

Singapore
22-27 November 2009



COLA 2009

10th International Conference on Laser Ablation Singapore 22-27 November 2009

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PROGRAM

Day 1, Sunday, 22 November, 2009 Registration and Tutorial Lectures

17:00 - 20:00 Registration

Tutorial Lectures

Session Chair: **Boris Luk'yanchuk** (DSI, Singapore)

13:00 - 13:45 **J. Thomas Dickinson** (*Washington State University, Pullman, USA*)
Laser induced desorption of ions

13:45 - 14:30 **Richard F. Haglund, Jr.** (*Vanderbilt University, USA*)
Wavelength-selective laser interactions with materials

14:30 - 15:15 **Alfred Vogel** (*Lübeck University, Germany*)
Mechanisms of laser ablation of biological tissues and cells with short and ultrashort laser pulses

15:15 - 15:45 **Coffee Break**

Session Chair: **Hong MingHui** (NUS, Singapore)

15:45 - 16:30 **Carmen N. Afonso** (*Institute of Optics, Madrid, Spain*)
Key parameters in pulsed laser deposition

16:30 - 17:15 **Koji Sugioka** (*RIKEN, Japan*)
Ultrafast laser micro and nano processing

17:15 - 18:00 **Boris Luk'yanchuk** (*Data Storage Institute, Singapore*)
Laser ablation on nanoscales

18:00 - 20:00 **Reception**

Day 2, Monday, 23 November, 2009

1. Opening Session

Session Chairs:

Boris Luk'yanchuk (DSI, Singapore), **Hong MingHui** (NUS, Singapore)

8:30 - 8:45

Chong Tow Chong (*A*STAR, Singapore*)

Opening Address

8:45 - 9:30

Dieter Bäuerle (*Johannes Kepler University Linz, Austria*)

ID:337

Laser chemical processing: An overview to the 30th Anniversary

Keynote Lecture

9:30 - 10:00

Craig B. Arnold (*Department of Mechanical and Aerospace Engineering, Princeton Institute for Science and Technology of Materials, Princeton University, Princeton, NJ 08544, USA*)

ID:485

Nano-scale laser direct writing by using optically trapped microspheres

Invited Lecture

10:00-10:15

David B. Geohegan, C. M. Rouleau, A. A. Puretzky, M. Yoon, N. Thonnard, G. Duscher, K.L. More (*Center for Nanophase Materials Sciences and Materials Science and Technology Divisions, Oak Ridge National Laboratory*)

ID:494

Laser synthesis of carbon nanohorns with tunable morphologies and metal decoration

10:15 - 10.30

Wayne P. Hess, Kenneth M. Beck, Alan G. Joly (*Environmental Molecular Sciences Laboratory & Pacific Northwest National Laboratory 902 Battelle Blvd, Richland, WA, 99352 USA*)

ID:237

Hyperthermal laser desorption from alkali halides: how can excited state atoms be faster?

10:30 - 11:00 Coffee Break

2. Ultrafast Laser Surface Processing and Structuring

Session Chairs:

Richard Haglund (Vanderbilt University, USA), **Mikio Takai** (Osaka University, Japan), **Alfred Vogel** (Lübeck University, Germany)

11:00 - 11:30

Costas P. Grigoropoulos, David J. Hwang, Hojeong Jeon, and Sanghoon Ahn (*Laser Thermal Laboratory Department of Mechanical Engineering University of California, Berkeley CA 94720-1740, USA*)

ID:315

Ultrafast Laser Micro/Nanoprocessing and Device Fabrication

Invited Lecture

11:30 - 12:00

Emmanuel Stratakis (*Foundation for Research and Technology Hellas (FORTH), Institute of Electronic Structure and Laser (IESL), P.O. Box 1527, Heraklion 711 10, Greece and University of Crete, Department of Materials Science & Technology, Heraklion, Crete, Greece*)

ID:163

Application of ultra short pulse lasers for materials micro/nanoprocessing and diagnostics

Invited Lecture

12:00 - 12:30

P. Kühler, **Jan Siegel**, F. J. García de Abajo, J. Solis, and C.N. Afonso (*Instituto de Optica, CSIC, Serrano 121, 28006 Madrid, Spain*), M. Mosbacher and P. Leiderer (*Faculty of Physics, University of Konstanz, Universitätsstraße 10, 78457 Konstanz, Germany*)

ID:241

Imprinting the optical near-field of microstructures with nanometer resolution

Invited Lecture

12:30 - 12:45

Jarno Kaakkunen (*Department of Physics and Mathematics, University of*

- ID:333** Joensuu, Yliopistonkatu 7, POBOX 111, 80100 Joensuu, Finland), Jozsef Bekesi, Jürgen Ihlemann, Peter Simon (*Laser Laboratorium Göttingen e.V., Hans-Adolf-Krebs-Weg 1, 37077 Göttingen, Germany*)
Ablation of microstructures applying diffractive elements and UV femtosecond laser pulses
- 12:45 - 13:00
ID:320 **Ladan E. Abolghasemi**, Abbas Hosseini, Peter R. Herman (*Department of Electrical and Computer Engineering, University of Toronto, 10 King's College Rd., Ont. M5S 3G4, Canada*)
Sub-wavelength multi-period ripple phenomena on stainless steel irradiated with high repetition rate femtosecond laser pulses
- 13:00 - 13:15
ID:159 **K. Sugioka**, Y. Hanada, , H. Kawano, I. S. Ishikawa, A. Miyawaki, K. Micorikawa (*RIKEN, 2-1 Hirosawa, Wako, Saitama 351-0198, Japan*), M. Iida and H. Takai (*Tokyo Denki University, 2-2 Nisikicho, Kanda, Chiyodaku, Tokyo 101-8457, Japan*)
Nanoaquarium integrated with micropump fabricated by femtosecond laser for observation of microorganisms in flowing water

13:15 - 14:30 Lunch

3. Ultrafast Phenomena

Session Chairs:

Dieter Bäuerle (Johannes Kepler University Linz Austria), **David B. Geohegan** (Oak Ridge National Laboratory, USA)

- 14:30 - 14:45
ID:216 **L. Englert**, J. Mildner, A. Horn, C. Sarpe-Tudoran, M. Wollenhaupt, T. Baumert (*Institut fuer Physik und CINSaT, Universität Kassel, Heinrich-Plett-Str. 40, 34132 Kassel, Germany*)
Tailored femtosecond pulses for nanoscale laser processing of dielectrics
- 14:45 - 15:00
ID:473 **Jürgen Koch**, Arseniy Kuznetsov, Boris N. Chichkov (*Laser Zentrum Hannover e.V., Hollerithallee 8, 30419 Hannover,, Germany*)
Material processing by means of femtosecond laser induced thermal deformations and melt dynamics
- 15:00 - 15:15
ID:79 Carl Liebig, Yaguo Wang, **Xianfan Xu** (*School of Mechanical Engineering, Purdue University, West Lafayette, IN 47907, USA*)
Effect of coherent excitation on surface modification
- 15:15 - 15.30
ID:84 I. Mingareev, **D. Wortmann**, A. Brand (*Lehrstuhl für Lasertechnik, RWTH Aachen University, Steinbachstr. 15, 52074 Aachen, Germany*), A. Horn (*Institute of Physics and Center for Interdisciplinary Nanostructure Science and Technology (CINSaT), University of Kassel, 34132 Kassel, Germany*)
Optical phase measurements during fs-processing of materials using time-resolved white-light interferometry
- 15:30 - 15.45
ID:73 Salvatore Amoruso (*Università degli Studi di Napoli, Italy*), **Jørgen Schou** (*Technical University of Denmark*), James G. Lunney (*Trinity College Dublin, Ireland*)
Energetics of laser ablation plume expanding in a background gas
- 15:45 - 16:00
ID:90 T. Donnelly, J. G. Lunney (*School of Physics, Trinity College Dublin, Dublin 2, Ireland*), **S. Amoruso**, R. Bruzzese, X. Wang (*Coherentia CNR-INFM and Dipartimento di Scienze Fisiche, Università degli Studi di Napoli Federico II, Complesso Universitario di Monte S. Angelo, Via Cintia, I-80126 Napoli, Italy*)
Ultrafast laser ablation of a metal in vacuum

16:00 - 16:30 Coffee Break

4. Ultrafast Phenomena and Dynamics

Session Chairs:

- 16:30 - 17:00
ID:152 **Craig B. Arnold** (Princeton, USA), **Costas P. Grigoropoulos** (Berkeley, USA)
Hidetoshi Nakano, Hidetoshi Nakano, Katsuya Oguri, Yasuaki Okano, Tadashi Nishikawa (*NTT Basic Research Laboratories, Nippon Telegraph and Telephone Corporation, 3-1 Morinosato Wakamiya, Atsugi, Kanagawa 243-0198, Japan*)
Dynamics of femtosecond-laser-ablated liquid aluminum nanoparticles probed by means of spatiotemporally resolved X-ray absorption fine structure spectroscopy
Invited Lecture
- 17:00 - 17.15
ID:285 **Alfred Vogel**, Norbert Linz, Sebastian Freidank, Xiaoxuan Liang, (*Institute of Biomedical Optics University of Lübeck, Peter-Monnik Weg 4, 23562 Lübeck, Germany*), Hannes Vogelmann, Thomas Trickl (*Institute for Meteorology and Climate Research, Karlsruhe Institute of Technology, Kreuzeckbahnstraße 19, 82467 Garmisch-Partenkirchen, Germany*), Kristian Werelius (*Laser Center Hannover e.V., Hollerithallee 8, 30419 Hannover, Germany*)
Wavelength dependence of nanosecond and femtosecond optical breakdown in water: experimental investigation & theoretical analysis
- 17:15 - 17:30
ID:187 G. Cheng, C. Mauclair, C. Mishchik, E. Audouard, **R. Stoian** (*Laboratoire Hubert Curien, CNRS UMR 5516, Université Jean Monnet, 18, Rue Benoit Lauras, 42000 Saint Etienne, France*)
Spatial beam engineering for laser photoinscription of isotropic and anisotropic optical functions in optical glasses
- 17:30 - 17:45
ID:156 **Yoshiki Nakata**, Takuya Hiromoto, Noriaki Miyanagava (*Institute of Laser Engineering, Osaka University, 2-6 Yamadaoka, Suita, 565-0871 Osaka, Japan*)
Mesoscopic nanomaterials generated by interfering femtosecond laser processing
- 18:00 - 22.30** **5. Poster session 1 (Topics 1.1, 1.2, 1.3, 2.2, 2.3, 3.2, 3.3)**
Session Chairs:
J. Thomas Dickinson (Washington State University, Pullman, USA),
Emmanuel Stratakis (Heraklion, Crete, Greece), **Xianfan Xu** (Purdue University, USA), **E. Haro-Poniatowski** (Universidad Autónoma Metropolitana-Iztapalapa, Mexico), **S. Amoruso** (University of Napoli, Italy), **Peter Simon** (Göttingen, Germany)

1.1. Modeling and Simulation

- 1.1/01. **Yudi Rosandi**, Herbert M. Urbassek (*Fachbereich Physik, Universität Kaiserslautern, Erwin-Schrödinger-Straße, D-67663 Kaiserslautern, Germany*)
ID:105 **Short-pulse laser irradiation of metal films: the effect of time structure**
- 1.1/02. **Steffen Sonntag**, Johannes Roth, Hans-Rainer Trebin (*1- Institute for Theoretical and Applied Physics, University of Stuttgart, Pfaffenwaldring 57/VI 70550, Germany*)
ID:183 **Laser ablation in anisotropic aluminum-cobalt alloys**
- 1.1/03. Bjarke H. Christensen, Mehrnaz N. Zadeh, **Peter Balling** (*Department of Physics and Astronomy, University of Aarhus, Ny Munkegade 120, DK-8000 Aarhus C, Denmark*)
ID:210 **Ultrashort-pulse laser ablation of dielectrics**
- 1.1/04. **Dmitry S. Ivanov**, Baerbel Rethfeld (*Phys Dept., TU-Kaiserslautern, Erwin-Schrödinger 46, 67663 Kaiserslautern, Germany*)
ID:222 **Direct comparison of large scale simulation of nanostructuring of metals with the experiment**
- 1.1/05. **Nadezhda M. Bulgakova**, Maxim V. Shugaev (*Institute of Thermophysics SB RAS, 1, Lavrentyev Ave., 630090 Novosibirsk, Russia*)
ID:223 **Thermodynamic and stress analysis of laser-induced forward transfer of metals**

- 1.1/06. **R. Zakaria***, P.E. Dyer (*Department of Physics, University of Hull, Hull, HU6 7RX, UK*
ID:224 *Current address; *Department of Physics, University of Malaya, Kuala Lumpur, Malaysia*)
Cone evolution on VUV laser ablated polymers
- 1.1/07. **J.R. Vázquez de Aldana**, P. Moreno, C. Romero (*Servicio Láser, Universidad de Salamanca, Pl. La Merced SN, E-37008, Salamanca, Spain*), C. Méndez, L. Roso (*Centro de Láseres Pulsados Ultracortos Ultraintensos (CLPU), Pl. La Merced SN, E-37008, Salamanca, Spain*)
ID:248 **Evolution of rough surfaces by multi-shot ultrafast ablation: numerical simulation**
- 1.1/08. **N. Sapogova**, E. Chelnokov, L. Soustov, N. Bityurin (*Institute of Applied Physics RAS, 603950, Nizhniy Novgorod, Russia*)
ID:287 **Model for UV laser-induced aggregation of eye lens proteins in water solution**
- 1.1/09. Bukuk Oh, Daehwan Ahn, Byounggu Bark, **Dongsik Kim** (*Department of Mechanical Engineering, POSTECH, Pohang, 790-784, Korea*)
ID:328 **Analysis of sapphire microdrilling by nanosecond visible laser pulses**
- 1.1/10. **Alexey Morozov** (*Rarefied Gas Laboratory, Institute of Thermophysics, 1, Lavrentyev Ave., 630090 Novosibirsk, Russia*)
ID:398 **Numerical study of backward flow for pulsed laser evaporation into vacuum**
- 1.1/11. **Alexey Morozov** (*Rarefied Gas Laboratory, Institute of Thermophysics, 1, Lavrentyev Ave., 630090 Novosibirsk, Russia*)
ID:402 **DSMC study of time-of-flight measurements for pulsed laser evaporation into vacuum**
- 1.1/12. **M.G. Lobok**, O.N. Koroleva, V.I. Mazhukin (*Institute of Mathematical Modeling of RAS, 4a Miusskaya sqr., 125047 Moscow, Russia*)
ID:491 **Modelling and the comparative analysis of optoacoustic effects caused by laser melting and evaporation of metals and semiconductors**
- 1.1/13. **M.G. Lobok**, A.V. Mazhukin, V.I. Mazhukin (*Institute of Mathematical Modeling of RAS, 4a Miusskaya sqr., 125047 Moscow, Russia*)
ID:492 **Modelling of laser plasma interaction with evaporating metal surface in air**
- 1.1/14. **S. Aggoune**, F. Vidal, E. H. Amara (*The Advanced Technologies Development Centre, Algiers, Algeria Division Milieux Ionises & Lasers, Equipe Traitement des Matériaux par Laser, Po. Box 17, Baba-Hassen, Algiers, Algeria*)
ID:523 **Numerical study of the aluminum vapor plasma expansion by a nanosecond laser pulse**
- 1.1/15. **Sylvain Lazare**, Ilham Elaboudi (*Institut des Sciences Moléculaires (ISM) UMR 5255, Université Bordeaux 1, 351 cours de la Libération, 33405 Talence, France*), Marta Castillejo (*Instituto de Química Física Rocasolano, CSIC, Serrano 119, 28006 Madrid, Spain*), Alina Sionkowska (*Nicolaus Copernicus University, Faculty of Chemistry, Gagarin 7, 87-100 Toruń, Poland*)
ID:115 **Modification of polymers and polymer-like materials by powerful lasers**
- 1.1/16. **C. M. Rouleau**, D. B. Geohegan, A. A. Puretzky, G. Eres, J. J. Jackson, N. Thonnard, D. Pickel, I.N. Ivanov, K.L. More (*Center for Nanophase Materials Sciences and Materials Science and Technology Divisions, Oak Ridge National Laboratory, USA*)
ID:495 **Laser interactions with vertically aligned carbon nanotube arrays**

1.2. Laser Surface Interactions

- 1.2/01. **Anil Kumar Singh**, R.K. Soni (*Department of Physics, IIT Delhi, Hauz Khas, New Delhi-*

- ID:94** 110016, India), K. Dasgupta, Sucharita Sinha (*Laser and Plasma Technology Division, BARC, Trombay, Mumbai-400085, India*)
Theoretical study of femtosecond pulsed laser ablation of Silicon
- 1.2/02. **Jeppe Byskov-Nielsen**, Juha-Matti Savolainen, Martin Snogdahl Christensen, Peter Balling (*Department of Physics and Astronomy, University of Aarhus, Ny Munkegade 120, DK-8000 Aarhus C, Denmark*)
ID:219 **Ultra-short pulse laser ablation of metals: threshold fluence and incubation coefficients**
- 1.2/03. Catalin Constantinescu, Andreea Matei, Maria Dinescu (*NILPRP, 409 Atomistilor Street, PO Box MG-16 Magurele, RO-077125 Bucharest, Romania*), **Jørgen Schou** (*Department of Photonics Engineering, Risø Campus, Technical University of Denmark, DK-4000 Roskilde, Denmark*), Ninell Pollas Mortensen (*Department of Systems Biology, Technical University of Denmark, DK-2800 Kgs. Lyngby, Denmark*)
ID:243 **PLD (pulsed laser deposition) of proteins: the influence of target preparation pressure on the deposition of lysozyme**
- 1.2/04. **J. R. Vázquez de Aldana**, P. Moreno, C. Romero, I. J. Sola, O. Varela, A. García, C. Prieto (*Servicio Láser, Universidad de Salamanca, Pl. La Merced SN. E37008 Salamanca, Spain*), E. Tajahuerce, P. Clemente, G. Mínguez-Vega (*GROCUJI, Department of Physics, Universitat Jaume I, E12080 Castelló, Spain*)
ID:249 **Damage and ablation of photoresists with high-power femtosecond pulses**
- 1.2/05. **Shazia Bashir**, M. Shahid Rafique, A. A. Ajami, Wolfgang Husinsky (*Institut für Allgemeine Physik, Vienna, University of Technology, Wiedner Hauptstrasse 8-10, A-1040 Vienna, Austria*)
ID:265 **Femtosecond laser –induced microexplosions in CaF₂**
- 1.2/06. **Shazia Bashir**, M. Shahid Rafique, A. Ajami, Wolfgang Husinsky (*Institut für Allgemeine Physik, Vienna, University of Technology, Wiedner Hauptstrasse 8-10, A-1040 Vienna, Austria*), A. Hobro, B. Lendl, (*2- Institut für Chemische Technologien und Analytik Vienna, University of Technology, Vienna, Austria*)
ID:266 **Ultrashort laser ablation efficiency of Aluminium and Silicon: an analysis by shadowgraphic imaging, Raman spectroscopy, scanning electron microscopy and atomic force microscopy**
- 1.2/07. Wolfgang Husinsky, **Shazia Bashir** (*Institut für Allgemeine Physik, Vienna University of Technology, Wiedner Hauptstrasse 8-10, A-1040 Vienna, Austria*)
ID:269 **Fundamental aspects of ultra short laser ablation obtained from ejected particles and surface topography**
- 1.2/08. **S. Mahmood**^{1,2}, R. S. Rawat¹, S. V. Springham¹, T. L. Tan¹, P. Lee¹ (¹NSSE, NIE, Nanyang Technological University, Singapore 637616, ²Department of Physics, University of Karachi, Karachi – 75270, Pakistan)
ID:280 **Material ablation and plasma plume expansion study from Fe, Al, Si and Graphite target through background of Ar, Ne, and N₂ gases in a PLD system**
- 1.2/09. **S. Mahmood**^{1,2}, R. S. Rawat¹, S. V. Springham¹, T. L. Tan¹, P. Lee¹ (¹NSSE, NIE, Nanyang Technological University, Singapore 637616, ²Department of Physics, University of Karachi, Karachi – 75270, Pakistan)
ID:281 **Plasma dynamics and determination of ablation parameters using the near-target surface imaging in a pulsed laser deposition system**
- 1.2/10. C. Yaddadene¹, A. Djemaa^{1,3}, Y. Belaroussi², **T. Kerdja**², N. Gabouze¹, M. Kechouane³, A. Keffous¹, L. Guerbouz⁴ (¹UDTS, 02 Bd Frantz Fanon B.P. 140 Alger 7 Merveilles, Alger, Algérie, ²CDTA, Haouch Oukil B.P.17 Baba-Hassan, Alger, Algérie, ³LCMS, Faculté de

