

Optical Trapping and Optical Micromanipulation VI

Conference Chairs: **Kishan Dholakia**, Univ. of St. Andrews (United Kingdom); **Gabriel C. Spalding**, Illinois Wesleyan Univ.

Program Committee: **Elliot L. Botvinick**, Beckman Laser Institute; **Carlos L. Cesar**, Univ. Estadual de Campinas (Brazil); **Roberto Di Leonardo**, Univ. degli Studi di Roma, La Sapienza (Italy); **Jesper Glückstad**, Danmarks Tekniske Univ. (Denmark); **Min Gu**, Swinburne Univ. of Technology (Australia); **Masud Mansuripur**, College of Optical Sciences/The Univ. of Arizona; **Jens-Christian D. Meiners**, Univ. of Michigan; **H. Daniel Ou-Yang**, Lehigh Univ.; **Thomas T. Perkins**, Univ. of Colorado at Boulder; **Rubén Ramos-García II**, Instituto Nacional de Astrofísica, Óptica y Electrónica (Mexico); **Halina H. Rubinsztein-Dunlop**, The Univ. of Queensland (Australia); **Pavel Zemánek**, Institute of Scientific Instruments (Czech Republic)

Sunday 2 August

SESSION 1: Bio I: Single Molecules

Session Chair: **Douglas E. Smith**, Univ. of California/San Diego
Room: TBD

Sun. 8:50 to 10:00 am

8:50 am: **Sensitivity of DNA-hairpins dynamics to the mechanism of force feedback probed using a surface-coupled passive force clamp** (*Invited Paper*), Yeonee Seol, Thomas T. Perkins, Univ. of Colorado at Boulder (United States) [740001]

9:20 am: **Boundary-condition dependent elasticity of short double-stranded DNA molecules**, Yih-Fan Chen, K. Raghunathan, David Wilson, Jens-Christian D. Meiners, Univ. of Michigan (United States) [740002]

9:40 am: **Quantifying and pinpointing sources of noise in optical tweezers**, Fabian Czerwinski, Andrew Richardson, Lene B. Oddershede, Univ. of Copenhagen (Denmark) [740003]

Coffee Break

10:00 to 10:30 am

SESSION 2: Bio II: From Single Molecules to Multiple Motors

Session Chair: **Thomas T. Perkins**, Univ. of Colorado at Boulder
Room: TBD

Sun. 10:30 am to 12:20 pm

10:30 am: **Quantifying the force dependence of initiation by T7 RNA polymerase**, Bennett Kalafut, The Univ. of Arizona (United States); Gary M. Skinner, Technische Univ. Delft (Netherlands); Koen Visscher, The Univ. of Arizona (United States) [740004]

10:50 am: **Using optical tweezers to probe the elasticity of short molecules**, Benjamin P. B. Downing, Astrid V. D. Horst, Marjan Shayegan, Nancy R. Forde, Simon Fraser Univ. (Canada) [740005]

11:10 am: **Ångström-resolution optical tweezers for investigating DNA-binding/translocating molecular motors**, Anders E. Wallin, Heikki Ojala, Edward Haeggström, Univ. of Helsinki (Finland) [740006]

11:30 am: **Bacterial swimming studied using optical traps** (*Invited Paper*), T. Lance Min, Patrick Mears, Lon Chubiz, Christopher Rao, Ido Golding, Yann R. Chemla, Univ. of Illinois at Urbana-Champaign (United States) [740007]

12:00 pm: **Evidence of chemotaxis by quantitative measurement of the force vectors of Trypanosoma cruzi in the vicinity of the Rhodnius prolixus midgut wall cells**, André A. de Thomaz, Diogo B. Almeida, Univ. Estadual de Campinas (Brazil); Adriana Fontes, Univ. Federal de Pernambuco (Brazil); Cecília Vieira Stahl, Jacenir R. Santos-Mallet, Suzete A. O. Gomes, Fundacao Oswaldo Cruz (Brazil); Denise Feder, Univ. Federal Fluminense (Brazil); Carlos L. Cesar, Univ. Estadual de Campinas (Brazil) [740008]

Lunch Break

12:20 to 1:50 pm

SESSION 3: Bio III: From DNA Damage to Cell Elasticity

Session Chair: **Elliot L. Botvinick**, Beckman Laser Institute, Univ. of California/Irvine

Room: TBD

Sun. 1:50 to 3:10 pm

1:50 pm: **Healthy ageing: laser microbeam studies reveal why birds are performing better**, Karl O. Greulich, Paulius Grigaravicius, Shamci Monajembashi, Fritz Lipmann Institute (Germany) [740009]

