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**Dieter Schuöcker
Richard Majer
Julia Brunnbauer**
Editors

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Contents

vii	<i>Authors</i>
ix-	<i>Conference Committees</i>
xiii	<i>Introduction</i>

XXI INTERNATIONAL SYMPOSIUM ON HIGH POWER LASER SYSTEMS AND APPLICATIONS

10254 02	Coherent combining of fiber lasers (Invited Paper) [10254-41]
10254 03	Fiber laser for high speed laser transfer printing (Invited Paper) [10254-48]
10254 04	Theoretical research of beam combination between hollow beam and Gaussian beam [10254-21]
10254 05	Numerical simulation about orthogonal single frequency dithering technique used in tilt control of fiber laser array [10254-51]
10254 06	Asymmetric, nonbroadened waveguide structures for double QW high-power 808nm diode laser [10254-35]
10254 07	Investigation of hollow beam generated by double axicons and its propagation properties [10254-18]
10254 08	Mid-infrared optical parametric oscillator pumped by an amplified random fiber laser [10254-20]
10254 09	Noise induced creation and annihilation of solitons in dispersion managed fiber oscillators [10254-13]
10254 0A	Simulation and experiment of pump distribution in LD end-pumped Nd:YAG single crystal fiber [10254-27]
10254 0B	High-brightness and narrow-linewidth diamond Raman lasers (Invited Paper) [10254-50]
10254 0C	Stimulated Raman scattering of high pressure gas in multiple-pass configuration [10254-43]
10254 0D	Red laser based on intra-cavity Nd:YAG/CH₄ frequency doubled Raman lasers [10254-44]
10254 0E	Design and characterization of Yb and Nd doped transparent ceramics for high power laser applications: recent advancements [10254-38]
10254 0F	2.94 μm diode side pumped Er:YAG laser [10254-45]
10254 0G	Reflections on the history of chemical lasers research (Invited Paper) [10254-8]

- 10254 OH **Optically pumped oxygen-iodine laser** [10254-37]
- 10254 OI **Results of experiments on iodine dissociation in active medium of oxygen-iodine laser** [10254-47]
- 10254 OJ **Advanced laser modeling with BLAZE multiphysics (Invited Paper)** [10254-49]
- 10254 OK **V-T relaxation of vibrationally excited singlet oxygen molecule in the EOIL systems** [10254-32]
- 10254 OL **Optimal gain-to-loss ratio for COIL and EOIL** [10254-23]
- 10254 OM **TEA HF laser with a high specific radiation energy** [10254-15]
- 10254 ON **Laser simulation at the Air Force Research Laboratory (Keynote Paper)** [10254-55]
- 10254 OO **3D CFD modeling of flowing-gas DPALs with different pumping geometries and various flow velocities** [10254-7]
- 10254 OP **Optically pumped Cs vapor lasers: pump-to-laser beam overlap optimization** [10254-26]
- 10254 OQ **Wavelength diversity in optically pumped alkali vapor lasers** [10254-11]
- 10254 OR **High power diode and solid state lasers (Keynote Paper)** [10254-53]
- 10254 OS **Experimental investigation of gas flow type DPAL** [10254-17]
- 10254 OT **Possible repetitive pulse operation of diode-pumped alkali laser (DPAL)** [10254-16]
- 10254 OU **High power CO₂ laser development with AOM integration for ultra high-speed pulses (Invited Paper)** [10254-54]
- 10254 OV **Computer simulation of effect of conditions on discharge-excited high power gas flow CO laser** [10254-2]
- 10254 OW **QCL seeded, ns-pulse, multi-line, CO₂ laser oscillator for laser-produced-plasma extreme-UV source** [10254-3]
- 10254 OX **Production of Ar metastables in a dielectric barrier discharge** [10254-9]
- 10254 OY **Pressure broadening coefficients for the 811.5nm Ar line and 811.3nm Kr line in rare gases** [10254-25]
- 10254 OZ **An intense radiation in mid-infrared of Xe** [10254-30]
- 10254 IO **30 Watts mid-infrared optical parametric oscillator based on spectral beam combination technology** [10254-19]
- 10254 I1 **Laser action in the IR, UV and VUV in runaway electron preionized discharges** [10254-12]
- 10254 I2 **Formation of the multi-terawatt laser beams in a visible spectrum region** [10254-10]