Physique. USTHB. B.P.32 El Alia, 16111, Bab Ezzouar, Alger, Algérie, ⁴CRNA, 02 Bd Frantz Fanon B.P.140 Alger 7 Merveilles, Alger, Algérie)

Study of optical properties of silicon microcolumn grown by nanosecond pulsed-excimer laser

- 1.2/11. **ID:313** N. Gabouze¹, A. Djemaa^{1,3}, C. Yaddadene¹, Y. Belaroussi², **T. Kerdja**² (¹UDTS, 02 Bd Frantz Fanon B.P. 140 Alger 7 Merveilles, Alger, Algérie, ²CDTA, Haouch Oukil B.P.17 Baba-Hassan, Alger, Algérie, ³LCMS, Faculté de Physique. USTHB. B.P.32 El Alia, 16111, Bab Ezzouar, Alger, Algérie)
Early stages of nanosecond pulsed-laser growth of silicium pillars in vacuum
- 1.2/12. **ID:309** **Guibing Wang**, Yongqiang Zhang, Xuewu Kuang (*Institute of Fluid Physics, China Academy of Engineering Physics, 64, Mianshan Street, POBOX919-113, 621900, Mianyang, Sichuan, PR*)
Reflectivity Characteristics for CW Nd-YAG Laser Radiation on Pure Iron under Various Oxygen Partial Pressure
- 1.2/13. **ID:311** **Yongqiang Zhang**, Guibing Wang (*Institute of Fluid Physics, China Academy of Engineering Physics, 64, Mianshan Street, POBOX919-113, 621900, Mianyang, Sichuan, PR*)
Investigation to ablation effect of resin matrix fibre reinforced composite under laser irradiation
- 1.2/14. **ID:312** H. Y. Lao, H. S. Zhu, **X. F. Chen** (*The State Key Laboratory on Fiber Optic Local Area Communication Networks and Advanced Optical Communication Systems, Institute of Optics and Photonics, Department of Physics, Shanghai Jiao Tong University, 800 Dongchuan Road, Shanghai 200240, China*)
Numerical simulation and experimental study on the threshold fluence of domain reversal by irradiation with femtosecond laser in lithium niobate
- 1.2/15. **ID:368** Ivlev G. D., **Gatskevich E. I.**, Malevich V. L. (*Institute of Physics, NAN of Belarus, 68, Independent av., 220072 Minsk, Belarus*)
Nanosecond laser ablation of Si and GaAs
- 1.2/16. **ID:379** **Jonathan Holey**, Sergey Gorelik (*Institute of Materials Research & Engineering, Agency for Science Technology And Research (A*STAR) 3 Research Link, Singapore, 117602*), Yutaka Kuge, Shinji Kajimoto, Koji, Hatanaka, Motohiro Kasuya, Hiroshi Fukumura (*Department of Chemistry, Graduate School of Science, Tohoku University, Sendai, Japan, 980-8578*)
Volume expansion dynamics during laser-induced spinodal phase-change
- 1.2/17. **ID:400** V. Dinca, A. Palla Papavlu, A. Matei, **M. Dinescu** (*National Institute for Lasers, Plasma and radiation Physics, Atomistilor no.4, PO BOX Mg 16, 077125 Bucharest Romania*), J. Shaw-Stewart, T. Lippert (*Paul Scherrer Institut, General Energy Research Department, 5232 Villigen PSI, Switzerland Laboratory for Functional Polymers, Swiss Federal Laboratories for Materials Testing and Research, Ueberlandstrasse 129, 8600 Duebendorf, Switzerland*), F. Dipietrantonio, D. Cannata, M. Benetti, E. Verona (*"O. M. Corbino" Institute of Acoustics Italian National Research Council – CNR, Via del Fosso del Cavaliere 100, 00133 Rome, Italy*)
A comparative study of DRL-lift and lift on integrated polyisobutylene polymer matrices
- 1.2/18. **ID:457** **Fang-Fei Lin**¹, Tzu-Hung Chuang², Ting-Yu Yeng¹, Hong-Tsu Young¹, Juen-Kai Wang^{2,3} (¹*Department of Mechanical Engineering, National Taiwan University, Taipei, Taiwan*, ²*Institute of Atomic and Molecular Sciences, Academia Sinica, Taipei, Taiwan*, ³*Center for Condensed Matter Sciences, National Taiwan University, Taipei, Taiwan*)

Oxidation of stainless steel induced by femtosecond and nanosecond laser ablation: a comparative Raman study

- 1.2/19. **Petr Šmejkal**, Blanka Vlčková (*Department of Physical and Macromolecular Chemistry, Faculty of Science, Charles University in Prague, Hlavova 2030/8, 12843 Prague 2, Czech Republic*), Jiří Pflieger (*Department of Polymer Materials, Institute of Macromolecular Chemistry, AS CR, v.v.i., Heyrovského Sq. 2, 162 06 Prague 6, Czech Republic*)
Laser ablation of silver in liquid ammonia
- 1.2/20. **Evans Chikarakara**, Sumsun Naher, Dermot Brabazon (*Materials Processing Research Centre, Dublin City University, Dublin 9, Ireland*)
Process mapping of laser glazing AISI 316L stainless steel for biomedical implants
- 1.2/21. **K. Zimmer**, R. Böhme, M. Ehrhardt, B. Rauschenbach (*Leibniz-Institut für Oberflächenmodifizierung, Permoserstr. 15, 04318 Leipzig, Germany*)
Mechanism of backside etching of transparent materials with nanosecond UV-lasers
- 1.2/22. A. Lorusso¹, M. V. Siciliano², L. Velardi³, **V. Nassisi**¹ (¹*Department of Physics, University of Salento, Laboratorio di Elettronica Applicata e Strumentazione, LEAS I.N.F.N. sect. of Lecce, C.P. 193, 73100 Lecce, Italy*, ²*Department of Material Science, University of Salento, INFN, Via per Arnesano, 73100 Lecce, Italy*, ³*Department of Physics, University of Bari, Via Amendola, 70126 Bari, Italy*)
Low energy ion beams by laser interaction
- 1.2/23. **N. Takada**, T. Nakano, W. Soliman (*Department of Electrical Engineering and Computer Science, Nagoya University, Furo-cho, Chikusa-ku, Nagoya 464-8603, Japan*), K. Sasaki (*Plasma Nanotechnology Research Center, Nagoya University, Furo-cho, Chikusa-ku, Nagoya 464-8603, Japan*)
Formation of etch pits on target surface of liquid-phase laser ablation
- 1.2/24. **Alexander V. Bulgakov**, Nadezhda M. Bulgakova, Anton B. Evtushenko, Yuri G. Shukhov (*Institute of Thermophysics SB RAS, Lavrentyev Ave. 1, 630090 Novosibirsk, Russia*) Sergey I. Kudryashov, Alexander A. Tikhov, Vladimir D. Zvorykin (*P.N. Lebedev Physical Institute RAS, Leninskiy prosp. 53, 119991 Moscow, Russia*)
Deep laser ablation of graphite: interplay between phase explosion and plasma effects
- 1.2/25. **N. Bityurin** (*Institute of Applied Physics RAS, 603950, Nizhniy Novgorod, Russia*)
Relaxation model for laser swelling of polymers
- 1.2/26. **Shinji Kajimoto**, Daisuke Shirasawa, Ayaka Mori, Yasuhiko Fujita, Hiroshi Fukumura (*Dept. Chem., Graduate School of Science, Tohoku University, Sendai, Japan*)
Photochemical synthesis of gold nanoparticles in dynamic nano-phases during laser induced phase separation
- 1.2/27. **S. N. Aqida**, D. Brabazon, S. Naher (*Materials Processing Research Centre, Dublin City University, Dublin 9, Ireland*); Z. Kovacs, D. J. Browne (*Materials Science Centre, University College Dublin, Belfield, Dublin 4, Ireland*)
Laser micro-machining of Cu₄₅Zr₄₈Al₇ bulk metallic glass

1.3. Ultrafast Phenomena and Dynamics

- 1.3/01. E. Magoulakis, E. Papadopoulou, E. Stratakis, **P. A. Loukakos** (*Foundation for Research and Technology – Hellas, Institute of Electronic Structure and Laser, N. Plastira 100, P. O. Box 1385, 71110 Heraklion, Greece*)
Ultrafast dynamics in ZnO nanopikes

- 1.3/02. **ID:143** M. Ruge, L. Englert, M. Wollenhaupt, T. Baumert, **A. Horn** (Institute of Physics and Center for Interdisciplinary Nanostructure Science and Technology (CINSaT), University of Kassel, 34132 Kassel, Germany)
Towards selective coloration of glasses using tailored ultrafast laser radiation
- 1.3/03. **ID:217** S. I. Anisimov, **N. A. Inogamov**, V. A. Khokhlov, Yu. V. Petrov (*Landau Institute for Theoretical Physics, 1 A, Semenov, 142432, Chernogolovka, Russia*), V. E. Fortov, M.B. Agranat, V. V. Zhakhovskii, S. I. Ashitkov, V. P. Komarov (*Joint Institute for High Temperatures, 13/19, Izhorskaya, 125412, Moscow, Russia*), V. V. Shepelev (*Institute for Computer Aided Design, 19/18, 2-Brestskaya, 123056, Moscow, Russia*)
Acoustic probing of two-temperature relaxation initiated by action of ultrashort laser pulse
- 1.3/04. **ID:225** **Alexander V. Bulgakov**, Nadezhda M. Bulgakova (*Institute of Thermophysics SB RAS, 1, Lavrentyev Ave., 630090 Novosibirsk, Russia*), Wladimir Marine (*Universite de la Mediterranee, CRMC-N, UPR CNRS 7251, 13288 Marseille, France*)
On the origin of momentum scaling for ions emitted from ultrashort-laser-irradiated surfaces
- 1.3/05. **ID:306** **Pascal Frank**, Florian Lang, Johannes Boneberg, Paul Leiderer (University of Constance, Department of Physics, 78457 Konstanz, Germany)
Stability of free flying fluid films
- 1.3/06. **ID:383** **A. B. Gojani**, S. J. Choi, T. H. Han, H. H. Lee, J. J. Yoh (*eXtreme Energy Laboratory, Seoul National University, 599 Kwanak-ro, Kwanak-gu, Seoul 151-744, Republic of Korea*)
Laser ablation of metals and polymers at the hydrodynamic regime
- 1.3/07. **ID:413** **Takanori Iino**¹, Yoichiro Hosokawa¹, Kazunori Okano^{1,2}, Hiroshi Masuhara^{1,3}
(¹*Graduate school of Materials Science, Nara Institute of Science and Technology, 8916-5 Takayama, Ikoma, Nara 630-0192, Japan*, ²*Kansei Fukushi Research Center, Tohoku Fukushi University*, ³*Department of Applied Chemistry and Institute of Molecular Science, National Chiao Tung University*)
Transient oscillation of AFM cantilever induced by femtosecond laser-induced stress
- 1.3/08. **ID:475** **P. Gečys**, G. Rapiukaitis (*Institute of Physics, Savanoriu Ave. 231, 02300, Vilnius, Lithuania*), A. Braun, S. Ragnow (*Solarion AG, Ostende 5, 04288 Leipzig, Germany*), M. Ehrhardt, K. Zimmer (*Leibniz-Institut für Oberflächenmodifizierung, Permoserstr. 15, 04318 Leipzig, Germany*)
Ps-laser scribing of cigs films at different wavelengths
- 1.3/09. **ID:92** **T. Donnelly**, J. G. Lunney (*School of Physics, Trinity College Dublin, Dublin 2, Ireland*), S. Amoroso, R. Bruzzese, X. Wang (*Coherentia CNR-INFM and Dipartimento di Scienze Fisiche, Università degli Studi di Napoli Federico II, Complesso Universitario di Monte S. Angelo, Via Cintia, I-80126 Napoli, Italy*), Ni Xiaochang (*Electronic Engineering Department, Tianjin University of Technology and Education, Tianjin, 300222, P. R. China*)
Ablation of nickel using a pair of collinear femtosecond laser pulses
- 1.3/10. **ID:450** **Jens Gottmann**, Martin Hermans, Maren Hörstmann-Jungemann, Jan Kolf (*LLT, RWTH Aachen University, Steinbachstraße 15, 52074 Aachen, Germany*)
Laser-induced coherent sub-wavelength ripples on surfaces and in the volume of dielectrics
- 1.3/11. **ID:476** **Cristian Focsa** (*Laboratoire de Physique des Lasers, Atomes et Molécules (UMR 8523), Centre d'Etudes et de Recherches Lasers et Applications (FR CNRS2416), Université Lille 1 Sciences et Technologies, 59655 Villeneuve d'Ascq cedex, France*), Silviu Gurlui, Cristian Ursu (*Faculty of Physics, "Al.I.Cuza" University, Blvd. Carol I no.11, 700506, Iasi,*

Romania), Maricel Agop, Petru-Edward Nica (*Department of Physics, "Gh. Asachi" University, Blvd. Mangeron no.64, 700029 Iasi, Romania*)

Laser ablation plasma dynamics: fractal hydrodynamic model and oscillatory behavior

- 1.3/12. **ID:91** T. Donnelly, **J. G. Lunney** (*School of Physics, Trinity College Dublin, Dublin 2, Ireland*), S. Amoruso, R. Bruzzese, X. Wang (*Coherentia CNR-INFM and Dipartimento di Scienze Fisiche, Università degli Studi di Napoli Federico II, Complesso Universitario di Monte S. Angelo, Via Cintia, I-80126 Napoli, Italy*), X. Ni (*Electronic Engineering Department, Tianjin University of Technology and Education, Tianjin, 300222, P. R. China*)

Expansion dynamics of the ablation plume produced by femtosecond laser ablation of nickel

2.2. 3D Structuring and Prototyping Polymerization

- 2.2/01. **ID:87** Steffen Weissmantel, **Guenter Reisse**, Falk Haehnel, Rene Bertram, Rene Boettcher (*University of Applied Sciences Mittweida, Technikumplatz 17, 09648 Mittweida, Germany*)

Production of microstructures in wide-band-gap and organic materials using pulsed laser ablation at 157 nm wavelength

- 2.2/02. **ID:88** A. Engel, **G. Reisse**, M. Pfeiffer, H. Gruettner, S. Weissmantel (*University of Applied Sciences Mittweida, Technikumplatz 17, 09648 Mittweida, Germany*)

Microstructuring of various metals using femtosecond laser pulses

- 2.2/03. **ID:240** M. Oujja, S. Pérez, **M. Castillejo** (*Instituto de Química Física Rocasolano, CSIC, Serrano 119, 28006 Madrid, Spain*), E. Fadeeva, J. Koch, B.N. Chichkov (*Laser Zentrum Hannover e.V., Hollerithallee 8, D-30419 Hannover, Germany*)

Structuring in the bulk of biopolymers by femtosecond laser irradiation

- 2.2/04. **ID:283** A. Pikulin, **N. Bityurin** (*Institute of Applied Physics RAS, 603950, Nizhniy Novgorod, Russia*)

Fluctuation limit of minimal voxel size in two photon polymerization

- 2.2/05. **ID:449** **Jens Gottmann**, Martin Hermans, Maren Hörstmann-Jungemann (*Lehrstuhl für Lasertechnik (LLT), RWTH Aachen University, Steinbachstraße 15, 52074 Aachen, Germany*)

3D microstructures in transparent materials by involume selective femtosecond laser-induced etching

- 2.2/06. **ID:459** Alesya Viktorovna Salomatova, **Seong Shan Yap**, Turid Worren Reenaas (*Institute of Physics, Norwegian University of Science and Technology, 7491 Trondheim, Norway*), Øystein Dahl, Cécile Ladam (*SINTEF Materials and Chemistry, 7465 Trondheim, Norway*)

Pulsed laser ablation and deposition of silicon

- 2.2/07. **ID:471** **Stefan Nolte**, Jens Limpert, Daniel Richter, Jens Thomas, Christian Voigtländer, Elodie Wikszak (*Institute of Applied Physics, Friedrich-Schiller-University Jena, Max-Wien-Platz 1, 07743 Jena, Germany*), Andreas Tünnermann (*Fraunhofer Institute for Applied Optics and Precision Engineering IOF, Albert-Einstein-Str. 7, 07745 Jena, Germany*)

Fabrication of fiber-Bragg-gratings using fs laser pulses: potential and applications

- 2.2/08. **ID:501** **Liang (Leon) Yuan**, Debashis Chanda, Ladan Abolghasemi, Peter R. Herman (*The Edward S. Rogers Sr. Department of Electrical and Computer Engineering, University of Toronto, 10 King's College Road, Toronto, ON M5S 3G4, Canada*)

Fabrication of phase shift masks for complete photonic band gaps

2.3. Ultrafast Laser Surface Processing and Structuring

- 2.3/01. **D. Wortmann**, M. Brajdic (*Lehrstuhl fuer Lasertechnik, RWTH Aachen University, Steinbachstr. 15, 52074 Aachen, Germany*), T. Mans, J. Weitenberg, P. Rußbüldt (*Fraunhofer Institut für Lasertechnik, Steinbachstr.15, 52074 Aachen, Germany*)
ID:71
Multi-100 W average power fs-laser for material processing applications
- 2.3/02. A. Klini^{1,2}, **P. A. Loukakos**¹, D. Gray¹, A. Manousaki¹, C. Fotakis^{1,3} (¹*Foundation for Research and Technology – Hellas, Institute of Electronic Structure and Laser, N. Plastira 100, P. O. Box 1385, 71110 Heraklion, Greece*; ²*University of Crete, Chemical Department, 71003 Heraklion, Greece*; ³*University of Crete, Physics Department, 71409 Heraklion, Greece*)
ID:114
Laser induced forward transfer of metals by temporally shaped femtosecond laser pulses
- 2.3/03. **Ng Ka Lai Gary** (*SIMTech, 71, Nanyang Drive, Singapore 63807*), Yeong Wai Yee (*School of Materials Science and Engineering, Nanyang Technological University, 1, Nanyang Avenue, Singapore 639798*)
ID:117
An investigation on laser cutting of biomaterials
- 2.3/04. **C.W. Cheng**¹, W.C. Shen¹, Y.J. Lee², J.S. Chen² (¹*ITRI South, Industrial Technology Research Institute, No. 8, Gongyan Rd., Liujia Shiang, Tainan County 734, Taiwan, R.O.C.*; ²*Department of Mechanical Engineering, National Chung Cheng University, No. 168, University Rd., Min-Hsiung, Chia-Yi 621, Taiwan, R.O.C.*)
ID:146
Fabrication of crystalline ITO structures by femtosecond laser-induced crystallization
- 2.3/05. **J. Hänel**, Dr. B. Keiper, S. Albert, R. Busch, M. Clair, C. Scholz (*3D-Micromac AG, Technologie-Campus 8, 09126 Chemnitz, Germany*)
ID:181
Micro-machining of thin-film solar cells with ultrashort pulsed lasers
- 2.3/06. **J. L. Tan**, D.L. Butler, L. M. Sim, A. E. W. Jarfors (*Singapore Institute of Manufacturing Technology, 71 Nanyang Drive, Singapore 638075*)
ID:182
Effects of laser ablation on cemented tungsten carbide surface quality
- 2.3/07. **Nadezhda M. Bulgakova**, Alexander V. Bulgakov (*Institute of Thermophysics SB RAS, 1, Lavrentyev Ave., 630090 Novosibirsk, Russia*), Vladimir P. Zhukov (*Institute of Computational Technologies SB RAS, 6, Lavrentyev Ave., 630090 Novosibirsk, Russia*)
ID:192
Arkadi Rosenfeld, Christian Grebing, Günter Steinmeyer, Jörn Bonse (*Max-Born-Institute for Nonlinear Optics and Short Pulse Spectroscopy, Max-Born-Str. 2a, 12489 Berlin, Germany*)
Fs-laser processing of metals in air: pulse duration effects and the role of air ionization
- 2.3/08. **S. Nakashima**, K. Sugioka, K. Midorikawa (*RIKEN – Advanced Science Institute, Japan*)
ID:198
Periodical micro/nano-structuring on GaN substrates by wet-chemical assisted femtosecond laser ablation for blue/UV LED
- 2.3/09. **Shingo Kanehira**, Masaaki Sakakura, Yasuhiko Shimotsuma (*Innovative Collaboration Center, Kyoto University, Nishikyo-ku, Kyoto 615-8510, Japan*); Masaaki Eida, Kiyotaka Miura, Kazuyuki Hirao (*Department of Material Chemistry, Graduate School of Engineering, Kyoto University, Nishikyo-ku, Kyoto 615-8510, Japan*)
ID:200
Phase control of iron silicides using femtosecond laser irradiation
- 2.3/10. Anatoliy Y. Vorobyev, **Chunlei Guo** (*The Institute of Optics, University of Rochester, Rochester, New York 14627, USA*)
ID:203
Formation of periodic surface structures on tungsten induced by femtosecond laser pulses
- 2.3/11. Shazia Bashir, Ali. A. Ajami, M.Shahid Rafique, **Wolfgang Husinsky** (*Institut für*