2:10 pm: **A combined double-tweezers and wavelength-tunable laser nanosurgery microscope**, Qingyuan Zhu, Univ. of California, Irvine (United States); Shahab Parsa, Linda Z. Shi, Marcellinus Harsono, Univ. of California, San Diego (United States); Michael W. Berns, Univ. of California, Irvine (United States) [740010]

2:30 pm: **The interaction of Escherichia coli with its surrounding three dimensional substrate measured by optical tweezers**, Novia Yen, Ming-Tzo Wei, Arthur E. Chiou, National Yang-Ming Univ. (Taiwan) [740011]

2:50 pm: **Theoretical prediction for cell deformation in the optical traps**, Paul Brule-Bareil, Yunlong Sheng, Univ. Laval (Canada); Arthur E. Chiou, National Yang-Ming Univ. (Taiwan) [740012]

Coffee Break

3:10 to 3:40 pm

SESSION 4: Nanoparticle Techniques I

Session Chair: **Jens-Christian D. Meiners**, Univ. of Michigan

Room: TBD

Sun. 3:40 to 5:10 pm

3:40 pm: **Combining optical trapping and gold post arrays: nanometer-scale localization of DNA to gold with a high strength, biocompatible bond**, Thomas T. Perkins, D. Hern Paik, Yeonee Seol, Wayne Halsey, Univ. of Colorado at Boulder (United States) [740013]

4:00 pm: **Optical trapping of individual quantum dots and other challenging particles** (*Invited Paper*), Lene B. Oddershede, Univ. of Copenhagen (Denmark) [740014]

4:30 pm: **Towards spatio-temporal control in optical trapping**, Debjit Roy, Arijit K. De, Debabrata Goswami, Indian Institute of Technology Kanpur (India) [740015]

4:50 pm: **Nano-optical trapping of Rayleigh particles and E-coli bacteria with optical resonant antennas**, Romain Quidant, Maurizio Righini, Petru V. Ghenuche, Sudhir Cherukulappurath, ICFO - Instituto de Ciencias Fotónicas (Spain); Viktor Myroshnychenko, Francisco Javier Garcia de Abajo, Consejo Superior de Investigaciones Científicas (Spain) [740016]

Monday 3 August

NanoScience + Engineering Plenary Session

Room: TBD

Mon. 8:30 am to 12:00 pm

8:30 am: **Taming the Light with Metamaterials**, Nader Engheta, Univ. of Pennsylvania (United States) [OP09NPLS101]

9:15 am: **Sub-nanometer Resolution for the Inspection of Specular Surfaces using White Light**, Werner P. O. Jüptner, Thorsten Bothe, Bremer Institut für angewandte Strahltechnik (Germany) [OP09NPLS102]

10:30 am: **Adapting to the Nanoscale Era of Technology**, Nils O. Petersen, National Institute for Nanotechnology, NRC (Canada); Lori Sheremeta, Univ. of Alberta (Canada) and National Institute for Nanotechnology, NRC (Canada) [OP09NPLS103]

11:15 am: **Nanophotonics: Dressed Photon Science and its Applications**, Takashi Yatsui, The Univ. of Tokyo (Japan) [OP09NPLS104]

Lunch Break

12:00 to 1:15 pm

SESSION 5: Optical Lattices

Session Chair: **Kishan Dholakia**, Univ. of St. Andrews (United Kingdom)

Room: TBD

Mon. 1:15 to 3:30 pm

1:15 pm: **Colloidal monolayers on quasicrystalline light fields (Keynote Presentation)** (*Invited Paper*), Clemens Bechinger, Univ. Stuttgart (Germany) [740017]

2:00 pm: **Dynamics of colloidal particles on optical trap arrays** (*Invited Paper*), Charles M. Reichhardt, Los Alamos National Lab. (United States) [740018]

2:30 pm: **Particle dynamics in optical lattices**, Petr Jákł, Mojmir Šerý, Pavel Zemánek, Institute of Scientific Instruments (Czech Republic) [740019]

2:50 pm: **Maximization of axial optical force acting upon nonspherical object placed in standing wave**, Jan Trojek, Vítizslav Karásek, Pavel Zemánek, Institute of Scientific Instruments (Czech Republic) [740020]

3:10 pm: **Brownian motion rectification in optically generated asymmetric potentials**, Ulises Ruiz-Corona, Maria Guadalupe Mendez-Vazquez, Nikolai A. Korneev, Victor M. Arrizón-Peña, Rubén Ramos-García II, Instituto Nacional de Astrofísica, Óptica y Electrónica (Mexico) [740021]

Coffee Break

3:30 to 4:00 pm

SESSION 6: Optical Sorting and Guidance

Session Chair: **Gabriel Cooper Spalding**, Illinois Wesleyan Univ.

