



21 - 26 January 2012
Moscone Center
San Francisco, California United States

Conference 8245

Synthesis and Photonics of Nanoscale Materials IX

Conference Program Track: **Laser Micro-/Nanoengineering** ()

[View Daily Schedule of Program Track](#)

Available in print as **Proceedings of SPIE Volume 8245**

Dates: **Monday-Tuesday 23 - 24 January 2012**

Conference Chairs

Frank Träger, Univ. Kassel (Germany); **Jan J. Dubowski**, Univ. de Sherbrooke (Canada); **David B. Geohegan**, Oak Ridge National Lab.

Program Committee

Carmen N. Afonso, Consejo Superior de Investigaciones Científicas (Spain); **Paolo Biagioni**, Politecnico di Milano (Italy); **J. Thomas Dickinson**, Washington State Univ.; **Haim Grebel**, New Jersey Institute of Technology; **Costas P. Grigoropoulos**, Univ. of California, Berkeley; **Tony F. Heinz**, Columbia Univ.; **Ilko K. Ilev**, U.S. Food and Drug Administration; **Hiroshi Kumagai**, Osaka City Univ. (Japan); **Thomas K. Lippert**, Paul Scherrer Institut (Switzerland); **Vladimir M. Shalaev**, Purdue Univ.; **Xianfan Xu**, Purdue Univ.; **Yaqiong Xu**, Vanderbilt Univ.

[Show All Abstracts](#)

Monday 23 January

Session 1: Frontiers in Plasmonics

Date: **Monday 23 January**

Time: **8:20 AM - 10:10 AM**

Session Chair: **Frank Träger**, Univ. Kassel (Germany)

The nano-optics of plasmonic optical tweezers, SERS substrates, and multi-colored silicon nanowires *(Invited Paper)*

Paper 8245-1

Time: **8:20 AM - 8:55 AM**

Author(s): Kenneth B. Crozier, Harvard Univ. (United States)

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Plasmon resonances in structures with atomic-scale gaps *(Invited Paper)*

Paper 8245-2

Time: **8:55 AM - 9:30 AM**

Author(s): Johannes Kern, Swen Grossmann, Nadja Tarakina, Monika Emmerling, Martin Kamp, Tim Häckel, Julius-Maximilians-Univ. Würzburg (Germany); Jer-Shing Huang, National Tsing Hua Univ. (Taiwan); Paolo Biagioni, CNISM, Politecnico di Milano (Italy); Jord C. Prangma, Bert Hecht, Julius-Maximilians-Univ. Würzburg (Germany)

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Multi-photon autocorrelation in Au dipole antennas

Paper 8245-3

Time: **9:30 AM - 9:50 AM**

Author(s): Paolo Biagioni, Daniele Brida, Politecnico di Milano (Italy); Jer-Shing Huang, National Tsing-Hua Univ. (Taiwan); Johannes Kern, Julius-Maximilians-Univ. Würzburg (Germany); Lamberto Duò, Politecnico di Milano (Italy); Bert Hecht, Julius-Maximilians-Univ. Würzburg (Germany); Marco Finazzi, Giulio Cerullo, Politecnico di Milano (Italy)

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Ultrafast plasmon dynamics of individual nano-rod antennas

Paper 8245-4

Time: **9:50 AM - 10:10 AM**

Author(s): Dario Polli, Margherita Zavelani-Rossi, Giuseppe Della Valle, Marco Marangoni, Politecnico di Milano (Italy); Pierre-Michel Adam, Univ. de Technologie Troyes (France); Giulio Cerullo, Politecnico di Milano (Italy)

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Coffee Break 10:10 AM - 10:45 AM

Session 2: Nanoparticle Synthesis and Applications

Date: **Monday 23 January**

Time: **10:45 AM - 12:00 PM**

Session Chair: **Jan J. Dubowski**, Univ. de Sherbrooke (Canada)

Fluclidating effects of nanoscale structural variations on local plasmonic modes via photon localization microscopy *(Invited Paper)*

Paper 8245-5

Time: **10:45 AM - 11:20 AM**

Author(s): Alexander S. McLeod, Alexander Weber-Bargioni, Jeff B. Neaton, Stefano Cabrini, P. James Schuck, Lawrence Berkeley National Lab. (United States)

[Show Abstract](#)[Add to My Schedule](#)**Noble metal nanoparticles on quartz supports as SERS substrates excited by a diode laser system for SERDS**

Paper 8245-17

Time: **11:20 AM - 11:40 AM**

Author(s): Robert Ossig, Univ. Kassel (Germany); Yong-Hyok Kwon, Heinz-Detlef Kronfeldt, Technische Univ. Berlin (Germany); Frank Träger, Frank Hubenthal, Univ. Kassel (Germany)

[Show Abstract](#)[Add to My Schedule](#)**Putting plasmonic near-field probes in perspective: the case for campanile geometry**