- ID:263** *Allgemeine Physik, Vienna, University of Technology, Wiedner Hauptstrasse 8-10, A-1040 Vienna, Austria*, Alison Hobro, Bernhard Lendl (2- *Institut für Chemische Technologien und Analytik Vienna, University of Technology, Vienna, Austria*)
Modification of Cr-39 by femtosecond laser pulses: an analysis by atomic force microscopy, micro Raman spectroscopy and z-scan measurements for nonlinear absorption properties
- 2.3/12. Shazia Bashir, M.Shahid Rafique , A. Ajami, **W. Husinsky** (*Institut für Allgemeine Physik, Vienna, University of Technology, Wiedner Hauptstrasse 8-10, A-1040 Vienna, Austria*), A. Hobro, B. Lendl (2- *Institut für Chemische Technologien und Analytik Vienna, University of Technology, Vienna, Austria*)
ID:264 **Atomic force microscopy and Raman scattering studies of femtosecond laser – induced nanohillocks on Cr-39**
- 2.3/13. **Hitoshi Nakano**, Miho Tsuyama, Satoshi Yamatani (*School of Science and Engineering, Kinki University 3-4-1 Kowakae, Higashi-osaka, Osaka 577-8502 Japan*), Toshiya Shibayanagi, Masahiro Tsukamoto, Nobuyuki Abe (*Joining and Welding Research Institute, Osaka University 11-1 Mihoga-oka, Ibaraki, Osaka 567-0047 Japan*)
ID:321 **Experimental study of femtosecond laser shock peening of steel**
- 2.3/14. Cheng-Chi Wu, **Yung-En Kuo**, Yuan-Cheng Tsai, Fu-Jen Kao (*Institute of Biophotonics, National Yang-Ming University, Taipei 11221, Taiwan*)
ID:387 **Comparison of Laser Ablation of Multi-Wall Carbon Nanotubes with Nano and Femtosecond Lasers**
- 2.3/15. **Jae-Gu Kim**, Sung-Hak Cho, Tae-Jin Je, Doo-Sun Choi, Kyung-Hyun Whang (*Nano-Mechanical Systems Research Division, Korea Institute of Machinery & Materials, 104, Sinseong-ro, Yusong-ku, Daejeon, 305-343, South Korea*)
ID:431 **Surface pattern formation on Cr thin film with ultrafast laser pulses**
- 2.3/16. Junghyun Choi, Younshil Kim, Youlee Lee, Taehong Kim, Daejin Kim, Wooyoung Jang, **Ki-Soo Lim** (*Department of Physics, Chungbuk National University, Cheongju 361-763, Korea*), Ik-Bu Sohn (*Advanced Photonics Research Institute, Gwangju Institute of Science and Technology, Gwangju 500-712, Korea*)
ID:462 **Femtosecond laser bonding and ion diffusion in the interface**
- 2.3/17. **Irina Zavestovskaya**, Oleg Krokhin (*Quantum Radiophysics Division, P.N.Lebedev Physical Institute, 53, Leninsky pr., 119991 Moscow, Russia*)
ID:508 **Laser metal micro-and nanostructuring**
- 2.3/18. Martin Ehrhardt, **Klaus Zimmer** (*Leibniz-Institut für Oberflächenmodifizierung, Permoserstr. 15, 04318 Leipzig, Germany*), Paulius Gecys, Gediminas Raciukaitis (*Institute of Physics, Savanoriu Ave. 231, 02300, Vilnius, Lithuania*)
ID:510 **Laser-induced backside wet etching of transparent materials with picosecond UV laser pulses**
- 2.3/19. **K. Zimmer**, R. Böhme, M. Ehrhardt, B. Rauschenbach (*Leibniz-Institut für Oberflächenmodifizierung, Permoserstr. 15, 04318 Leipzig, Germany*), S. Pissadakis (*Institute of Electronic Structure and Laser, Foundation for Research and Technology Hellas, P.O. Box 1527, 71110, Heraklion, Greece*)
ID:512 **Backside wet etching of submicron gratings in crystalline materials with UV laser pulses**
- 2.3/20. Martin Ehrhardt, Henning Schulte-Huxel, **Klaus Zimmer** (*Leibniz-Institut für Oberflächenmodifizierung, Permoserstr. 15, 04318 Leipzig, Germany*), A. Braun, S. Ragnow (*Solarion AG, Ostende 5, 04288 Leipzig, Germany*)
ID:513 **Investigation of the ablation process of CIGS with temporal shaped laser pulses**
- 2.3/21. **L. Jiao**¹, E.Y.K. Ng¹, L.M. Wee², H. Zheng² (¹*School of Mechanical and Aerospace*

ID:205 *Engineering, College of Engineering, Nanyang Technological University, 50 Nanyang Avenue 639798, Singapore; ²Singapore Institute of Manufacturing Technology, A*Star, 71 Nanyang Drive 638075, Singapore)*

Statistical analysis of femtosecond pulses laser hole drilling of silicon wafer

3.2. Diagnostics

3.2/01. **James G. Lunney** (School of Physics, Trinity College Dublin, Dublin 2, Ireland)

ID:81 **Recent advances in Langmuir probe measurement of laser produced plasma**

3.3. Laser-based Probes

3.3/01. **M. Miyabe**, M. Oba, H. Iimura, K. Akaoka, Y. Maruyama, I. Wakaida (*Division of Environment and Radiation Sciences, Japan Atomic Energy Agency, Tokai, Ibaraki, Japan*)

ID:166 **Spectroscopy of laser-produced cerium plasma for remote isotope analysis of nuclear fuel**

Day 3, Tuesday, 24 November, 2009

6. Laser Surface Interactions

Session Chairs:

C. Fotakis (IESL-FORTH, Heraklion, Greece), **Jørgen Schou** (Technical University of Denmark, Roskilde, Denmark)

- 8:30 - 9:00
ID:229 Enamul Khan, Sharon George, Steve Langford, **Tom Dickinson** (*Surface Dynamics Laboratory, Washington State University, Pullman, WA 99164-2814, USA*)
Fundamental studies of 193 nm irradiation of ZnO
Invited Lecture
- 9:00 - 9:30
ID:116 **Sylvain Lazare**, Ilham Elaboudi (Institut des Sciences Moléculaires (ISM) UMR 5255, Université Bordeaux 1, 351 cours de la Libération, 33405 Talence, France)
Particularities of laser ablation of moderately absorbing polymers
Invited Lecture
- 9:30 - 9:45
ID:288 A. Alexandrov, E. Chelnokov, **N. Sapogova**, L. Smirnova, N. Bityurin (*Institute of Applied Physics RAS, 603950, Nizhniy Novgorod, Russia*)
UV induced light scattering for random lasing
- 9:45 - 10.00
ID:386 **Yuji Utsunomiya**, Takashi Kajiwara, Takashi Nishiyama, Kunihiro Nagayama (*Faculty of Engineering, Kyushu University, Motooka 744, Nishi-ku, Fukuoka 819-0395, Japan*), Shiro Kubota (*Research Core for Explosion Safety, National Institute of Advanced Industrial Science and Technology, 16-1, Onogawa, Tsukuba, Ibaraki 305-8569 Japan*), Motonao Nakahara (*Faculty of Engineering, Fukuoka Institute of Technology, Wajiro-higashi 3-30-1, Higashi-ku, Fukuoka 811-0295, Japan*)
Laser ablation of liquid surface in air induced by laser irradiation through liquid medium
- 10:00 - 10.15
ID:142 **Nadezhda M. Bulgakova** (*Institute of Thermophysics SB RAS, 1, Lavrentyev Ave., 630090 Novosibirsk, Russia*) Alexei N. Panchenko, Alexei E. Tel'minov, Mikhail A. Shulepov (*Institute of High-Current Electronics SB RAS, 2/3 Akademichesky Ave., 634055 Tomsk, Russia*)
Formation of microhorn structures at ns laser ablation of liquid metals
- 10:15 - 10.30
ID:284 **A. Selimis**, G. Bounos, I.-A. Paun, G. Kecskeméti, S. Georgiou (*FORTH-IESL, P.O. Box 1527, 71110 Heraklion, Crete, Greece*)
The influence of the molecular weight on the nanosecond laser ablation of polymers

10:30 - 11:00 Coffee Break

7. Modeling and Simulation

Session Chairs:

Peter Balling (University of Aarhus, Denmark), **Takashi Yabe** (Tokyo Institute of Technology, Japan)

- 11:00 - 11:30
ID:220 **Baerbel Rethfeld**, D. S. Ivanov, N. A. Medvedev, O. Osmani (*Dept. of Physics and OPTIMAS research center, Technical University of Kaiserslautern, 67663 Kaiserslautern, Germany*)
Material modification of dielectrics irradiated with high-intensity beams
Invited Lecture
- 11:30 - 12:00
ID:214 S. I. Anisimov, **N. A. Inogamov**, V. A. Khokhlov, Yu. V. Petrov, (*Landau Institute for Theoretical Physics, 1A, Semenova, 142432, Chernogolovka, Russia*), A. Ya. Faenov, V. V. Zhakhovskii, I. Yu. Skobelev, T. A. Pikuz, V. E. Fortov (*Joint Institute for High Temperatures, 13/19, Izhorskaya, 125412, Moscow, Russia*), M. Tanaka, M. Kishimoto, M. Ishino, M. Nishikino, Y. Fukuda, S. V. Bulanov, T. Kawachi (*Kansai Photon Science Institute, Japan Atomic Energy Agency, Kyoto 619-0215, Japan*), K. Nishihara (*Institute of Laser Engineering, Osaka University, Osaka 565-0871, Japan*), Y. Kato (*The Grad. School Creation of New Photonics Ind.,*

Hamamatsu, Shizuoka 431-1202, Japan), V. V. Shepelev (Institute for Computer Aided Design, 19/18, 2-Brestskaya, 123056, Moscow, Russia)

Spallative ablation of dielectrics by X-ray laser

Invited Lecture

12:00 - 12:15
ID:93

Andreas Fell, Filip Granek, Gerhard P. Willeke (*Fraunhofer Institute for Solar Energy Systems ISE, Heidenhofstr. 2, 79110 Freiburg, Germany*)

Simulation of laser melting of silicon and silicon melt expelling by liquid jet using transient coupling of fluent with a finite differences code in Matlab

12:15 - 12:30
ID:369

Y. Y. Tsui¹, **S. E. Kirkwood**¹, V. Sametoglu¹, Lj. Nikolic¹, R. Fedosejevs¹, A. V. Brantov², V. Yu. Bychenkov² (*¹Department of Electrical and Computer Engineering, University of Alberta, Edmonton, Alberta T6G 2V4. Canada, ²P.N. Lebedev, Physics Institute, Russian Academy of Science, Moscow 119991, Russia*)

Models for Femtosecond Laser Ablation

12:30 - 12:45
ID:189

W. Wendelen, D. Autrique, A. Bogaerts (*Research Group for Plasma, Laser Ablation and Surface Modelling – Antwerp (PLASMANT), University of Antwerp, Universiteitsplein, 1, B-2610, Wilrijk, Belgium*)

Space charge limited electron emission from metal surfaces under ultrashort pulsed laser irradiation

12:45 - 13:00
ID:144

Nadezhda M. Bulgakova, Olga A. Bulgakova (*Institute of Thermophysics SB RAS, Novosibirsk, Russia*), Vladimir P. Zhukov (*Institute of Computational Technologies SB RAS, Novosibirsk, Russia*)

A model of ns laser ablation of compound semiconductors accounting for non-congruent vaporization

13:00 - 13:15
ID:468

Stéphane Guizard, Nikita Fedorov, Ghita Geoffroy (*Laboratoire des Solides Irradiés, Ecole Polytechnique, 91128 Palaiseau, France*), Andrei Belsky, P. Martin, H. Bachau (*Laboratoire CELIA, CNRS, CEA et Université de Bordeaux I, 33400 Talence, France*), A. Vasil'ev (*Dept of Optics and Spectroscopy, Moscow Lomonosov University, 11234, Moscow, Russia*)

Femtosecond laser ablation of dielectrics: experimental studies of fundamental processes

13:15 - 14:30 Lunch

8. New Materials and Applications

Session Chairs:

Koji Sugioka (RIKEN, Japan), **Carmen Afonso** (Institute of Optics, Madrid, Spain)

14:30 - 15:00
ID:502

Venky T. Venkatesan (*NanoCore, ECE and Physics Department, National University of Singapore*)

New Directions in Pulsed Laser Deposition of Novel Oxides

Invited Lecture

15:00 - 15:30
ID:322

Takashi Yabe (*Tokyo Institute of Technology, 2-12-1 Oh-okayama, Meturo-ku, Tokyo 852-1552, Japan*)

Prospect of a new world supported by solar-pumped laser and magnesium

Invited Lecture

15:30 - 15:45
ID:161

Junko Morikawa, Akihiro Orié, Toshimasa Hashimoto (*Tokyo Institute of Technology, Meguro-ku, Tokyo 152-8550, Japan*), Saulius Juodkazis (*Research Institute for Electronic Science, Hokkaido University, N21-W10, CRIS Bldg., Kitaku, Sapporo 001-0021, Japan*)

Thermal properties of femtosecond laser-structured materials: Polymers

15:45 - 16:00
ID:340

Tadatake Sato, Ryoza Kurosaki, Yoshizo Kawaguchi, Aiko Narazaki, Hiroyuki Niino (*Photonics Research Institute (PRI), National Institute of Advanced Industrial*)

Science and Technology (AIST), Tsukuba Central 5, 1-1-1 Higashi, Tsukuba, Ibaraki 305-8565, Japan)

Flexible 3D deep microstructures of silica glass by laser-induced backside wet etching (LIBWE)

16:00 - 16:30 Coffee Break

9. Film Production and Combinatorial PLD

Session Chairs:

Venky T. Venkatesan (National University of Singapore), **N. Bityurin** (Institute of Applied Physics, Nizhny Novgorod, Russia)

16:30 - 17:00

ID:370

Gareth M. Fuge, Benjamin S Truscott, Michael N. R. Ashfold (School of Chemistry, University of Bristol, Cantock's Close, Bristol, UK, BS8 1TS)

Ultrathin nanorod growth using diffusive pulsed laser deposition

Invited Lecture

17:00 - 17:15

ID:232

T. Lippert, S. Heiroth, A. Wokaun (General Energy Research Department, Paul Scherrer Institut, CH-5232 Villigen PSI, Switzerland)

Pulsed laser deposition of electroceramic thin films for a micro solid oxide fuel cell

17:15 - 17:30

ID:519

Yue Li, **Naoto Koshizaki** (Nanotechnology Research Institute, National Institute of Advanced Industrial Science and Technology (AIST), Central 5 1-1-1, Higashi Tsukuba, Ibaraki 305-8565, Japan)

Structural control of hexagonal non-closed packed hierarchical TiO₂ micro/nanostructures by pulsed laser deposition in gas phase

17:30 - 17:45

ID:137

J. Gonzalo^a, A. Castelo^a, **C. N. Afonso^a**, E. Piscopiello^b (^aLaser Processing Group, Instituto de Optica, CSIC, Serrano 121, 28006 Madrid, Spain; ^bENEA, Brindisi R. C., Dept. of Advanced Physical Technologies and New Materials, S. S. 7, km 714, 72100 Brindisi, Italy)

Control of self-organized metal nanostructures through the kinetic energy of host species

17:45 - 18:00

ID:409

S. Mailis, C. L. Sones, P. Ganguly, Y. J. Ying, K. S. Kaur, D. P. Banks, R.W. Eason (Optoelectronics Research Centre, University of Southampton, Highfield, Southampton, SO17 1BJ, UK)

Laser-Induced-Forward-Transfer: A rapid prototyping tool for fabrication of photonic devices

18:00 - 22.30

10. Poster session 2 (Topics 2.1, 4.2, 4.3, 5.3)

Session Chairs:

T. Lippert (Paul Scherrer Institut, Villigen PSI, Switzerland), **James G. Lunney** (Trinity College Dublin, Ireland), **Nadezhda M. Bulgakova** (Institute of Thermophysics SB RAS, Novosibirsk, Russia), **Gareth M. Fuge** (University of Bristol, UK), **R. Stoian** (Université Jean Monnet, Saint Etienne, France), **Andrei V. Kabashin** (Université de la Méditerranée, Marseille, France),

2.1. Patterning, Cleaning, Annealing, Deposition, Modification

2.1/01.

ID:119

Simone Pentzien, Andrea Conradi, **Jörg Krüger** (BAM Federal Institute for Materials Research and Testing, Unter den Eichen 87, 12205 Berlin, Germany)

Cleaning of artificially soled paper using nanosecond, picosecond and femtosecond laser pulses

2.1/02.