Room: TBD

Mon. 4:00 to 6:30 pm

4:00 pm: **Laser guidance based cell detection**, Zhen Ma, Julie X. Yun, Yangzhang Wei, Karen J. L. Burg, Xiaocong Yuan, Bruce Z. Gao, Clemson Univ. (United States) [740022]

4:20 pm: **Optical chromatographic sample fractionation**, Alex V. Terray, Joseph D. Taylor, Sean J. Hart, Naval Research Lab. (United States) [740023]

4:40 pm: **Analytical measurement using optical chromatography**, Sean J. Hart, Naval Research Lab. (United States) [740024]

5:00 pm: **Simultaneous laser particle guidance and fluid counterflow in single-mode hollow core photonic crystal fibres** (*Invited Paper*), Tijmen G. Euser, Martin K. Garbos, Jocelyn S. Y. Chen, Philip S. J. Russell, The International Max-Planck Research School for Optics and Imaging (Germany) [740025]

5:30 pm: **Integrated optical chromatography using photonic crystal fiber**, Praveen C. Ashok, Robert F. Marchington, Thomas F. Krauss, Kishan Dholakia, Univ. of St. Andrews (United Kingdom) and Scottish Univ. Physics Alliance (United Kingdom) [740026]

5:50 pm: **Cylindrical mirror sorting system**, Ai-Tang Chang, Sheng-Yang Tseng, Long Hsu, National Chiao Tung Univ. (Taiwan) [740027]

6:10 pm: **Micro particle sorting using non-periodic structure of optical pattern**, Yuji Nishi, Yasuyuki Hayashi, Kousuke Iwai, Shoji Takeuchi, Tsutomu Shimura, Kazuo Kuroda, The Univ. of Tokyo (Japan) [740028]

Tuesday 4 August

SESSION 7: Integrated Platforms

Session Chair: **Arthur E. T. Chiou**, National Yang-Ming Univ. (Taiwan)

Room: TBD Tues. 8:00 to 10:20 am

8:00 am: **Optical manipulation using silicon nanophotonics** (*Invited Paper*), David Erickson, Cornell Univ. (United States) [740029]

8:30 am: **Light-driven microfluidic platforms for droplet-based biochemical analysis**, Sungyong Park, Sheraz Kalim, Caitlin Callahan, Michael A. Teitell, Eric P. Y. Chiou, Univ. of California, Los Angeles (United States) [740030]

8:50 am: **A novel optically driven electrokinetic technique for manipulating nanoparticles**, Aloke Kumar, Stuart J. Williams, Steven T. Wereley, Purdue Univ. (United States) [740031]

9:10 am: **Integrated silicon platform for photonic tweezing and levitation** (*Invited Paper*), Hong Tang, Yale Univ. (United States) [740032]

9:40 am: **Optically actuated micromanipulation of silicon nanomembranes**, Stefan M. Oehrlein, R. B. Jacobson, Frank S. Flack, Max G. Lagally, Ryan J. Kershner, Univ. of Wisconsin-Madison (United States) [740033]

10:00 am: **Optomechanics with surface plasmons: attractive and repulsive forces between planar metal surfaces**, David N. Woolf, Harvard Univ. (United States) [740034]

Coffee Break

10:20 to 10:50 am

SESSION 8: Fundamental Issues of Force and Momentum

Session Chair: **Roberto Di Leonardo**, Univ. degli Studi di Roma/La Sapienza (Italy)
Room: TBD Tues. 10:50 am to 12:20 pm

10:50 am: **AFM measurement of long-range quantum forces** (*Invited Paper*), Jeremy Munday, California Institute of Technology (United States) [740035]

11:20 am: **Whence the Minkowski momentum?**, Masud Mansuripur, College of Optical Sciences, The Univ. of Arizona (United States); Armis R. Zakharian, Corning Inc. (United States) [740036]

11:40 am: **Where to split between the material and electromagnetic momentum?**, Michael Mazilu, Kishan Dholakia, Univ. of St. Andrews (United Kingdom) [740037]

12:00 pm: **What is wrong with the interpretation of recent nano-filament experiments?**, Masud Mansuripur, College of Optical Sciences, The Univ. of Arizona (United States); Armis R. Zakharian, Corning Inc. (United States) [740038]

Lunch Break

12:20 to 1:50 pm

SESSION 9: Key Techniques

Session Chair: **Carlos Lenz Cesar**, Univ. Estadual de Campinas (Brazil)
Room: TBD

Tues. 1:50 to 3:40 pm

1:50 pm: **Precise calculation of three-dimensional force fields from Brownian motion** (*Invited Paper*), Ernst-Ludwig Florin, The Univ. of Texas at Austin (United States) [740039]