Paper 8245-7

Time: **11:40 AM - 12:00 PM**

Author(s): Wei Bao, Univ. of California, Berkeley (United States) and Lawrence Berkeley National Lab. (United States); P. James Schuck, Lawrence Berkeley National Lab. (United States); Miquel B. Salmeron, Univ of California, Berkeley (United States) and Lawrence Berkeley National Lab. (United States); Alexander Weber-Bargioni, Lawrence Berkeley National Lab. (United States)

[Show Abstract](#)[Add to My Schedule](#)**Lunch Break** 12:00 PM - 1:15 PM**Session 3: Graphene and Carbon Nanotubes**Date: **Monday 23 January**Time: **1:15 PM - 3:10 PM**Session Chair: **David B. Geohegan**, Oak Ridge National Lab.**Laser direct writing of micro graphene patterns** *(Invited Paper)*

Paper 8245-8

Time: **1:15 PM - 1:50 PM**

Author(s): Yongfeng Lu, J. B. Park, Yunshen Zhou, Univ. of Nebraska-Lincoln (United States)

[Show Abstract](#)[Add to My Schedule](#)**In situ optical diagnostics of graphene synthesis**

Paper 8245-9

Time: **1:50 PM - 2:10 PM**

Author(s): Alex A. Puretzky, David B. Geohegan, Norbert Thonnard, Jason Readle, Christopher Rouleau, Gyula Eres, Murari Regmi, Gerd Duscher, Mina Yoon, Oak Ridge National Lab. (United States)

[Show Abstract](#)[Add to My Schedule](#)**Laser direct growth of graphene on semiconductor substrate**

Paper 8245-10

Time: **2:10 PM - 2:30 PM**

Author(s): Dapeng Wei, Xianfan Xu, Purdue Univ. (United States)

[Show Abstract](#)[Add to My Schedule](#)**Femtosecond laser assisted photobleaching of single-wall carbon nanotubes**

Paper 8245-11

Time: **2:30 PM - 2:50 PM**

Author(s): Satoru Shoji, Hideaki Kobayashi, Thomas C. Rodgers, Osaka Univ. (Japan); Satoshi Kawata, Osaka Univ. (Japan) and RIKEN (Japan)

[Show Abstract](#)[Add to My Schedule](#)**Density and orientation control of carbon nanotube synthesis**

Paper 8245-12

Time: **2:50 PM - 3:10 PM**

Author(s): Yunhao Cao, Tu Hong, Yaqiong Xu, Vanderbilt Univ. (United States)

[Show Abstract](#)[Add to My Schedule](#)**Coffee Break** 3:10 PM - 3:40 PM**Session 4: Laser Nanoscale Materials Processing and Manufacturing: Joint Session with Conference 8243**Date: **Monday 23 January**Time: **3:40 PM - 6:00 PM**Session Chair: **Richard F. Haglund, Jr.**, Vanderbilt Univ.**Surface plasmon-assisted nanolithography with nanometric accuracy** *(Invited Paper)*

Paper 8245-15

Paper 8243-15

Time: **3:40 PM - 4:10 PM**

Author(s): Kosei Ueno, Hokkaido Univ. (Japan)

[Show Abstract](#)[Add to My Schedule](#)**XPS study of InP/InGaAs/InGaAsP microstructure irradiated by KrF and ArF lasers in different environments**

Paper 8245-13

Time: **4:10 PM - 4:30 PM**

Author(s): Neng Liu, Khalid Moumanis, Sonia Blais, Jan J. Dubowski, Univ. de Sherbrooke (Canada)

[Show Abstract](#)[Add to My Schedule](#)**Designed near fields for parallel surface nanostructures**

Paper 8245-14

Time: **4:30 PM - 4:50 PM**

Author(s): Frank Hubenthal, Sören Maag, Abdul-Aleem Jamali, Bernd Witzigmann, Frank Träger, Univ. Kassel (Germany)

[Show Abstract](#)[Add to My Schedule](#)**Laser ablation and nano-material fabrication in supercritical fluids** (*Invited Paper*)

Paper 8243-16

Time: **4:50 PM - 5:20 PM**

Author(s): Ken-ichi Saitow, Hiroshima Univ. (Japan)

[Show Abstract](#)[Add to My Schedule](#)**Dynamics of TiO₂ nanoparticle formation and deposition for nanostructured thin films**

Paper 8245-15

Time: **5:20 PM - 5:40 PM**

Author(s): Jason Readle, Alex A. Poretzky, Christopher Rouleau, Oak Ridge National Lab. (United States); Rudresh Ghosh, Rene Lopez, The Univ. of North Carolina at Chapel Hill (United States); Gyula Eres, Murari Regmi, Oak Ridge National Lab. (United States); Gerd Duscher, The Univ. of Tennessee (United States); Mina Yoon, David B. Geohegan, Oak Ridge National Lab. (United States)

[Show Abstract](#)[Add to My Schedule](#)**Template-assisted metal nanoneedle/nanoprotrusion array fabrication at a sub-diffraction-limited scale**

