{3+}:YLF Laser with Cr^{4+}:YAG Saturable Absorber and Intracavity Frequency Doubling**
H. Tanaka, R.Kariyama, J. Kojou, and F. Kannari
Keio Univ., Japan

ALPS-p13 **Ultrashort Pulse VUV Laser System with an OFI Ar_2^* Amplifier**
M. Kaku, T. Daikyuji, M. Katto, S. Kubodera
Univ. Miyazaki,, Japan

ALPS-p14 **Direct Writing of Waveguides in Pr:ZBLAN Glass with Femtosecond Laser Pulses**
Y. Yamanaka, K. Hirosawa, and F. Kannari
Keio Univ., Japan

ALPS-p15 **Evaluation of IR Laser Processing Properties for Organic Thin Film**
S. Ono, V. Srinivasan, N. Tsuda, J. Yamada, and S. Ochiai
Aichi Institute of Technology, Japan

ALPS-p16 **High-Gain Regenerative Chirped-Pulse Amplifier using Photonic Crystal Rod Fiber with 100 μm Core Diameter**
J. Ogino[1)], K. Sueda[1)], T. Kurita[2)], T. Kawashima[2)], and N. Miyanaga[1)]
[1)]Osaka Univ., Japan, [3)]Hamamatsu Photonics K. K., Japan

ALPS-p17 **High Peak Power All-fiber MOPA System for Pulse Widths of from 50 ps to 2 ns**
R. Yamashita[1)], Y. Kamba[1)], K. Tei[1)], S. Yamaguchi[1)] , J. Enokidani[2)] and S. Sumida[2)]
[1)]Tokai Univ., Japan, [2)]OPT-i, Japan

ALPS-p18 **Generation of Few-cycle Infrared Pulses from Degenerate Dual-Pump OPCPA**
Z. Hong[1)], Q. Zhang[1)], and P. Lu[1)]
[1)]Huazhong Univ. of Science and Technology, China

ALPS-p19 **Temperature Dependence of the Emission Cross Section of Yb^{3+} and Nd^{3+} Doped Ceramic Laser Materials**
K. Izuno[1)], K. Funabiki[1)], T. Kenmotsu[1)], M. Wada[1)], K. Muramatsu[2)], T. Yanagitani[2)], and H. Kiriyama1[3)]
[1)]Doshisha Univ., Japan, [2)]Konoshima

Chemical Co., Ltd., Japan, [3]Japan Atomic Energy Agency, Japan

ALPS-p20 **Diode-pumped Femtosecond Yb:KLu $(WO_4)_2$ Laser Mode-locked by Carbon Nanostructure-based Saturable Absorber Mirror**

S. Y. Choi[1], J. W. Kim[1], M. H. Kim[1], D.-I. Yeom[1], B. H. Hong[2], X. Mateos[3], M. Aguiló[3], F. Díaz[3], V. Petrov[4], U. Griebner[4], F. Rotermund[1]

[1]Ajou Univ., Republic of Korea, [2]Seoul National Univ., Republic of Korea, [3]Universitat Rovira i Virgili, Spain, [4]Max Born Institute for Nonlinear Optics and Short Pulse Spectroscopy, Germany

ALPS-p21 **Modelling of Atomic Process and Hydrodynamics of EUV Light Sources for Microlithography**

A. Sasaki[1], K. Nishihara[2], A. Sunahara[3]

[1]Japan Atomic Energy Agency, Japan, [2]Osaka Univ., Japan, [3]Institute for Laser Technology, Japan

ALPS-p22 **F_2 Laser Formation of Corrosion Resistant Iron Thin Films**

M. Okoshi[1,2], Y. Awaihara[1], T. Yamashita[2] and N. Inoue[1]

[1]National Defense Academy, Japan, [2]Kanto Gakuin Univ., Japan

ALPS-p23 **Comparison of Supercontinuum with Dispersion of HLNF and Solution of Bandwidth Limitation in Loop Cavity**

Y. Lan, H. Kuo and W. Lin

Chang Gung Univ., Taiwan

ALPS-p24 **Real-time THz Imaging by Difference Frequency Generation in a DAST Crystal at Room Temperature**

S. Fan, F. Qi, T. Notake, K. Nawata, T. Matsukawa, Y. Takida, and H. Minamide

RIKEN, Japan

ALPS-p25 **Angular Dispersive Frequency Conversion Method with Periodical Poling Lithium Niobate Crystal**

Y. Michine and H. Yoneda

Univ. Electro-Communications, Japan

ALPS-p26 **Q-switched Yb:KYW Planar Waveguide Laser by Carbon Nanostructures**

J. W. Kim[1], S. Y. Choi[1], S. Aravazhi[2], M. Pollnau[2], U. Griebner[3], V. Petrov[3], D.-I. Yeom[1], and F. Rotermund[1]

[1]Ajou Univ., Republic of Korea, [2]Univ. of Twente, Netherland, [3]Max Born Institute for Nonlinear Optics and Short Pulse Spectroscopy, Germany

ALPS-p27 **Formation of Noise-Like Pulses in Dispersion-managed Fiber Laser Cavities with Fast and Slow Saturable Absorbers**

S. Lee, L. A. V.-Zuniga, and Y. Jeong

Seoul National Univ., Japan

ALPS-p28 **Terahertz Electron Dynamics in Dye-Sensitized $BaSnO_3$**

B. J. Kang[1], S. S. Shin[2], I. H. Baek[1], K. S. Hong[2], and F. Rotermund[1]

[1]Ajou Univ., Republic of Korea, [2]Seoul National Univ., Republic of Korea

ALPS-p29 **Measurement of Absolute Refractive Indices of Nonlinear Optical Medium by Interferometric Method**

H. J. Choi and M. Cha

Pusan National Univ., Japan

ALPS-p30 **Mid-infrared Optical Parametric Oscillator Pumped with Rapidly Tunable Cr:ZnSe Laser**

M. Yumoto, N. Saito, and S. Wada

RIKEN, Japan

ALPS-p31 **Spectral Properties of Light in Photonic Liquid Crystals Doped with Nanoparticles in the Presence of Induced Defects**

H. Gharagulyan[1], M. S. Rafayelyan[1], A. H. Gevorgyan[1], and R. B. Alaverdyan[1]

[1]Yerevan State Univ., Armenia

ALPS-p32 **Directional Control of Surface Plasmon Hot Spot with Double Nanoslit Segment Arrays**

S.-Y. Lee, S. Kim, K. Kim, and B. Lee

Seoul National Univ., Republic of Korea

ALPS-p33 **Control of Ultrafast Localized Plasmon using Response Functions Measured at Orthogonal Polarized Excitation**

Y. Masaki, M. Kusaba, K.Toma, and F. Kannari

Keio Univ., Japan

ALPS-p34 **Control of Grating-coupled Ultrafast Surface Plasmon Pulse and its Nonlinear Emission by Shaped Femtosecond Laser Pulses**

K. Toma, Y. Masaki, M. Kusaba, K. Hirosawa, and F. Kannari

Keio Univ., Japan

ALPS-p35 **Plasmonic Metasurface Induced Off-axis Coherent Perfect Absorber**

H.. Park, S.-Y. Lee, and B. Lee

Seoul National Univ., Republic of Korea

ALPS-p36 **Analytical Solutions of Electromagnetic Waves in Focusing and Magnifying Cylindrical Hyperlenses : Green's Function approach**

P. Tapsanit[1,2], M. Yamashita[2], and C. Otani[1,2]

[1]Tohoku Univ., Japan, [2]RIKEN, Japan

ALPS-p37 **High-speed Three Dimensional SS-OCT using a KTN Swept Source for Imaging Underneath Tissue Surface**

A. Fukuda[1], Y. Sugawa[1], J. Miyazu[2], M. Ueno[2], T. Sakamoto[2], Y. Sasaki[2], S. Toyoda[2], J. Kobayashi[2] and M. Ohmi[1]

[1]Osaka Univ., Japan, [2]NTT Photonics Labs., Japan

ALPS-p38 **Using Two-dimensional Spatial and Temporal Focusing Microscopy to Increase the Imaging Depth and Decrease the Photobleaching Probability**

Q. Song [1,2], A. Nakamura[1], A. Isouchi[1], K. Hirosawa[1], K. Isobe[2], K. Midorikawa[2], and F. Kannari[1]

[1]Keio Univ., Japan, [2]RIKEN, Japan

ALPS-p39 **Detection of Early Caries by**

Laser-induced Breakdown Spectroscopy
S. Sasazawa[1)], S. Kakino[2)], T. Katagiri[1)] and Y. Matsuura[1)]
[1)]Tohoku Univ., Japan, [2)]Tokyo Medical and Dental Univ., Japan

ALPS-p40 **Shockwave Generation by Erbium:YAG Laser-induced Liquid Jet Based on Hollow Optical Fiber**
K. Takahashi, T. Katagiri, and Y. Matsuura
Tohoku Univ., Japan

ALPS-p41 **Temporal Behavior of Fine Heat Source in a Fiber Tip for Clinical Applications**
M. Miyara, K. Maeda, Y. Imai, T. Fujimoto, K. Tei, and S. Yamaguchi
Tokai Univ., Japan

ALPS-p42 **Ultrahigh Resolution, High Speed Optical Coherence Tomography using High Power Supercontinuum at 0.8 μm Wavelength Region**
Y. Hattori, H. Kawagoe, and N. Nishizawa
Nagoya Univ., Japan

ALPS-p43 **Fluorescence Properties for Synthesized Nd:CNGG Powders**
T. Isshiki[1)], Y. Honda[1)], S. Motokoshi[2)], K. Fujioka[1)] , T. Jitsuno[1)] , M. Murakami[1)] , and M. Yoshida[3)]
[1)]Osaka Univ., Japan, [2)]Institute for Laser Technology, Japan, [3)]Kinki Univ., Japan

ALPS-p44 **Present Status of LED-based Plant Factory in Japan**
M. Takatsuji
Foundation of Social Development Research Center, Japan

Biomedical Imaging and Sensing Conference ’14

BISC’14

Tuesday, April 22

15:30-16:00 Opening Room 313+314

Opening Remarks

15:30 **T. Omatsu, Conference Chair of OMC’ 14**
Chiba Univ., Japan

16:00-18:00 BISC& OMC Joint session Room 313+314

Chair: K. Sasaki, Co-Chair of OMC’14
Hokkaido Univ., Japan

BISC&OMC-1 16:00 **(Plenary) New perspectives for optical manipulation in air and vacuum**
K. Dholakia
Univ. St. Andrews, UK

BISC&OMC-2 16:40 **(Plenary) Polarization-sensitive OCT (PS-OCT) for retinal imaging**
B. Cense
Utsunomiya Univ., Japan

BISC&OMC-3 17:20 **(Plenary) Optical Tweezers Based Biomicrorheology**
A. Chiou
National Yang-Ming Univ., Taiwan

----- OPIC Banquet (Room 501& 502) (18:00-20:00) -----

Wednesday, April 23

9:00-9:15 Opening Room 303

Opening Remarks

9:00 T. Yatagai, Conference Chair of BISC’ 14
Utsunomiya Univ., Japan

9:15-10:30 BISC1：Holography, Delivery Technique Room 303

Chair: O. Matoba, Steering Committee Chair of BISC’14,
Kobe Univ., Japan

BISC1-1 9:15 **(Plenary) Digital Holographic Microscopy in the Life Sciences**
Gert von Bally
Universitätsklinikum Münster, Germany

BISC1-2 10:00 **(Invited) Targeted Delivery and Controlled Release of Molecules by the Use of Photomechanical Waves**
S. Sato
National Defense Medical College Research Institute, Japan

----- Break （10:30-10:45）-----

10:45-12:15 BISC2 : Raman Spectroscopy Room 303

Chair: T. Iwai, Program Committee Member of BISC’14,
Tokyo Univ. of Agri. & Tech., Japan

BISC2-1 10:45 **(Invited) Multicolor, Stain-free Imaging of Tissue with Stimulated Raman Scattering**
Y. Ozeki
The Univ. of Tokyo, Japan

BISC2-2 11:15 **Slit-scanning Raman Microscope for Imaging Biological Functions**
K. Fujita [1,2)], A.F. Palonpon [2)], L.-da Chiu [1)], M. Okada [1)], H. Yamakoshi [2)], J. Ando [2)], K. Dodo [2,3)], N.I. Smith [4)], M. Sodeoka [2,3)], and S. Kawata [1)]
[1)] Osaka Univ., Japan, [2)] JST-ERATO, Japan, [3)] RIKEN, Japan, [4)] IFRC, Osaka Univ., Japan

BISC2-3 11:30 **Raman Spectroscopic Study for Osteoporosis in Ovariectomised (OVX) Rats**
Y. Oshima [1,2,3)], T. Iimura [2,3)], A. Hikita [1,3)], T. Imamura [1,2,3)]
[1)] Ehime Univ. Hospital, Japan, [2)] Ehime Univ. of Medicine, Japan, [3)] Ehime Univ., Japan

BISC2-4 11:45 **(Invited) Optical Biopsy System Based on Hollow Optical Fibers**
Y. Matsuura
Tohoku Univ., Japan

----- Lunch Break （12:15-13:30）-----

13:30-15:30 BISC3: Poster Session Exhibition Hall C

BISCp3-1 **Phase-Contrast Scanning Optical Microscopy of Biological Tissues Using Annular Illumination**
Y. Miyake, M. Hisaka, and T. Ikuta
Osaka Electro-Communication Univ., Japan

BISCp3-2 **High Spatial Resolution Time-lapse Imaging with Electron-beam Excitation Assisted Optical Microscope**
W. Inami [1,3], M. Fukuta [1], Y. Masuda [1], Y. Nawa [1,2], A. Ono [1,3], S. Lin [1], Y. Kawata [1,3], and S. Terakawa [3,4]
[1] Shizuoka Univ., Japan, [2] JSPS, Japan, [3] CREST, JST, Japan, [4] Hamamatsu Univ. of Medicine, Japan

BISCp3-3 **Observation of Aggregation Structure of Red Blood Cells in Blood Coagulation Using Digital Holographic Microscopy**
H. Funamizu, Y. Watanabe, and Y. Aizu
Muroran Inst. Tech., Japan

BISCp3-4 **Observation of Sound Wave Field by Using Digital Holography**
H. Inokuchi [1], K. Nitta [1], O. Matoba [1], and Y. Awatsuji [2]
[1] Kobe Univ., Japan, [2] Kyoto Inst. Tech., Japan

BISCp3-5 **Analyzing Influence of Degree of Temporal Coherence on Incoherent Digital Holography**
X. Quan [1], K. Nitta [1], O. Matoba [1], and Y. Awatsuji [2]
[1] Kobe Univ., Japan, [2] Kyoto Inst. Tech., Japan

BISCp3-6 **Extension of the Space-bandwidth Product in Single-shot Multiwavelength Interferometry Using a Single Reference Beam**
T. Tahara and Y. Arai
Kansai Univ., Japan

BISCp3-7 **Signal Model Analysis in the Single Shot Wide Field Optical Coherence Tomography**
T. Anna [1], D.S. Mehta [2], and M. Sato [1]
[1] Yamagata Univ., Japan, [2] Indian Inst. Tech., India

BISCp3-8 **Precise Measurement of Instantaneous Volume of Sweat Gland in Mental Sweating by Optical Coherence Tomography**
Y. Sugawa, A. Fukuda, and M. Ohmi
Osaka Univ., Japan

BISCp3-9 **Reconstruction Evaluation of Absorbers in Scattering Medium by Using Intensity Ratio with Time-Resolved Observation**
T. Yamaoki, K. Nitta, and O. Matoba
Kobe Univ., Japan

BISCp3-10 **Monte Carlo Simulation for Determination of Optical Properties from Time-resolved Reflectance Measured with a Small Probe Separation**
K. Nadamoto [1], T. Iwase [2], Y. Tanikawa [3], Y. Hoshi [2], and E. Okada [1]
[1] Keio Univ., Japan, [2] Tokyo Metropolitan Inst. Medical Science, Japan, [3] AIST, Japan

BISCp3-11 **Correction of Optical Path Length for Measurement of Haemoglobin Change in Exposed Cortex**
Y. Yoshimori [1], T. Kikuchi [1], H. Takuwa [2], H. Kawaguchi [2], K. Masamoto [2,3], H. Ito [2], and E. Okada [1]
[1] Keio Univ., Japan, [2] National Institute of Radiological Sciences, Japan, [3] Univ. Electro-Communications, Japan

BISCp3-12 **Estimation of Spatial Distribution of Partial Optical Path Length in Brain for Functional Near-infrared Spectroscopy**
K. Nakamura [1], K. Kurihara [1], S. Ichimura [1], H. Kawaguchi [2], T. Obata [2], H. Ito [2], and E. Okada [1]
[1] Keio Univ., Japan, [2] National Institute of Radiological Sciences, Japan

BISCp3-13 **Effect of High-density Probe Arrangement on Image Quality of Near-infrared Topography**
Y. Sakakibara, S. Ichimura, M. Tato, K. Kurihara, and E. Okada
Keio Univ., Japan

BISCp3-14 **Influence of Incidence and Detection Conditions on Diffuse Reflectance Spectrum of Skin**
M. Kato, M. Ohtake, T. Ohtsuka, and E. Okada
Keio Univ., Japan

BISCp3-15 **Hybrid Mie-MCML Monte Carlo Simulation for Analysis of Light Propagation in Skin Layers**
Y. Kawai and T. Iwai
Tokyo Univ. of Agri. & Tech., Japan

BISCp3-16 **Effect of the Surface Roughness on the Reflection and Scattering Properties of Human Skin**
K. Tsukamoto [1], T. Igarashi [2], M. Takabayashi [1], and T. Okamoto [1]
[1] Kyushu Inst. Tech., Japan, [2] Kao Corp., Japan