- 10254 13 **Spectrum characteristic study of sodium-ethane excimer pairs** [10254-31]
- 10254 14 **Amplification of femtosecond pulses at 126 nm in optical field-induced plasma filamentation in Ar** [10254-5]
- 10254 15 **Amplification of sub-nanosecond pulse in THL-100 laser system** [10254-14]
- 10254 16 **High energy laser demonstrators for defense applications (Invited Paper)** [10254-1]
- 10254 17 **Beam quality active control of a slab MOPA solid state laser with combined deformable mirrors** [10254-29]
- 10254 18 **Properties of welded joints in laser welding of aeronautic aluminum-lithium alloys** [10254-6]
- 10254 19 **Observation of inner surface roughness in fused silica microholes with varying the number of femtosecond laser pulses** [10254-36]
- 10254 1A **LPP-EUV light source for HVM lithography (Invited Paper)** [10254-39]
- 10254 1B **Ablation-erosion analyses of various fusion material surfaces and developments of surface erosion monitors for notification of fusion chamber maintenance times, as an example: Visible light transparent SiC and up-conversion phosphors applied to plasma facing surface structures, useful for versatile purposes to protect and diagnose fusion chambers and so on** [10254-22]
- 10254 1C **The thermo-optical behavior of turbid composite laminates under highly energetic laser irradiations** [10254-46]
- 10254 1D **Laser materials processing of complex components: from reverse engineering via automated beam path generation to short process development cycles** [10254-28]
- 10254 1E **Studies of cavity enhanced absorption spectroscopy for weak absorption gas measurements** [10254-24]
- 10254 1F **Post-filamentation high-intensive light channels formation upon ultrashort laser pulses self-focusing in air** [10254-4]
- 10254 1G **Direct surface engineering of silicon nanoparticles prepared by collinear double-pulse ns laser ablation** [10254-33]
- 10254 1H **Experimental investigation on colloidal alumina nanoparticles produced by collinear nanosecond double-pulse laser ablation in liquid** [10254-34]
- 10254 1I **Space debris: modeling and detectability** [10254-40]

Authors

Numbers in the index correspond to the last two digits of the seven-digit citation identifier (CID) article numbering system used in Proceedings of SPIE. The first five digits reflect the volume number. Base 36 numbering is employed for the last two digits and indicates the order of articles within the volume. Numbers start with 00, 01, 02, 03, 04, 05, 06, 07, 08, 09, 0A, 0B...0Z, followed by 10-1Z, 20-2Z, etc.