Paper 8243-17

Time: **5:40 PM - 6:00 PM**

Author(s): Yuto Tanaka, Keio Univ. (Japan) and Harvard Univ. (United States); Jonathan D. B. Bradley, Eric Mazur, Harvard Univ. (United States); Minoru Obara, Keio Univ. (Japan)

[Show Abstract](#)[Add to My Schedule](#)**Tuesday 24 January****Session 5: Nanoparticle Characterization and Biological Applications**Date: **Tuesday 24 January**Time: **8:20 AM - 9:55 AM**Session Chair: **Frank Hubenthal**, Univ. Kassel (Germany)**Exploring exciton-plasmon coupling in laser- and electron-beam fabricated nanostructures** (*Invited Paper*)

Paper 8245-16

Time: **8:20 AM - 8:55 AM**

Author(s): Richard F. Haglund, Jr., Benjamin J. Lawrie, Vanderbilt Univ. (United States); Richard Mu, Fisk Univ. (United States); Kyeong-Won Kim, David P. Norton, Univ. of Florida (United States)

[Show Abstract](#)[Add to My Schedule](#)**Characterization of silicon fibrous nanoparticles aggregate structure synthesized using femtosecond laser pulses**

Paper 8245-18

Time: **8:55 AM - 9:15 AM**

Author(s): Sivakumar Manickam, Amrita Univ. (India); Krishnan Venkatakrishnan, Tan Bo, Ryerson Univ. (Canada)

[Show Abstract](#)[Add to My Schedule](#)**Plasmonic control of far-field interference for regular ripple formation on various material substrates irradiated by femtosecond laser**

Paper 8245-19

Time: **9:15 AM - 9:35 AM**

Author(s): Go Obara, Naoki Maeda, Tomoya Miyaniishi, Mitsuhiro Terakawa, Minoru Obara, Keio Univ. (Japan)

[Show Abstract](#)[Add to My Schedule](#)**Influence of the growing parameters on the size distribution of PbTe nanoparticles produced by laser ablation under inert gas atmosphere**

Paper 8245-20

Time: **9:35 AM - 9:55 AM**

Author(s): Eugenio Rodriguez, Ctr. de Investigación en Ciencia Aplicada y Tecnología Avanzada (Mexico); Diogo B. Almeida, Univ. Estadual de

Campinas (Brazil); Said Agouam, Univ. de València (Spain); Ricardo Sis Moreira, Carlos Lenz Cesar, Univ. Estadual de Campinas (Brazil); Ernesto Jimenez Villar, Univ. de València (Spain); Luiz C. Barbosa, Univ. Estadual de Campinas (Brazil)

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Posters-Tuesday

Date: **Tuesday 24 January**

Time: **6:00 PM - 8:00 PM**

Conference attendees are invited to attend the LASE & MOEMS-MEMS poster session on Tuesday evening. Come view the posters, enjoy light refreshments, ask questions, and network with colleagues in your field. Authors of poster papers will be present to answer questions concerning their papers. Attendees are required to wear their conference registration badges to the poster sessions. Poster authors, view poster presentation guidelines and set-up instructions at <http://spie.org/x27476.xml>.

Femtosecond ablation of aluminum for synthesis of nanoparticles and nanostructures and their optical characterization

Paper 8245-21

Author(s): Gopala Krishna Podagatlapalli, Hamad Syed, Surya P. Tewari, Soma Venugopal Rao, Univ. of Hyderabad (India)

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Direct observation of surface plasmon far field for regular surface ripple formation by femtosecond laser irradiation of silicon wafer

Paper 8245-22

Author(s): Naoki Maeda, Go Obara, Tomoya Miyaniishi, Keio Univ. (Japan); Nikolay N. Nedyalkov, Institute of Electronics (Bulgaria); Minoru Obara, Keio Univ. (Japan)

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Influence of ZnO buffer layer on ZnO nanowire growth by nanoparticle-assisted pulsed laser deposition

Paper 8245-23

Author(s): Daisuke Nakamura, Kota Okazaki, Iyampermal A. Palani, Kazuki Kubo, Koji Tsuta, Mitsuhiro Higashihata, Tatsuo Okada, Kyushu Univ. (Japan)

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Femtosecond laser doped and nanostructured TiO₂ for photocatalysis

Paper 8245-24

Author(s): Katherine C. Phillips, Elizabeth C. Landis, Cynthia M. Friend, Eric Mazur, Harvard Univ. (United States)

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Novel beam splitter for high-order harmonics with WO₃/TiO₂ bilayer grown on c-plane sapphire substrate by sequential surface chemical reactions

Paper 8245-25

Author(s): Yasutaka Sanjo, Masaki Murata, Hiroshi Kumagai, Osaka City Univ. (Japan); Yasuo Nabekawa, Katsumi Midorikawa, RIKEN (Japan); Masaya Chigane, Osaka Municipal Technical Research Institute (Japan)

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