BISCp3-17 **Relationship between Skin Surface Reflection and Skin Surface Shape**
T. Katsuyama
Shiseido Research Center, Japan

BISCp3-18 **Near-infrared Microscopic Water Imaging of the Skin**
M. Egawa [1], M. Yanai [1], H. Arimoto [2], T. Kuwahara [1], T. Hirao [1]
[1] Shiseido Research Center, Japan, [2] AIST, Japan

BISCp3-19 **Imaging of Pigmentation in Human Facial Skin by a Spectral Camera and its Application**
K. Kikuchi, Y. Masuda, and T. Hirao
Shiseido Research Center, Japan

BISCp3-20 **Study on Depth Measurement of a Blood Flow Region Based on Speckle Correlation**
N. Yokoi [1] and Y. Aizu [2]
[1] Asahikawa National College of Tech., Japan, [2] Muroran Inst. Tech., Japan

BISCp3-21 **Range Expansion Using Higher Order Optical Frequency Comb Interferometry**
T. Sato and T. Shioda
Saitama Univ., Japan

----- Break （15:30-15:45）-----

15:45-17:45 BISC4 : High-resolution Imaging, Fluorescence Technique Room 303

Chair: K. Fujita, Osaka Univ., Japan

BISC4-1 15:45 **(Invited) Optical Bio-imaging Using Complex Scattering Media**
W. Choi
Korea Univ., South Korea

BISC4-2 16:15 **(Invited) Scattering Super-lens: Subwavelength Light Focusing and Imaging via Wavefront Shaping in Complex Media**
J.H. Park [1], C. Park [1,2], Y.H. Cho [1,2], and Y.K. Park [1]
[1] KAIST, South Korea, [2] Graduate School of

Nanoscience and Technology and KAIST, Korea

BISC4-3 16:45 **D-EXA Microscopy for Live Cell Imaging with Nanophosphors**
Y. Nawa [1,2], W. Inami [1,3], A. Ono [1,3], S. Lin [1], Y. Kawata [1,3], and S. Terakawa [3,4]
[1] Shizuoka Univ., Japan, [2] JSPS, Japan, [3] CREST, JST, Japan, [4] Hamamatsu Univ. of Medicine, Japan

BISC4-4 17:00 **High Sensitive Fluorescence Observation of Organelles in Cells by Deep-UV SPR**
M. Kikawada [1], A. Ono [1,2], W. Inami [1,2], and Y. Kawata [1,2]
[1] Shizuoka Univ., Japan, [2] CREST, JST, Japan

BISC4-5 17:15 **Local Viscosity Mapping inside a Cell with Two-dimensional Fluorescence-correlation Spectroscopy**
T. Sugiura [1] and M. Matsumoto [2]
[1] Nara Inst. Science and Tech., Japan, [2] Himeji Dokkyo Univ., Japan

BISC4-6 17:30 **Development of Fluorescent Nano-Bioprobes Using Bacteriophage T7**
I. Maeda and M. Tsuboyama
Utsunomiya Univ., Japan

Thursday, April 24

9:00-10:30 BISC5 : Photoacoustic Imaging, Spectroscopic Imaging Room 303
Chair: E. Okada, Program Committee Member of BISC'14, Keio Univ., Japan

BISC5-1 9:00 **Development of a Compact Acoustic-resolution Photoacoustic Imaging System with Fiber-based Illumination and Its Application to Vascular Imaging**
Y. Tsunoi [1], S. Sato [2], R. Watanabe [1], S. Kawauchi [2], H. Ashida [2], and M. Terakawa [1]
[1] Keio Univ., Japan, [2] National Defense Medical College Research Institute, Japan

BISC5-2 9:15 **Development of Near-infrared Multispectral Imaging for Quantitative Diagnosis of Atherosclerotic Plaque**
R. Nagao, K. Ishii, and K. Awazu
Osaka Univ., Japan

BISC5-3 9:30 **Unconstrained Imaging of Venous Compliance Using RGB Camera**
K. Nakano [1], R. Matsuda [2], R. Satoh [2], H. Suzuki [3], and I. Nishidate [2]
[1] Nippon Sport Science Univ., Japan, [2] Tokyo Univ. of Agriculture and Tech., Japan, [3] Tokyo Inst. Tech., Japan

BISC5-4 9:45 ***In vivo* Multispectral Imaging of the Absorption and Scattering Properties of Exposed Rat Brain Using a Digital Red-green-blue Camera**
K. Yoshida [1], T. Ishizuka [1], C. Mizushima [1], I. Nishidate [1], S. Kawauchi [2], S. Sato [2], and M. Sato [3]
[1] Tokyo Univ. of Agriculture and Tech., Japan, [2] National Defense Medical College Research Institute, Japan, [3] Yamagata Univ., Japan

BISC5-5 10:00 **Noncontact Imaging of Human Skin Hemodynamics Using a Digital Red-green-blue Camera**
I. Nishidate [1], R. Matsuda [1], R. Sato [1], T. Maeda [2], T. Yuasa [3], T. Yuasa [4], K. Niizeki [4], and Y. Aizu [3]
[1] Tokyo Univ. of Agriculture and Tech., Japan, [2] Kushiro National College of Tech., Japan, [3] Muroran Inst. Tech., Japan, [4] Yamagata Univ., Japan

BISC5-6 10:15 **Imaging by Tandem Optics using Short Multimode Fiber and GRIN Lens**
M. Sato [1], Y. Sekine [1], H. Suto [1], T. Kanno [1], S. Ishihara [1], T. Takahashi [1], and I. Nishidate [2]
[1] Yamagata Univ., Japan, [2] Tokyo Univ. of Agriculture and Tech., Japan

----- Break (10:30-10:45) -----

10:45-12:15 BISC6 : Imaging, Tomography, Spectroscopy Room 303
Chair: M. Sato, Program Committee Member of BISC'14, Yamagata Univ., Japan

BISC6-1 10:45 **Development of New Optical CT for 3D Animal Imaging －Practical Technique Using Transillumination Images －**
T.T. Nghia [1], K. Yamamoto [1], T. Namita [2], Y. Kato [1], and K. Shimizu [1]
[1] Hokkaido Univ., Japan, [2] Kyoto Univ., Japan

BISC6-2 11:00 **The Effect of Data at a Detection Limit on 3-D Time Domain Diffuse Optical Tomography**
D. Furukawa, K. Awasthi, and G. Nishimura
Hokkaido Univ., Japan

BISC6-3 11:15 **Spectroscopic Mueller Matrix Microscope Using Dual-rotating Retarders**
M. Sakaguchi, Y. Kodama, and Y. Otani
Utsunomiya Univ., Japan

BISC6-4 11:30 **Palm-Top-Size Portable Apparatus of Wide-Field Fourier-Spectroscopic-Imaging in Mid Infrared Region**
Y. Suzuki, W. Qi, S. Suzuki, P.K.W. Abeygunawardhana, and I. Ishimaru
Kagawa Univ., Japan

BISC6-5 11:45 **Proposal of One-shot-type Spectroscopic-tomography for Non-invasive Medical-measurement**
S. Sato, M. Fujiwara, P.K.W. Abeygunawardhana, S. Suzuki, A. Nishiyama, and I. Ishimaru
Kagawa Univ., Japan

BISC6-6 12:00 **Optical Zoom for the Single-shot Tomography and Profilometry Using Diffraction Orders of a Reflection Grating**
T.B. Quoc [1] and T. Shioda [2]
[1] Nagaoka Univ. Tech., Japan, [2] Saitama Univ., Japan

----- Lunch Break (12:15-13:30) -----

13:30-15:30 BISC7 : Terahertz Sensing Room 303
Organized Session
Chair: T. Yasui, Program Committee Member of BISC'14, Tokushima Univ., Japan

BISC7-1 13:30 **(Invited) Development of Meta-material Sensors for Bioapplications**
Y. Ogawa and T. Suzuki
Kyoto Univ., Japan

BISC7-2 **(Invited) Terahertz Spectroscopic**

14:00 **Measurement of Raw Cancer Model Tissues**
N. Miyoshi [1], T. Nagashima [2], T. Takahashi [3], R. Kato [2], and K. Fukui [1]
[1] Univ. of Fukui, Japan, [2] Osaka Univ., Japan, [3] Kyoto Univ., Japan

BISC7-3 14:30 **(Invited) Detection of Bio-related Materials Using Laser-terahertz Technique**
T. Kiwa, A. Nakamura, Y. Okawa, K. Sakai, and K. Tsukada
Okayama Univ., Japan

BISC7-4 15:00 **(Invited) Terahertz Near-field Microscopy for Biological Sensing and Imaging**
K. Tanaka [1,2], T. Tanaka [1,2], A. Doi [3], and F. Blanchard [1]
[1] Kyoto Univ., Japan, [2] CREST, JST, Japan, [3] Olympus Corp., Japan

----- Break （15:30-15:45）-----

15:45-17:45 BISC8：OCT, Digital Holography, Imaging, Molecular Sensing Room 303
Chair: Y. Otani, Steering Committee Member of BISC'14, Utsunomiya Univ., Japan

BISC8-1 15:45 **Determination of Resonant Frequency of Human Sweat Duct Based on the Duct Dimension Obtained Using Optical Coherence Tomography**
S.R. Tripathi [1], H. Yamada [1], E. Miyata [1], and K. Kawase [1,2]
[1] Nagoya Univ., Japan, [2] RIKEN ASI, Japan

BISC8-2 16:00 **(Invited) Applications of Incoherent Digital Holography**
J. Hong, C. Liu, and M.K. Kim
Univ. South Florida, USA

BISC8-3 16:30 **Portable Phase-shifting Lensless Digital Holographic Microscopy**
K. Hoshino and E. Watanabe
The Univ. of Electro-Communications, Japan

BISC8-4 16:45 **Numerical Study for Comparing the Performance between 2-step and 3-step Single-shot Complex Amplitude Measurement Using Transport of Intensity Equation**
P. Xia [1], Y. Awatsuji [1], S. Ura [1], K. Nishio [1], and O. Matoba [2]
[1] Kyoto Inst. Tech., Japan, [2] Kobe Univ., Japan

BISC8-5 17:00 **An Intra-oral Diagnostic System Based on a Compound-imaging Module**
H. Mima [1], K. Kagawa [2], C. Ogata [3], and J. Tanida [1]
[1] Osaka Univ., Japan, [2] Shizuoka Univ., Japan, [3] Osaka Dental Univ., Japan

BISC8-6 17:15 **Optical Control of FRET Path for Programmable Molecular Sensing**
R. Fujii, T. Nishimura, Y. Ogura, and J. Tanida
Osaka Univ., Japan

BISC8-7 17:30 **Feasibility Study of Multiplex Biomolecular Detection based on Biomolecule-to-fluorescence-color Encode**
T. Nishimura, Y. Ogura, K. Yamada, Y. Ohno, and J. Tanida
Osaka Univ., Japan

17:45-18:00 Closing Room 303
Closing Remarks
17:45 O. Matoba, Steering Committee Chair of BISC'14 Kobe Univ., Japan

High Energy Density Sciences 2014

HEDS 2014

Tuesday, April 22

15:30-15:40 Opening Room 311&312
Opening Remarks
15:30 R. Kodama, Conference Chair of HEDS 2014, Osaka Univ., Japan

15:40-16:20 HEDS1：Plenary talk-1 Room 311&312
Chair: R. Kodama, Osaka Univ., Japan

HEDS1-1 15:40 **(Plenary) On the Prospects of Laser Driven Hadron Therapy**
S.V. Bulanov
JAEA, Japan

16:20-17:45 HEDS2：High Field Laser Physics-1 Room 311&312
Chair: R. Kodama, Osaka Univ., Japan

HEDS2-1 16:20 **(Invited) Ultra-high Magnetic Field Effects on Laser Plasma Interactions**
K. Mima
GPI, Japan

HEDS2-2 16:45 **Enhancement of Electron Beam Intensity Generated by Irradiation of Foil Target with Two Femtosecond Laser Pulses**
S. Inoue
Kyoto University, Japan

HEDS2-3 17:05 **Strongly Magnetized, High-velocity Collisionless Shocks for Laboratory Astrophysics**
D. Higginson
LULI, France

HEDS2-4 17:25 **Nuclear Reaction Induced by Proton Recollision in a Laser-driven Molecule**
E. Loetstedt
RIKEN, Japan

----- OPIC Banquet (Room 501& 502) (18:00-20:00) -----

Wednesday, April 23

9:00-10:20 HEDS3 : Plenary Talk-2 Room 311&312
Chair: K. Kondo, JAEA, Japan

HEDS3-1 9:00 **(Plenary) X-ray Quantum Optics with Ultra-high Intensity X-ray Lasers**
H. Yoneda
Inst. Laser Science, Univ. Electro-Comunicaton, Japan

HEDS3-2 9:40 **(Plenary) Ultra Compact Femtosecond X-rays Beams with Plasma Wigglers**
V. Malka
LOA, France

----- Break (10:20-10:40) -----

10:40-12:30 HEDS4 : Quantum Beams -1 (Electron Acceleration) Room 311&312
Chair: E. Miura, AIST, Japan

HEDS4-1 10:40 **(Invited, Special) Laser-plasma Acceleration of Electrons to 2 GeV and Beyond**
M. Downer
U. Texas, USA

HEDS4-2 11:10 **(Invited, Special) Laser-plasma Wakefield Accelerators as Attosecond to Femtosecond**

Sources of High Energy Particles and Incoherent and Coherent Radiation
D. Jaroszynski
Univ. of Strathclyde, UK

HEDS4-3 11:40 **(Invited) Future Light Source driven by Dielectric Laser Accelerator**
Y. C. Huang
National Tsinghua Univ., Taiwan

HEDS4-4 12:05 **(Invited) High Density Electron Beam and High Power Laser Complex for the Novel Accelerator Experiment in the KEK 7 GeV Electron Linear Accelerator**
M. Yoshida
KEK, Japan

----- Lunch Break (12:30-14:00) -----

14:00-15:50 HEDS5 : Quantum Beams -2 (Quantum Beam Imaging) Room 311&312
Chair: K. Arakawa, Shimane Univ., Japan

HEDS5-1 14:00 **(Invited, Special) A Window in Time: Interrogating Rapid Materials Phenomena with Movie-mode Dynamic Electron Microscopy**
T. LaGrange
LLNL, USA

HEDS5-2 14:30 **(Invited, Special) Relativistic Laser-plasma Interaction Using kHz few Cycle Laser Pulses: a Path to a Femtosecond Electron Source for Ultrafast Electron Diffraction**
J. Faure
LOA., France

HEDS5-3 15:00 **(Invited) Accelerator Based Femtosecond Time-resolved Electron Microscopy**
J. Yang
Osaka Univ., Japan

HEDS5-4 15:25 **(Invited) Staging Laser Wakefield Acceleration for Single-shot Ultrafast Electron Diffraction Imaging**
T. Hosokai
Osaka Univ., Japan

----- Break (15:50-16:00) -----

16:00-17:30 HEDS6 : Radiation Sources-1 (X-ray Sources) Room 311&312
Chair: K. A. Tanaka, Osaka Univ., Japan

HEDS6-1 16:00 **(Invited) Status and Perspective of SACLA**
M. Yabashi
SP-8, SACLA, Japan

HEDS6-2 16:25 **(Invited) Improvement of Surface Properties by Laser Irradiation and Real-time Probing of Mechanism by XFEL at SACLA**
Y. Sano
Toshiba Corp., Japan

HEDS6-3 16:50 **High-resolution XUV Imaging of Catastrophes in Relativistic Plasma**
A. Pirozhkov
JAEA, Japan

HEDS6-4 17:10 **X-ray Spectroscopy Studies on Warm Solid Matter Isochorically Heated by Laser-generated Electrons**
S. Pikuz
JIHT, RAS, Russia

Thursday, April 24

9:00-10:20 HEDS7 : Plenary Talk-3 Room 311&312
Chair: K. Koyama, KEK, Japan

HEDS7-1 9:00 **(Plenary) Demonstration of High Gradient Inverse Ion Channel Laser Acceleration Mechanism**
C. Joshi
UCLA, USA

HEDS7-2 9:40 **(Plenary) Laser Plasma Acceleration of Low Emittance, High Energy Bunches, and Applications**
C. Geddes
LBNL, USA

----- Break (10:20-10:40) -----

10:40-12:00 HEDS8 : Radiation Sources-2 (Plasma Photonics) Room 311&312
Chair: J. Koga, JAEA, Japan

HEDS8-1 10:40 **(Invited, Special) Control of Temporal Evolution of Laser-generated Plasma Filaments Using a Dual Femtosecond/Nanosecond Laser Pulse**
A. Zigler
Hebrew Univ., Israel

HEDS8-2 11:10 **(Invited) Turbulent Magnetic Fields, Ultrafast Surface Transport and THz Reflectivity Oscillations in High Energy Density Plasmas**
G.R. Kumar
Tata Inst., India

HEDS8-3 11:35 **(Invited) Study of Laser-driven Electron Accelerator And Betatron X-ray Sources in IOP**
L. Chen
Chinese Academy of Sciences, IOP, China

----- Lunch Break & Poster Session (12:00-14:45) -----

13:00-14:45 HEDSp9 : Poster Session Exhibition Hall C
Chair: T. Hosokai, Osaka Univ., Japan

HEDSp9-1 **Short Duration Neutron Beams Produced by Ultra-intense Lasers**
D. Higginson
LULI, France

HEDSp9-2 **Radiation Reaction Effects in Cascade Scattering of Intense Laser Pulses by Relativistic Electrons. Classical and Quantum Approaches**
A. Zhidkov
Osaka Univ., Japan