Wu Dong-jiang, Ma Guang-yi, Liu Shuang, Wang Xu-yue, Guo Dong-ming (Key

- ID:132** *Laboratory for Precision and Non-traditional Machining Technology of Ministry of Education, Dalian University of Technology, No.2 Linggong Road of Gan Jingzi District, 116024, Dalian, China)*
Experiments and simulation on laser bending of silicon sheet with different thicknesses
- 2.1/03.
ID:148 G. X. Chen, T. J. Kwee, K. P. Tan (*Center of Innovation, Ngee Ann Polytechnic, 535 Clementi Road, Singapore 599489*), Y. S. Choo, **M. H. Hong** (*Faculty of Engineering, National University of Singapore, Singapore 117576*)
Laser cleaning of stainless steels for paint removal
- 2.1/04.
ID:158 **L. M. Wee**, H. Y. Zheng (*Singapore Institute of Manufacturing Technology 71 Nanyang Drive, Singapore 638075*)
Pulsed UV laser ablation of micro-groove on harden steel
- 2.1/05.
ID:162 **Kiyotaka Miura**, Masahiro Shimizu, Kazuyuki. Hirao (*Department of Material Chemistry, Kyoto University, Nishikyo-ku, Kyoto 615-8510, Japan*), Yasuhiko Shimotsuma, Masaaki Sakakura, Shingo Kanehira (*International Innovation Center, Kyoto University, Nishikyo-ku, Kyoto 615-8510, Japan*)
Formation of elemental distribution in glass with a femtosecond laser
- 2.1/06.
ID:171 **Yoshiaki Yano** (*Graduate school of Engineering, Osaka University, 2-1 Yamadaoka, Suita, Osaka 565-0871, Japan*), Masahiro Tsukamoto, Nobuyuki Abe (*Joining and Welding Research Institute, Osaka University, 11-1 Mihogaoka, Ibaraki, Osaka 567-0047, Japan*), Masanari Takahashi (*Osaka Municipal Technical Research Institute, 1-6-50, Morinomiya, Joto-ku, Osaka 536-8553, Japan*), Masayuki Fujita (*Institute for Laser Technology, 2-6 Yamadaoka, Suita, Osaka 565-0871, Japan*)
Variation of material properties of titanium dioxide film by short pulsed laser irradiation
- 2.1/07.
ID:172 Johannes Richter, Martin Jahn, **Jörg Meinertz**, Jürgen Ihlemann (*Laser-Laboratorium Gottingen e.V., Hans-Adolf-Krebs-Weg 1, 37077 Göttingen, Germany*)
Ablation of silicon suboxide thin layers
- 2.1/08.
ID:188 **I.A.Palani**, N.J.Vasa, M.Singaperumal (*PEIL, Dept of Mechanical Engineering, Indian Institute of technology Madras, Chennai-36, India*), T. Okada (*ISEE, Kyushu University, Nishi-Ku, Fukuoka, Japan*)
Investigation on Solid Diffused Laser Doping (SDLD) of Sb on a-Si and ZnO for functional device
- 2.1/09.
ID:190 **Ng Chu Chung** (*The Advanced Manufacturing Technology Research Centre, Department of Industrial and Systems Engineering, 1, The Hong Kong Polytechnic University, Hung Hom, Hong Kong, China*)
Selective laser sintering of magnesium powders for fabrication of porous structures
- 2.1/10.
ID:206 **Masami Nishikawa**¹, Tomohiko Nakajima², Toshiya Kumagai², Takeshi Okutani¹, Tetsuo Tsuchiya² (*¹Yokohama National University, Tokiwadai 79-5, Hodogaya-ku, Yokohama, Kanagawa 240-8501, Japan, ²National Institute of Advanced Industrial Science and Technology, Tsukuba Central 5, Higashi 1-1-1, Tsukuba, Ibaraki 305-8565, Japan*)
Fabrication of epitaxial VO₂ films grown by excimer laser assisted metal organic deposition
- 2.1/11.
ID:212 Pilkyu Kim¹, SeungJae Moon², **Sungho Jeong**¹ (*¹Department of Mechatronics, Gwangju Institute of Science and Technology, 1Oryong-dong Buk-gu, Gwangju 500-712, Republic of Korea, ²School of Mechanical Engineering, Hanyang University, Seoul 133-791, Republic of Korea*)
Single pulse crystallization of thin amorphous silicon film on glass using a second harmonic Nd:YAG laser

- 2.1/12. **ID:221** **K.S. Tiaw**¹; S.H. Teoh¹; M.H. Hong^{2,3} (¹Centre for BIOMAT, Department of Mechanical Engineering, National University of Singapore, 10 Kent Ridge Crescent, Singapore 119260, ²Data Storage Institute, 5 Engineering Drive 1, Singapore 117608, ³Department of Electrical and Computer Engineering, National University of Singapore, 4 Engineering Drive 3, Singapore 117576)
Surface chemistry and degradation study of laser processed biocompatible Poly(H-caprolactone) thin films
- 2.1/13. **ID:234** **Tetsuo Tsuchiya**, Tomohiko Nakajima, Toshiya Kumagai (National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba Central 5, 1-1-1 Higashi, Tsukuba, 305-8565, Japan)
Preparation of Y₂O₃:Eu thin film grown by excimer laser assisted metal organic deposition
- 2.1/14. **ID:235** **Tetsuo Tsuchiya**, Tomohiko Nakajima, Toshiya Kumagai (National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba Central 5, 1-1-1 Higashi, Tsukuba, 305-8565, Japan)
Formation control of epitaxial and polycrystalline oxide thin film grown by photo reaction of metalorganic compound and nano-particle using excimer laser
- 2.1/15. **ID:258** **Jürgen Ihlemann**, Ruth Weichenhain-Schriever (Laser-Laboratorium Göttingen, Hans-Adolf-Krebs-Weg 1, 37077 Göttingen, Germany)
Laser induced congruent forward transfer of SiO_x-layers
- 2.1/16. **ID:272** **H. J. Fan**, W. W. Zhou, C. W. Cheng (Division of Physics and Applied Physics, School of Physical & Mathematic Sciences, Nanyang Technological University, Singapore), C. F. Guo, Q. Liu (National Center for Nanoscience and Technology, Zhongguancun, Beijing 100190, China)
Nanopatterns by laser direct writing and their application for growth of nanowires arrays
- 2.1/17. **ID:278** Carlos Acosta-Zepeda, **Emmanuel Haro-Poniatowski** (Departamento de Física, Universidad Autónoma Metropolitana Iztapalapa, Av. San Rafael Atlixco No. 186 Col. Vicentina, C. P. 09340 México D. F.)
Modeling of micro and nano patterning of noble metal quasi-percolated thin films
- 2.1/18. **ID:290** E. Drakaki, B. Klingenberg, I. Tsilikas, E. Zoros, M. Kandyla, and **A.A.Serafetinides** (Physics Department, School of Applied Mathematical and Physical Sciences, National Technical University of Athens, 9, Iroon Polytechniou, 15780 Athens, Greece)
Laser cleaning and characterization of old corroded metal coins
- 2.1/19. **ID:301** **Shih-Feng Tseng**^{1,2}, Wen-Tse Hsiao³, Ming-Fei Chen³, Kuo-Cheng Huang¹, Sheng-Yi Hsiao¹, Yung-Sheng Lin¹, Chang-Pin Chou² (¹Instrument Technology Research Center, National Applied Research Laboratories, 20, R&D Road VI, Hsinchu Science Park, Hsinchu City, Taiwan; ²Department of Mechanical Engineering, National Chiao Tung University, 1001, University Road, Hsinchu City, Taiwan; ³Department of Mechatronics Engineering, National Changhua University of Education, 2, Shi-Da Road, Changhua City, Taiwan)
Surface hydrophobicity of silicon substrates enhanced by laser ablation
- 2.1/20. **ID:318** **P. K. Kim**, M. H. Lee, J. B. Park, H. T. Lim, S. H. Jeong (Department of Mechatronics, Gwangju Institute of Science and Technology, 1 Oryong-dong Buk-gu, Gwangju 500-712, Republic of Korea)
Modification of surface properties by laser shock peening of stainless steel
- 2.1/21. **ID:327** Deoksuk Jang, **Dongsik Kim** (Department of Mechanical Engineering POSTECH, 790-784, Pohang, Korea)

Novel surface cleaning method using laser-induced breakdown of microdroplet/jet

- 2.1/22.
ID:350 D. Mastrogiannis, **C. Boutopoulos**, Y. Raptis, I. Zergioti (*Physics Department, National Technical University of Athens, Zografou Campus, Greece, 15780*), M. Genetzakis, K. Zekentes (*Foundation for Research & Technology – Hellas, Institute of Electronic Structure and Laser, P. O. Box 1527, Heraklion 71110, Greece*), E. Fogarassy (*ENSPS, Parc d'innovation, Bd Sébastien Brant, BP 10413, 67412 Strasbourg-Illkirch, France*)
Nanosecond UV laser annealing of implanted silicon carbide
- 2.1/23.
ID:360 **V. Dinca**, A. Palla Papavlu, A. Matei, M. Dinescu (*National Institute for Lasers, Plasma and radiation Physics, Atomistilor no.4, PO BOX Mg 16, 077125 Bucharest Romania*), J. Stewart*, R. Fardel*, T. Lippert (*Paul Scherrer Institut, General Energy Research Department, 5232 Villigen PSI, Switzerland*, *EMPA, Swiss Federal Laboratories for Materials Testing and Research, Laboratory for Functional Polymers, Uberlandstrasse 129, 8600 Duebendorf, Switzerland), F. Dipietrantonio, D. Cannata, M. Benetti, E. Verona (*"O.M.Corbino" Institute of Acoustics Italian National Research Council – CNR, Via del Fosso del Cavaliere 100, 00133 Rome, Italy*)
Polymer pixel enhancement by laser induced forward transfer for sensor application
- 2.1/24.
ID:367 **Q. Wang**¹, V. Sauer¹, V. Sametoglu¹, W. Hiebert², Y.Y. Tsui¹ (¹*Department of Electrical and Computer Engineering, University of Alberta, Edmonton, Alberta T6G 2V4, Canada*; ²*National Institute for Nanotechnology, Edmonton, Alberta T6G 2M9 Canada*)
Laser induced forward transfer of Cr micro-nanodisks
- 2.1/25.
ID:377 A. J. J. Fernandez, **D M Kane** (*Dept. of Physics and Engineering, Macquarie University, Sydney, NSW 2109, Australia*)
Laser removal of protective coatings from aboriginal bark paintings
- 2.1/26.
ID:390 Lim Foong Fee, Melvin Chia, Leng Lian Shin, Keith Liew, **Chin-ying Stephen Hsu** (*Department of Preventive Dentistry, Faculty of Dentistry, National University Health System, Singapore*)
Bleaching effects of CO₂ laser on tooth enamel
- 2.1/27.
ID:244 Ralph Delmdahl, **Burkhard Fechner** (*Coherent GmbH, Hans-Boeckler-Str. 12, 37079 Göttingen, Germany*)
Large-area microprocessing with excimer lasers
- 2.1/28.
ID:418 **Y.C. Guan**^a, W. Zhou^{a,b}, H.Y. Zheng^b, Z.L. Li^b (^a*Precision Engineering and Nanotechnology Centre, School of Mechanical and Aerospace Engineering, Nanyang Technological University, 50 Nanyang Avenue, Singapore 639798*; ^b*Singapore Institute of Manufacturing Technology, 71 Nanyang Drive, Singapore 638075*)
Solidification microstructure of AZ91D MG alloy after laser surface melting
- 2.1/29.
ID:452 E. Drakaki, M. Kandyla, E. Chatzitheodoridis, **I. Zergioti**, A. A. Serafetinides (*Physics Department, National Technical University of Athens, 15780 Athens, Greece*), A. Terlixi, E. Kouloumpi, A. Moutsatsou, M. Doulgerides (*National Gallery of Alexandros Soutzos Museum, Conservation Department, Laboratory of Physicochemical Research, 1 I. Michalacopoulou Str., 11601 Athens, Greece*), V. Kantarelou, A. Karydas (*Institute of Nuclear Physics, Laboratory for Material Analysis,*

NCSR 'Demokritos', GR- 15310 Ag. Paraskevi, Greece), C. Vlachou-Mogire (Numismatic Museum of Athens, 12 Eleftheriu Venizelou Avenue, 10671, Athens, Greece).

Laser conservation of metallic objects of historical significance

2.1/30. **Masahiro Tsukamoto**, Nobuyuki Abe (*Joining and Welding Research Institute, Osaka University, 11-1 Mihogaoka, Ibaraki, Osaka 567-0047, Japan*), Teppei Nomura, Togo Shinonaga (*Graduate school of Engineering, Osaka University, 2-1 Yamadaoka, Suita, Osaka 565-0871, Japan*), Minoru Yoshida, Hitoshi Nakano (*Kinki University, 3-4-1 Kowakae, Higashi-Osaka 577-8502, Japan*), Masayuki Fujita (*Institute for Laser Technology, 2-6 Yamadaoka, Suita, Osaka 565-0871, Japan*)

Surface modification of titanium film by femtosecond and CW laser irradiation

2.1/31. **G. Račiukaitis**, P. Gečys (*Institute of Physics, Savanoriu Ave. 231, 02300, Vilnius, Lithuania*), A. Braun, S. Ragnow (*Solarion AG, Ostende 5, 04288 Leipzig, Germany*), H. Schulte-Huxel, A. Wehrmann, M. Ehrhardt, K. Zimmer (*Leibniz-Institut für Oberflächenmodifizierung, Permoserstr. 15, 04318 Leipzig, Germany*)

Patterning of composite semiconductor films by ultrashort laser pulses: basics and applications

2.1/32. J. Jiménez-Jarquín, **E. Haro-Poniatowski**, M. Fernández-Guasti, J.L. Hernández-Pozos (*Departamento de Física, Universidad Autónoma Metropolitana-Iztapalapa. Avenida San Rafael Atlixco No 186. Col. Vicentina. C.P. 09340. Mexico City. Mexico*).

Mechanical fracture of laser-growth microcones on silicon wafers characterized by Raman spectroscopy

2.1/33. B. Zhang, **K. C. Yung** (*Department of Industrial and Systems Engineering, Hong Kong Polytechnic University, Kowloon, Hong Kong*)

Analysis of laser structuring process parameters with Taguchi method

2.1/34. **Yung Kam-Chuen**, Thomas S. Plura (*Department of Industrial and Systems Engineering, Hong Kong Polytechnic University, Kowloon, Hong Kong*)

Selective laser sintering of ink-jet printed nano-scaled particles for PCB fabrication

4.2. Film Production and Combinatorial PLD

4.2/01. **Katja Guenther**, Rene Boettcher, Andy Engel, Maren Nieher, Guenter Reisse, Steffen Weissmantel (*University of Applied Sciences Mittweida, Technikumplatz 17, 09648 Mittweida, Germany*)

Preparation of microstructures in super-hard amorphous carbon (Ta-C) films using excimer and femtosecond laser pulses

4.2/02. Thian-Khok Yong, Kee-Yeh Yee, Seong-Shan Yap, **Teck-Yong Tou** (*Faculty of Engineering, Multimedia University, Cyberjaya, Selangor, Malaysia*)

Effects of Sodium Ions in ITO by Pulsed Laser Deposition on Organic Light Emitting Diodes

4.2/03. **H.C. Swart**, E. Coetzee, J.J. Terblans, O.M. Ntwaeaborwa, P.D. Nsimama, J.J. Dolo (*Department of Physics, University of the Free State, P.O. Box 339, Bloemfontein, ZA9300 South Africa*)

Cathodoluminescence degradation of PLD thin films

4.2/04. M. Sanz, **M. Castillejo** (*Instituto de Química Física Rocasolano, CSIC, Serrano 119, 28006 Madrid, Spain*), J. G. Izquierdo, L. Bañares (*Departamento de Química Física I, Facultad de Ciencias Químicas, Universidad Complutense de Madrid, 28040 Madrid, Spain*)

Femtosecond pulsed laser deposition of nanostructured CdS films

4.2/05. M. Sanz, **M. Castillejo** (*Instituto de Química Física Rocasolano, CSIC, Serrano 119,*

- ID:124** 28006 Madrid, Spain), S. Amoruso, G. Ausanio, R. Bruzzese, X. Wang (Coherentia CNR-INFM and Dipartimento di Scienze Fisiche, Università degli Studi di Napoli Federico II, Complesso Universitario di Monte S. Angelo, Via Cintia, I-80126 Napoli, Italy)
Ultrafast laser ablation and deposition of TiO₂
- 4.2/06. **ID:134** F. Yan, M. O. Lai, **L. Lu** (Department of Mechanical Engineering, National University of Singapore, 9, Engineering Drive 1, Singapore, 117576), T. J. Zhu (Department of Materials Science and Engineering, Zhejiang University, Hangzhou, P. R. China, 310027)
Multiferroic properties of BiFeO₃ thin films on LaNiO₃/Si substrates via laser ablation
- 4.2/07. **ID:167** **F. B. Dejene** (Department of Physics, University of the Free State, Private Bag X13, Phuthaditjhaba 9866, South Africa)
Electrical, Optical and Structural Properties of pure and gold-coated VO₂ thin films deposited on Quartz Substrate by pulse laser deposition
- 4.2/08. **ID:211** **Jaroslav Bruncko**, Andrej Vincze, Frantisek Uherek (International Laser Centre, 3 Ilkovicova Str., 841 04 Bratislava, Slovak Republic)
Pulsed laser deposition of ZnO in N₂O atmosphere
- 4.2/09. **ID:233** **H. H. Liu**¹, N. Pryds², J. Schou³, X. Huang¹ (¹Center for Fundamental Research: Metal Structures in Four Dimensions, Materials Research Division, Risø National Laboratory for Sustainable Energy, Technical University of Denmark, DK- 4000 Roskilde, Denmark; ²Fuel Cells and Solid State Chemistry Division, Risø National Laboratory for Sustainable Energy, Technical University of Denmark, DK-4000 Roskilde, Denmark; ³Department of Photonics Engineering, Technical University of Denmark, DK-4000 Roskilde, Denmark)
Quantitative TEM analysis of Al/Cu multilayer prepared by pulsed laser deposition
- 4.2/10. **ID:247** Shijie Wang, Man On Lai, **Li Lu** (Department of Mechanical Engineering, National University of Singapore, 9, Engineering Drive 1, Singapore 117576, Singapore)
Impedance spectroscopy studies on zinc-doped barium stannate titanate thin films grown by pulse-laser deposition
- 4.2/11. **ID:253** **A. Pereira**, C. Martinet, A. Chevallier (Laboratoire de Physico-Chimie des Matériaux Luminescents (LPCML), Université de Lyon -CNRS UMR 5620, 10 Rue André-Marie Ampère, 69622 Villeurbanne Cedex, France)
Correlation between plasma dynamics and luminescent properties of Eu₃⁺ doped Lu₂O₃ films grown by pulsed laser deposition
- 4.2/12. **ID:302** Md. Alauddin, Arif Ahmed, Seung Keun Shin, Jae Kyu Song, **Seung Min Park** (Department of Chemistry, Kyunghee University, Seoul 130-701, Republic of Korea)
Laser ablation of a ZnO:P₂O₅ target under the presence of a transverse magnetic field
- 4.2/13. **ID:317** Arif Ahmed, Md. Alauddin, Seung Keun Shin, Jae Kyu Song, **Seung Min Park** (Department of Chemistry, Kyunghee University, Seoul 130-701, Republic of Korea)
Effects of aluminum doping and substrate temperature on zinc oxide thin films grown by pulsed laser deposition
- 4.2/14. **ID:330** **W. Mróz** (Institute of Optoelectronics, Military Academy of Technology, gen. S. Kaliskiego 2 Str., 00-908 Warsaw, Poland)
Multilayer calcium phosphate functional coating fabricated by pulsed laser deposition on metallic implants for applications in condition of increased bioactivity
- 4.2/15. **A. Matei**, R. Birjega, G. Epurescu, V. Dinca, A. Palla-Papavlu, C. Luculescu, M.