Abbasi, S. P., 06
Abe, T., 1A
Agrež, Vid, 03
Akbari Jafarabadi, M., 1H
Alekseev, S. V., 15
Allheily, Vadim, 1C
Andreev, M. V., 0M
Auslender, Ilya, 0P
Azyazov, V. N., 0K, 0Y
Barmashenko, Boris D., 0O, 0P
Baumgärtel, Th., 16
Biasini, V., 0E
Bohrer, Markus, 0U
Boulon, G., 0E
Bourdon, Pierre, 02
Brandstätter, Elmar, 1D
Cai, Hongxing, 0C
Cai, Xianglong, 0C
Cai, XiaoTian, 0A
Carroll, David L., 0J
Chen, Gao, 0C
Chernyshov, A. K., 0Y
Choukourov, A., 1B
Ciofini, M., 0E
Clark, Amanda, 0X
Cohen, Tom, 0P
Dajani, Iyad, 0N
Du, Yinglei, 17
Duo, Liping, 1E
Durécu, Anne, 02
Eichhorn, Alfred, 1C
Eichler, H. J., 0R
Endo, Akira, 0W
Endo, Masamori, 0S, 0T
Esposito, L., 0E
Fattahi, B., 1H
Fritsche, H., 0R
Frolov, O., 1B
Fujimoto, Junichi, 0W
Fujiyoshi, Kazuyuki, 14
Gai, Baodong, 0F, 13
Geints, Yu. E., 1F
Ghildina, A. R., 0Y
Gizzi, L., 0E
Gong, Deyu, 1E
Görgl, Richard, 1D
Goto, T., 0E
Goular, Didier, 02
Graf, A., 16
Gray, Michael I., 0J
Grosek, Jacob, 0N
Guo, Jingwei, 0C, 0D, 0F, 0Z, 13
Han, Jiande, 0X
He, Shan, 0Z
Heaven, Michael C., 0K, 0X, 0Y
Hori, T., 1A
Horstmann, A., 1I
Hostasa, J., 0E
Hu, Shu, 13
Ilday, F. Ömer, 09
Ionin, A. A., 1F
Ivanov, M. V., 15
Ivanov, N. G., 15
Iyoda, Mitsuhiro, 0V
Jamalieh, Murad, 0U
Jasbeer, H., 0B
Jia, Chunyan, 0F
Jin, Yuqi, 1E
Jung, M., 16
Kaku, Masanori, 14
Kasuya, K., 1B
Katto, Masahito, 14
Kawasuji, Yasufumi, 0W, 1A
Kebeschull, C., 1I
Khvatov, Nikolay A., 0I
Kitzler, O., 0B
Kodama, T., 1A
Kolacek, K., 1B
Kubodera, Shoichi, 14, 19
Kurosawa, A., 1A
Kurosawa, Yoshiaki, 0W
Labate, L., 0E
Lacroix, Fabrice, 1C
Lane, Ryan, 0N
Lapucci, A., 0E
Lebiush, Eyal, 0P
Le Goüet, Julien, 02
L'Hostis, Gildas, 1C
Li, Guohui, 17
Li, Hui, 13
Li, J., 0E
Li, Liucheng, 1E
Li, Xiao, 04, 07, 08, 0A, 10
Li, Yimin, 0F
Li, Zhonghui, 0C
Liu, Dong, 0Z
Liu, Jinbo, 0D, 13
Liu, Wanfa, 0D, 0F

Lomaev, Mikhail I., 11
 Lombard, Laurent, 02
 Lorenz, J., 11
 Losev, Valery F., 0M, 12, 15
 Ludewigt, K., 16
 Lux, O., 0B, 0R
 Ma, Yanhua, 1E
 Ma, Yanxing, 05
 Madden, Timothy, 0N
 Mahdieh, M. H., 06, 1G, 1H
 Maksimov, R. N., 0E
 Malikov, A. G., 18
 Malyshev, Mikhail S., 0H, 0I
 Matejicek, J., 1B
 McKay, A., 0B
 Mertat, Lionel, 1C
 Mesyats, G. A., 15
 Mezhenin, A. V., 0L
 Mikheev, L. D., 15
 Mikheyev, Pavel A., 0X, 0Y
 Mildren, R. P., 0B
 Mizoguchi, Hakaru, 0W, 1A
 Mokrousova, D. V., 1F
 Momeni, A., 1G
 Motokoshi, S., 1B
 Naderi, Shadi, 0N
 Nagai, S., 1A
 Nakai, M., 1B
 Nakarai, Hiroaki, 0W, 1A
 Nikl, M., 0E
 Nimberger, Robert, 0U
 Novak, Vid, 03
 Nowak, Krzysztof Michał, 0W
 Ochiai, Ryo, 0V
 Ohta, Takeshi, 0W
 Olikier, Benjamin, 0N
 Orishich, A. M., 18
 Palla, Andrew D., 0J
 Panchenko, Alexei N., 11
 Panchenko, Nikolai A., 11
 Panchenko, Yu. N., 0M, 15
 Perram, Glen P., 0Q
 Petkovšek, Rok, 03
 Pirri, A., 0E
 Planchat, Christophe, 02
 Puchikin, A. V., 0M
 Radtke, J., 11
 Ratakhin, N. A., 15
 Riesbeck, Th., 16
 Rosenwaks, Salman Zamik, 0G, 0O, 0P
 Sadot, Oren, 0O
 Saito, Takashi, 0W, 1A
 Sanderson, Carl, 0X
 Sang, Fengting, 0Z
 Sarang, S., 0B
 Sato, Shunichi, 0V
 Schmidt, J., 1B
 Schmitz, J., 16
 Seleznev, L. V., 1F
 Shang, Yaping, 04, 07, 08, 10
 Shen, Meili, 08
 Shiraiishi, Masahiko, 19
 Si, Lei, 05
 Sinitsyn, D. V., 1F
 Sorokin, Dmitry A., 11
 Stoll, E., 11
 Straus, J., 1B
 Strohmaier, S. G., 0R
 Suganuma, Takashi, 0W
 Sumitani, Akira, 0W
 Sunchugasheva, E. S., 1F
 Suzuki, Lui, 0J
 Tan, Yannan, 0F, 13
 Taniguchi, S., 1B
 Taniwaki, Manabu, 0V
 Teamir, Tesfay G., 09
 Toci, G., 0E
 Tokunaga, K., 1B
 Torbin, A. P., 0K
 Ueno, Y., 1A
 Ufimtsev, N. I., 0Y
 Vannini, M., 0E
 Vaupel, Matthias, 0U
 Waichman, Karol, 0O
 Wang, Peng, 04, 07, 08, 10
 Wang, Pengyuan, 0D, 0F, 13
 Wang, Xiaolin, 05
 Wang, Yanchao, 0D
 Wang, Yuanhu, 1E
 Wani, Fumio, 0S
 Watanabe, Kazuhiro, 19
 Weinberger, Bernhard, 0U
 Wiedemann, C., 11
 Williams, R. J., 0B
 Wu, Jing, 17
 Xiang, Rujian, 17
 Xu, Honglai, 17
 Xu, Xiaojun, 04, 07, 08, 10
 Xu, Zhi, 0F
 Yabu, T., 1A
 Yacoby, Eyal, 0O
 Yamamoto, Fumiaki, 0S
 Yamamoto, Taro, 0S
 Yamazaki, T., 1A
 Yanagida, T., 1A
 Yastremsky, A. G., 15
 Zagidullin, Marsel V., 0H, 0I
 Zemlyanov, A. A., 1F
 Zhang, Kai, 17
 Zhang, Zhiguo, 1E
 Zhang, Zhixin, 05
 Zhao, GuoMin, 0A
 Zhi, Dong, 05
 Zhou, Dongjian, 1E
 Zhou, Pu, 05