HEDSp9-3 **Analysis of E and B Fields Distribution Around a Plasma Channel Observed in Proton Radiography**
Y. Uematsu
Osaka Univ., Japan

HEDSp9-4 **Neutron Measurement in Experiment of Laser Induced Proton Source**
K. Ogura
JAEA, Japan

HEDSp9-5 **Guidance of Fast Electrons Generated by Interaction of Intense Femtosecond Laser and Metal Wire**
K. Teramoto
Kyoto Univ., Japan

HEDSp9-6 **The Generation of Proton Beam by Interaction of Thin Films and Intense Laser Pulses**
Y. Nakashima
Kyoto Univ., Japan

HEDSp9-7 **Development of Comprehensive Simulation Including High-intense Femtosecond Laser Plasma Interaction and Electron Beam Transport and Emission**
M. Hata
Kyoto Univ., Japan

HEDSp9-8 **Proton Generation from a Thin-Foil Target with a High-Intensity Laser**
A. Sagisaka
JAEA, Japan

HEDSp9-9 **Numerical Approach for Defects Formation Studies in Matter Irradiated with Laser-driven Proton Beam**
M. Yamashita
Osaka Univ., Japan

HEDSp9-10 **Monochromotaic X-ray Observation by Bragg Crystal Imager in Fast Ignition Experiment**
S. Nakaguchi
Osaka Univ., Japan

HEDSp9-11 **Enhancement of The Energy Conversion Efficiency From High-Intensity Laser to Electrons by Using Nanowire Target**
R. Shiraishi
Osaka Univ., Japan

HEDSp9-12 **Spectral Modifications of an Intense Laser Pulse Propagating in Underdense Plasmas**
N. Pathak
Osaka Univ., Japan

HEDSp9-13 **Ionization Dynamics and Structure in High Power Laser-Matter Interaction**
D. Kawahito
Kyoto Univ., Japan

HEDSp9-14 **Conceptual Study on Nuclear Transmutation Using Laser Accelerated Protons**
K. Watanabe
Nagoya Univ., Japan

HEDSp9-15 **Electron Injection with Axisymmetric Polarized Laser Pulses for Laser Wake Field Acceleration**
Y. Mizuta
Osaka Univ., Japan

HEDSp9-16 **Repeatable Electron Injection for Staged Laser Wakefield Acceleration**
K. Iwasa
Osaka Univ., Japan

HEDSp9-17 **Electron Transport for Ultrafast Imaging Based on LWFA**
N. Takeguchi
Osaka Univ., Japan

HEDSp9-18 **Research on High-gradient Acceleration at KEK**
K. Koyama
KEK, Japan

HEDSp9-19 **Focusing Electron Beams Generated by Laser-Plasma Acceleration with External Static Magnetic Field**
Y. Oishi
CRIEPI, Japan

HEDSp9-20 **Electron and Photon Acceleration by Interaction between Laser and Plasma**
H. Kotaki
JAEA, Japan

HEDSp9-21 **Preliminary Experiment on Dielectric Laser Acceleration Designed for On-chip Radiation Source**
S. Otsuki
Univ. Tokyo, Japan

HEDSp9-22 **Staged Laser Wakefield Acceleration Driven by Coaxial Two Laser Pulses**
N. Nakanii
Osaka Univ., Japan

HEDSp9-23 **Design of Ultrafast Electron Imaging System**
S. Masuda
Osaka Univ., Japan

HEDSp9-24 **Femtosecond Laser-driven Shock Processing of Solids and its Dynamics**
T. Sano
Osaka Univ., Japan

HEDSp9-25 **Detection of Interaction between Defects in Tungsten using High-voltage Electron Microscopy**
K. Arakawa
Shimane Univ., Japan

HEDSp9-26 **Direct Observation of Ultrafast Structural Change under Dynamic High Pressures**
N. Ozaki
Osaka Univ., Japan

HEDSp9-27 **Observation of Material Dynamics Loading Laser-shock Compression Using In-situ X-ray Diffraction**
T. Sato
Osaka Univ., Japan

HEDSp9-28 **Laser-shock Compression Experiments on Hydrocarbon in Mbar Pressure Range**
T. Ogawa
Osaka Univ., Japan

HEDSp9-29 **Laser-shock Compression of Liquid Mixtures to Planetary Interior Pressures and Temperatures**
M. Kita
Osaka Univ., Japan

HEDSp9-30 **In-situ Observation of Laser Shock-induced Martensite Formation on Type 304 by XRD Technique at SACLA**
T. Fujita
Toshiba Corp., Japan

HEDSp9-31 **Direct Observation of Femtosecond Laser Ablation on Metals by Plasma-based Soft X-ray Laser**
T. Eyama
Univ. Tokushima, Japan

HEDSp9-32 **Development of Experimental Platform for High Energy Density Science Using X-ray Free Electron Laser**
Y. Inubushi
JASRI, Japan

HEDSp9-33 **Status of Experimental Platform for Matter under Dynamical Compression Driven by 40 TW Laser Pulse in XFEL Facility (SACLA)**
T. Matsuoka
Osaka Univ., Japan

HEDSp9-34 **Tunable Quasi-monochromatic Terahertz Radiation from Rippled Air Irradiated by Femtosecond Laser Pulses**
J. Shin
Osaka Univ., Japan

HEDSp9-35 **Single-shot THz Time-domain Spectroscopy System with Spatial Resolution**
T. Zhang
Osaka Univ., Japan

HEDSp9-36 **Simulation of Cherenkov THz Generation by Electron Bunch in a Dielectric-lined Coaxial Waveguide**
C. Tian
Osaka Univ., Japan

HEDSp9-37 **Experimental Study of Plasma Filament Generated by Sub-TW Laser Pulse in N2 Gas**
T. Hommyo
Utsunomiya Univ., Japan

HEDSp9-38 **Characteristics of THz Emission from Plasma Generated by a Femtosecond Pulse Laser**
K. Oguri
Utsunomiya Univ., Japan

HEDSp9 39 **Emission and Absorption Spectroscopy of Laser-produced Bismuth Plasma in the Soft X-ray Spectral Region**
T. Otsuka
Utsunomiya Univ., Japan

HEDSp9-40 **Development of a High Energy Fiber CPA Laser for Few-cycle Laser System**
K. Sueda
Osaka Univ., Japan

HEDSp9-41 **Development of a High-power Laser with a Pulse Shaping Function**
I. Jinno
Osaka Univ., Japan

HEDSp9-42 **Multi Pass Cross-correlator for Single-shot Laser Pulse Contrast Measurement**
A. Kon
JAEA, Japan

14:45-17:30 HEDS10 : High Field Laser Physics-2 Room 311&312

Chair: A. Zhidkov, Osaka Univ., Japan

HEDS10-1 14:45 **(Invited) High Field Sciences Explored with High-peak Power Lasers at JAEA**
M. Kando
JAEA, Japan

HEDS10-2 15:10 **(Invited) Laser-driven Ion Acceleration by High Intensity Short-pulse High-contrast Laser System at JAEA**
M. Nishiuchi
JAEA, Japan

HEDS10-3 15:35 **(Invited) Intense, Laser-driven Shocks**
L. Gizzi
INO, Pisa,, Italy

----- Break (16:00-16:15)-----

HEDS10-4 16:15 **(Invited) High Resolution X-ray Spectroscopy of Plasma Irradiated by Ultra-short Laser Pulses with Intensities of 10^{21} W/cm^2**
A. Faenov
JAEA, Japan

HEDS10-5 16:40 **Precision Measurement of the Vacuum from the Contribution of Delbrück Scattering of γ-rays off Nuclei**
J. Koga
JAEA, Japan

HEDS10-6 17:00 **Fast Electron Transport Study in Cone-wire-targets Surrounded by Imploded Plasmas**
T. Yabuuchi
Osaka Univ., Japan

17:20-17:30 Closing Room 311&312

Closing Remarks
17:20 S.V. Bulanov
JAEA, Japan

Conference on LED and Its Industrial Application '14

LEDIA '14

Tuesday, April 22

15:30-15:45 Opening Room 411, 412

Opening Remarks
15:30 H. Amano, Conference Chair of LEDIA' 14
Nagoya Univ., Japan

15:45-16:45 LED1: GaN Bulk Growth Room 411, 412

Chair: Y. Mori, Osaka Univ., Japan

LED1-1 15:45 **(Invited) Hydride Vapor Phase Epitaxy on Ammonothermally Grown GaN Seeds: Challenges and Perspectives**
M. Boćkowski [1,2]
[1] Institute of High Pressure Physics, PAS, Poland, [2] Top GaN Sp. z o.o., Poland

LED1-2 16:15 **Growth of GaN Layers Using Ga_2O Vapor Synthesized from Ga Metal**
T. Sumi [1], H. Takatsu [1], M. Juta [1], J. Y. Bu [1], A. Kitamoto [1], M. Imade [1], M. Yoshimura [1], M. Isemura [2], and Y. Mori [1]
[1] Osaka Univ., Japan, [2] Itochu Plastics Inc., Japan

LED1-3 16:30 **Controlling the Growth Habit of Early Stage in the Na-Flux Coalescence Growth by the Dipping Technique**
K. Nakamura, M. Imanishi, T. Sato, K. Murakami, H. Imabayashi, H. Takazawa, Y. Todoroki, D. Matsuo, M. Maruyama, M. Imade, M. Yoshimura, and Y. Mori
Osaka Univ., Japan

16:45-17:30 LED2 : Agricultural Applications Room 411, 412

Chair: Y. Mori, Osaka Univ., Japan

LED2-1 16:45 **(Invited) Present Status of LED-Based Plant Factory in Japan**
M. Takatsuji
Foundation of Social Development Research Center, Japan

LED2-2 17:15 **Far-Red Cr-Doped Garnets for the Control of Photomorphogenesis in Plants Using Phosphor-Conversion LEDs**
A. Zabiliūtė, S. Butkutė, A. Žukauskas, P. Vitta, and A. Kareiva
Vilnius Univ., Lithuania

----- OPIC Banquet (Room 501& 502) (18:00-20:00) -----

Wednesday, April 23

9:00-12:00 LED3: UV Devices Room 411, 412

Chair: Y. Kumagai, Program Committee Chair, Tokyo Univ. of Agri. & Tech., Japan

LED3-1 9:00 **(Invited) Crystal Growth of AlN Single Crystal by Sublimation Method**
S. Nagata
JFE Mineral Company, Ltd., Japan

LED3-2 9:30 **(Invited) Recent Progress of AlGaN UVC-LED by Improving Light-Extraction Efficiency**
H. Hirayama
RIKEN, Japan

LED3-3 10:00 **Reliability and Lifetime of Pseudomorphic UV-C LED Product for Instrumentation**
M. Toita [1,2], J. R. Grandusky [1], J. Chen [1], K. Kitamura [1,2], M. C. Mendrick [1], C. Moe [1], Y. Li [1], K. Nagase [2], T. Morishita [3], H. Ishii [3], S. Yamada [3], and L. J. Schowalter [1]
[1] Crystal IS, U.S.A., [2] Asahi Kasei, Japan, [3] Asahi Kasei Microdevices, Japan

LED3-4 10:15 **Nonpolar M-Plane AlGaN Deep-UV LEDs**
R. G. Banal, Y. Taniyasu, and H. Yamamoto
NTT Corp., Japan

----- Break （10:30-10:45）-----

Chair: H. Hirayama, RIKEN, Japan

LED3-5 10:45 **Temperature Dependence of Deep Ultraviolet Emission for Diamond Light Emitting Diodes**
D. Kuwabara [1-3], T. Makino [2,3], D. Takeuchi [2,3], H. Kato [2,3], M. Ogura [2,3], H. Okushi [2,3], and S. Yamasaki [1-3]
[1] Univ. of Tsukuba, Japan, [2] AIST, Japan, [3] CREST, Japan

LED3-6 11:00 **Investigation of Hole Injection in UV-LEDs Utilizing Polarization Effect**
T. Yasuda [1], K. Hayashi [1], T. Nakashima [1], T. Takeuchi [1], S. Kamiyama [1], M. Iwaya [1], I. Akasaki [1,2], and H. Amano [2,3]
[1] Meijo Univ., Japan, [2] Akasaki Research Center, Japan, [3] Nagoya Univ., Japan

LED3-7 11:15 **Optimization of InGaN Superluminescent Diodes: State of the Art Devices and an Analysis of their Limiting Factors**
A. Kafar [1], S. Stanczyk [1], G. Targowski [2,3], P. Wisniewski [1], T. Suski [1], U. T. Schwarz [4], and P. Perlin [1,2]
[1] Institute of High Pressure Physics, PAS, Poland, [2] TopGaN Sp. z o.o., Poland, [3] Fraunhofer Institute for Applied Solid State Physics IAF, Germany, [4] Freiburg Univ., Germany

LED3-8 11:30 **The Impact of Al-Composition on Microstructures and Crystalline Quality of Semi-Polar $Al_xGa_{1-x}N$ on GaAs Substrates by MOVPE Growth**
P. Saengkaew [1], S. Sanorpim [2], V. Yordsri [3], C. Thanachayanont [3], and K. Onabe [4]
[1] King Mongkut's Univ. of Technology North Bangkok, Thailand, [2] Chulalongkorn Univ., Thailand, [3] MTEC, Thailand, [4] The Univ. of Tokyo, Japan

LED3-9 11:45 **Optical Properties of Ga-In-O Polycrystalline Films Fabricated by Molecular Precursor Method**
T. Onuma [1,2], T. Yasuno [2], S. Takano [2], R. Goto [2], S. Fujioka [2], T. Hatakeyama [2], H. Hara [2], C. Mochizuki [2], H. Nagai [2], T. Yamaguchi [2], M. Sato [2], and T. Honda [2]
[1] Tokyo National College of Technology, Japan, [2] Kogakuin Univ., Japan

----- Lunch Break （12:00-13:15）-----

13:15-18:00 LED4: InGaN Devices Room 411, 412

Chair: Y. J. Kim, Program Committee Member, Yonsei Univ., Korea

LED4-1 13:15 **(Invited) InGaN Light-Emitting Diodes on c-Face Sapphire Substrates in Green-Yellow Gap Spectral Region**
S. Saito, R. Hashimoto, J. Hwang, and S. Nunoue
Toshiba Corp., Japan

LED4-2 13:45 **(Invited) 740-nm InGaN-Based LEDs by MOVPE**
K. Ohkawa
Tokyo Univ. of Science, Japan

LED4-3 14:15 **Enhancement of Vertical Light Extraction from GaN-Based Blue LEDs Using Moth-Eye Patterned Sapphire Substrate**
M. Ohya [1], K. Naniwae [1], T. Kondo [1], A. Suzuki [1], M. Mori [1], T. Kitano [1], and S. Kamiyama [1,2]
[1] EL-Seed Corp., Japan, [2] Meijo Univ., Japan

LED4-4 14:30 **Investigation of InGaN Light-Emitting Diodes Prepared on High Aspect Ratio Patterned Sapphire Substrate with Sputtered AlN Nucleation Layer**
L. C. Chang, Y. A. Chen, and C. H. Kuo
National Chiao Tung Univ., Taiwan

----- Break （14:45-15:00）-----

Chair: K. Ohkawa, Tokyo Univ. of Science, Japan

LED4-5 15:00 **Roles of Mg Doping in Nitride Semiconductor-Based Light Emitting Diodes with Two Active Regions**
K. Matsui [1], T. Morita [1], T. Suzuki [1], T. Takeuchi [1], S. Kamiyama [1], M. Iwaya [1], and I. Akasaki [1,2]
[1] Meijo Univ., Japan, [2] Akasaki Research Center, Japan

LED4-6 15:15 **Diffusion Injected Multi-Quantum Well Light Emitting Diode Structure**
L. Riuttanen, P. Kivisaari, H. Nykänen, O. Svensk, S. Suihkonen, J. Oksanen, J. Tulkki, and M. Sopanen
Aalto Univ., Finland

LED4-7 15:30 **The Improvement of Efficiency Droop and Current Spreading on Nitride-Based LEDs Using Electron Transmission Layer**
J. S. Jheng [1], C. K. Wang [1], Y. Z. Chiou [1], T. K. Lin [2], and S. J. Chang [3]
[1] Southern Taiwan Univ. of Science and Technology, Taiwan, [2] Epistar Corp., Taiwan, [3] National Cheng Kung Univ., Taiwan

LED4-8 15:45 **Growth of High Yield LED Structures on 8" Si(111) Substrates Using High throughput MOCVD Reactors**
B. Krishnan, J. Su, S. M. Lee, G. D. Papasouliotis

Veeco Instruments Inc., U.S.A.