- ID:338** Filipescu, M. Dinescu (*National Institute for Lasers, Plasma and Radiation Physics, 409 Atomistilor Str., 76900 Bucharest-Magurele, Romania*), R. Zavoianu, O.D. Pavel (*University of Bucharest, Faculty of Chemistry, Department of Chemical Technology and Catalysis, 4-12 Regina Elisabeta Bd., Bucharest 030018, Romania*), D. Pelinescu, T. Vassu (*Research, Forming and Consulting Center for Microbiology, Genetics and Biotechnology(MICROGEN), Portocaliilor Str., No. 1, Bucharest 060101, Romania*)
Layered double hydroxides and derived mixed oxides thin films grown by laser techniques for bioapplications
- 4.2/16. **ID:344** **Komal Bapna**, D.M. Phase, R.J. Choudhary (*UGC-DAE Consortium for Scientific Research, Khandwa Road, University Campus, Indore-452 001, M.P., India*)
Effect of oxygen partial pressure on structural, optical, electrical, and magneto-transport properties of pulsed laser deposited Fe doped TiO₂ thin films
- 4.2/17. **ID:347** **Ridhi Master**, R.J. Choudhary, D.M. Phase (*UGC-DAE Consortium for Scientific Research, Khandwa Road, University Campus, Indore-452 001, M.P., India*)
Effect of Ag doping on structural, electrical and magnetic properties of pulsed laser deposited Fe₃O₄ thin films
- 4.2/18. **ID:363** **E. Cappelli**¹, D.M. Trucchi¹, S. Orlando², V. Valentini¹, A. Mezzi³ (¹*CNR-ISC, Montelibretti, via Salaria Km 29.3, P.O.B. 10, 00016 Rome, Italy*; ²*CNR-IMIP sez. Potenza, 85050 Tito Scalo, Potenza, Italy*; ³*CNR-ISMN, Montelibretti, via Salaria Km 29.3, P.O.B. 10, 00016 Rome, Italy*)
Electronic properties of amorphous carbon nitride (a-CN_x) films prepared by RF plasma assisted reactive pulsed laser deposition
- 4.2/19. **ID:405** **K. Takayama**, S. Soma, T. Inoue, H. Kakinuma, T. Haraguchi, K. Suzuki (*Discharge Plasma and Laser Laboratory; Depart of Electrical Engineering, College of Science and Technology, Nihon University, 1-8-14 Surugadai, Kanda, Chiyoda-ku, Tokyo, Japan*)
Ascent of open circuit voltage on diamond like carbon photovoltaic cell by infrared heating assisted pulsed laser deposition
- 4.2/20. **ID:407** **T. Uehara**¹, S. Kurumi¹, K. Takase², K. Suzuki¹ (¹*Discharge Plasma and Laser lab, Department of Electrical Engineering College of Science*; ²*Technology Nihon University, 1-8-14, Kanda-Surugadai, Chiyoda-ku, Tokyo, Japan*)
Synthesis of p-type zinc oxide films by assisted plasma pulsed laser deposition
- 4.2/21. **ID:416** **P. Haro-González**, I.R. Martín, F. Lahoz (Dep. Física Fundamental y Experimental, Electrónica y Sistemas, University of La Laguna, Av. Astrofísico Francisco Sánchez, s/n, E-38206 La Laguna, Tenerife, Spain), N.E. Capuj (Dep. Física Básica, University of La Laguna, Av. Astrofísico Francisco Sánchez, s/n, E-38206 La Laguna, Tenerife, Spain), D. Muñoz, J. Gonzalo, C.N. Afonso (Laser Processing Group, Instituto de Optica, CSIC, Serrano 121, 28006 Madrid, Spain)
Length scale of energy transfer mechanisms in Er³⁺-Yb³⁺ co-doped waveguides
- 4.2/22. **ID:417** **Turkka Salminen**, Mikko Hahtala, Ilkka Seppälä (*Optoelectronics Research Centre, Tampere University of Technology, Korkeakoulunkatu 3, PO BOX 599, 33101 Tampere, Finland*)
Picosecond pulse laser ablation from kilohertz to megahertz repetition rates
- 4.2/23. **ID:446** **A. P. Caricato**, G. Leggieri, M. Martino, A. Vantaggiato (*Dipartimento di Fisica, University of Salento, Via Arnesano, 73100 Lecce, Italy*), D. Valerini (*ENEA - Italian National Agency for New Technologies, Energy and the Environment, Research Centre of Brindisi, S.S. 7 Appia - km 706, 72100 Brindisi, Italy*), A. Cretì, M. Lomascolo, M.G. Manera, R. Rella (*Istituto per la Microelettronica e Microsistemi (IMM) CNR, Via Monteroni, 73100 Lecce, Italy*), M. Anni (*Dipartimento di Ingegneria dell'Innovazione, University of Salento, Via Monteroni, 73100 Lecce, Italy*)

- Dependence of solubility parameters on the surface roughness and optical emission properties of thin polymer films deposited by MAPLE**
- 4.2/24. **Jiri Bocan**, Jan Lancok, Jiri Bulir, Premysl Fitl, Michal Novotny (*Institute of Physics, Academy of Sciences of the Czech Republic, Na Slovance 2, 182 21 Prague 8, Czech Republic*)
ID:447
Production and characterization of LiYF₄ oxifluoride glass ceramics prepared by electron beam evaporation and pulsed laser deposition
- 4.2/25. **Q. He¹**, Hao Wang¹, H.B. Wang², X.N. Wang¹, J.H. Zhu¹, Y. Jiang² (¹*Faculty of Physics and Electronic Technology, Hubei University, Wuhan 430062, PR China;* ²*School of Material Science and Engineering, University of Science and Technology Beijing, Beijing 100083, China*)
ID:453
Effect of annealing atmosphere on ferromagnetism of Zn_{0.95}Co_{0.05}O thin films
- 4.2/26. **Jan Lancok**, Jiri Bulir, Jiri Bocan, Michal Novotný, Petr Pokorný (*Institute of Physics, Academy of Sciences of the Czech Republic, Na Slovance 2, 182 21 Prague 8, Czech Republic*), Adriana Lancok, Mariana Klementová (*Institute of Inorganic Chemistry AS CR, v.v.i., 250 68 Rez near Prague, Czech Republic*), Kamil Postava, Ondrej Zivotsky (*Dep. of Physics TUO Ostrava, 17 Listopadu 15, Ostrava, Czech Republic*)
ID:477
Fabrication and laser annealing of Fe-Co nanostructured thin films embedded by dielectric matrix
- 4.2/27. L. Escobar-Alarcón, E. Camps, S. Romero (*Departamento de Física, Instituto Nacional de Investigaciones Nucleares, México, D. F. 11801, México, Apdo. Postal 18-1027*), S. Muhl, I. Camps, G. Ramírez G. (*Instituto de Investigaciones en Materiales, Universidad Nacional Autónoma de México, Circuito Exterior s/n, CU, México D.F. 04510, México*), E. Haro-Poniatowski (*Departamento de Física, Universidad Autónoma Metropolitana Iztapalapa, Apdo. Postal 55-534 México D.F., México*)
ID:478
TiCN thin films grown by reactive crossed beam pulsed laser deposition
- 4.2/28. **D. R. Liu**, W. H. Cho, C. Y. Su (*Instrument Technology Research Center, National Applied Research Laboratories, 20 R&D road VI, Hsinchu 300, Taiwan*)
ID:526
Properties of ZnO/Zn_{1-x}Mn_xO thin films grown by pulsed laser deposition
- 4.2/29. F. Golmar, **F. D. Saccone** (*INTECIN (UBA-CONICET), Fac. Ingenieria Universidad de Buenos Aires, Av. Paseo Colon 850, Buenos Aires, Argentina*), C. E. Rodriguez Torres (*Departamento de Física, Universidad Nacional de la Plata, CC 67, La Plata, Argentina*)
ID:529
Transport properties in multilayers deposited by PLD with CoFe₂O₄ as pinner layer
- 4.2/30. **S. Karamat**, R. S. Rawat, T. L. Tan, P. Lee (*Natural Science and Science Education, National Institute of Education, Nanyang Technological University 637616*), W. Zhou (*Precision Engineering and Nanotechnology Centre, School of Mechanical & Aerospace Engineering, Nanyang Technological University, Singapore 639798*)
ID:401
Ferromagnetism in ZnCoO thin films deposited by PLD
- 4.2/31 **Z.Y. Pan¹**, **R.S. Rawat¹**, J.J. Lin², P. Lee¹, S.V. Springham¹, T.L.Tan¹ (¹*NSSE, National Institute of Education, Nanyang Technological University, 1 Nanyang walk, Singapore 637616;* ²*Solar Energy Research Institute of Singapore, National University of Singapore, 7 Engineering Drive 1, Singapore 117574*)
ID:542
Oriented Growth of CoPt Nanoparticles by Pulsed Laser Deposition
- 4.2/32 **T. Ando¹**, K. Suzuki¹, K. Seki², T. Nakada², A. Kamimoto², S. Masutani², H. Hirose³ (¹*Discharge Plasma and Laser lab, Department of Electrical Engineering College of Science and Technology Nihon University, 1-8-14, Kanda-Surugadai, Chiyoda-ku, Tokyo, Japan;* ²*Dental Hospital General Practice Residency;* ³*Department of Dental*)
ID:433

Materials School of dentistry Nihon University, 1-8-13 Kanda-Surugadai Chiyoda-ku Tokyo Japan)

Improvement of water splitting reaction on heavily La-doped TiO₂ films by pulse laser deposition

4.3. New Materials and Applications

- 4.3/01. **ID:107** A. Sikora, A. S. Loir, F. Garrelie, C. Donnet, **R. Stoian** (*Laboratoire Hubert Curien, UMR 5516 CNRS, Université Jean Monnet, 18 Rue Pr. B. Lauras, 42000 SAINT ETIENNE, France*), O. Bourgeois, J-L Garden (*Institut Néel, UPR 2940 CNRS, 25 Avenue des Martyrs, 38042 GRENOBLE CEDEX 9, France*), J-N Rouzaud (*Laboratoire de Physique du Solide, UPR5 CNRS-ESPCI, 10 rue Vauquelin 75231 Paris Cedex 05, France*), J. C. Sánchez López, T.C. Rojas (*Instituto de Ciencia de Materiales de Sevilla, Avda. Américo Vespucio, 49 41092 SEVILLA, Spain*)
Study of boron doped diamond like carbon films elaborated by femtosecond and nanosecond pulsed laser ablation
- 4.3/02. **ID:130** M. Oujja, M. López, R. de Nalda, **M. Castillejo** (*Instituto de Química Física Rocasolano, CSIC, Serrano 119, 28006 Madrid, Spain*), R. Torres, J.P. Marangos (*Blackett Laboratory, Imperial College London, SW7 2BZ London, UK*)
CaF₂ ablation plumes as a source of CaF molecules for harmonic generation
- 4.3/03. **ID:184** **J. Gao**, L. Wang (Department of Physics, The University of Hong Kong, Pokfulam Road, Hong Kong, China)
Electronic structures and field effects in tetravalent cation doped epitaxial thin films of La_{0.9}Hf_{0.1}MnO₃
- 4.3/04. **ID:259** **T. Yoshida**, T. Tachibana, T. Maemoto, S. Sasa, M. Inoue (*Nanomaterials Microdevices Research Center, Osaka Institute of Technology, 5-16-1, Omiya, Asahiku, Osaka 535-8585, Japan*)
Pulsed laser deposition of ZnO grown on glass substrates for realizing the high performance thin-film transistors
- 4.3/05. **ID:300** **R. J. Choudhary**¹, N. E. Rajeevan², Ravi Kumar³, D. K. Shukla⁴, P. P. Pradyumn², A. K. Singh⁵, S. Patnaik⁵, S. K. Arora⁶, D. M. Phase¹, I. V. Shvets⁶ (*¹UGC DAE Consortium for Scientific Research, Indore-452 057, India; ²Department of Physics, University of Calicut, Kerala-673 635; ³India Materials Science Division, IUAC, New Delhi-110 067, India; ⁴Department of Physics, Aligarh Muslim University, Aligarh 202 002, India; ⁵School of Physical Sciences, JNU, New Delhi 110 067, India; ⁶CRANN, School of Physics, Trinity College, Dublin-2, Ireland*)
Magnetoelectric studies of pulsed laser deposited Bi-substituted Co₂MnO₄ thin films
- 4.3/06. **ID:408** **K. Rodrigo**, K. Mohan. Kant, M. Lundberg, N. Pryds, S. Linderroth (*Fuel Cells and Solid State Chemistry Division, Risø DTU, Technical University of Denmark, DK-4000 Roskilde, Denmark*), S. Heiroth, T. Lippert (*Paul Scherrer Institut, CH-5232 Villigen PSI, Switzerland*), J. Schou (*Department of Photonics Engineering, Risø Campus, Technical University of Denmark, DK- 4000 Roskilde, Denmark*)
Transport properties of nanocrystalline gadolinia doped ceria films grown by pulsed laser deposition
- 4.3/07. Takashi Nishiyama, **Takashi Kajiwara**, Sachi Morinaga, Kunihito Nagayama

- ID:419** (Department of Aeronautics and Astronautics, Faculty of Engineering, Kyushu-University 744 Motooka, Nishi-ku, Fukuoka, Japan)
Optical emission spectroscopy of thin film fabrication by pulsed laser ablation under high-gravity
- 4.3/08. **D. R. Milev**, P. A. Atanasov, A. Og. Dikovska, I. G. Dimitrov (“Gas Laser and Laser Technologies” Laboratory, Institute of Electronics, Bulgarian Academy of Sciences, 72 Tzarigradsko chaussee blvd., 1784 Sofia, Bulgaria), G. Socol, I. Mihailescu (“Laser Surface Plasma Interaction”, National Institute of Laser, Plasma and Radiation Physics, Buchacher-Magurele, Romania)
ID:424
Homo-epitaxial growth of Er³⁺, Yb³⁺:YVO₄ waveguides
- 4.3/09. **Sachi Morinaga**, Takashi Nishiyama, Kunihiro Nagayama (Department of Aeronautics and Astronautics, Faculty of Engineering, Kyushu-University 744 Motooka, Nishi-ku, Fukuoka, Japan)
ID:429
Fabrication of compositionally graded thin films by gravity-assisted pulsed laser ablation
- 4.3/10. Amina Bensalah, **Stephan Guy**, A. Pereira (Laboratoire de Physico-Chimie des Matériaux Luminescents, Université Lyon 1 69622 Villeurbanne Cedex FRANCE), Laure Guy (Laboratoire de Chimie, École Normale Supérieure de Lyon 69000 Lyon FRANCE)
ID:432
Pulsed Laser Deposition and Optical Characterization of Pure Chiral Organic Thin Films with High Isotropic Rotary Activity: A comparative study of bridged binaphthol derivative molecules
- 4.3/11. M. Dinescu, **N. Scarisoreanu**, R. Birjega (NILPRP, P.O. Box MG-16, RO-77125, Bucharest, Romania), F. Craciun (CNR-Istituto dei Sistemi Complessi, Area della Ricerca Roma-Tor Vergata, Via del Fosso del Cavaliere 100, I-00133, Rome, Italy), C. Galassi (CNR-ISTEC, Via Granarolo 64, I-48018, Faenza, Italy)
ID:438
Lead-free ferroelectric thin films by PLD and RF-plasma enhanced PLD
- 4.3/12. **A. P. Caricato**, M. Cesaria, A. Luches, M. Martino (Physics Department, University of Salento, Via Arnesano, 73100 Lecce, Italy), G. Maruccio, Chaitanya Lekshmi Indira, R. Rinaldi (Scuola Superiore ISUFI, University of Salento, National Nanotechnology Lab of CNR-INFN, Via per Arnesano km 5, I-73100 Lecce, Italy), D. Valerini (ENEA - Italian National Agency for New Technologies, Energy and the Environment, Research Centre of Brindisi, S.S. 7 Appia - km 706, 72100 Brindisi, Italy), M. Catalano (Institute for Microelectronics and Microsystems (IMM) CNR, Via Monteroni, 73100 Lecce, Italy)
ID:444
Electrical, magnetic and optical properties of ITO films and ITO/Cr-doped ITO multilayers
- 4.3/13. **Reijo Lappalainen**, Sami Myllymaa (Dept. of Physics, University of Kuopio, Yliopistoranta 1F, POBOX 1627, FI-70211 Kuopio, Finland), Vesa Myllymäki (Picodeon Ltd, Bulevardi 2 A, FI-00120 Helsinki, Finland)
ID:479
Thin film electrical sensors by ultra short pulsed laser deposition
- 4.3/14. **Jaanus Eskusson**, Enn Lust (Institute of Chemistry, University of Tartu, Jakobi 2, 51014, Tartu, Estonia), Raivo Jaanisoo (Institute of Physics, University of Tartu, Riia 142, 51014, Tartu, Estonia)
ID:511
Synthesis of diamond-like carbon films including Sm³⁺ dopant by pulsed laser deposition from liquid target
- 4.3/15. **D. M. Phase**, Ridhi Master, Shailja Tiwari, R. J. Choudhary (UGC-DAE Consortium for Scientific Research, Khandwa Road, University Campus, Indore-452001, M.P., India)
ID:525
Structural, electrical and magnetotransport properties of epitaxial Fe₃O₄/ZnO bilayer structure

- 4.3/16. **Takashi Nishiyama**, Sachi Morinaga, Kunihiro Nagayama (*Department of Aeronautics and Astronautics, Faculty of Engineering, Kyushu-University 744 Motooka, Nishi-ku, Fukuoka, Japan*)
ID:414
A new use of pulsed laser ablation for the fabrication of compositionally graded thin films
- 4.3/17. **P. S. Krishnaprasad**¹, N. S. Shitha¹, R. Reshmi¹, M. T. Sebastian², M. K. Jayaraj¹ (*¹Optoelectronic Devices Laboratory, Department of Physics, CUSAT, Kochi-22, India, ²Materials and minerals division, NIIST, Trivandrum-19, Kerala, India*)
ID:506
Structural, optical, and electrical characterization of BST thin films grown by PLD
- 4.3/18. **Yoshie Ishikawa**, Qi Feng (*Department of Advanced Materials Science, Faculty of Engineering, Kagawa University, 2217-20 Hayashi-Cho, Takamatsu, Kagawa 761-0396, Japan*), Naoto Koshizaki (*Nanotechnology Research Institute (NRI), National Institute of Advanced Industrial Science and Technology (AIST), AIST Tsukuba Central 5, 1-1-1 Higashi, Tsukuba, Ibaraki, 305-8565, Japan*)
ID:520
Boron carbide particle formation by laser irradiation in various organic solutions
- 4.3/19 **Li Xiaoping** (*Department of Mechanical Engineering National University of Singapore 9 Engineering Drive 1, Singapore 117576*)
ID:541
Femtosecond Laser-Induced Surfaces and Magnetic Property Modifications on Permalloy

5.3. Lithography and Printing

- 5.3/01. **C. H. Liu**^{1,2}, M. H. Hong¹, L. S. Tan¹, H. Flotow² (*¹Department of Electrical and Computer Engineering, 4 Engineering Drive 3, Singapore 117576; ²Experimental Therapeutics Center, ASTAR, 31 Biopolis Way Nanos Level 3, Singapore 138669*)
ID:80
Large-area microhole array fabrication in glass chips by laser means for clinical bio-diagnostics
- 5.3/02. **Liang Fang**, Qu Yue, Yao Liu, Hui Xin, Changtao Wang, Xiangang Luo (*State Key Laboratory of Optical Technologies for Microfabrication, Institute of Optics and Electronics, Chinese Academy of Sciences, P.O. box 350, Chengdu 610209, China*)
ID:394
Fabrication of 65 nm features nanoimprint stamp by laser interference lithography
- 5.3/03. **Qu Yue**, Liang Fang, Ling Liu, Cheng Huang, Chuankai Qiu, Xiangang Luo (*State key laboratory of optical technologies for microfabrication, Institute of Optics and Electronics, Chinese Academy of Sciences. P.O. box 350, Chengdu, 610209, China*)
ID:391
Nanoimprint lithography for the fabrication of low effective index metamaterial at optical range

Day 4, Wednesday, 25 November, 2009

11. Clusters, Nanoparticles and Nanotubes Formation

Session Chairs:

Jürgen Ihlemann (Laser-Laboratorium Göttingen, Germany), **Deborah Kane** (Macquarie University, Sydney, Australia)

- 8:30 - 9:00 **N. D. Browning**^{1,2}, G. H. Campbell¹, J. E. Evans¹, W. E. King¹, T. B. LaGrange¹, B. W. Reed¹ (*¹Condensed Matter and Materials Division, Physical and Life Sciences Directorate, Lawrence Livermore National Laboratory, Livermore, Ca 94550. USA,*)
ID:196

D. J. Masiel² (²Department of Chemical Engineering and Materials Science, University of California-Davis, One Shields Avenue, Davis, Ca 95616. USA), J. S. Kim^{1,3} (³current address: Department of Materials, University of Oxford, Parks Road, Oxford, OX1 3PH. UK), M. L. Taheri⁴ (⁴current address: Department of Materials Science & Engineering, LeBow Hall 441, Drexel University, Philadelphia, PA 19104. USA)

Dynamic transmission electron microscopy (DTEM) and the synthesis of Si nanowires

Invited Lecture

9:00 - 9:30

ID:111

F. Hubenthal, R. Morarescu, L. Haag, L. Englert, T. Baumert, F. Träger (*Institut für Physik and Center for Interdisciplinary Nanostructure Science and Technology – CINSaT, Universität Kassel, Heinrich-Plett-Str. 40, 34132 Kassel, Germany*)

Triangular gold nanoparticles: from structuring surfaces to tailoring dimensions

Invited Lecture

9:30 - 10:00

ID:218

S. Mazevet (*CEA DAM DIF F91297 Arpajon Cedex, France*)

Simulations of the non-equilibrium melting of aluminum and gold nanofold solid

Invited Lecture

10:00 - 10:15

ID:372

M. Meunier, E. Boulais, P. Desjeans-Gauthier (*Laser Processing Laboratory, École Polytechnique de Montréal, Department of Engineering Physics, Succursale Centre-Ville, PO Box 6079, Montréal, PQ, Canada, H3C 3A9*)