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- 8 Beam Manipulation
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- 9 Macroprocessing
Johannes Pedarnig, Johannes Kepler Universität Linz (Austria)
- 10 Various Applications
Johannes Heitz, Johannes Kepler Universität Linz (Austria)

Introduction

During the last 50 years since the invention of the laser by Dr. Theodore Maiman, the field of coherent light technology has experienced fantastic development. Nowadays coherent light sources are available for a wide range of wavelengths: from the ultraviolet to the infrared, with powers from microwatt to megawatt and with pulse lengths from ultra short to very large; the active and light-emitting media range from vacuum; a large number of gases via various kinds of crystals to semiconductors. Many different excitation principles are used with electrical energy, chemical energy, optical energy, as well as others. High beam power is offered by carbon dioxide lasers, neodymium YAG lasers, and most recently by diode lasers where a large number of single elements cooperate. It should also be mentioned that many of these lasers deliver excellent beam quality with high focus ability and therefore offer very important applications: material processing for industrial use, the cutting and welding of metals and plastics, measurement techniques, surgery, and last but not least, energy transmission and defense.

All topics mentioned above were addressed in a large number of keynote and invited papers as well as other oral and poster contributions at the conference. I am personally interested in industrial applications and in this field the conference showed important highlights such as: the development of diode lasers with high power and excellent beam quality close to conventional high power lasers, the development of ultra precise carbon dioxide lasers for printing applications, and new welding techniques combining plasmas and laser beams. That some of these developments have been achieved in Austria pleases me very much.

Finally, I would like to express my thanks to all authors (keynote, invited, and regular presenters) as well as all of our sponsors. First of all the government of Upper Austria, the Federal Ministry for Traffic, Innovation and Technology (Austria), and companies such as Fronius GmbH (Austria), Trotec Laser GmbH (Austria), and Trumpf Maschinen Austria GmbH + Co. KG (Austria). I also appreciate the efficient help of my coworkers Richard Majer, O. Spitzer, M. Nessmann and Julia Brunnbauer. Without the help from all of the above, the conference could not take place.

Dieter Schuöcker