LED4-9 16:00 **Surface Orientation Dependence of the In-Incorporation of THVPE-Grown InGaN Studied by First Principles and Statistical Thermodynamics**
H. Murakami, Y. Fujimura, R. Togashi, Y. Kumagai, and A. Koukitu
Tokyo Univ. of Agri. & Tech., Japan

LED4-10 16:15 **Realization of p-Type Conduction in Mg-Doped N-Polar (000$\bar{1}$) GaN Grown by Metalorganic Vapor Phase Epitaxy**
T. Tanikawa [1,2], J. H. Choi [1,2], K. Shojiki [1], S. Kuboya [1], R. Katayama [1,2], and T. Matsuoka [1,2]
[1] Tohoku Univ., Japan, [2] CREST, Japan

----- Break （16:30-16:45）-----

Chair: K. Naniwae, EL-Seed Corp., Japan

LED4-11 16:45 **Growth Optimization of Green InGaN Multi-Quantum Well on Bulk GaN Substrate by in situ Monitoring System**
T. Mitsunari [1], A. Tamura [1], S. Usami [1], M. Kushimoto [1], K. Yamashita [1], Y. Honda [1], Y. Lacroix [3], and H. Amano [1,2]
[1] Nagoya Univ., Japan, [2] Akasaki Research Center, Japan, [3] YSystems Ltd., Japan

LED4-12 17:00 **Evaluation of the Optical Polarization Properties in Semi-Polar {11$\bar{2}$2} LEDs**
Y. Okamura, K. Nakao, N. Okada, K. Yamane, and K. Tadatomo
Yamaguchi Univ., Japan

LED4-13 17:15 **Stress Compensated InGaN/AlGaN Superlattices Coherently Grown on Semipolar (11$\bar{2}$2) GaN Substrates**
J. Nishinaka, M. Funato, and Y. Kawakami
Kyoto Univ., Japan

LED4-14 17:30 **Relationship between V-Pit Diameter and Potential Barrier Height in InGaN Based Light-Emitting Diodes**
N. Okada, M. Haziq, K. Yamane, Y. Yamada, and K. Tadatomo
Yamaguchi Univ., Japan

LED4-15 17:45 **Suppression of Metastable-Phase Inclusion in MOVPE-Grown N-Polar (000$\bar{1}$) InGaN/GaN Multiple Quantum Wells**
K. Shojiki [1], J. H. Choi [1,2], T. Iwabuchi [1], N. Usami [3], T. Tanikawa [1,2], S. Kuboya [1], T. Hanada [1,2], R. Katayama [1,2], and T. Matsuoka [1,2]
[1] Tohoku Univ., Japan, [2] CREST, Japan, [3] Nagoya Univ., Japan

Thursday, April 24

9:00-9:45 LED5: White LEDs Room 411, 412

Chair: G. Hatakoshi, Program Committee Member, Toshiba Corp., Japan

LED5-1 9:00 **(Invited) Sialon Phosphors for Improved White LED**
K. Takahashi [1,2] and N. Hirosaki [1,2]
[1] NIMS, Japan, [2] SIALON Co., Ltd., Japan

LED5-2 9:30 **High Brightness White LED Prepared by Silicone Layer-by-Layer Coatings with Uniform Distribution of Quantum-Dot-Embedded Silica Nanoparticles**
Y. J. Kim [1], H. G. Hong [1], H. S. Jung [2], H. J. Kim [1], M. H. Shin [1], H. Kim [2], and H. Lee [2]
[1] Yonsei Univ., Korea, [2] Nanosquare Inc., Korea

----- Break （9:45-10:00）-----

10:00-11:45 LED6: Short Presentations for Poster Session Room 411, 412

Chair: Y. Honda, Program Committee Member, Nagoya Univ., Japan
T. Yamaguchi, Program Committee Member, Kogakuin Univ., Japan
H. Murakami, Program Committee Member, Tokyo Univ. of Agri. & Tech., Japan
R. Togashi, Program Committee Member, Tokyo Univ. of Agri. & Tech., Japan

----- Lunch Break （11:45-13:15）-----

13:15-15:15 LED6: Poster Session Exhibition Hall D

LEDp6-1 **Examination of on the Influence of Boron Flow Rate and Substrate in BGaN Epitaxial Growth**
K.Ueyama, K. Atsumi, H. Mimura, Y. Inoue, T. Aoki, and T. Nakano
Shizuoka Univ., Japan

LEDp6-2 **Rapid Growth of GaN Layers Using Ga_2O Vapor on GaN Substrates Grown by Na-Flux Method**
H. Takatsu [1], M. Juta [1], T. Sumi [1], Y. Bu [1], A. Kitamoto [1], M. Imade [1], M. Yoshimura [1], M. Isemura [2], and Y. Mori [1]
[1] Osaka Univ., Japan, [2] Itochu Plastics Inc., Japan

LEDp6-3 **Growth of High Crystallinity Thick GaN Layers Using Ga_2O Vapor**
M. Juta [1], H. Takatsu [1], T. Sumi [1], Y. Bu [1], A. Kitamoto [1], M. Imade [1], M. Yoshimura [1], M. Isemura [2], and Y. Mori [1]
[1] Osaka Univ., Japan, [2] Itochu Plastics Inc., Japan

LEDp6-4 **Growth of Homoepitaxial ZnO Thin Layers by Halide Vapor Phase Epitaxy Using Non-Hydrogenous Sources**
R. Asakawa [1], Y. Isa [1], N. Kanzaki [1], S. Y. Kang [2], A. Hiroe [2], R. Togashi [1], H. Murakami [1], Y. Kashiwagi [2], Y. Kumagai [1], and A. Koukitu [1]
[1] Tokyo Univ. of Agri. & Tech., Japan, [2] Tokyo Electron Ltd., Japan

LEDp6-5 **Fabrication of In-Doped ZnO Thin Film by Molecular Precursor Method**
R. Goto, T. Yasuno, H. Nagai, H. Hara, M. Sato, and T. Honda
Kogakuin Univ., Japan

LEDp6-6 **Thermal Stability of β-Ga_2O_3 Substrates in Mixed Flows of H_2 and N_2**
C. Eguchi [1], T. Fukizawa [1], S. Hanagata [1], K. Nomura [1], K. Goto [2], R. Togashi [1], H. Murakami [1], A. Kuramata [2], Y. Kumagai [1], and A. Koukitu [1]

[1] Tokyo Univ. of Agri. & Tech., Japan, [2] Tamura Corp. Ltd., Japan

LEDp6-7 **C-Related p-Type Conduction in AlGaN and AlN**
K. Yamazumi, D. Kim, M. Sekiguchi, and S. Sakai
The Univ. of Tokushima, Japan

LEDp6-8 **InGaN Growth on GaN/Sapphire by Increased-Pressure MOVPE**
K. Yamashita [1], Y. Honda [1], and H. Amano [1,2]
[1] Nagoya Univ., Japan, [2] Akasaki Research Center, Japan

LEDp6-9 **Characterization of Dark Spots on GaInN Films by Using Fluorescence Microscope and Secondary Ion Mass Spectroscopy**
N. Toyomitsu [1], L. Sang [2], T. Yamaguchi [1], T. Honda [1], and M. Sumiya [2]
[1] Kogakuin Univ., Japan, [2] NIMS, Japan

LEDp6-10 **High Efficiency GaN-Based LEDs Grown by Interruption-Free Epitaxial Lateral Overgrowth on Patterned SiO_2 AlN/Sapphire Template**
Y. A. Chen, C. H. Kuo, L. C. Chang, and J. P.Wu
National Chiao Tung Univ., Taiwan

LEDp6-11 **The Evaluation of Optical Characteristic of GaN Double Polarity Selective Area Growth by Using MOVPE**
K. Kuze, Y. Fujita, H. Mimura, Y. Inoue, and T. Nakano
Shizuoka Univ., Japan

LEDp6-12 **In Situ Wafer Temperature Measurement of Gallium Nitride Grown on Sapphire Using Diffuse Reflectance at Two Wavelengths**
Y. Lacroix [1], K. Yamashita [1], V. Robichaud [1], Y. Majima [1], Y. Honda[2], and H. Amano[2]
[1] YSystems Ltd., Japan, [2] Nagoya Univ., Japan

LEDp6-13 **Effect of Pseudo Aluminum Templates in RF-MBE Growth of GaN on 4H-SiC**
Y. Watanabe, S. Osawa, D. Tajimi, T. Yamaguchi, and T. Honda
Kogakuin Univ., Japan

LEDp6-14 **Control of Surface Roughness of GaN Seed Crystals by Applying a Dipping Technique to the Na-Flux Method**
T. Sato, M. Imanishi, K. Nakamura, K. Murakami, H. Imabayashi, H. Takazawa, Y. Todoroki, D. Matsuo, M. Maruyama, M. Imade, M. Yoshimura, and Y. Mori
Osaka Univ., Japan

LEDp6-15 **The Relationship between Growth Habit and the Behaviors of Dislocations of GaN Crystals in the Na-Flux Coalescence Growth**
M. Imanishi, K. Murakami, H. Imabayashi, H. Takazawa, Y. Todoroki, D. Matsuo, M. Maruyama, M. Imade, M. Yoshimura, and Y. Mori
Osaka Univ., Japan

LEDp6-16 **High-Speed InN Growth on Yttria-Stabilized Zirconia (111) Substrates by a Two-Step Precursor Generation HVPE System**
C. Kojima, R. Togashi, R. Imai, N. Fujita, H. Saito, H. Murakami, Y. Kumagai, and A. Koukitu
Tokyo Univ. of Agri. & Tech., Japan

LEDp6-17 **Nanoscale Optical Analysis Using Cathodoluminescence Combined with Transmission Electron Microscopy**
A. Maigne and D. J. Stowe
Gatan Inc., U.S.A.

LEDp6-18 **RF-MBE Growth of pn-GaInN Structure and Fabrication of Blue-Green Homojunction-Type Light Emitting Diode**
K. Narutani [1], T. Yamaguchi [1], K. Wang [2], T. Araki [2], Y. Nanishi [2], L. Sang [3], M. Sumiya [3], S. Fujioka [1], T. Onuma [1,4], and T. Honda [1]
[1] Kogakuin Univ., Japan, [2] Ritsumeikan Univ., Japan, [3] NIMS, Japan, [4] Tokyo National College of Technology, Japan

LEDp6-19 **Efficiency Improvement of Nitride-Based Light-Emitting Diode with Physical Vapor Deposition AlN Nucleation Layer**
J. Lee [1], C. H. Yen [1], W. C. Lai [1], Y. Y. Yang [1], C. K. Wang [2], and S. J. Chang [1]
[1] National Cheng Kung Univ., Taiwan, [2] Southern Taiwan Univ. of Science and Technology, Taiwan

LEDp6-20 **Enhancement in Output Power of Blue Nitride-Based Light Emitting Diodes with an Electron Retarded Layer**
S. B. Chuang [1], C. K. Wang [1], Y. Z. Chiou [1], C. H. Yen [2], W. C. Lai [2], and S. J. Chang [2]
[1] Southern Taiwan Univ. of Science and Technology, Taiwan, [2] National Cheng Kung Univ., Taiwan

LEDp6-21 **High Current Density LED Performance on Low Dislocation Density GaN on Sapphire**
T. Sugiyama [1], K. Yamashita [2], M. Iwai [1], Y. Honda [2], T. Yoshino [1], and H. Amano [2,3]
[1] NGK Insulators, Ltd., Japan, [2] Nagoya Univ., Japan, [3] Akasaki Research Center, Japan

LEDp6-22 **Fabrication of InGaN Based Light-Emitting Diode Using Freestanding {20 $\bar{2}$ 1} GaN Substrate**
Y. Denpo, Y. Mitsui, K. Yamane, N. Okada, and K. Tadatomo
Yamaguchi Univ., Japan

LEDp6-23 **Nitride-Based Light Emitting Diodes with Buried Tunnel Junctions**
M. Ino [1], Y. Kuwano [1], T. Morita [1], D. Minamikawa [1], T. Takeuchi [1], S. Kamiyama [1], M. Iwaya [1], and I. Akasaki [1,2]
[1] Meijo Univ., Japan, [2] Akasaki Research Center, Japan

LEDp6-24 **Fabrication of Vertical-Type GaN-Based Metal Oxide Semiconductor Light-Emitting Diodes**
S. Fujioka [1], T. Yasuno [1], A. Sato [1], T. Onuma [1,2], H. Nagai [1], T. Yamaguchi [1], M. Sato [1], and T. Honda [1]
[1] Kogakuin Univ., Japan, [2] Tokyo National College of Technology, Japan

LEDp6-25 **Study of High-Reflective Ag-Based Electrode on p-Type GaN**
S. Kawai [1], D. Iida [1], M. Iwaya [1], T. Takeuchi [1], S. Kamiyama [1], and I. Akasaki [1,2]
[1] Meijo Univ., Japan, [2] Akasaki Research Center, Japan

LEDp6-26 **Fabrication of Nitride-Based Blue LED with Eliminating Light-Absorptive Laser Scribing Damages**
S. Hanai [1)], I. Nakatani [2)], A. Suzuki [1,3)], T. Kitano [1,3)], D. Iida [1)], T. Kato [1)], M. Iwaya [1)], T. Takeuchi [1)], S. Kamiyama [1)], and I. Akasaki [1,4)]
[1)] Meijo Univ., Japan, [2)] Mitsuboshi diamond industrial, Japan, [3)] EL-Seed Corp., Japan, [4)] Akasaki Research Center, Japan

LEDp6-27 **InGaN Flip-Chip Light-Emitting Diodes with Embedded Air Voids Grown on Selective-Area Ar-Implanted AlN/Sapphire Substrate**
Y. H. Yeh [1)], J. K. Sheu [1)], M. L. Lee [2)], C. J. Chang [2)], P. C. Chen [1)], Y. C. Yang [1)], C. H. Yen [1)], W. C. Lai [1)]
[1)] National Cheng Kung Univ., Taiwan, [2)] Southern Taiwan Univ. of Science and Technology, Taiwan

LEDp6-28 **Auto-Split Laser Lift-Off Technique for Vertical-Injection GaN-Based Green Light-Emitting Diodes**
M. Chen [1)], L. E. Cai [2)], J. Y. Zhang [1)], L. Y. Ying [1)], and B. P. Zhang [1)]
[1)] Xiamen Univ., China, [2)] Xiamen University of Technology, China

LEDp6-29 **Light-Emitting Diode Panel Lamps**
W. S. Cheung, Y. F. Cheung, and H. W. Choi
The Univ. of Hong Kong, Hong Kong

LEDp6-30 **Design Optimization of Pattern Structure for Improving Light Extraction Efficiency of Light-Emitting Diodes with Patterned Sapphire Substrate**
H. Cui and S. H. Park
Yeungnam Univ., Korea

LEDp6-31 **Numerical Study of the LEDs with Injected Current Modulated by Patterned Contact**
I. Khmyrova [1)], N. Watanabe [1)], Ju. Kholopova [2)], A. Kovalchuk [2)], and S. Shapoval [2)]
[1)] Univ. of Aizu, Japan, [2)] IMT RAS, Russia

LEDp6-32 **Phosphor-Converted Light-Emitting Diodes with Advanced Color Rendition Properties**
A. Zabiliūtė, R. Vaicekauskas, P. Vitta, A. Tuzikas, A. Petrulis, and A. Žukauskas
Vilnius Univ., Lithuania

LEDp6-33 **Control of Thickness and Concentration of Color Converting Film Based on Quantum Dots for White LED with High Luminous Efficiency and CRI**
H. J. Kim, M. H. Shin, H. G. Hong, and Y. J. Kim
Yonsei Univ., Korea

----- Break （15:15-15:30）-----

15:30-16:30 LED7: Special Lectures Room 411, 412
Chair: M. Boćkowski,
Institute of High Pressure Physics, PAS, Poland, Top GaN Sp. z o.o., Poland

LED7-1 15:30 **Fundamentals and Integration Technologies for Semiconductor Light-Emitting Devices**
H. Yonezu (Under negotiation)
Toyohashi Univ. of Tech., Japan

LED7-2 16:00 **Red and Blue LEDs: Physics and Applications of Visible Light Emitting Diodes**
G. Hatakoshi
Toshiba Corp., Japan

16:30-16:45 Closing Room 411, 412
Closing Remarks
16:30 Y. Kumagai, Program Committee Chair
Tokyo Univ. of Agri. & Tech., Japan

The2nd Laser Ignition Confarence2014

LIC'14

Tuesday, April 22

15:30-15 Joint Session PLD/LIC Room 303
Opening Remarks of Joint Session
15:30 T. Taira, Conference Chair of LIC' 14
Institute for Molecular Science, Japan
T. Jitsuno, Conference Chair of PLD' 14
Institute of Laser Engineering,Osaka Univ.,Japan

15:45-17:45 Joint Session PLD/LIC 1 Room 303
Chair: T. Jitsuno, ILE, Osaka Univ., Japan

PLD/LIC1-1 15:45 **(Invited) The microchip-laser based high energy probe laser for the Thomso scattering plasma diagnostics**
R. Yasuhara
National Institute for Fusion Science, Japan

PLD/LIC1-2 16:15 **(Invited) Giant micro-photonics: a key to extending the horizons of laser peening**
Y. Sano, Japan

PLD/LIC1-3 16:45 **(Invited) High resistant multi-layer coating for thin disk laser amplifier**
Y. Ochi[1)], K. Nagashima[1)], H. Okada[1)], M. Maruyama[1)], R. Tateno[2)], Y. Furukawa[2)], and A. Sugiyama[1)]
[1)] Japan Atomic Energy Agency, Japan, [2)]SHIMADZU Japan

PLD/LIC1-4 17:15 **Influence of longitudinal mode beating on laser-induced damage in fused silica**
R. Diaz[1)], M. Chambonneau[1)], P. Grua[1)], J.-L. Rullier1), J.-Y. Natoli2) and L. Lamaignère1)
[1)]CEA CESTA, [2)] bAix Marseille Université,France

PLD/LIC1-5 17:30 **Effect of longitudinal mode beating on laser matter-interaction in dielectrics**
E. Pupka, G. Batavičiūtė Vilnius University, Lithuania

----- OPIC Banquet (Room 501& 502) (18:00-20:00) -----

Wednesday, April 23

9:00-10:15 LIC-1 Plenaly Room 302
Chair:

LIC1-1 9:00 **Opening remarks**
T. Taira
IMS, Japan

LIC1-2 9:15 **Guest Talk-I**
Director of OSA, USA

LIC1-3 10:00 **Guest Talk-II**
Director of SPIE, USA

10:15-12:30 LIC-2 Laser ignited engines for power generator and vehicle (1) Room302

LIC2-1 10:15 **(Invited) Overview of the history of engine ignition leading to laser ignition**
E.Murase

Tohoku Univ. Japan

----- Break （10:45-11:15）-----

LIC2-2 11:15 **History of Laser Ignition for large gas engines at Robert Bosch GmbH**
R. Wörner
Robert Bosch GmbH, Germany

LIC2-3 11:45 **Laser-induced ignition of a gasoline engine with inert gas dilution**
T. Saito
Meisei University, Japan

LIC2-4 12:00 **Laser Ignition Characteristics of Hydrous Ethanol**
K. M.Rahman
Okayama Univ., Japan

LIC2-5 12:15 **Laser ignition in an aeronautical injector**
L. Zimmer
CNRS

----- Lunch Break and Poster Session （12:30-15:00）-----

13:00-15:00 Poster Session Exhibition Hall C

LICp-1 **Nd:YVO4/diamond and Yb:YAG/diamond composite lasers fabricated with the room-temperature bonding**
I.Shoji
Chuo Univ., Japan

LICp-2 **Diagnosis of Dental Caries using LIBS with Passively Q-switched Nd:YAG Microchip Laser**
Y. Oki
Kyushu Univ., Japan

LICp-3

15:00-16:15 LIC-3 Applications of high brightness laser Room302

Chair: TBD

LIC3-1 15:00 **(Invited)**
T. Sakamoto
Kogakuin Univ.