Gold nanorods enhanced femtosecond laser nanoprocessing

10:15 - 10:30

ID:443

Tetsuya Makimura, Shuichi Torii, Kouichi Murakami (*Institute of Applied Physics, University of Tsukuba 1-1-1 Ten'ndai, Tsukuba, Ibaraki 305-8573, Japan*), Hiroyuki Niino (*Photonics Research Institute, National Institute of Advanced Industrial Science and Technology Central 5, 1-1-1 Higashi, Tsukuba, Ibaraki 305-8565, Japan*)

Silica nano-ablation process induced by laser plasma soft x-ray irradiation

10:30 - 11:00 Coffee Break

12. Laser-Material Interactions

Session Chairs:

Baerbel Rethfeld (*Technical University of Kaiserslautern, Germany*),

Nail Inogamov (*Landau Institute for Theoretical Physics, Russia*)

11:00 - 11:30

ID:374

A. V. Rode¹, D. Boschetto², T. Garl², A. Rousse¹, E. G. Gamaly¹ (¹*Laser Physics Centre, RSPHysE, Australian National University, Canberra, ACT 0200, Australia*, ²*Laboratoire d'Optique Appliquée, ENSTA/Ecole Polytechnique, Palaiseau, France*)

Coherent phonons and nonequilibrium transient state of fs-laser excited bismuth

Invited Lecture

11:30 - 12:00

ID:426

Miles Padgett (*Department of Physics and Astronomy, University of Glasgow, Glasgow, G12 9ES. UK*)

Holographic optical tweezers: a light touch

Invited Lecture

12:00 - 12:15

ID:323

Eugene G. Gamaly (*Laser Physics Centre, Research School of Physical Sciences and Engineering Australian National University, Canberra, ACT 0200 Australia*)

Ultra-fast disordering by femtosecond-lasers: superheating prior the entropy catastrophe

12:15 - 12:30

Christos Boutopoulos, Christos Pandis, Polycarpos Pissis, **Ioanna Zergioti**

- ID:343** (Physics Department, National Technical University of Athens, Zografou Campus, Greece, 15780), Vasiliki Tsouti, Stavros Chatzandroulis (NCSR Demokritos, Institute of Microelectronics, Aghia Paraskevi 15310, Greece)
Direct laser printing of polymers for gas sensing applications
- 12:30 - 12:45
ID:128 J. M. Manceau, **P. A. Loukakos**, S. Tzortzakis (Foundation for Research and Technology – Hellas, Institute of Electronic Structure and Laser, N. Plastira 100, P. O. Box 1385, 71110 Heraklion, Greece)
Direct phonon excitation with intense ultrashort THz pulses
- 12:45 - 13.00
ID:139 **Bruno Berini**, Niels Keller, Elena Popova, Michel Tessier, Yves Dumont, Arnaud Fouchet (GEMaC, CNRS-UVSQ, 45 avenue des Etats Unis, 78035 Versailles, France)
IR thermometry: a new tool for contactless in situ investigations of metal-insulator transition
- 13:00 - 13:15
ID:535 **Yasir Faheem Joya**, Zhu Liu (Corrosion and Protection Centre, The Mill, School of Materials, The University of Manchester, Sackville Street, Manchester, M60 1QD, United Kingdom)
On the Generation of Nanostructured Tungsten doped Titanium Oxide Thin Films by Pulsed Excimer Laser Irradiation

13:00 - 14:30 Lunch

14:30 - 22:30 Excursion & Banquet

Day 5, Thursday, 26 November, 2009

13. Laser Analysis

Session Chairs:

Michel Meunier (École Polytechnique de Montréal, Canada), **Andrei Rode** (Australian National University, Canberra, Australia)

- 8:30 - 9:00
ID:151 Ales Charvat, **Bernd Abel** (Lehrstuhl für Physikalische Chemie und Reaktionsdynamik, Wilhelm-Ostwald-Institut für Physikalische und Theoretische Chemie, Universität Leipzig Linne-Strasse 2, D-04103 Leipzig and MPI für biophysikalische Chemie, Am Fassberg 11, 37077 Göttingen, Germany)

How to make big molecules fly out of liquid water: applications, features and physics of laser assisted liquid phase dispersion mass spectrometry
Invited Lecture

9:00 - 9:30
ID:109

Liang Zhu, Thomas A. Schmitz, Gerardo Gamez, Renato Zenobi (*Department of Chemistry and Applied Biosciences, ETH Zürich, 8093 Zürich, Switzerland*)
Towards nanoscale molecular analysis and chemical imaging at atmospheric pressure by near-field laser ablation mass spectrometry
Invited Lecture

9:30 - 9:45
ID:150

Kenneth M. Beck, Alan G. Joly, Wayne P. Hess (*William R. Wiley Environmental Molecular Science Laboratory Pacific Northwest National Laboratory, P.O. Box 999, Richland, WA 99352, USA*)
Effect of Surface Charge on Laser-induced Neutral Atom Desorption

9:45 - 10:00
ID:102

Hough P., McLoughlin C., Kelly T. J., Hayden P., Mosnier J. P., Costello J. T. (*National Centre for Plasma Science and Technology and School of Physical Sciences, Dublin City University, Glasnevin, Dublin 9*), Harilal S. S. (*School of Nuclear Engineering, Purdue University, 400 Central Drive, West Lafayette, IN 40707, USA*)
Colliding laser produced plasmas as novel sources: optical diagnostics

10:00 - 10:15
ID:470

A. Faccinnetto, P. Desgroux (*Laboratoire de Physico-Chimie des Processus de Combustion et de l'Atmosphère (UMR 8522), Centre d'Etudes et de Recherches Lasers et Applications (FR CNRS2416), Université Lille 1 Sciences et Technologies, 59655 Villeneuve d'Ascq cedex, France*), M. Ziskind, **Cristian Focsa** (*Laboratoire de Physique des Lasers, Atomes et Molécules (UMR 8523), Centre d'Etudes et de Recherches Lasers et Applications (FR CNRS2416), Université Lille 1 Sciences et Technologies, 59655 Villeneuve d'Ascq cedex, France*)
Investigation of a flame sooting region by laser desorption / laser ionization / time-of-flight mass spectrometry

10:15 - 10:30
ID:341

Sergey Gorelik, Hongyan Song, Jonathan Hobley (*Institute of Material of Research and Engineering, Agency for Science Technology and Research (A*STAR), 3, Research Link, Singapore 117602*), Martin J. Lear (*Department of Chemistry, National University of Singapore, 3 Science Drive 3, Singapore 117543*)
A method to monitor changes in nanometer films using reflectometry in the vicinity of Brewster angle

10:30 - 11:00 Coffee Break

14. Laser Applications

Session Chairs:

Bernd Abel (Göttingen, Germany), **Stephane Mazevet** (CEA DAM, France)

11:00 - 11:30
ID:239

Lin Li, G. Chabrol (Laser Processing Research Centre, School of Mechanical, Aerospace and Civil Engineering, The University of Manchester, Manchester, M60 1QD, UK)

Generating hydrophobic surface characteristics on stainless steel by rapid laser micro-texturing

Invited Lecture

11:30 - 12:00
ID:149

A. Tünnermann, J. Limpert, S. Nolte (*Friedrich-Schiller-University Jena, Institute of Applied Physics, Max-Wien-Platz 1, 07743 Jena, Germany; Fraunhofer Institute for Applied Optics and Precision Engineering, Albert-Einstein-Strasse 7, 07745 Jena, Germany*)
Industrial perspectives of ultrafast fiber lasers

Invited Lecture

- 12:00 - 12:15
ID:307 **Stephen Riedel**, Markus Schmotz, Tobias Geldhauser, Fabian Kneier, Paul Leiderer, Johannes Boneberg (*Department of Physics, University of Constance, Universitätsstraße 10, LS Leiderer, 78457 Konstanz, Germany*)
Pulsed laser interference lithography
- 12:15 - 12:30
ID:208 **Mikio Takai** (*Center for Quantum Science and Technology under Extreme Conditions Osaka University, Toyonaka, Osaka 560-8531, Japan*)
UV laser surface modification of CNT cathodes for field emission display and backlight unit
- 12:30 - 12:45
ID:518 **Richard F. Haglund Jr.**, Stephen L. Johnson, Kenneth E. Schriver (*Department of Physics and Astronomy, Vanderbilt University, Nashville, TN 37235 U.S.A.*), Hee K. Park (*AppliFlex LLC, 1290 Kifer Road, Suite 306, Sunnyvale, CA 94086 U.S.A.*)
Deposition of organic and polymeric materials for display applications by resonant infrared PLD
- 12:45 - 13:00
ID:70 **Dirk Wortmann**, Johannes Finger (*Lehrstuhl für Lasertechnik, RWTH Aachen University, Steinbachstrasse 15, 52074 Aachen, Germany*)
Graphene production by fs-laser ablation of graphite
- 13:00 - 13:15
ID:136 Vladlen G. Shvedov^{1,2,3}, Yana V. Izdebskaya^{2,3}, Anton S. Desyatnikov², **Andrei V. Rode**¹, Wieslaw Z. Krolikowski¹, Yuri S. Kivshar² (¹*Laser Physics Center and ²Nonlinear Physics Centre, Research School of Physics and Engineering, Australian National University, Canberra ACT 0200, Australia;* ³*Department of Physics, Taurida National University, Simferopol 95007 Ukraine*)
Trapping and transport of nanoparticles in air with optical vortices

13:15 - 14:30 Lunch

15. Plasmonics and Metamaterials; Laser Surface Structuring

Session Chairs: **Boris N. Chichkov** (Laser Zentrum Hannover, Germany), **Wayne P. Hess** (Pacific Northwest National Laboratory, Richland, USA)

- 14:30 - 14:45
ID:238 Wei Wei, J. M. White (*Department of Chemistry and Biochemistry, Center for Materials Chemistry, The University of Texas at Austin, Austin, Texas 78712, USA*), Gang Xiong, Alan G. Joly, Kenneth M. Beck, **Wayne P. Hess** (*Environmental Molecular Sciences Laboratory & Pacific Northwest National Laboratory 902 Battelle Blvd, Richland, WA, 99352 USA*)
Photoemission microscopy study of nano-plasmonics
- 14:45 - 15:00
ID:255 **K. V. Sreekanth**, V. M. Murukeshan (*Micromachines Center, School of Mechanical and Aerospace Engineering, Nanyang Technological University, 50 Nanyang Avenue, Singapore 639798*)
Effect of metals on UV excited plasmonic lithography for sub-50nm periodic feature fabrication
- 15:00 - 15:15
ID:392 **Yao Liu**, Hui Xing, Liang Fang, Li Pan, Ling Liu, Chuankai Qiu, Changtao Wang, Xiangang Luo (*State Key Laboratory of Optical Technologies for Microfabrication, Institute of Optics and Electronics, Chinese Academy of Sciences, P.O. box 350, Chengdu 610209, China*)
Large area surface plasmon lithography with resolution beyond 100 nm
- 15:15 - 15:30
ID:271 **H. J. Fan** (*Division of Physics and Applied Physics, School of Physical & Mathematic Sciences, Nanyang Technological University. Singapore*), J. Banys, M. Ivanov (*Vilnius University, Sauletekio Str. 9, LT-10222 Vilnius, Lithuania*), R. Adomavicius, A. Krotkus, J. Macutkevicius (*Semiconductor Physics Institute, A. Gostauto str. 11, LT-01108 Vilnius, Lithuania*), J. F. Scott (*Department of Earth Sciences, University of Cambridge, CB2 3EQ Cambridge, UK*)
THz spectroscopy and emission from quasi-one dimensional nanostructures

- 15:30-15:45
ID:273 Evgeny Gurevich, **Roland Hergenröder** (*Material Analysis, ISAS-Institute for Analytical Sciences1, Bunsen-Kirchhoff Str.11, 44139 Dortmund, Germany*), Damiano Monticelli (*Dipartimento di Scienze Chimiche e Ambientali, Università degli Studi dell'Insubria, via Valleggio 11, 22100 Como, Italy*)
Modifications of organic and inorganic materials induced by interaction with ultrashort laser pulses
- 15:45 - 16:00
ID:448 **Li Pan**, Xudong Chen, Swee Ping Yeo (Department of Electrical and Computer Engineering, National University of Singapore, Singapore 117576)
Nondestructive evaluation of nanoscale structures: inverse scattering approach

16:00 - 16:30 Coffee Break

16. Lasers in Biology, LIBS and MALDI

Session Chairs: **Sylvain Lazare** (Université Bordeaux 1, Talence, France), **Akos Vertes** (George Washington University, Washington, DC, USA)

- 16:30 - 16:45
ID:297 Bindesh Shrestha, Peter Nemes, **Akos Vertes** (*Department of Chemistry, George Washington University, 725 21st Street, NW, Washington, DC, 20052, USA*)
Laser ablation and analysis of a single cell
- 16:45 - 17:00
ID:516 **M. Barberoglou**, A. Ranella, E. Spanakis, V. Zorba, S. H. Anastasiadis, C. Fotakis, E. Stratakis (*Institute of Electronic Structure and Laser, Foundation for Research & Technology Hellas, (IESL-FORTH), P.O. Box 1527, Heraklion 711 10, Greece; University of Crete, Heraklion 714 09, Greece*)
Tuning cell adhesion via controlling the roughness and wettability of 3D micro/nano silicon structures
- 17:00 - 17:15
ID:362 **A. Palla-Papavlu**, V. Dinca, A. Matei, M. Dinescu (*National Institute for Lasers, Plasma and Radiation Physics, P.O. Box MG-36, Magurele RO-077125, Bucharest, Romania*), I. Paraico, E. Kovacs (*Department of Biophysics and Cell Biotechnology, "Carol Davila" University of Medicine and Pharmacy, P.O. Box 35-43, Bucharest, Romania*)
Preliminary studies on laser induced forward transfer of liposomes as drug delivery systems
- 17:15 - 17:30
ID:434 **Andrei V. Kabashin**, Marc Sentis, Philippe Delaporte, David Grojo, Thierry Sarnet, Nicolas Sanner, Olivier Uteza (*Lasers, Plasmas et Procédés Photoniques LP3, UMR 6182 CNRS – Université de la Méditerranée, Campus de Luminy- case 917, 13288 Marseille cedex 9 France*)
Laser-assisted nanofabrication for biological sensing, imaging and therapeutics applications
- 17:30 – 17:45
ID:276 **T. Vaculovic**, Z. Zverina, V. Otruba, V. Kanicky (*Department of Chemistry, Faculty of Science, Masaryk University, 611 37, Brno, Czech Republic*)
Laser induced breakdown spectroscopy in analysis of molten metals
- 17:45 - 18:00
ID:467 **M. Kandyla**, G. Tsekenis, C. Boutopoulos, S. Chatzandroulis, P. Dimitrakis, I. Zergioti (*Physics Department, National Technical University of Athens, 9, Iroon Polytechniou, 15780 Athens, Greece*)
Fabrication of biosensors using the laser induced forward transfer process
- 18:00 - 22.30** **17. Poster session 3 (Topics 3.1, 4.1, 5.1, 5.2, 6.1, 6.2, 6.3, 6.4, 7.1)**
Session Chairs:
Peter R. Herman (University of Toronto, Canada), **Hiroyuki Niino** (National Institute of Advanced Industrial Science and Technology, Tsukuba, Japan), **M. Dinescu** (National Institute for Lasers, Plasma and Radiation Physics, Bucharest,

Romania), **Cristian Focsa** (Université Lille 1 Sciences et Technologies, France),
Ioanna Zergioti (National Technical University of Athens, 15780 Athens, Greece)

3.1. LIBS and MALDI

- 3.1/01. **Xi Jiang**, J.T. Costello, P. Hayden, E.T. Kennedy (*School of Physical Science and National Centre for Plasma Science and Technology (NCPST) Dublin City University, Glasnevin, Dublin 9, Ireland*)
ID:108
VUV laser-induced plasma spectroscopy of carbon in steel: defocusing and dual-pulse LIPS studies
- 3.1/02. **J. Mildner**, L. Englert, A. Horn, T. Baumert (*Universität Kassel, Institut fuer Physik und CINSaT, Heinrich-Plett-Str. 40, D-34132 Kassel, Germany*), W. Wessel, A. Brueckner-Foit (*Universität Kassel, Institut fuer Werkstofftechnik – Qualitaet und Zuverlaessigkeit, Moenchebergstr. 3, D-34125 Kassel, Germany*)
ID:215
Development of a 3D-mapping technique for microcrack investigation in alloys by femtosecond LIBS
- 3.1/03. **Masaki Oba**, Yoichiro Maruyama, Katsuaki Akaoka, Masabumi Miyabe, Ikuo Wakaida, (*Research Group for Laser Probing Nuclear Science and Engineering Directorate Japan Atomic Energy Agency, Tokai-mura, Ibaraki-ken, 319-1195, Japan*)
ID:256
Double pulse LIBS of gadolinium oxide ablated by femto- and nanosecond laser pulses
- 3.1/04. **T. Vaculovic**, T. Warchilova, V. Otruba, V. Kanicky (*Department of Chemistry, Faculty of Science, Masaryk University, 611 37, Brno, Czech Republic*)
ID:292
Laser ablation inductively coupled plasma mass spectrometry - tool for elemental mapping
- 3.1/05. **Ali Khumaeni**, Hideaki Niki (*Program of Nuclear Power and Energy Safety Engineering, Graduate School of Engineering, University of Fukui, Fukui 910-8507, Japan*), Yoji Deguchi (*Department of Community Nursing, Faculty of Medical Sciences, University of Fukui, Japan*), Yong Inn Lee (*Department of Physics, Research Institute of Physics and Chemistry, Chonbuk National University, Chonju 561-756, Republic of Korea*), Kazuyoshi Kurihara, Kiichiro Kagawa (*Department of Physics, Faculty of Education and Regional Studies, University of Fukui, Fukui 910-8507, Japan*)
ID:316
Spectrochemical analysis of powder samples using tea CO₂ laser-induced metal-assisted he gas plasma
- 3.1/06. Cristian Ursu, Silviu Gurlui (*Faculty of Physics, "Al.I.Cuza" University, Blvd. Carol I no.11, 700506, Iasi, Romania*), Gloria Oana Pompilian, Cristian Lungu (*National Institute for Lasers, Plasma and Radiation, Str. Atomistilor, 409, 077125, Magurele Bucharest*), Maricel Agop, Petru-Edward Nica (*Department of Physics, Technical "Gh. Asachi" University, Blvd. Mangeron no.64, Iasi - 700029, Romania*), **Cristian Focsa** (*Laboratoire de Physique des Lasers, Atomes et Molécules (UMR 8523), Centre d'Etudes et de Recherches Lasers et Applications (FR CNRS2416), Université Lille 1 Sciences et Technologies, 59655 Villeneuve d'Ascq cedex, France*)
ID:472
Ceramics under high fluence irradiation: plasma plume dynamics through space- and time-resolved optical emission spectroscopy
- 3.1/07. **Jobin K. Antony**, Gurneesh Singh Jatana, Nilesh J. Vasa (*Indian Institute of Technology Madras, Chennai, 600036, India*), V. L. N. Sridhar Raja, A. S. Laxmiprasad (*LEOS, Indian Space Research Organization, Bangalore, 560058, India*)
ID:522

Modelling of laser induced breakdown spectroscopy (LIBS) for very low pressure conditions

3.1/08. **Bennett N. Walker**, Jessica A. Stolee, Akos Vertes (*Department of Chemistry, George Washington University, 725 21st Street, NW, Washington, DC, 20052, USA*), Deanna L. Pickel, Scott T. Retterer (*Center for Nanophase Materials Sciences, Oak Ridge National Laboratory, Oak Ridge, TN 37831, USA*)
Nanopost arrays as photonic ion sources for soft laser desorption ionization

3.1/09 **Zener Sukra Lie**, Ali Khumaeni, Hideaki Niki, Kenichi Fukumoto (*Program of Nuclear Power and Energy Safety Engineering, Graduate School of Engineering, University of Fukui, Fukui 910-8507, Japan*), Kiichiro Kagawa (*Department of Physics, Faculty of Education and Regional Studies, University of Fukui, Fukui 910-8507, Japan*)
Hydrogen analysis in metal samples by selective detection method utilizing TEA CO₂ laser-induced He gas plasma