LIC3-2 15:30 **Investigation of Post-Ionizations of Sputtered Atoms in TOF-MS Using a Palm-Top-Size Megawatt Microlaser**
J. Gao
Kogakuin Univ.

LIC3-3 15:35 **High dynamic range THz wave spectroscopic system using microchip Nd:YAG laser**
K. Murate
Nagoya Univ., Japan

LIC3-4 16:00 **Characterization of Energy Input and Laser-Induced Plasma for Passively Q-switched Laser Ignition**
S. Lorenz
Univ. Bayreuth

----- Break （16:15-16:45）-----

16:45-18:00 LIC-4 High brightness lasers for ignition and diagnostic (1) Room 302

Chair: TBD

LIC4-1 16:45 **(Invited)**
G. J Quarles
Open Photonics, Inc.

LIC4-2 17:15 **Passively Q-switched, composite Nd:YAG/Cr4+:YAG laser pumped laterally through a prism**
N. Pavel
Nation. Inst. for Laser, Plasma and Radiation Phys.

LIC4-3 17:30 **LD pumped passively Q-switched high brightness laser**
A.Sone
HAMAMATSU PHOTONICS K.K, Japan

LIC4-4 17:45 **Design optimization for a compact high-pulse-energy passively Q-switched NdYLF laser with an ultra-low-magnification unstable resonator**
C. Cho
National Chiao Tung Univ.

Thursday, April 24

9:00-10:30 LIC-5: Laser ignited engines for power generator and vehicle (2) Room 302

Chair: TBD

LIC5-1 9:00 **(Invited) Fundamental laser ignition studies of hydrocarbon fuels**
S. Vasu
CREOL

LIC5-2 9:30 **Characteristics of Microwave-Enhanced Laser Ignition in Methane/air Premixed Mixture**
J. Hayashi
Osaka Univ., Japan

LIC5-3 9:45 **(Invited) Effects of Laser Irradiation Delay on the Laser Ignition Characteristics of Hydrogen Jet Injected into a Constant-volume Combustion Vessel**
J. Hayashi
Osaka Univ., Japan

LIC5-4 10:00 **Performance of a 6-cylinder natural gas engine on laser ignition**
S. B. Gupta
Argonne National Lab.

LIC5-5 10:15 **Laser Ignition in a High-temperature and High-pressure Spray**
H. Kojima
AIST, Japan

----- Break （10:30-11:00）-----

10:00-12:30 LIC-6: High brightness lasers for ignition and diagnostic (2) Room 302

Chair: TBD

LIC6-1 11:00 **(Invited) Mid-IR lasers for gas sensing**
I.Sorokina
Norway Univ., Norway

LIC6-2 11:30 **Discretely Tunable Multi-Wavelength Operation of a Diode-Pumped Nd:YVO4 Laser**
T. Waritanant
Univ. Manitoba

LIC6-3 11:45 **High-power harmonically self-mode-locked Nd:YVO4 1.34 μm laser with repetition rate up to 32.1 GHz**
T. Wu
National Chiao Tung Univ.

LIC6-4 12:00 **High efficiency continuous-wave self-Raman Nd:KGW laser with a shift of 89 cm-1**
C. Tang
National Chiao Tung Univ.

LIC6-5 12:15 **Green microlaser for ignition**
R. Bhandari
IMS

----- Lunch Break （12:30-13:30）-----

13:30-15:00 LIC7: Laser ignited engines for power generator and vehicle (3)
Chair: TBD

LIC7-1 13:30 **(Invited) Semiconductor laser ignition for micro-solid-state rocket**
H. Koizumi
Univ. Tokyo, Japan

LIC7-2 14:00 **Flame kernel formation process for lean methane/air mixture by close dual-point laser-induced sparks**
H. Shiono
Univ. Tokyo, Japan

LIC7-3 14:15 **An Investigation of Multi-pulse Laser Ignition in GDI engine**
H. Cheng
Univ. Liverpool

lIC7-4 14:30 **Multi-point Laser ignition of internal combustion engines using a spatial light modulator**
Z. Kuang
Univ. Liverpool

LIC7-5 14:45 **Two-Point Laser Ignition for Stable Lean Burn Operation of Gas Engine**
S. Yamaguchi
Tsukuba Univ., Japan

----- Break （15:00-15:30）-----

15:30-17:00 LIC-8 High brightness lasers for ignition and diagnostic (3) Room 302
Chair: TBD

LIC8-1 15:30 **Thin rod micro-laser for ignition**
M. Tsunekane
IMS, Japan

LIC8-2 15:45 **VCSEL power arrays as ideal pump source for laser ignition**
S. Gronenborn
Philips Photonics

LIC8-3 16:00 **Diode pumped continuous and quasi continuous laser operation of TGT-grown Nd,Y-codoped:SrF2 crystal**
M. Jelinek
Czech Technical Univ., Japan

LIC8-4 16:15 **Linear thermal expansion coefficient of YAG single crystal along various orientations**
Y. Sato
IMS, Japan

LIC8-5 16:30 **Short pulse duration ultraviolet laser with a single-stage rod-type photonic crystal fiber amplifier**
W. Zhuang
National Chiao Tung Univ.

LIC8-6 16:45 **Parametric laser pulse shortening**
Y. Chiu
National Tsinghua Univ.

17:00-17:30 LIC-9 Closing Room 302

LIC9-1 17:00 **Awards**

LIC9-2 17:15 **Closing Remarks**

Conference on Laser and Synchrotron Radiation Combination Experiment

LSC'14

Wednesday, April 23

9:00-9:15 Opening Room 416+417
Opening Remarks
9:00 H. Azech, Conference Chair of LSC' 14
Institute of Laser Engineering, Osaka University, Osaka, Japan

9:15-12:30 LSC1 Room 416+417
Chair:

LSC1-1 9:15 **(Invited) X-ray Free-Electron Lasers – a bright future for structural biology**
Ilme Schlichting
Max Planck Institute for Medical Research, Germany

LSC1-2 9:45 **(Invited) Tracking the chemical reactions with combined ultrafast x-ray spectroscopies and scattering**
Simone A. Techert
European XFE, Germany

LSC1-3 10:15 **(Invited) Structural Dynamics in Chemistry Investigated by Pulsed, High Flux X-ray Radiation**
Simone A. Techert
DESY, Hamburg, Germany / MPIbpC, Germany

----- Break （10:45-11:00）-----

LSC1-4 11:00 **(Invited) SR & XFELs' Challenges to Time Resolved Structural Visualization of Optical Recording Process**
Masaki Takata
RIKEN SPring-8 Center, Japan

LSC1-5 11:30 **(Invited) Time-resolved X-ray Diffraction Experiment on Crystal Lattice Dynamics Using Optical Laser and Accelerator-based X-ray Source**
Yoshihito Tanaka
RIKEN SPring-8 Center, Japan

LSC1-6 12:00 **(Invited) Towards femtosecond time-resolved hard x-ray photoelectron spectroscopyray as a probe of transient electronic states in condensed matter**
Masaki Oura
RIKEN SPring-8 Center, Japan

----- Lunch Break （12:30-13:30）-----

13:30-18:30 LSC2 Room 416+417
Chair:

LSC2-1 13:30 **(Invited) Time-resolved X-ray spectroscopy at 3rd and 4th generation light sources**
Chris Milne
Paul Scherrer Institute, Switzerland

LSC2-2 **(Invited) EUV+IR two-color experiments at**

14:00 **FELs**
Kiyoshi Ueda
IMRAM, Tohoku University, Japan

LSC2-3 14:30 **(Invited) Femtosecond time-resolved X-ray absorption spectroscopy using SPring-8 Angstrom Compact Free Electron laser (SACLA)**
Kazuhiko Misawa
Tokyo University of Agriculture and Technology, Japan

----- Break （15:00-15:15）-----

LSC2-4 15:15 **(Invited) Exploring Possible Pathways to Non-Thermal Sub-Picosecond Phase-Switching in the Phase Change Alloy Ge2Sb2Te5 using a Free-Electron Laser**
Paul Fons
National Institute of Advanced Industrial Science and Technology, Japan

LSC2-5 15:45 **(Invited) Picosecond Lattice Deformation in Ge2Sb2Te5 Revealed by X-ray Free-Electron Laser**
Eiichiro Matsubara
Dept. Materials Science & Engineering, Kyoto University, Japan

LSC2-6 16:15 **(Invited) Ultrafast lattice dynamics of phase change materials by coherent phonons**
Muneaki Hase
Institute of Applied Physics, University of Tsukuba, Japan

----- Break （16:45-17:00）-----

LSC2-7 17:00 **(Invited) Generation of Kilo-Tesla Magnetic Field with High-Power Laser for LSC Experiments**
Shinsuke Fujioka
Institute of Laser Engineering, Osaka University, Japan

LSC2-8 17:30 **Relaxation of the Surface Photovoltage Effect on ZnO(0001) Studied by Time-resolved Soft X-ray Photoemission Spectroscopy**
Ryu Yukawa
ISSP, the University of Tokyo, Japan

LSC2-9 17:45 **Optical properties of lanthanide-doped APLF crystals as neutron scintillators**
Melvin John F. Empizo
Institute of Laser Engineering, Osaka University, Japan

LSC2-10 18:00 **Investigation of the spatial resolution of a ZnO crystal as a EUV imaging device scintillator**
Ren Arita
Institute of Laser Engineering, Osaka University, Japan

LSC2-11 18:15 **Vacuum ultraviolet (VUV) fluorescence of KMgF3 and BaLiF3 crystals for short wavelength devices**
Luong Viet Mui
Institute of Laser Engineering, Osaka University, Japan

Thursday, April 24

9:00-12:15 LSC3 Room 416+417
Chair:

LSC3-1 9:00 **(Invited) Development of an Ultrafast Pump-probe Facility with Multiple Radiations generated by an RF Photogun-based Accelerator and a Femtosecond Laser**
Young U. Jeong
WCI Center for Quantum-Beam-based Radiation Research, KAERI, Korea

LSC3-2 9:30 **(Invited) Generation of Coherent Synchrotron Radiation by using Laser and Synchrotron**
Masahiro Katoh
Institute for Molecular Science, Japan

LSC3-3 10:00 **(Invited) Nonlinear ionization of atoms in intense EUV laser fields studied by single-shot photoelectron spectroscopy**
Mizuho Fushitani
Department of Chemistry, Graduate School of Science, Nagoya University, Japan

----- Break （10:30-10:45）-----

LSC3-4 10:45 **(Invited) Capturing structural dynamics of materials by picosecond X-ray pulses**
Shin-ichi Adachi
Photon Factory, KEK, Japan

LSC3-5 11:15 **(Invited) Ultrafast X-ray science at synchrotron and XFEL facilities using laser pump X-ray probe experiments**
Shunsuke Nozawa
High Energy Accelerator Research Organization, Japan

LSC3-6 11:45 **(Invited) Single-shot time-resolved X-ray scattering measurement of structural change of amorphous material under laser-driven compression**
Kouhei Ichiyanagi
Graduate School of Frontier Sciences, The University of Tokyo, Japan

----- Lunch Break （12:15-13:15）-----

13:15-18:15 LSC4 Room 416+417
Chair:

LSC4-1 13:15 **(Invited) Ultrabright femtosecond electron diffraction**
German Sciaini
Department of Chemistry, University of Waterloo, Canada

LSC4-2 13:45 **(Invited) Femtosecond Electron Diffraction Studies**
Masaki Hada
Tokyo Institute of Technology, JST-PRESTO / Max Planck Institute for the Structure and Dynamics of Matter

LSC4-3 14:15 **(Invited) Role of Ultrafast Structural Dynamics in Photo-Functional Materials Based on Cooperative Effect**
Shin-ya Koshihara
CREST, JST and Department of Materials Science, Tokyo Institute of Technology, Japan

----- Break （14:45-15:00）-----

LSC4-4 15:00 **(Invited) Chronology of Photocarriers at Surfaces Studied by Time-Resolved Photoemission Spectroscopy**

Iwao Matsuda
The Institute for Solid State Physics, the University of Tokyo, Japan

LSC4-5 15:30 **(Invited) Synchrotron Radiation and Laser Photoemission Studies of Epitaxial Graphene on SiC**
Kazutoshi Takahashi
Synchrotron Light Application Center, Saga University, Japan

LSC4-6 16:00 **(Invited) Highly Efficient Deep UV Generation from a Newly Developed Wavelength-conversion β-BaB2O4 Device**
Ichiro Shoji
Chuo University, Japan

----- Break （16:30-16:45）-----

LSC4-7 16:45 **(Invited) Time-resolved vibrational spectroscopy for photo-functional organic materials**
Ken Onda
Tokyo Institute of Technology, PRESTO-JST, Japan

LSC4-8 17:15 **(Invited) Nondestructive 3D Imaging of Fatigue Cracks inside Engineering Materials by Synchrotron Radiation**
Yuji Sano
Toshiba Corporation, Japan

LSC4-9 17:45 **Development of measurement system for magneto-optical effect with a vacuum ultraviolet High Harmonic Generation laser**
Shingo Yamamoto
Institute for Solid State Physics, the University of Tokyo, Japan

LSC4-10 18:00 **Observing carrier dynamics in an n-type epitaxial graphene using time-resolved photoemission spectroscopy**
Takashi Someya
Institute for Solid State Physics, the University of Tokyo, Japan

18:15-18:30 Closing Room 416+417

Closing Remarks

18:15 K. Nakamura, Steering Committee Co-Chair, Tokyo Institute of Technology, and CREST-JST, Japan

Optical Manipulation Conference'14

OMC'14

Tuesday, April 22

15:30-16:00 Opening Room 313+314

Opening Remarks

15:30 **T. Omatsu, Conference Chair of OMC' 14**
Chiba Univ., Japan

16:00-18:00 BISC& OMC Joint session Room 313+314

Chair: K. Sasaki, Co-Chair of OMC'14
Hokkaido Univ., Japan

BISC&OMC-1 16:00 **(Plenary) New perspectives for optical manipulation in air and vacuum**
K. Dholakia
Univ. St. Andrews, UK

BISC&OMC-2 16:40 **(Plenary) Polarization-sensitive OCT (PS-OCT) for retinal imaging**
B. Cense
Utsunomiya Univ., Japan

BISC&OMC-3 17:20 **(Plenary) Optical Tweezers Based Biomicrorheology (APLS'14)**
A. Chiou
National Yang-Ming Univ., Taiwan

Wednesday, April 23

9:00-10:25 OMC1: Optical Manipulation1 Room 414+415

Chair: H. Ishihara
Osaka Prefecture Univ., Japan

OMC1-1 9:00 **Optical manipulation of molecular dynamics in neurons**
C. Hosokawa [1)], N. Takeda [1,2)], S. N. Kudoh [2)], T. Taguchi [3)]
[1)] AIST, Japan, [2)] Kwansei Gakuin Univ., Japan, [3)] NICT, Japan

OMC1-2 9:15 **Optical manipulation of quantum dots in superfluid He**
Y. Minowa, H. Tahara, and M. Ashida
Osaka Univ., Japan

OMC1-3 9:30 **Dispersion reduction in generation of high-order optical vortex using axially-symmetric half-wave plates**
M. Sakamoto [1)], R. Fukumoto [1)], K. Oka [2)], R. Morita [2,3)], and N. Murakami [2)]
[1)] Graduate School of Engineering, Hokkaido Univ., Japan, [2)] Faculty of Engineering, , Hokkaido Univ., Japan, [3)] JST CREST, Japan

OMC1-4 9:45 **(Plenary) Laser Trapping Assembling of Clusters and Nanoparticles**
H. Masuhara [1)], T. Sugiyama [1)], K. Yuyama [1)], A. Usman [2)], W. Chiang [1)],
[1)] National Chiao Tung Univ., Taiwan, [2)] King Abdullah Univ. of Science and Engineering, Saudi Arabia

----- Break （10:25-10:45）-----

10:45-12:30 OMC2: Optical Manipulation2 Room 414+415

Chair: Y. Tsuboi
Osaka City Univ., Japan

OMC 2-1 10:45 **Laser-induced breakdown of optically trapped nanoparticlesfor cell transfection**
Y. Arita [1)], M. Ploschner [1)], M. Antkowiak [1,2)], F. G.Moore [2)] and K. Dholakia [1)]
[1)] SUPA, Univ. St. Andrews, UK, [2)] SULSA, Univ. St. Andrews, UK

OMC2-2 11:00 **Optical manipulation with coherent transient phenomena**
T. Kudo, H. Ishihara
Osaka Prefecture Univ., Japan

OMC2-3 11:15 **Dynamics of microparticles trapped in a perfect vortex beam**
M. Chen [1)], M. Maziluand [1)], Y. Arita [1)], E. M. Wright [1,2)], and K. Dholakia [1,2)]
[1)] SUPA, Univ. St. Andrews, UK, [2)] The Univ. of Arizona, USA

OMC2-4 **Theory for Bio-inspired Optical**

11:30 **Manipulation under Fluctuations**
T. Iida [1,2], M. Tamura [1,3], S. Hidaka [1,3], H. Hattori [1,3], T. Hamada [1,3], K. Nishida [1,3], S. Tokonami [1], T. Itoh [4], H. Yamauchi [5,6], H. Miyasaka, and S. Ito [2,5,6]
[1] Nanoscience and Nanotechnology Research Center, Research Organization for the 21st Century,Osaka Prefecture Univ, Japan, [2] JST PRESTO, Japan, [3]Graduate School of Engineering, Osaka Prefecture Univ., Japan, [4] AIST, Japan, [5] Division of Frontier Materials Science, Graduate School of Engineering Science, Osaka Univ., Japan,[6] Center for Quantum Materials Science under Extreme Conditions, Osaka Univ., Japan

OMC2-5 11:45 **Low-driving-voltage liquid-crystal lens with elliptically distributed refractive indices**
M. Kawamura [1], S. Oikawa [1], and S. Sato [2]
[1] Akita Univ., Japan, [2] LC-Lens Institute, Japan

OMC2-6 12:00 **(Invited)Quantitative measurements of rotation in optical tweezers and applications**
H. R. Dunlop
Univ. of Queensland, Australia

---- Lunch Break& Poster Session（12:30-15:30）-----

13:30-15:30 OMC3: Poster Session Exhibition Hall C

OMCp3-1 **Creation of laser trapping beam with 3D dark spot**
Y. Iketaki [1], K. Hidaka [2], A. Hirabayashi [2], and N. Bokor [3]
[1] Olympus Corp., Japan, [2] Ceratech Japan Co., Ltd., Japan, [3] Budapest Univ. of Technology and Economics, Hungary

OMCp3-2 **Three-dimensional off-axis trapping with optical vortex**
T. Otsu, T. Ando, Y. Takiguchi, Y. Ohtake, H. Toyoda, H. Itoh
Hamamatsu Photonics K.K., Japan

OMCp3-3 **Simulation study for the output modecleaner in KAGRA**
T. Shimizu [1], K. Yamanoi [1], R. Nishi [1], Y. A. Kumeta [1], C. Bond [2], and K. Somiya [1]
[1]Tokyo Institute of Technology, Japan, [2]Univ. of Birmingham, UK

OMCp3-4 **Chiral copper nano-needle formation by optical angular momentum transfer**
Y. Tabata [1], F. Takahashi [1], S. Takizawa [1], K. Miyamoto [1], R. Morita [2,3], and T. Omatsu [1,3]
[1] Chiba Univ., Japan, [2] Hokkaido Univ., Japan, [3] JST CREST, Japan

OMCp3-5 **Water jet generated by horizontally focusing a Q-switched laser beneath a flat free surface with different depths**
Ross C. C. Chen, Y. T. Yu, K. W. Su, and Y. F. Chen
National Chiao Tung Univ., Taiwan

OMCp3-6 **Comparison of polarization properties in broad-area vertical cavity surface emitting lasers with different cavity shapes**
Y. T. Yu, P. H. Tuan, K. W. Su, and Y. F. Chen
National Chiao Tung Univ., Taiwan

OMCp3-7 **Real-time THz-wave sensing via infrared lights detection interacted with evanescent THz waves**
T. Akiba [1], N. Kaneko [1], K. Suizu [1], K. Miyamoto [2], T. Omatsu [2,3]
[1] Chiba Institute of Technology,Japan, [2] Chiba Univ., Japan, [3] JST CREST, Japan

OMCp3-8 **Higher-Order Single-Transverse Mode Generation from a Yb:YAG Laser Pumped by a Scanning Beam**
T. Sato, Y. Kozawa and S. Sato
Tohoku Univ., Japan

OMCp3-9 **Generation of vector Bessel-Gaussian beams from a c-cut Nd:$GdVO_4$ laser cavity**
T. Sumi, Y. Kozawa, and S. Sato
Tohoku Univ., Japan

OMCp3-10 **Fast and broadband conversion of light polarization using shortcut to adiabaticity**
C. P. He and S. Y. Tseng
National Cheng Kung Univ., Taiwan

OMCp3-11 **Transfer of transverse spin angular momentum using Airy beams**
K. Y. Kim
Sejong Univ., Korea

OMCp3-12 **Optical Trapping of a Single Submicron-Sized Dielectric Particle with Continuous Wave and Pulsed Lasers**
T. H. Liu [1], A. Usman [2], W. Y. Chiang [1], H. Masuhara [1]
[1] National Chiao Tung Univ., Taiwan, [2] King Abdullah Univ. of Science and Technology, Saudi Arabia

OMCp3-13 **Power scale-up of structured laser beams concentrated on three-dimensional Lissajous parametric surfaces**
J. C. Tung [1], H. C. Liang [2] and Y. F. Chen [1]
[1] National Chiao Tung Univ., Taiwan, [2] National Taiwan Ocean Univ., Taiwan

OMCp3-14 **Mid-Infrared (6.5μm) optical vortex laser**
K. Furuki [1], M. T. Horikawa [1], Y. Tokizane [1,2], K. Miyamoto [1], and T. Omatsu [1,2]
[1] Chiba Univ., Japan, [2] JST CREST, Japan

OMCp3-15 **Quantum control of isotope-selective rovibrational excitation of diatomic molecules in the thermal distribution**
A. Ichihara [1], L. Matsuoka [2], Y. Kurosaki [1], K. Yokoyama [1]
[1] Japan Atomic Energy Agency, Japan, [2] Hiroshima Univ., Japan

OMCp3-16 **Optical Kerr response of nano-scale thin films**
T. Kinoshita, H. Ishihara
Osaka Prefecture Univ, Japan

OMCp3-17 **Luminescence Activity of Two-level Molecule with Population Inversion**
R. Hata, N. Yokoshi, H. Ajiki and H. Ishihara
Osaka Prefecture Univ, Japan

OMCp3-18 **Study of crossover between Fano resonance and Rabi splitting in an antenna-molecule coupled system**
N. Murata, Y. Mizumoto, H. Ishihara

Osaka Prefecture Univ, Japan

OMCp3-19 **Theoretical estimation of inter-molecule correlations nearby metallic nanostructures**
Y. Osaka, N. Yokoshi, H. Ishihara
Osaka Prefecture Univ, Japan

OMCp3-20 **In-situ surface-enhanced Raman scattering measurement for plasmon-induced electron transfer reaction at nanogap of Au dimer structure**
K. Suzuki, F. Nagasawa, S. Yasuda and K. Murakoshi
Hokkaido Univ., Japan

OMCp3-21 **Nanoparticle trapping using plasmonic nanostructure and potential analysis**
S. Ishida, T. Wada, Y. Tanaka, and K. Sasaki
Hokkaido Univ., Japan

OMCp3-22 **Angular momentum transfer from photons to plasmons**
K. Sakai, K. Nomura, T. Yamamoto, K. Sasaki
Hokkaido Univ., Japan

OMCp3-23 **Ultra-sensitive observation of molecules under excitation by localized surface plasmons at metal nanogap**
F. Nagasawa, M. Takase and K. Murakoshi
Hokkaido Univ., Japan

OMCp3-24 **Preparation of a two-excitation state in an antenna-coupled double quantum dot**
N. Yokoshi, H. Ishihara
Osaka Prefecture Univ, Japan

OMCp3-25 **Optical Trapping and Ejection of Dielectric Nanoparticles by Double Femtosecond Pulse Trains.**
M. Muramatsu, T. F. Shen, W. Y. Chiang, A. Usman, H. Miyasaka, H. Masuhara
National Chiao Tung Univ., Taiwan

OMCp3-26 **Colloidally-Synthesized Gold Nanoparticle Films Having Tunable Optical Properties**
T. Torimoto [1)], T. Kameyama [1)], Y. Ohno [1)], S. Kuwabata [2)]
[1)] Nagoya Univ., Japan, [2)] Osaka Univ., Japan

15:30-17:45 OMC4: Plasmonc radiation pressure
Room 414+415

Chair: N. M. Litchinitser
State Univ. of New York at Buffalo, USA

OMC4-1 15:30 **(Invited)Optical manipulation of nanostructures by linear and nonlinear resonant responses**
H. Ishihara
Osaka Prefecture Univ., Japan

OMC4-2 16:00 **Selective assembly of microstructures of plasmonic nanorods with radiation pressure**
S. Ito [1,2,)], H. Yamauchi [1)], M. Tamura [3)], S. Hidaka [3)], H. Hattori [3)], T. Hamada [3)], K. Nishida [3)], S. Tokonami [3)], T. Itoh [4)], H. Miyasaka [1)], and T. Iida [2,3)]
[1)] Osaka Univ., Japan, [2)] JST PRESTO, Japan, [3)] Osaka Prefecture Univ., Japan, [4)] AIST, Japan

OMC4-3 16:15 **Generation of electric-fields enhancements between metal cubes by focused radially polarized beams**
K. Kitamura, T. T. Xu,and S. Noda
Kyoto Univ., Japan

OMC4-4 16:30 **(Invited)Scattering asymmetry and non-conservative Optical Forces on small particles**
J. J. Saenz
Universidad Autonoma de Madrid, Spain

OMC4-5 17:00 **Plasmon-based optical trapping of soft nano-materials: characteristic pattern formation based on radiation force and temperature gradient.**
T. Shoji [1)], Y. Tsuboi [1,2)]
[1)] Osaka City Univ., Japan, [2)] JST PRESTO, Japan

OMC4-6 17:15 **Nanomanipulation using designed plasmonic fields**
K. Sasaki, Y. Tanaka, S. Ishida, K. Sakai, H. Fujiwara
Hokkaido Univ., Japan

OMC4-7 17:30 **Plasmon-induced radiation force with far-infrared light and its application to imaging camera**
K. Ueno, H. Itoh, W. Nakano, S. Nozawa, H. Misawa
Hokkaido Univ., Japan

Thursday, April 24

9:00-10:45 OMC5: Structured light 1
Room 414+415

Chair: S. Ashihara
Tokyo Univ. Agriculture & Technology, Japan

OMC5-1 9:00 **(Invited)Behaviour of optically bound particles in laser beams**
P. Zemánek, O. Brzobohatý, M. Šiler, V. Karásek, L. Chvátal
Academy of Sciences of the Czech Republic, Czech Republic

OMC5-2 9:30 **Generation of broadband terahertz vortex beam**
R. Imai [1)], N. Kanda [1,2,3)], T. Higuchi [1,4)], Z. Zheng [1)], K. Konishi [3)], and M. Kuwata [1,3,4)]
[1)] Dept. of Applied Physics,Univ. of Tokyo, Japan, [2)] RIKEN, [3)] Photon Science Center, Univ. of Tokyo, Japan, [4)] Dept. of Physics, Univ. of Tokyo, Japan

OMC5-3 9:45 **Extended Stokes Parameters Capable of Degree of Polarization definition for Axially-Symmetric Polarization based on Cylindrical Coordinates**
M. Suzuki [1)], K. Yamane [1,2)], K. Oka [1)], Y. Toda [1,2)], R. Morita [1,2)]
[1)] Hokkaido Univ., Japan, [2)] JST CREST, Japan

OMC5-4 10:00 **Generation of quasi-nondiffracting focused beams via secondharmonic process of flower Laguerre-Gaussian modes**
Y. C. Lin, K. W. Su, and Y. F. Chen
National Chiao Tung Univ., Taiwan

OMC5-5 10:15 **Direct generation of a fractional vortex output from an optical parametric oscillator**

A. Abulikemu [1], T. Yusufu [1], K. Miyamoto [1], and T. Omatsu [1,2],
[1] Chiba Univ., Japan, [2] JST CREST, Japan

OMC5-6 10:30 **High-order Hermite-Gaussian modes in self-Raman lasers**
C. Y. Lee, C. C. Chang, C. H. Wu, and Y. F. Chen
National Chiao Tung Univ., Taiwan

----- Break （10:45-11:15）-----

11:15-12:30 OMC6: Structured light 2 Room 414+415

Chair: I. Shoji
Chuo Univ., Japan

OMC6-1 11:15 **Generation of mJ-class ultrashort optical-vortex pulses with programmable topological-charge control**
K. Yamane [1,2], A. Honda [1], Y. Toda [1,2], and R. Morita [1,2]
[1] Hokkaido Univ., Japan, [2] JST CREST, Japan

OMC6-2 11:30 **Mid-IR imaging of the localized plasmonic mode by the scanning near-field optical microscopy**
S. Usui, F. Kusa, K. Kohmura, S. Ashihara
Tokyo Univ. of Agriculture and Technology

OMC6-3 11:45 **Atomic resolution imaging of optical near field using force detection**
Y. Sugawara, S. Yamada, M. Furukawa, T. Tokuyama, J. Yamanishi, Y. Naitoh, and Y. J. Li
Osaka Univ., Japan

OMC6-4 12:00 **(Invited) Generation of temporally and spatially structured laser beams related to Diophantine equations**
Y. F. Chen
National Chiao Tung Univ., Taiwan

----- Lunch Break（12:30-13:30）-----

13:30-14:45 OMC7: Structured matters Room 414+415

Chair: R. Morita, Programming Chair of OMC'14
Hokkaido Univ., Japan

OMC7-1 13:30 **(Invited)Structured light in linear and nonlinear nanostructures**
N. M. Litchinitser, J. Sun,J. Zeng,X. Wang,M. Shalaev, and A. N. Cartwright
State Univ. of New York at Buffalo, USA

OMC7-2 14:00 **Optical vortex induced chiral surface relief in an azo-polymer film**
G. Juman [1], M. Watabe [1], K. Miyamoto [1], and T. Omatsu [1,2]
[1] Chiba Univ., Japan, [2] JST-CREST, Japan

OMC7-3 14:15 **Chiral crystalline silicon nano-cone formation by the irradiation of an optical vortex pulse**
F. Takahashi [1], S. Takizawa [1], K. Miyamoto [1], H. Hidai [1], R. Morita [2,3], and T. Omatsu [1,3]
[1] Chiba Univ., Japan, [2] Hokkaido Univ., Japan, [3] JST CREST, Japan

OMC7-4 14:30 **Optical fabrication of single-crystalline microspheres with high sphericity**
S. Okamoto, Y. Minowa, and M. Ashida
Osaka Univ., Japan

----- Break （14:45-15:15）-----

15:15-16:45 OMC8: Optical physics Room 414+415

Chair: P. Zemanek
Academy of Sciences of the Czech Republic, Czech Republic

OMC8-1 15:15 **(Invited)Nano-Optical Trapping:Recent developments and applications to quantum physics**
R. Quidant
ICFO-Institut de Ciencies Fotoniques, Spain

OMC8-2 15:45 **Nonlocal theory of peculiar photoluminescence in nano-to-bulk crossover thin films**
T. Matsuda and H. Ishihara
Osaka Prefecture Univ., Japan

OMC8-3 16:00 **A theoretical study of optical microcavity-based laser cooling under different ambient conditions**
N. D. Vy and T. Iida
Osaka Prefecture Univ., Japan

OMC8-4 16:15 **Spatiotemporal decoherence of excitons excited by an optical vortex with multiple orbital angular momentum**
K. Shigematsu [1], K. Yamane [1,2], R. Morita [1,2], and Y. Toda [1,2]
[1] Hokkaido Univ., Japan, [2] JST CREST, Japan

OMC8-5 16:30 **Evaluation of energy flow across an optical beam**
Y. Miyamoto [1], A. Wada [2], T. Yonemura [1], and M. Takeda [3]
[1] The Univ. of Electro-Communications, Japan, [2] National Defense Academy, Japan, [3] CORE, Utsunomiya Univ., Japan

----- Postdeadline papers (16:45-17:15）-----

17:15-17:30 Closing Room 414+415

Closing Remarks & Best Paper Award
T. Omatsu, Conference Chair of OMC' 14
Chiba Univ., Japan

Pacific-rim Laser Damage '14

PLD'14

Tuesday, April 22

15:30-15:45 Joint Session PLD/LIC Room 303

Opening Remarks of Joint Session

15:30 T. Taira, Conference Chair of LIC' 14
Institute for Molecular Science, Japan
T. Jitsuno, Conference Chair of PLD' 14
Institute of Laser Engineering,Osaka Univ.,Japan

15:45-17:45 Joint Session PLD/LIC 1 Room 303

Chair: T. Jitsuno, ILE, Osaka Univ., Japan

PLD/LIC1-1 15:45 **(Invited) The microchip-laser based high energy probe laser for the Thomso scattering plasma diagnostics**
R. Yasuhara
National Institute for Fusion Science, Japan

PLD/LIC1-2 16:15 **(Invited) Giant micro-photonics: a key to extending the horizons of laser peening**
Y. Sano, Japan

PLD/LIC1-3 16:45 **(Invited) High resistant multi-layer coating for thin disk laser amplifier**
Y. Ochi[1)], K. Nagashima[1)], H. Okada[1)], M. Maruyama[1)], R. Tateno[2)], Y. Furukawa[2)], and A. Sugiyama[1)]
[1)] Japan Atomic Energy Agency, Japan, [2)]SHIMADZU Japan