4.1. Pulsed Laser Deposition: Modeling and Simulation

4.1/01. H. M. Urbassek, **S. N. Sun** (*Fachbereich Physik, TU-Kaiserslautern, Erwin-Schrödinger-Straße, 67663 Kaiserslautern, Germany*)
Molecular-dynamic study of picosecond-laser induced desolvation of polymers

4.1/02. M. Guillermin, **J. P. Colombier**, F. Garrelie, R. Stoian, E. Audouard (*Université de Lyon, F-69003, Lyon, France, Université de Saint-Etienne, Laboratoire Hubert Curien (UMR 5516 CNRS), 42000 Saint Etienne, France*)
Control of emission lines in ultrashort laser-induced aluminum plasmas using temporal pulse engineering

4.1/03. **E. H. Amara**¹, R. Fabbro² (¹*Centre de Développement des Technologies Avancées (CDTA), Po. Box 17 Baba-Hassen 16303, Algiers, Algeria;* ²*LALP(CNRS)-GIP GERAILP, 16 bis Avenue Prieur de la Côte d'Or, F-94114 Arcueil Cedex, France*)
Modeling of humps formation during deep penetration laser welding

4.1/04. K. Kheloufi, **E. H. Amara** (*Centre de Développement des Technologies Avancées (CDTA) CDTA, Po. Box 17 Baba-Hassen 1630, Algiers, Algeria*)
3D multiphasic study of laser cladding by coaxial powder injection

4.1/05. **Marcelo Ciappina** (*Institute of High Performance Computing, Agency For Science Technology And Research (A*STAR) Fusionopolis, 1 Fusionopolis Way, #16-16 Connexis, Singapore, 138632*), Jonathan Hoble, Sergey Gorelik (*Institute of Materials Research & Engineering, Agency For Science Technology And Research (A*STAR) 3 Research Link, Singapore, 117602*), Tomoya Oori, Shinji Kajimoto, Hiroshi Fukumura (*Department of Chemistry, Graduate School of Science, Tohoku University, Sendai, Japan, 980-8578*)
Molecular dynamics simulation of laser-induced phase change in a molecular monolayer

4.1/06. **S. Lafane**¹, T. Kerdja¹, S. Abdelli-Messaci¹, S. Malek¹, M. Maaza² (¹*Centre de développement des technologies avancées Cité 20 août 1956, B. P. 17, Baba Hassen, Algérie;* ²*IThemba LABS National Research Foundation PO Box 722, Somerset West 7129, Western Cape Province, South Africa*)

Laser-induced plasma study by ion probe and fast imaging for Sm_{1-x}Nd_xNiO₃ thin films deposition

5.1. Industry

- 5.1/01. **Wen-Hong Wu**¹, Kuo-Cheng Huang¹, Shih-Chu Huang² (¹System Control and Integration Division, Instrument Technology Research Center, National Applied Research Laboratories, 20 R&D Road VI, Hsinchu Science Park, Hsinchu City, Taiwan; ²Second Division of Chung-Shan Institute of Science and Technology)
ID:186
Cylinder Mirror Design of YAG Laser Applied for High Speed Glass Substrate Straight Cutting
- 5.1/02. **X. C. Wang**, H. Y. Zheng, P. L. Chu, J. L. Tan, K. M. Teh, T. Liu, (Singapore Institute of Manufacturing Technology (SIMTech), 71 Nanyang Drive, Singapore 638075, Singapore), Bryden C. Y. Ang, G. H. Tay (DSO National Laboratories, 20, Science Park Drive, Singapore 118230, Singapore)
ID:204
Femtosecond laser drilling of alumina ceramic substrates
- 5.1/03. **Q. Xie**, C. W. An, B. X. Xu (Data Storage Institute, 5 Engineering Drive 1, Singapore 117608)
ID:483
Dynamic magnetic properties measurement by magneto-optical Kerr effect with laser heating
- 5.1/04. **Jyh-Rou Sze** (Instrument Technology Research Center, National Applied Research Laboratories, 20, R&D Rd. VI, Hsinchu Science Park, Hsinchu, Taiwan, R.O.C.)
ID:524
Performance analyses of pseudo-nondiffracting beams at oblique incidence
- 5.1/05. An-Chi Wei, Jyh-Rou Sze, **Jyh-Long Chern** (Foxsemicon integration technology Inc., No. 16, Ke-Jung Rd., 350, Miao-Li Hsien, Taiwan, R.O.C.)
ID:528
Designs for optimizing depth of focus and spot size for UV laser

5.2. Biology

- 5.2/01. **Miroslav Jelínek**^{1,2}, Tomáš Kocourek^{1,2}, Karel Jurek¹, Jan Mikšovský^{1,2} (Institute of Physics ASCR, Na Slovance 2, 18221 Prague 8, Czech Republic) CTU, Faculty of Biomedical Engineering, Sítná 3105, Kladno, Czech Republic), Marie Weiserová (Institute of Microbiology ASCR, Vídeňská cesta 1083, Prague 4, Czech Republic) Jakub Strnad (Lasak, Ltd., Papírenská 25, 160 00 Prague 6, Czech Republic), Thomas Luxbacher (Anton Paar GmbH, Graz, Rakousko)
ID:72
Antibacterial properties of Ag-doped hydroxyapatite layers prepared by PLD method
- 5.2/02. **M. Jelínek**^{1,2}, T. Kocourek^{1,2}, J. Mikšovský^{1,2}, J. Zemek¹, J. Remsa¹ (¹Institute of Physics ASCR, Na Slovance 2, 182 21 Prague 8, Czech Republic; ²Czech Technical University, Faculty of Biomedical Engineering, nám. Sítná 3105, 27201 Kladno, Czech Republic), K. Smetana^{3,4}, B. Dvořánková^{3,4} (³Charles University, 1st Faculty of Medicine, Institute of Anatomy, U nemocnice 3, 128 00 Prague 2, Czech Republic; ⁴Charles University, 2nd Faculty of Medicine, Center of Cell Therapy and Tissue Repair, V Úvalu 84, 15006 Prague 5, Czech republic), Thomas Luxbacher (Anton Paar GmbH, Graz, Austria)
ID:82
Diamond/graphite content and biocompatibility of DLC films fabricated by PLD
- 5.2/03. **Zhongke Wang**, Huanming Xia, Hongyu Zheng (Singapore Institute of Manufacturing Technology, 71 Nanyang Drive, Singapore 638075), Wei Zhou (School of Mechanical and Aerospace Engineering, Nanyang Technological University, 50 Nanyang Avenue, Singapore 639798)
ID:154

- Effect of post-treatment on surface wettability of laser fabricated microfluidic structures**
- 5.2/04.
ID:236 **Kenneth M. Beck** (*William R. Wiley Environmental Molecular Science Laboratory, Pacific Northwest National Laboratory, P.O. Box 999, Richland, WA 99352, USA*), Tar-Chee Aw^a (DDS, MS) and Fumio S. Ohuchi^b (*University of Washington, ^aDept. of Restorative Dentistry, ^bDept. of Chemistry, ^bDept. of Material Science and Engineering, Seattle, WA 98195 USA*), Shunji Takekawa and Kenji Kitamura (*National Institute for Materials Science, 1-1 Namiki, Tsukuba, 305-0005 Japan*), Nan Ei Yu (*Advanced Photonics Research Inst. 1 Oryong-dong, Bukgu Gwangju 500-712, South Korea*)
Tunable IR conversion device for dental applications
- 5.2/05.
ID:332 **A. Bombalska**¹, M. Jedyński¹, S. Burdyńska¹, A. Prokopniuk¹, W. Mróz¹, E. Menaszek², A. Ścisłowska-Czarnecka³, A. Niedzielska⁴ (*¹Institute of Optoelectronics, Military Academy of Technology, Gen. S. Kaliskiego 2 str., 00-908, Warsaw, Poland; ²Department of Cytobiology and Histochemistry, Jagiellonian University, Medyczna 9 str., 30-688, Krakow, Poland; ³Department of Anatomy, Academy of Physical Education, Al. Jana Pawła II 78 str., 31-571, Krakow, Poland; ⁴Faculty of Mechanical Engineering, Technical University of Lodz, Zeromskiego 116 str. 90-924 Lodz, Poland*)
Comparative study of hydroxyapatite and octacalcium phosphate coating deposited on metallic implants by PLD method
- 5.2/06.
ID:356 **Dan C. Dumitras**, D.C. Dutu, M. Petrus (*Department of Lasers, National Institute for Laser, Plasma and Radiation Physics, 409 Atomistilor St., PO Box MG-36, 077125 Bucharest, Romania*), C. Sarafoleanu, C. Manea (*ENT Clinique, St. Maria Hospital, Bucharest, Romania*)
Laser ablation processes in ENT surgery
- 5.2/07
ID:325 **Yasuyo Maezawa**¹, Yoichiroh Hosokawa¹, Kazunori Okano^{1,2}, Mie Matsubara¹, Hiroshi Masuhara^{1,3} (*¹Graduate School of Materials Science, Nara Institute of Science and Technology, Takayama 8916-5, Ikoma 630-0192, Japan, ²Tohoku Fukushi University., ³National Chiao Tung University*)
In situ cell detachment from a substrate by femtosecond laser-induced stress wave
- 5.2/08.
ID:385 **Yung-En Kuo**¹, Cheng-Chi Wu¹, Yoichiroh Hosokawa², Yasuyo Maezawa², Kazunori Okano², Hiroshi Masuhara², Fu-Jen Kao¹ (*¹Institute of Biophotonics, National Yang-Ming University, Taipei 11221, Taiwan; ²Graduate School of Materials Science, Nara Institute of Science and Technology, 8916-5 Takayama, Ikoma, Nara 630-0192, Japan*)
Femtosecond Laser-induced Stress on Live Myocyte Cells
- 5.2/09.
ID:440 **James Joseph**, Krishnan Sathiyamoorthy, V.M Murukeshan, Lye Sun Woh (*School of Mechanical and Aerospace Engineering, Nanyang Technological University, 50 Nanyang Avenue, Singapore 639798*)
Laser induced photoacoustic spectroscopy investigation of colon phantom tissue
- 5.2/10.
ID:532 A. Lorusso¹, G. Buccolieri², G Palamà², M. Di Giulio², M.V. Siciliano², F. Paladini¹, A. Rainò³, L. Velardi³, **V. Nassisi**¹ (*¹Department of Physics, University of Salento, Laboratorio di Elettronica Applicata e Strumentazione, LEAS I.N.F.N. sect. of Lecce, C.P. 193, 73100 Lecce, Italy; ²Department of Material Science, University of Salento, INFN, Via per Arnesano, 73100 Lecce, Italy; ³Department of Physics, University of Bari, Via Amendola, 70126 Bari, Italy*)
Processing of biomaterials by IR and UV Laser Irradiation
- 5.2/11 **Kaoru Suzuki** (*Department of Electrical Engineering, College of Science and*

- ID:209** *Technology, Nihon University, 1-8-14, Kanda-Surugadai, Chiyoda-ku, Tokyo, 101-8308 Japan)*
Damage limitation marking of chitosan by free electron laser induced forward transfer method
- 5.2/12. **Chie Hosokawa**, Mariko Suzuki, Takahisa Taguchi (*Research Institute for Cell Engineering, National Institute of Advanced Industrial Science and Technology (AIST), 1-8-31 Midorigaoka, Ikeda, Osaka 563-8577, Japan*), Ai Kiyohara, Suguru N. Kudoh (*Department of Human System Interaction, Kwansai Gakuin University, 2-1 Gakuen, Sanda, Hyogo 669-1337, Japan*), Yoichiroh Hosokawa, Kazunori Okano, Hiroshi Masuhara (*Graduate School of Materials Science, Nara Institute of Science and Technology (NAIST), 8916-5 Takayama, Ikoma, Nara 630-0912, Japan*)
ID:543 **Micro-channel fabrication by femtosecond laser to arrange neuronal cells on multi-electrode arrays**
- 5.2/13 Wen-Chi Lin¹, Chang-Long Chen¹, **Hai-Pang Chiang**^{1,2,3}, Din Ping Tsai^{3,4}
ID:539 (¹Institute of Optoelectronic Sciences, National Taiwan Ocean University, Keelung, Taiwan; ²Institute of Physics, Academia Sinica, Taipei, Taiwan; ³Instrument Technology Research Center, National Applied Research Laboratories, Hsinchu, Taiwan; ⁴Department of Physics, National Taiwan University, Taipei, Taiwan, Taiwan)
Controlling SERS intensity by tuning the size and height of nanoparticle in silver nanoparticle array
- 5.2/14 **T. H. Han**, H. H. Lee, A. B. Gojani, J. J. Yoh (*School of Mechanical and Aerospace Engineering, Seoul National University*)
ID:536 **Performance analysis of a new Biolistic gun using high power laser irradiation**
- 6.1. Clusters, Nanoparticles and Nanotubes Formation**
- 6.1/01. **Geetika Bajaj**, R.K. Soni (*Physics Department, Indian Institute of Technology Delhi, New Delhi, India*)
ID:86 **Gold/TiN oxide nanocomposite by nano-soldering**
- 6.1/02. **Fumio Kokai**, Iori Nozaaki, Takashi Okada, Akira Koshio (*Division of Chemistry for Materials, Mie University, 1577 Kurimamachiya, Tsu, Japan*)
ID:96 **Efficient growth of multi-wall carbon nanotubes by room temperature laser vaporization**
- 6.1/03. **Fumio Kokai**, Kunihiro Uchiyama, Tomoyuki Shimazu, Adachi Kazuma, Akira Koshio (*Division of Chemistry for Materials, Mie University, 1577 Kurimamachiya, Tsu, Japan*)
ID:97 **Fabrication of completely filled carbon nanotubes with copper or silicon carbide nanowires by laser vaporization**
- 6.1/04. **M. Tang**, M. H. Hong (Department of Electrical & Computer Engineering, National University of Singapore, Singapore 117576), Y. S. Choo (Department of Civil Engineering, National University of Singapore, Singapore 117576)
ID:98 **Optically transparent super-hydrophobic surface fabrication by laser micro-patterning to control carbon nanotubes growth**
- 6.1/05. **Tatiana E. Itina** (*Laboratoire Hubert Curien (UMR CNRS 5516/Université Jean Monnet), 18 rue de Professeur Benoit Lauras, 42000, Saint-Etienne, France*), Karine Gouriet (*Ecole Nationale Supérieure des Mines, Saint-Etienne, France*)
ID:103 **Nanoparticle synthesis by short-pulse laser ablation: formation mechanisms and size distribution**
- 6.1/06. **Wee-Ong Siew**, Wee-Kiat Lee, Hin-Yong Wong, Thian-Khok Yong, Seong-Shan Yap, Teck-Yong Tou (Faculty of Engineering, Multimedia University, Cyberjaya, Selangor, Malaysia)
ID:113

- Investigation of Droplet Formation in Pulsed Nd:YAG Laser Ablation of Metals and Silicon**
- 6.1/07. **B. Q. Cao**¹, T. Matsumoto¹, K. Okazaki¹, M. Higashihata¹, K. Sakai², T. Ikari², T. Okada¹ (¹*Department of Electrical Engineering, Kyushu University, 744 Motoooka, Nishi-ku, Fukuoka 819-0395, Japan;* ²*Miyazaki University Kibana 1-1-1, Miyazaki, Japan*)
ID:135
- Synthesis and Characterization of Phosphorus-Doped ZnO Nanowires and Nanowalls by Nanoparticle-Assisted Pulsed Laser Deposition**
- 6.1/08. G. X. Chen (*Center of Innovation, Ngee Ann Polytechnic, 535 Clementi Road, Singapore 599489*), **M. H. Hong** (*Department of Electrical & Computer Engineering, National University of Singapore, Singapore 117576; Data Storage Institute, DSI Building, 5 Engineering Drive 1, Singapore 117608*)
ID:147
- Time-resolved analysis of nonlinear optical limiting for laser synthesized carbon nanoparticles**
- 6.1/09. T. Nakano, **N. Takada**, W. Soliman (Department of Electrical Engineering and Computer Science, Nagoya University, Furo-cho, Chikusa-ku, Nagoya 464-8603, Japan), K. Sasaki (Plasma Nanotechnology Research Center, Nagoya University, Furo-cho, Chikusa-ku, Nagoya 464-8603, Japan)
ID:155
- Observations of laser-ablation phenomena in pressurized water, heated water, and supercritical water**
- 6.1/10. S. Petersen, **S. Barcikowski** (*Laser Zentrum Hannover e.V., Hollerithallee 8, 30419 Hannover, Germany*)
ID:168
- Bioconjugation of nanoparticles during femtosecond laser ablation in bioactive media**
- 6.1/11. Sangita and **R. K. Soni** (*Laser Spectroscopy Laboratory, Physics Department, Indian Institute of Technology Delhi, New Delhi 110016, India*)
ID:174
- Colloidal titanium oxide nanoparticles by laser ablation**
- 6.1/12. **Philipp Wagener**, Stephan Barcikowski (*Laser Zentrum Hannover e. V., Hollerithallee 8, 30419 Hannover, Germany*)
ID:175
- Laser fragmentation of organic compounds into nanoparticles in a free liquid jet**
- 6.1/13. **Alexander V. Bulgakov**, Anton B. Evtushenko, Yuri G. Shukhov (*Institute of Thermophysics SB RAS, Lavrentyev Ave. 1, 630090 Novosibirsk, Russia*), Igor Ozerov, Wladimir Marine (*Université de la Méditerranée, CRMC-N, UPR CNRS 7251, 13288 Marseille, France*)
ID:228
- Cluster generation under pulsed laser ablation of compound semiconductors**
- 6.1/14. **Ken-ichi Yuyama**¹, Teruki Sugiyama^{1,3}, Tsuyoshi Asahi², Sen-ichi Ryo³, Isamu Oh³, Hiroshi Masuhara^{1,4} (¹*Graduate School of Materials Science, Nara Institute of Science and Technology, Ikoma 630-0192, Japan;* ²*Department of Applied Physics, Osaka University, Suita 565-0871, Japan;* ³*ABsize Inc., 903 Casabella Kokusai Plaza, 1-1-18, Isobe-Douri, Kobe 651-0084, Japan;* ⁴*Department of Applied Chemistry and Institute of Molecular Sciences, National Chiao Tung University, Hsinchu 30010, Taiwan*)
ID:230
- Fabrication of organic nanocrystals by near-infrared laser ablation**
- 6.1/15. **E. G. Gamaly**¹, N. R. Madsen¹, D. Golberg², A. V. Rode¹ (¹*Laser Physics Centre, Research School of Physics and Engineering, The Australian National University, Canberra, Australian Capital Territory 0200, Australia;* ²*World Premier International Center for Materials Nanoarchitectonics (MANA), National Institute for Materials Science, Tsukuba, Ibaraki 305-0044, Japan*)
ID:268
- Nanocluster formation by a single ultrashort laser pulse: Expansion-limited aggregation**