PLD/LIC1-4 17:15 **Influence of longitudinal mode beating on laser-induced damage in fused silica**
R. Diaz[1)], M. Chambonneau[1)], P. Grua[1)], J.-L. Rullier1), J.-Y. Natoli2) and L. Lamaignère1)
[1)]CEA CESTA, [2)] bAix Marseille Université,France

PLD/LIC1-5 17:30 **Effect of longitudinal mode beating on laser matter-interaction in dielectrics**
E. Pupka, G. Batavičiūtė Vilnius University, Lithuania

Wednesday, April 23

9:00-12:30 PLD2: Plenaly Room 413
Chair: S. Motokoshi, Institute for Laser Technology., Japan

PLD2-1 9:00 **Recent progress in optical components for the high power laser system in China**
J. Shao[1)], Y. Dai[2)], Q. Xu[3)]
[1)] SIOM, [2)] Shanghai Inst. Laser Plasma, China, [3)] Chengdu Fine Opt. Engin. Reser. Center, China

PLD2-2 9:30 **Progresses in research on laser damage mechanisms and contamination problem**
T. Jitsuno
Osaka Univ., Japan

PLD2-3 10:00 **New cheme of grating fablication for large-scale lasers**
D. Smith
Plymouth Grating Laboratory, USA

----- Break （10:30-10:45）-----

10:45-12:15 PLD3: High Power Laser Damage
Chair: T. Jitsuno, ILE, Osaka Univ., Japan

PLD3-1 10:45 **Optical cpmponent requirement for ultra- short and ultra-intense lasers**
J. Zou
Ecole Polytechnique, France

PLD3-2 11:15 **Femtosecond laser induced damage of dispersive mirrors**
J. Zhang, Y. Xie, X. Cheng, Z. Wang
MOE, Tongji Univercity, China

PLD3-3 11:45 **Ultrafast UV laser induced dynamics in dielectric coating materials before laser damage**
J. Du[1)], Z. Li[2)], T. Kobayashi[3,4)], Y. Zhao[2)], Y. Leng[1)]
[1,2)]SIOM,China, [3)]Univ.of Elect. Commun., Japan [4)]JST/(CREST), Japan

PLD3-4 12:00 **Laser induced damage in fused silica and metal mirror for plasma application**
R. Yasuhara)
National Institute for Fusion Science, Japan

----- Lunch Break （12:15-13:15）-----

13:15-15:15 PLD4: Poster Session Exhibition Hall C

PLDp4-1 **Contribution of the metrology of multiple longitudinal modes to the study of laser induced damage in fused silica**
R. Diaz[1)], M. Chambonneau1), R. Courchinoux[1)], J. Luce[1)], J.-Y. Natoli[2)] and L. Lamaignère[1)]
[1)],CEA CESTA, [2)] Aix Marseille Univ., France

PLDp4-2 **Investigation of electric field formed in a multilayer mirror under simultaneous irradiation of two wavelengths**
M. Sugiura[1)], K. Tamura[1)], M. Kobiyama[2)], S. Motokoshi[3)] and T. Jitsuno[4)]
[1)]Tokai optical Co. Ltd, [2)]Tecwave Co. Ltd, [3)] Institute for Laser Technology, [4)]ILE Osaka Univ., Japan

PLDp4-3 **Temperature dependence of laser-induced damage threshold by ultra-short IR laser pulse**
K. Mikami[1)2)], S. Motokoshi[3),] T. Somekawa[3)] , T. Jitsuno1), M. Fujita[3)], and K. A. Tanaka[2)]
[1)] Osaka Univ., [2)],Grad. School of Engin., Osaka Univ.,[3)]Institute for Laser Technology, Japan

PLDp4-4 **Laser removal for highly ion-implanted novolak resist without occurring laser-induced surface damage**
T. Kiriyama[1)], Y. Kuroki[1)], Y. Kasajima[1)], H. Kuramae[1)], T. Kamimura[1)], and H. Horibe[2)]
[1)] Osaka Institute of Technology, [2)] Osaka City University, Japan,

LPDp4-5 **Ablation rate dependence on incident angle and polarization for copper irradiated by femtosecond laser pulses**
Y. Miyasaka*, M. Hashida, T. Nishii, S. Inoue, and S. Sakabe
Kyoto University, Japan

PLD4-6 **High-efficiency cavity-dumped micro-chip Yb:YAG laser**
M. Nishio, A. Maruko, M. Inoue, M. Takama, S. Matsubara, H. Okunishi, K. Kato, K. Kyomoto, T. Yoshida, and S. Kawato
University of Fukui, Japan

PLD4-7 **Thin-rod Yb:YAG regenerative laser amplifier**
A. Maruko, M. Nishio, M. Tanaka, M. Takama, S. Matsubara, H. Okunishi, K. Kato, K. Kyomoto, T. Yoshida, and S. Kawato
University of Fukui, Japan

----- Break （15:15-15:45）-----

15:45-17:00 PLD5: Nonlinear Crystals and Lasers Room 413
Chair: TBD

PLD5-1 15:45 **(Invited) Laser induced bulk damage of KDP crystals prepared by rapid growth**
Y. Zhao[1)], Y. Wang[1)], G. Hu[1)], J. Shao[1)], J. Chang[1)], X. Liu[1)], D. Li[1)], Y. Yao[2)], X. Lin[2)], G. Zheng[2)]
[1)]SIOM, [2)] Fujian Institute of Research on the Structure of Matter, China

PLD5-2 16:15 **Laser induced defect decrement in DKDP crystals varied with photon energy**
Y. Wang1,[2)], Y. Zhao1), M. Zhu[1)], G. Hu1),

L. Yang[1)], D. Li[1)], X. Liu[1)], and Q. Xiao[1)]
[1)] SIOM, [2)] University of Chinese Academy of Sciences, Beijing, China

PLD5-3 16:30 **Pulsed laser-induced damage behavior in KH2PO4/KD2PO4 frequency conversion crystals**
C. Li[1,2)], B. Feng[2)], Q. Zhu[2)], X. Wei[2)], W. Zheng[2)], X. Ju[1)]
[1)]University of Science and Technology Beijing, [2)]Research Center of Laser Fusion, Mianyang, China

PLD5-4 16:45 **Nonlinear optical frequency conversion for lasers in space**
A. Potreck[1,2)], H. Schröder[1)], M. Lammers[1)], A. Santangelo[2)], C. Tenzer[2)], G. Tzeremes[3)], W. Riede[1)]
[1)]Institute of Technical Physics, German Aerospace Center, [2)]University of Tübingen, Germany,
[3)] European Space Agency, Netherlands

---- OPIC Banquet (Room 501& 502) (18:00-20:00) -----

Thursday, April 24

9:00-12:30 PLD6: Defects, Contamination, Polishing and Surface Damage Room 413

Chair: TBD

PLD6-1 9:00 **(Invited) Challenge in realizing ultraflat surfaces using a dressed photon**
Takashi Yatsui
University of Tokyo and ALCA, JST, Japan

PLD6-2 9:30 **Surface Structure of Fused Silica Revealed by Thermal Annealing**
Yang Jun[1,2)], Yi Kui[1)], Yang Minghong[1)], Hu Guohang[1)], Shao Jianda[1)]
[1)]SIOM, [2)] University of Chinese Academy of Sciences, Beijing, China

PLD6-3 9:45 **Evolution simulation of the polishing pad figure in continuous polishing**
H. Shan[1,2)], X. Xu[1)], H. He[1)], S. Liu[1)], C. Wei1), K. Yi[1)], J. Shao[1)]
[1)]SIOM,[2)] University of Chinese Academy of Sciences, Beijing, China

PLD6-4 10:00 **Research of scratch visibility in (subsurface) damage detection based on total internal reflection microscopy**
H. Cui[1,2)], S. Liu[1)], Y. Zhao[1)], J. Liu [1,2)], J. He[1,2)]
[1)]SIOM, [2)] University of Chinese Academy of Sciences, Beijing, China

PLD6-5 10:15 **Discrimination between statistic pseudo fatigue and real modification in optical materials induced by multiple irradiations**
J.-Y. Natoli, F.Wagner, C. Gouldief
Aix Marseille Université, CNRS, France

----- Break （10:30-10:45）-----

Chair: TBD

PLD6-6 10:45 **Laser-induced surface damage measurements with large beams: From initiation to growth**
L. Lamaignère, A. Bourgeade, R. Courchinoux T. Donval, G. Dupuy, A. Roques
CEA CESTA, France

PLD6-7 11:00 **The impact of different cleaning processes on the laser damage threshold of antireflection coatings for Z-backlighter optics at Sandia National Laboratories**
Ella Field, John Bellum, Damon Kletecka
Sandia National Laboratories, USA

PLD6-8 11:15 **PLD6-8 Damage morphology change condition and thermal accumulation effect on dielectric coatings at 1064nm**
Z. Liu, Y. Zheng, J. Luo, S. Chen, Z. Zhang and P. Ma
Fine Optical Engineering Research Centre, Chengdu, China

PLD6-9 11:30 **(Invited) Long-wavelength intense laser ionization inside dielectrics and semiconductors**
D. Grojo[1)], A. Mouskeftaras[1)], S. Leyder[1)], A. Rode[2)], R. Clady[1)], M. Sentis[1)], O. Uteza[1)]
[1)]Aix-Marseille University, France
[2)] Laser Physics Centre, The Australian National University, Australia

PLD6-10 12:00 **(Invited) Three-dimensional micro / nano fabrication by integration of additive and subtractive laser direct writing processes**
W. Xiong[1)], Y. S. Zhou1), L. J. Jiang[1)], J.-F. Silvain[1),2)], L. Jiang[3)], Y. F. Lu[1)],
[1)] University of Nebraska-Lincoln, USA
[2)] Université Bordeaux, France
[3)] Beijing Institute of Technology, China

----- Lunch Break （12:30-13:30）-----

13:30-15:15 PLD7: High Laser Damage Resistant Coating
Chair: TBD

PLD7-1 13:30 **An effective design method for trapezoidal pulse compression metal multilayer dielectric gratings**
H. Guan[1,2)], Y. Jin[1)], J. Wu[1)], F. Kong[1)], K. Yi[1)], and J. Shao[1)]
[1)]SIOM, [,2)] Graduate School of Chinese cademy of Sciences, Beijing, China

PLD7-2 13:45 **Femtosecond laser-induced damage threshold of electron-beam deposited materials for broadband high-reflective coatings on large optics**
A. Hervy[1,2,3)], L. Gallais[2)], G. Chériaux[3)], D. Mouricaud[1)]
[1)]REOSC, [2)]Institut Fresnel, [3)]Laboratoire d'Optique Appliquée, France,

PLD7-3 14:00 **Rapid detection and radiation calibration of laser-induced damage on optical components**
L. Liang, Y. Jiang, X. Li
SIOM, China

PLD7-4 14:15 **Haze in artificially grown single crystal CaF2**
M. Azumi
Nikon Co. LtD., Japan

PLD7-5 14:30 **Relation between crystal structure and laser damage of Calcium Fluoride**
E. Nakahata、M. Azumi
Nikon Co. LtD., Japan

PLD7-6 14:45 **Temperature Dependence of Laser-Induced Damage Thresholds in Dielectric Crystals**
T. Sugita[1)]、K. Mikami[2)]、M. Azumi[1)]、T. Jituno[2)]
[1)]Nikon Co. LtD. [2)] ILE Osaka Univ.

PLD7-8 **Polygon-binaryzation modeling of laser**

15:15 **damage morphologies on dielectric coating to describe their wavefront properties**
Y. Zheng*, Z. Liu, P. Ma, F. Pan
Chengdu Fine Optical Engineering Research Center

15:30-15:45 Closing Room 413

Closing Remarks

15:30 T. Jitsuno Steering Committee Co-Chair, ILE Osaka Univ., Japan

Smart Laser Processing Conference 2014

SLPC2014

Tuesday, April 22

15:30-15:45 Opening Room 413

Opening Remarks

15:30 Y. Okamoto, Okayama Univ., Japan

15:45-17:30 SLPC1 : Advanced Lasers and Optical Technologies for Smart Processing Room 413

Chairs: A. Ostendorf, Ruhr Univ., Germany,
S. Wada, RIKEN, Japan

SLPC1-1 15:45 **(Invited) Inline Coherent Imaging of Laser Materials Processing: Development, Diagnosis and Control**
P. J. L. Webster [1,2], C. V. Vlack [1], C. M. Galbraith [2], and J. M. Fraser [2]
[1] Laser Depth Dynamics Inc., Canada,
[2] Queen's Univ., Canada

SLPC1-2 16:15 **A New 60 W 355 nm Laser for Precision Manufacturing**
R. Patel, J. Bovatsek, and A. Tamhankar
Spectra Physics, USA

SLPC1-3 16:30 **Laser Processing by Using Multi-level Free-form 3D Micro-fabricated DOE**
A. Hamano [1], A. Yamada [1], T. Takada [2], and Y. Usuki [1]
[1] Material Research Laboratory, R&D Division, Furukawa Co. Ltd., Japan,
[2] R&D Planning Department, R&D Division, Furukawa Co. Ltd., Japan

SLPC1-4 16:45 **The Study of the Phase Difference of Beam Splitters Structure in the Fiber-optic Mach-Zehnder Interferometer**
J. T. Huang [1], C. H. Chen [2], C. T. Wang [2], and W. T. Wu [1]
[1] National Pingtung Univ. of Science and Technology, Taiwan, [2]National Chung Cheng Univ., Taiwan

SLPC1-5 17:00 **Development of the Path Generation Algorithm for Large-area Laser Pattern Using the Manual Input Control Point**
K. Yoon, K. Kim, and J. Lee
Korea Institute of Machinery and Materials, Korea

SLPC1-6 17:15 **Fiber-delivery and Compression of Milli-joule Femtosecond Pulses and Micromachining**
B. Debord [1], M. Dontabactouny [1], M. Alharbi [1], C. Fourcade-Dutin [1], C. Hönninger [3], E. Mottay [3], Q. Mocaer [3], L. Vincetti [4], F. Gerome [1,2], and F. Benabid [1,2]
[1] GPPMM Group, Xlim Research Institute, France, [2] GLOphotonics S.A.S, France,
[3] Amplitude Systèmes, France, [4] Univ. of Modena and Reggio Emilia, Italy

----- OPIC Banquet (Room 501& 502) (18:00-20:00) -----

Wednesday, April 23

8:30-10:00 SLPC2: Short Wavelength Applications Room 313+314

Chairs: L. Li, The Univ. of Manchester, UK,
M. Katto, Univ. of Miyazaki, Japan

SLPC2-1 8:30 **(Invited) Update of EUV Source Development Status for HVM Lithography**
H. Mizoguchi [1], H. Nakarai [1], T. Abe [1], T. Ohta [1], K. M Nowak [2], Y. Kawasuji [1], H. Tanaka [1], Y. Watanabe [1], T. Hori [1], T. Kodama [1], Y. Shiraishi [1], T. Yanagida [1], T. Yamada [1], T. Yamazaki [1], S. Okazaki [1], and T. Saitou [1]
[1] Gigaphoton Inc., Oyama Facility, Japan,
[2] Gigaphoton Inc., Hiratsuka Facility, Japan

SLPC2-2 9:00 **(Invited) Laser Induced Front Side Etching Using Excimer Laser**
Klaus Zimmer
Leibniz Institute of Surface Modification, Germany

SLPC2-3 9:30 **Straight Through Hole Drilling in Machinable Ceramics**
S. Nakamura [1], T. Miura [2], and M. Tsuta [2]
[1] Department of Electrical and Electronic Systems Engineering, Nagaoka National College of Technology, Japan, [2] Electrical & Mechanical Systems Engineering Advanced Course, Nagaoka National College of Technology, Japan

SLPC2-4 9:45 **Improvement of Junction Properties of ZnO Nanowire / GaN Hetetojunction Using Selective Laser Processing**
D. Nakamura, N. Tetsuyama, T. Shimogaki, M. Higashihata, and T. Okada
Kyushu Univ., Japan

----- Break （10:00-10:30）-----

10:30-11:45 SLPC3: Micro Nano Processing Room 313+314

Chairs: John Lopez, Univ. of Bordeaux, CNRS, France,
M. Fujita, Institute for Laser Technology, Japan

SLPC3-1 10:30 **(Invited) Laser Direct Writing of Graphene Patterns on Glasses under Ambient Condition**
Y. Lu [1], W. Xiong [1], W. J. Hou [1], L. J. Jiang [1], J. F. Silvain [1,2], and L. Jiang [3],
[1] Univ. of Nebraska - Lincoln, USA,
[2] Institut de Chimie de la Matière Condensée de Bordeaux (ICMCB), CNRS, France,
[3] Beijing Institute of Technology, China

SLPC3-2 11:00 **(Invited) Ultrashort Pulsed Laser Processing: Laser Quantum Ejection from Transparent Thin Film and Their Promising Applications**
P. Herman [1], K. Kumar [2], K. K. C. Lee [1], J. Li [1], S. Ho [1], and J. Nogami [2]
[1] Department of Materials Science and

Engineering, Univ. of Toronto, Canada,
[2] Department of Electrical and Computer Engineering, Univ. of Toronto, Canada

SLPC3-3 11:30 **Laser Micromachining of Bio-absorbable Polymers: Impact of the Laser Process Parameters on the Machining Throughput and Quality**
F. Hendricks [1], R. Patel [2], and V. Matylitsky [1]
[1] High Q Laser, Newport Corp., Austria,
[2] Spectra Physics, Newport Corp., USA

----- Lunch Break （11:45-12:30）-----

12:30-14:15 SLPC4：Poster Session Exhibition Hall C

SLPC4p-1 **All-fiber Microfluidic Mach-Zehnder Interferometer for Detection of Calcium Hydroxide**
J. N. Wang [1], W. T. Wu [2], C. H. Chen [3], and P. L. Shen [1]
[1] National Yunlin Univ. of Science and Technology, Taiwan, [2] National Pingtung Univ. of Science and Technology, Taiwan,
[3] National Chung Cheng Univ., Taiwan

SLPC4p-2 **A Study of the Reflective Cladding-off Cylindrical Fiber Sensor**
Y. T. Y. Kao, and W. T. Wu
National Pingtung Univ. of Science and Technology, Taiwan

SLPC4p-3 **Method for Measuring of the Contrast of Multi-Beam-Interference with a Gaussian Beam-shape**
M. Steger [1,2], S. Boes [2], S. Thilker [2], and A. Gillner [2]
[1] Chair for Laser Technology, Technical Univ. Aachen, Germany, [2] Fraunhofer Institute for Laser Technology, Germany

SLPC4p-4 **Holographic Vector Wave Femtosecond Laser Processing**
S. Hasegawa, and Y. Hayasaki
Center for Optical Research and Education (CORE), Utsunomiya Univ., Japan

SLPC4p-5 **Solid-state-like Fiber Lasers: Ultrahigh Repetition Rate Femtosecond Fiber Laser and Applications**
Z. Zhang, A. Wang, C. Li, X. Gao, G. Wang, and J. Zang
Peking Univ., China

SLPC4p-6 **Multifunctional Laser System for Micromachining of Various Materials**
M. Milenky, E. V. Raevsky, and D. L. Saprykin
Electronic Special Technological Equipment, Research & Development Institute, Russia

SLPC4p-7 **Demonstration of Heat Resistant Bragg Grating by Femtosecond Laser Processing for Vibration Monitoring**
A. Nishimura [1], Y. Takenaka [2], T. Furuyama [2], T. Shimomura [3], T. Terada [3], and H. Daido [3]
[1] Japan Atomic Energy Agency, Kizugawa, Japan, [2] A-Tech, Japan, [3] Japan Atomic Energy Agency, Tsuruga, Japan

SLPC4p-8 **A Simplified Fabrication Technique for TFBG for the Simultaneous Measurement of Refractive Index and Temperature of Liquids**
A. Kameyama [1], A. Yokotani [1], and M. Katto [2]
[1] Faculty of Engineeing, Univ. of Miyazaki, Japan, [2] Center of Collaborative Research and Community Cooperation, Univ. of Miyazaki, Japan

SLPC4p-9 **The Absorption Property Change of Quartz in Micromachining by ns Pulsed CO_2 laser**
K. Yamasaki, H. Ikenoue, Y. Watanabe, D. Nakamura, and T. Okada
Kyushu Univ., Japan

SLPC4p-10 **Localized CO_2 Laser Smoothing of Defects on EUV Ti-doped Silica Substrates**
A. Cournoyer, M. Briand, and Y. Duval
INO, Canada

SLPC4p-11 **Formation of Periodic Nanowire Array by Femtosecond Laser Irradiation**
Y. Nakajima [1], H. Shimizu [2], T. Shinohara [2], and M. Terakawa [2]
[1] Department of Electronics and Electrical Engineering, Keio Univ., Japan, [2] School of Integrated Design Engineering, Keio Univ., Japan

SLPC4p-12 **Periodic Grating Structures on Metal Self-organized by Double Pulse Irradiations**
L. Gemini [1], M. Hashida [1], T. Nishii [1], Y. Miyasaka [1], H. Sakagami [2], S. Inoue [1], and S. Sakabe [1]
[1] Kyoto Univ., Japan, [2] National Institute for Fusion Science, Japan

SLPC4p-13 **Investigation of Micro-welding Characteristics of Si and Glass by Picosecond Pulsed Laser**
I. H. W. Nordin [1], Y. Okamoto [1],
I. Miyamoto [2], and A. Okada [1]
[1] Okayama Univ., Japan, [2] Osaka Univ., Japan

SLPC4p-14 **Thin Film CIGS Cell Scribing Using a High Energy Femtosecond Fiber Amplifier**
F. Morin [1], Y. Zaouter [1], C. Hönninger [1], E. Mottay [1], Q. Mocaer [1], B. Dunne [2], R. D. Almeida [3], and J. P. Aguerre [3]
[1] Amplitude Systèmes, France, [2] NEXCIS Photovoltaic Technology, France,[3] Mondragon Assembly, France

SLPC4p-15 **Double-sided Laser-arc Hybrid Welding of High Strength Steel Thick Plate**
L. Li, J. Feng, and Y. Chen
Harbin Institute of Technology, China

SLPC4p-16 **Research Progress on the High Power Laser Processing Technique**
L. Feng, and A. Wu
Beijing Institute of Opto-Electronic Technology, China

SLPC4p-17 **Effects of Laser Peening Parameters on Plastic Deformation of Metallic Materials**
M. Tsuyama [1], Y. Kodama [2], Y. Miyamoto [2],
I. Kitawaki [2], T. Shibayanagi [3],
M. Tsukamoto [4], and H. Nakano [1]
[1] Faculty of Science and Engineering, Kinki Univ., Japan, [2] Interdisciplinary Graduate School of Science and Engineering, Kinki Univ., Japan, [3] Faculty of Engineering, Toyama Univ., Japan, [4] Joining and Welding Research Institute, Osaka Univ., Japan

SLPC4p-18 **Experimental Study on CFRP Cutting with Nanosecond Laser in Air and Ar Gas Ambience**
Y. Sato [1], M. Tsukamoto [1], F. Matsuoka [2], K. Takahashi [1], S. Masuno [1], T. Ohkubo [3], and H. Nakano [2]
[1] Joining and Welding Research Institute, Osaka Univ., Japan, [2] Department of Electrical Engineering, Kinki Univ., Japan, [3] Department of Mechanical Science and Engineering, Tokyo Institute of Technology, Japan

----- Break （14:15-14:45）-----

14:45-16:00 SLPC5: Ultrashort Pulsed Laser Processing I Room 313+314

Chairs: Y. Lu, Univ. of Nebraska-Lincoln, USA,
M. Terakawa, Keio Univ., Japan

SLPC5-1 14:45 **(Invited) Parameters of Influence in Surface Ablation and Texturing of Metals Using High-Power Ultrafast Laser**
J. Lopez [1], M. Faucon [2], R. Devillard [1], Y. Zaouter [3], C. Hönninger [3], E. Mottay [3], and R. Kling [2]
[1] Univ. of Bordeaux, CNRS, France,
[2] ALPHANOV, France, [3] Amplitude Systèmes, France

SLPC5-2 15:15 **(Invited) Double-pulsed Ultrafast Laser Welding of Glasses Toward Enhancement of Process Efficiency**
K. Sugioka, S. Wu, and K. Midorikawa
RIKEN, Japan

SLPC5-3 15:45 **Ultrafast Mechanisms in Semiconductor Micro- and Nano-processing by Temporally Shaped Femtosecond Laser Pulses**
P. A Loukakos, M. Barberoglou, D. Gray, G. D. Tsibidis, E. Stratakis, and C. Fotakis
Foundation for Research and Technology - Hellas, Greece

----- Break （16:00-16:30）-----

16:30-17:45 SLPC6: Ultrashort Pulsed Laser Processing II Room 313+314

Chairs: P. R. Herman, Univ. of Toronto, Canada,
M. Hashida, Kyoto Univ., Japan

SLPC6-1 16:30 **(Invited) Ultrafast Laser Processing: a New Route to Innovative Manufacturing**
J. Choi
Department of Laser & Electron Beam Application, Korea Institute of Machinery and Materials, Korea

SLPC6-2 17:00 **Monolithic Fabrication of Electrofluidic Glass Microchips Based on Femtosecond Laser Direct-write Technique**
J. Xu, K. Midorikawa, and K. Sugioka
RIKEN Center for Advanced Photonics, Japan

SLPC6-3 17:15 **Cutting Strengthened Glass Using Bursts of Picosecond Pulses from a MOPA Fiber Laser**
D. Gay [1], L. Desbiens [1], S. Lavoie [2], and Y. Taillon [1]
[1] INO, Canada, [2] Allied Scientific Pro, Canada

SLPC6-4 17:30 **Plasma Expansion During Laser Structuring of Metals with ps Pulse Bursts**
C. Hartmann [1,2], and A. Gillner [2]
[1] Chair for Laser Technology, Technical Univ. Aachen, Germany, [2] Fraunhofer Institute for Laser Technology ILT, Germany

Thursday, April 24

8:30-10:45 SLPC7: Additive Manufacturing and Advanced Surface Processing Room 313+314

Chairs: R. Poprawe, Fraunhofer Institute for Laser Technology ILT, Germany,
H, Nakano, Kinki Univ., Japan

SLPC7-1 8:30 **(Invited) Opportunities and Challenges in Laser 3D Printing**
B. Gu
Bos Photonics, USA

SLPC7-2 9:00 **(Invited) Advanced Laser Processing Technology in BAMTRI**
S. Gong
Beijing Aeronautical Manufacturing Technology Research Institute, China

SLPC7-3 9:30 **Effect of Defects on Mechanical Properties of 316 Stainless Steel Fabricated by Selective Laser Melting**
H. Li, B. Huang, L. Ding, Y. Wang, and S. Gong
Beijing Aeronautical Manufacturing Technology Research Institute, China

SLPC7-4 9:45 **(Invited) Enhancement of Fatigue Properties of FSW Joints of A6061 Aluminum Alloy by Laser Peening**
Y. Sano [1], and K. Masaki [2]
[1] Toshiba Corp., Japan, [2] Okinawa National College of Technology, Japan

SLPC7-5 10:15 **Laser Peening Systems and the Effects of Laser Peening on Aeronautical Metals Sheet**
S. Zou, and S Gong
Beijing Aeronautical Manufacturing Technology Research Institute, China

----- Break （10:30-11:00）-----

11:00-12:15 SLPC8: Bio-medical and Photonics Applications Room 313+314

Chairs: E. Mottay, Amplitude Systemes, France,
K. Sugioka, RIKEN, Japan

SLPC8-1 11:00 **(Invited) Novel Applications by Femtosecond Laser in Electronics and Medical Device Industries**
C. W. Cheng [1,2], C. Y. Lin [2], P. H. Wu [2], K. P. Chang [2], J. B. Horng [2], W. T. Wu [3], and K. L. Ou [4,5,6,7]
[1] National Chiao Tung Univ., Taiwan,
[2] Industrial Technology Research Institute, Taiwan, [3] National Pingtung, Univ. of Science and Technology, Taiwan, [4] Taipei Medical Univ., Taiwan, [5] Research Center for Biomedical Devices and Prototyping Production, Taipei Medical Univ., Taiwan,
[6] Research Center for Biomedical Implants and Microsurgery Devices, Taipei Medical Univ., Taiwan, [7] Taipei Medical Univ.-Shuang Ho Hospital, Taiwan

SLPC8-2 11:30 **(Invited) Femtosecond Laser Generated Optically Generated Sub-100 nm Structures for Biomedical and Technical Applications**
K. Koenig [1], and A. Ostendorf [2]
[1] Saarland Univ., Germany, [2] Ruhr Univ.,

Germany

SLPC8-3 12:00 **Femtosecond Laser Integration of High-performance Microoptical Devices into 3D Microchannel for Optofluidic Application**
D. Wu [1], J. Xu [2], S. Wu [1], K. Midorikawa [1], and K. Sugioka [1,2]
[1] Laser Technology Laboratory, RIKEN, Japan, [2] RIKEN-SIOM Joint Research Unit, RIKEN, Japan

----- Lunch Break （12:15-13:15）-----

13:15-14:45 SLPC9: Processing of CFRP Room 313+314
Chairs: R. Patel, Spectra Physics, USA,
K. Washio, Paradigm Laser Research Ltd., Japan

SLPC9-1 13:15 **(Invited) Laser Machining of CFRP Composite – a Comparison of Fibre, Nd:YAG, CO_2 , DPSS and Picosecond Laser Processing**
Lin Li
The Univ. of Manchester, UK

SLPC9-2 13:45 **Investigations in Wavelength Adapted Laser Remote Treatment of Fiber Reinforced Polymers**
A. Klotzbach [1], A, Fürst [1,2], J. Hauptmann [1], and E. Beyer [1,2]
[1] Fraunhofer Institute Material and Beam Technology, Germany, [2] Technische Univ. Dresden, Germany

SLPC9-3 14:00 **Micromachining of Thin CFRP with UV-ps Laser Pulses**
M. Fujita [1], H. Ohkawa [2], M. Otsuka [2], T. Somekawa [1], Y. Maeda [2], Y. Orii [3], K. Inaba [3], G. Okada [3], and N. Miyanaga [3]
[1] Institute for Laser Technology, Japan, [2] Kinki Univ., Japan, [3] Spectronix Corp., Japan, [4] Institute of Laser Engineering, Osaka Univ., Japan

SLPC9-4 14:15 **Laser Cutting of CFRP by Q-CW Fiber Laser**
H. Yoshida [1], S. Yamazaki [1], H. Fukagawa [1], T. Tanaka [2], T. Imai [2], and H. Ogawa [2]
[1] Gifu Univ., Japan, [2] Technological Innovation Center GIFU, Japan

SLPC9-5 14:30 **Influences of Laser Scanning Conditions for CFRP Processing with Fiber Laser**
K. Takahashi [1], M. Tsukamoto [1], S. Masuno [1], Y. Sato [1], M. Matsushita [2], K. Furukawa [2] , H. Yoshida [3], K. Tsubakimoto [3], H. Fujita [3] , N. Miyanaga [3], T. Yamamura [4], M. Ishikawa [4], M. Fujita [5], H. Niino [6], Y. Harada [6], M. Muramatsu [6], M. Nishino [7], T. Kamiya [8], O. Matsumoto [8], T. Mano [8], S. Nakai [8], and H. Ogata [8]
[1] Joining and Welding Research Institute, Osaka Univ., Japan, [2] Shin Nippon Koki Co., Ltd., Japan, [3] Institute of Laser Enginnering, Osaka Univ., Japan, [4] Advanced Laser Research Laboratory, Kataoka Corp., Japan, [5] Institute of Laser Technology, Japan, [6] Advanced Industrial Science and Technology, Japan, [7] Mitsubishi Chemical Co., Ltd., Japan, [8] Advanced Laser and Process Technology Research Association, Japan

----- Break （14:45-15:15）-----

15:15-17:00 SLPC10: Industrial Applications Room 313+314
Chairs: B. Gu, Bos Photonics, USA,
K. Hirano, Nippon Steel & Sumitomo Metal Corp., Japan

SLPC10-1 15:15 **(Invited) Laser-based Micro-processing for Electronics Industries**
H. Zhang
Electro Scientific Industries, Inc., USA

SLPC10-2 15:45 **(Invited) Laser Processing for Display Glass**
S. Shimizu
Mitsuboshi Diamond Industrial Co., Ltd., Japan

SLPC10-3 16:15 **Laser Drilling with ps Laser and ms Laser in Thermal Barrier Coated Single-Crystal Alloy**
X. Zhang, R. Sun, W. Zhang, and S. Gong
Beijing Aeronautical Manufacturing Technology Research Institute, China

SLPC10-4 16:30 **Smart Laser Tracking, Welding and Monitoring,**
J. P. Boillot [1], R. Simoneau [1], J. C. Fontaine [1], J. A. Gaboury [1], and N. Torii [2]
[1] Servo-Robot Inc., Canada, [2] Servo-Robot Japan, Japan

SLPC10-5 16:45 **Freeform Beam Shaping for Industrial Technologies Based on Fiber or Fiber-coupled Lasers**
A. V. Laskin, and V Laskin
AdlOptica GmbH, Germany

17:00-17:15 Closing Room 313+314
Closing Remarks
17:00 M. Tsukamoto, Osaka Univ., Japan

OPIC特別シンポジウム　　4月25日(金)　**9:45-14:30**

開催場所　アネックスホール　**F206**

題名：「光と物質の相互作用に基づく革新的光の構築にむけて」

趣旨

光科学技術の研究戦略立案において、光の分野が多岐にわたり、将来に向ってのまとまった考えが見えにくいとの指摘を受けることが多々ある。このため、総意とはいかないまでも、光技術の社会における価値とサイエンス、テクノロジー両面からその研究開発の重要性を見える形でアピールすることが重要な局面になっている。　このような背景から、OPIC2014 (Optics and Photonics International Congress、2014.4.22-25)において、特別シンポジウムを開催する。　シンポジウムでは、技術の紹介だけでなく、研究開発を進めるべき光共通基盤の抽出を図るとともにその共有化を図り、シンポジウムをもとに「提言書」を取りまとめる。

協賛

独立行政法人科学技術振興機構、独立行政法人新エネルギー・産業技術総合開発機構

一般財団法人光産業技術振興協会、応用物理学会、電子情報通信学会、レーザー学会、IEEE東京支部

プログラム

09:45-09:50	開会挨拶	中井 貞雄　(OPI理事長)
09:50-10:00	来賓挨拶	(文部科学省、経済産業省)
10:00-10:15	問題提起	辻　伸二 (科学技術振興機構)
10:15-10:50	光の量子性の活用と展開	荒川 泰彦 (東大)
10:50-11:25	情報通信における新展開	中沢 正隆 (東北大)
11:25-12:00	光による生体等の革新的精密計測	合田 圭介 (東大)
	(昼食休憩　12:00-13:00)	
13:00-13:35	社会を革新する光技術	久間和生 (総合科学技術会議)
13:35-14:10	光を用いた物質創成	兒玉了祐 (阪大)
14:10-14:45	自動車産業における光ものづくりの現状と課題	(Nissan交渉中)
14:45-15:30	パネル討論、まとめ	加藤義章 (光産創大)