- 6.1/16. **ID:293** M. Oujja, M. Sanz, **M. Castillejo** (*Instituto de Química Física Rocasolano, CSIC, Serrano 119, 28006 Madrid, Spain*), G. Gómez, R. Moreno, J.C. Fariñas (*Instituto de Cerámica y Vidrio, CSIC, Kelsen 5, 28049 Madrid, Spain*)
Preparation of Al₂O₃ nanoparticles by laser ablation in water
- 6.1/17. **ID:294** **Ken-ichi Saitow**^{1,2}, Tomoharu Yamamura² (¹*N-BARD, Hiroshima University, 1-3-1 Higashi-Hiroshima 739-0046, Japan*; ²*Department of chemistry, Hiroshima University, 1-3-1 Higashi-hiroshima 739-0046, Japan*)
Rapid cooling gives luminescent Si nanocrystals in near-UV to visible region
- 6.1/18. **ID:304** **Benjamin S. Truscott**, Rebecca S. Sage, Gareth M. Fuge, Michael N. R. Ashfold (School of Chemistry, University of Bristol, Cantock's Close, BS8 1TS, Bristol, UK)
Mass and kinetic energy spectra of ZnO PLD plumes
- 6.1/19. **ID:348** **Shailja Tiwari**, R. J. Choudhary, D. M. Phase (*UGC-DAE Consortium for Scientific research, Khandwa Road, University Campus, Indore-452 001, India*)
Growth and characterization of Fe₃O₄ nano-structures on GaAs
- 6.1/20. **ID:359** N. Santo (*CIMA, Università degli Studi, Milano, Italy*), P.M. Ossi (*Dip. Chimica, Materiali, Ingegneria Chimica & Centre for NanoEngineered Materials and Surfaces – NEMAS, Politecnico di Milano, Italy*), **M. Filipescu**, M. Dinescu (*National Institute for Laser, Plasma and Radiation Physics, P.O. Box MG 16, RO- 77125 Magurele, Bucharest, Romania*)
Nanoclusters cluster-assembled WO_x films prepared by radio-frequency assisted laser ablation
- 6.1/21. **ID:373** J-P. Sylvestre¹, S. Kenth², K. Lüling^{2,3}, J-C. Leroux^{2,3}, **M. Meunier**¹ (¹*Canada Research Chair in Laser Micro/nano-engineering of materials Department of Engineering Physics, Ecole Polytechnique de Montréal, P.O. Box 6079, H3C 3A7, Downtown station, Québec*; ²*Canada Research Chair in Drug Delivery, Faculty of Pharmacy, Université de Montréal, P.O. Box 6128, Downtown Station, H3C 3J7 Montreal, Quebec, Canada*; ³*Institute of Pharmaceutical Sciences, ETHZ, 8093 Zürich, Switzerland*)
Laser processing of dispersed drug nanocrystals in water
- 6.1/22. **ID:375** **I. Umezu**, Y. Nakayama, A. Sugimura (*Department of Physics, Konan University, Kobe 658-8501, Japan*; *Quantum Nano-technology Laboratory, Konan University, Kobe 658-8501, Japan*)
Formation of core-shell structured silicon nanoparticles by pulsed laser ablation
- 6.1/23. **ID:422** **Nikolai Tarasenko**, Andrei Butsen, Victor Zhukovski (*B.I. Stepanov-Institute of Physics, 68 Nezalezhnasti Ave., 220072 Minsk, Belarus*)
Laser ablation synthesis and modification of magnetic Gd –based nanoparticles in liquids
- 6.1/24. **ID:469** **Sébastien Besner**, Paul Boyer, Patrick Daoust, Michel Meunier (*Laser Processing Laboratory, Department of Engineering Physics, École Polytechnique de Montréal, CP6079, Succ. Centre-vi Ile, Montréal, QC, Canada, H3C 3A7*)
Laser synthesis of metastable metallic nanoalloys in liquids
- 6.1/25. **ID:481** **R. Zakaria**¹, S. Cockcroft², C. D. Walton² (¹*Department of Physics, Faculty of Science, University of Malaya, Kuala Lumpur, Malaysia*; ²*Department of Physical Sciences, Physics, University of Hull, HU6 7RX, UK*)
VUV 157nm Laser Ablation of Nano-composite Structures
- 6.1/26. **ID:286** **N. Fukata**, J. Chen, T. Sekiguchi (*National Institute for Materials Science, 1-1 Namiki, Tsukuba, 305-0044, Japan*), M. Seoka, N. Saito, K. Murakami (*Institute of Applied Physics, University of Tsukuba, Tsukuba, 305-8573, Japan*)
Doping and segregation of impurity atoms in silicon nanowires synthesized by laser ablation

- 6.1/27
ID:540 C. W. Chen¹, L. S. Liao¹, **H.-P. Chiang**^{1,2,3}, P. T. Leung¹ (¹*Institute of Optoelectronic Sciences, National Taiwan Ocean University, Keelung, Taiwan;* ²*Institute of Physics, Academia Sinica, Taipei, Taiwan;* ³*Instrument Technology Research Center, National Applied Research Laboratories, Hsinchu, Taiwan*)
Temperature effects on the polarizability of mesoscopic metallic nanoparticles
- 6.2. Nanoscale Processing and Structuring**
- 6.2/01.
ID:100 **Z. Q. Huang**^{1,2,3}, M. H. Hong^{1,2}, Q. Y. Lin³ (¹*Department of Electrical & Computer Engineering, National University of Singapore, Singapore 117576;* ²*Data Storage Institute, 5 Engineering Drive 1, Singapore 117608;* ³*Chartered Semiconductors Manufacturing Ltd, 60 Woodlands Industrial Park D, Street Two, Singapore 738406*)
Laser micro-lens array lithography for functional structures fabricated on quartz substrate for chromeless phase mask applications
- 6.2/02.
ID:201 Wafaa Soliman, Noriharu Takada (Department of Electrical Engineering and Computer Science, Nagoya University, Furo-cho, Chikusa-ku, Nagoya 464-8603, Japan), **Koichi Sasaki** (Plasma Nanotechnology Research Center, Nagoya University, Furo-cho, Chikusa-ku, Nagoya 464-8603, Japan)
Evolution of nanoparticles during the life cycle of cavitation bubble induced by LASR ablation of a Ti target immersed in water
- 6.2/03.
ID:295 **X. D. Li**¹, D. W. Zhang¹, Z. A. Wang¹, Z. Sun¹, Z. B. Wang², Boris Luk'yanchuk³, S. M. Huang¹ (¹*Engineering Research Center for Nanophotonics and Advanced Instrument, Ministry of Education, Department of physics, East China Normal University, North Zhongshan Rd. 3663, Shanghai 200062, P. R. China;* ²*Laser Processing Research Centre, School of Mechanical, Aerospace and Civil Engineering, University of Manchester, Sackville Street, Manchester, M60 1QD, UK;* ³*Data Storage Institute, DSI Building, 5 Engineering Drive 1, Singapore 117608, Republic of Singapore*)
Near-field properties of laser/ atomic force microscopy nanofabrication systems
- 6.2/04.
ID:298 **Shaoyu Wei**¹, Daisuke Kajiyama², Ken-ichi Saitow^{1,2} (¹*Graduate School of Science, Hiroshima University, 1-3-1 Higashi-hiroshima 739-0046, Japan;* ²*N-BARD, Hiroshima University, 1-3-1 Higashi-hiroshima 739-0046, Japan*)
Ultraviolet and blue light-emitting silicon nanocrystal generated by laser ablation in high pressure supercritical fluid
- 6.2/05.
ID:336 **K. Siraj**, M. Khaleeq-ur-Rahman, M.S. Rafique, M. Z. Munawar (*Advance Physics Laboratory, Department of Physics, University of Engineering and Technology, G. T. Road, Lahore, Pakistan*)
Optical, magnetic and surface characterization of metal-carbon thin films prepared by pulsed laser deposition
- 6.2/06.
ID:427 **W. Phangrean**, V. Kosalathip, P. Limsuwon, T. Kumpeerapun (*Department of Physics, King Mongkut's University of Technology Thonburi, Bangkok 10140, Thailand*), A. Dauscher (*Institut Jean Lamour, UMR 7198 CNRS-Nancy Université-Université Paul Verlaine de Metz, Ecole Nationale Supérieure des Mines de Nancy, Parc de Saurupt, CS 4234, 54042 Nancy Cedex, France*)
Preparation of Bi_{0.6}Sb_{1.4}Te₃ nanoparticles from long laser pulses
- 6.2/07.
ID:461 Olga Varlamova, Markus Ratzke, **Jürgen Reif** (*Brandenburg. Tech. Univ. (BTU) Cottbus and Cottbus JointLab, Universitaetsstr. 1, 03046 Cottbus, Germany*)
Multi-pulse feedback in self-organized ripples formation
- 6.2/08.
ID:500 **C. S. Lim**¹, M. H. Hong^{1,2}, A. Senthil Kumar³, M. Rahman³, L. P. Shi¹, T. C. Chong^{1,2} (¹*Optical Materials and Systems, Data Storage Institute, A*STAR, Singapore 117608;* ²*Department of Electrical & Computer Engineering, National University of Singapore, Singapore 117576;* ³*Department of Mechanical Engineering, National University of Singapore, Singapore 117576*)

Field intensity distribution of laser light passing through a microlens array

6.3. Nanoscale Diagnostics and Analysis

- 6.3/01. Justin W. Cleary, Robert E. Peale (*University of Central Florida, Department of Physics, 4000 Central Florida Blvd., Orlando, FL, 32816*), **Kenneth M. Beck**, Alan G. Joly, Wayne P. Hess (*William R. Wiley Environmental Molecular Sciences Laboratory, Pacific Northwest National Laboratory P.O. Box 999, K8-88, Richland, Washington 99352*), Chris J. Fredricksen, Oliver Edwards (*Zyberwear Inc., 2114 New Victor Rd., Ocoee FL, 34761*)
ID:195
Gold-black optimization and characterization
- 6.3/02. **Ikurou Umezu**, Shigeki Yamamoto, Akira Sugimura (*Department of physics, Konan University, Kobe 658-8501, Japan; Quantum nano-technology laboratory, Konan University, Kobe 658-8501, Japan*)
ID:378
Emission induced by collision of two plumes
- 6.3/03. **Hui Xing**, Yao Liu, Liang Fang, Chuankai Qiu, Changtao Wang, Xiangang Luo (*State Key Laboratory of Optical Technologies for Microfabrication, Institute of Optics and Electronics, Chinese Academy of Sciences, P.O. box 350, Chengdu 610209, China*)
ID:395
The measurement of spacing in nanometer magnitude with sub-wavelength grating
- 6.3/04. **Y. Fan**, M. J. Rose, S. K. Persheyev (*Division of Electronic Engineering and Physics, Faculty of Engineering and Physical Sciences, University of Dundee, Dundee DD1 4HN, UK*)
ID:460
Preparation of nickel nanoparticles by excimer laser ablation metal films confined by a quartz plate
- 6.3/05. **M. K. Samani**, George Chen (*Photonics Lab I, School of Electrical and Electronics Engineering, Nanyang Technological University, 639798, Singapore*)
ID:497
Temperature-dependent Thermal Conductivity of Multi-walled Carbon Nanotubes
- 6.3/06. Xing-Zhao Ding (*Singapore institute of manufacturing Technology, 71 Nanyang Drive, 638075, Singapore*), M. K. Samani, George Chen (*Photonics Lab I, School of Electrical and Electronics Engineering, Nanyang Technological University, 639798, Singapore*)
ID:498
Thermal Conductivity of PVD TiAlN Films using Pulsed Photothermal Reflectance Technique

6.4. Plasmonics, THz and Metamaterials

- 6.4/01. Z. C. Chen, **M. H. Hong**, Chong Tow Chong (*Department of Electrical and Computer Engineering, 4 Engineering Drive 3, Singapore 117576; Data Storage Institute, A*STAR, DSI Building, 5 Engineering Drive 1, Singapore 117608*)
ID:126
Polarization Dependent Loss of Large-area Sandwiched Split Ring Resonator Fabricated by Laser MLA Lithography in Terahertz Region
- 6.4/02. Hengyi Li, Zeyu Zhao, **Xiangang Luo** (*State Key Laboratory of Optical Technologies for Microfabrication, Institute of Optics and Electronics, Chinese Academy of Sciences, P.O. box 350, Chengdu 610209, China*)
ID:397
Design of nano focusing metamaterial lens by coordinate transformation
- 6.4/03. **Ling Liu**, Qu Yue, Yao Liu, Hui Xin, Liang Fang, Chuankai Qiu, Changtao Wang, Xiangang Luo (*State Key Laboratory of Optical Technologies for Microfabrication, Institute of Optics and Electronics, Chinese Academy of Sciences, P.O. box 350, Chengdu 610209, China*)
ID:396
Experimental observation of directional light propagation in stacked metal-dielectric films

7.1. Others

- 7.1/01. **ID:77** **Hidetaka Shimawaki**, Yo Kida (*Graduate School of Engineering, Hachinohe Institute of Technology, 88-1 Ohbiraki, Myo, Hachinohe 031-8501, Japan*), Yoichiro Neo, Hidenori Mimura (*Research Institute of Electronics, Shizuoka University, Hamamatsu 432-8011, Japan*), Katsuhisa Murakami, Fujio Wakaya, and Mikio Takai (*Center for Quantum Science and Technology under Extreme Conditions, Osaka University, Osaka 560-8531, Japan*)
Metal-oxide-semiconductor cathode arrays based on nanocrystalline silicon prepared by pulsed laser ablation
- 7.1/02. **ID:125** **E. Coetsee**, J. J. Terblans, H. C. Swart (*Department of Physics, University of the Free State, Bloemfontein, South Africa, ZA 9300*)
The growth of Y₂SiO₅:Ce thin films with pulsed laser deposition
- 7.1/03. **ID:133** Zhang Juan, Wang De-zhen, Shang Wan-li, Liu Li-ying (*School of Physics and Optoelectronic Technology, Dalian University of Technology, No.2 Linggong Road, 116023, Dalian, China*)
Numerical simulation of VHF effects on deposition silicon film at atmospheric pressure
- 7.1/04. **ID:202** **Sunita Gupta** (*Research scholar PTU, Jallendher, INDIA*), T. P. Singh (*DAV College Sadhaura, YamunaNagar, INDIA*)
Ranking of fuzzy numbers with geometrical method
- 7.1/05. **ID:251** **Lu Yan**, Zhisong Xiao (*Department of Applied Physics, Beihang University, 100191, Beijing, China*), Yongchang Zhu (*China Building Materials Academy, Beijing 100024, China*)
Quantitative study of concentration quenching and energy transfer mechanism in TM³⁺ doped aluminate glass for laser material
- 7.1/06. **ID:279** **Fang Zhu**, Zhisong Xiao, Lu Yan, Anping Huang (*Department of Physics, Beihang University, Beijing 100191, China*), Guoan Cheng (*Department of Materials Science and Engineering, Beijing Normal University, Beijing 100875, China*)
Investigation of spectroscopic properties of CaMoO₄:Pr³⁺ as single-phased phosphors
- 7.1/07. **ID:521** Feng Zhang, **Zhisong Xiao**, Lu Yan, Fang Zhu, Anping Huang (*Department of Physics, Beihang University, Beijing 100191, China*)
Visible luminescence from Dy³⁺ doped telluride glasses
- 7.1/08. **ID:425** **Miles Padgett**, Kevin O'Holleran (*Department of Physics and Astronomy, University of Glasgow, Glasgow, G12 9ES, UK*), Mark Dennis (*H. H. Wills Physics Laboratory, University of Bristol, Bristol, BS8 1TL, UK*)
Fractality and topology of light's darkness

Day 6, Friday, 27 November, 2009

18. Lasers Lithography and Light Sources for Nanoscale Processing

Session Chairs: **Peter E. Dyer** (University of Hull, UK), **Paul Leiderer** (University of Konstanz, Germany)

8:30 - 9:00

ID:296

Masahito Katto (*Cooperative Research Center, University of Miyazaki*), Atushi Yokotani, Masanori Kaku, Shoichi Kubodera (*Dept. of Electrical and Electronic Eng., University of Miyazaki, 1-1 Gakuen- Kibanadai-Nishi, Miyazaki 889-2192, Japan*), Noriaki Miyanaga, Kunioki Mima (*ILE, Osaka University, 2-6 Yamada-oka, Suita 565-0871, Japan*)

Development of ultrashort pulse VUV laser system for nanoscale processing
Invited Lecture

9:00 - 9:15

ID:358

P. Hayden, P. Hough, J. T. Costello (*NCPST, School of Physical Sciences, Dublin City University, Dublin 9, Ireland*), P. Dunne, G. O'Sullivan (*School of Physics, University College Dublin, Belfield, Dublin 4, Ireland*)

TiN based laser plasma light sources for lithography

9:15 - 9:30
ID:393

Pan Li, Liu Yao, Liu Ling, Liang Fang, Hui Xing, Qiu Chuankai, Changtao Wang, Xiangang Luo (*State Key Laboratory of Optical Technologies for Microfabrication, Institute of Optics and Electronics, Chinese Academy of Sciences, P.O. box 350, Chengdu 610209, China*)

High resolution and aspect ratio near field lithography using multi-layer photon resist

9:30 - 9:45
ID:410

James Shaw Stewart, Martin Zäch, Matthias Nagel, Frank Nüesch (*Empa, Swiss Federal Laboratories for Materials Testing and Research, Laboratory for Functional Polymers, Überlandstrasse 129, 8600 Dübendorf, Switzerland*), **Thomas Lippert**, Alexander Wokaun (*Paul Scherrer Institut, General Energy Research Department, 5232 Villigen PSI, Switzerland*)

Transfer of a single light-emitting polymer layer using laser induced forward transfer

9:45 - 10:00
ID:412

Ik Joo Byun, Joonwon Kim (*Pohang University of Science and Technology (POSTECH), 790-794, Pohang, Korea*)

A cost-effective laser interference lithography using 30 mW AlInGaN semiconductor laser

10:00 - 10:15
ID:442

R. Sidharthan, K. Sathiyamoorthy, V. M. Murukeshan (*School of Mechanical and Aerospace Engineering Nanyang Technological University, Singapore 639 798*)

Large area lithography based on template assisted microspheres

10:15 - 10:30
ID:291

Ana Pena, Zengbo Wang, David Whitehead, Lin Li (*Laser Processing Research Centre, School of Mechanical, Aerospace and Civil Engineering, University of Manchester, Sackville Street, Manchester, M60 1QD, United Kingdom*)

Direct writing of micro/nano-scale patterns by means of particle lens arrays scanned by a focused diode pumped Nd:YVO₄ laser

10:30 - 11:00 Coffee Break

19. Lasers in Nanoscience - Nanotechnology

Session Chairs: **Wladimir Marine** (Universite de la Mediterranee, Marseille, France), **Lin Li** (University of Manchester, UK)

11:00 - 11:30
ID:262

Norbert Linz, Xiaoxuan Liang, Sebastian Freidank, Joachim Noack, Alfred Vogel (*Institute of Biomedical Optics, University of Lübeck, Peter-Monnik Weg 4, 23562 Lübeck, Germany*)

Controlled nonlinear energy deposition in transparent materials – experiments and theory

Invited Lecture

11:30 - 11:45
ID:537

E. G. Gamaly, A. V. Rode (*Laser Physics Centre, Research School of Physics and Engineering Australian National University, Canberra, ACT0200, Australia*)

Is the ultra-fast melting of bismuth non-thermal?

11:45 - 12:00
ID:69

Y. Fan, M. J. Rose, S. K. Persheyev, M. Z. Shaikh (*Division of Electronic Engineering and Physics, Faculty of Engineering and Physical Sciences, University of Dundee, Dundee DD1 4HN, UK*)

Fabrication of black silicon on glass substrates by excimer laser irradiation of thick a-Si:H films

12:00 - 12:15
ID:456

M. Mathieu, S. Franzka, **N. Hartmann** (*Fachbereich Chemie and Center for Nanointegration Duisburg-Essen, Universität Duisburg-Essen, 45141 Essen, Germany*), J. Koch, B. N. Chichkov (*Laser Zentrum Hannover e. V., 30419*

Hannover, Germany), A. Ostendorf (Fakultät für Maschinenbau, Ruhr-Universität Bochum, 44801 Bochum, Germany)

Sub-wavelength patterning of organic monolayers via nonlinear laser processing with femtosecond laser pulses

12:15 - 12:30

ID:534

Sohaib Z Khan^{1,2}, Zhu Liu¹, Lin Li² (¹Corrosion and Protection Centre, School of Materials, The University of Manchester, Manchester, M60 1QD, UK; ²Laser Processing Research Centre, School of Mechanical, Aerospace and Civil Engineering, The University of Manchester, Manchester, M60 1QD, UK)

Generation and characterization of aluminium-oxide nanoparticles by CW laser ablation in liquid

12:30 - 13:00

20. COLA 2009 Awards & Closing

Session Chairs:

Boris Luk'yanchuk (DSI, Singapore), **Hong MingHui** (NUS, Singapore), **Richard Haglund** (DSI, Singapore), **Mikio Takai** (Osaka University, Japan), **Alfred Vogel** (Lübeck University, Germany)

Awards

Concluding remarks

13:15 - 14:30 Lunch

18:30-22:30 Night Safari Excursion