2:20 pm: **Single molecule chemical reactions within femtoliter volume containers**, Ana M. Jofre, Ben Faulk, The Univ. of North Carolina at Charlotte (United States) [740040]

2:40 pm: **[SWITCH TO POSTER]. Optical trapping of hydrosomes**, Carlos Lopez-Mariscal, Kristian Helmerson, National Institute of Standards and Technology (United States) [740041]

3:00 pm: **Measuring the surface tension of oil droplets using optical tweezers**, Graham M. Gibson, Alison M. Yao, Richard Bowman, Jonathan M. Cooper, Miles J. Padgett, Univ. of Glasgow (United Kingdom) [740042]

3:20 pm: **Power spectral analysis trap calibration using high-speed camera position detection with limited bandwidth**, Astrid van der Horst, Benjamin P. B. Downing, Nancy R. Forde, Simon Fraser Univ. (Canada) [740043]

Coffee Break

3:40 to 4:10 pm

SESSION 10: Fluidics and Interactions

Session Chair: **H. Daniel Ou-Yang**, Lehigh Univ.
Room: TBD

Tues. 4:10 to 6:30 pm

4:10 pm: **A test of pairwise additivity in colloidal electrostatics at low ionic strength**, Jason W. Merrill, Yale Univ. (United States); Sunil K. Sainis, The Rowland Institute at Harvard (United States); Eric R. Dufresne, Yale Univ. (United States) [740044]

4:30 pm: **Measurement of interparticle capillary forces in colloidal self-assembly with holographic optical tweezers**, Supone Manakasettharn, Ryan J. Kershner, Kevin T. Turner, Univ. of Wisconsin-Madison (United States) [740045]

4:50 pm: **Hydrodynamic interactions at a fluid wall**, Roberto Di Leonardo, Univ. degli Studi di Roma, La Sapienza (Italy); Concepcion López Quesada, Univ. de Barcelona (Spain) [740046]

5:10 pm: **[WITHDRAWN]. Micro-rheology near interfaces using optical tweezers**, Genmiao Wang, Edith M. Sevick, The Australian National Univ. (Australia) [740047]

5:30 pm: **Mapping fluid velocity in a microfluidic device using optical trapping**, Daniel J. Day, Jing Wu, Min Gu, Swinburne Univ. of Technology (Australia) [740048]

5:50 pm: **The optical micro-pipeline**, Etienne Brasselet, Bruno Issenman, Charles Loussert, Virginie Hourtane, Régis Wunenburger, Jean-Pierre Delville, Univ. Bordeaux 1 (France) [740049]

6:10 pm: **Three dimensional holographic optical trapping and manipulation of multiple particles and defects in liquid crystals**, Ivan I. Smalyukh, Rahul P. Trivedi, Taewoo Lee, Gabriel Stockdale, Dennis F. Gardner, Jr., Suman Anand, Univ. of Colorado at Boulder (United States) [740050]

Wednesday 5 August

SESSION 11: Binding Interactions

Session Chair: **Masud Mansuripur**, College of Optical Sciences/The Univ. of Arizona

Room: TBD Wed. 8:30 to 11:50 am

8:30 am: **Depletion-driven selective optical trapping in nanoparticle suspensions**, Joseph Junio, H. Daniel Ou-Yang, Lehigh Univ. (United States) [740051]

8:50 am: **Revisiting transverse optical binding**, Jörg Baumgartl, Andrew P. Rudhall, Michael Mazilu, Univ. of St. Andrews (United Kingdom); Ewan M. Wright, College of Optical Sciences, The Univ. of Arizona (United States); Kishan Dholakia, Univ. of St. Andrews (United Kingdom) [740052]

9:10 am: **Optical binding forces acting on two colloidal particles in a dual optical tweezers**, Ming-Tzo Wei, Lehigh Univ. (United States); Jack Ng, Ping Sheng, Che Ting Chan, The Hong Kong Univ. of Science and Technology (Hong Kong, China); H. Daniel Ou-Yang, Lehigh Univ. (United States) [740053]

9:30 am: **Optical trapping and binding in evanescent optical landscapes**, Luen Y. Wong, Colin D. Bain, Durham Univ. (United Kingdom) [740054]

9:50 am: **Modeling optical forces near planar interfaces**, Brian D. Stout, Institut Fresnel (France) and Univ. de Provence (France); Alexis Devilez, Institut Fresnel (France) [740055]

Coffee Break

10:10 to 10:30 am

10:30 am: **Mechanisms for optical binding**, David L. Andrews, Univ. of East Anglia Norwich (United Kingdom) [740056]

10:50 am: **Manipulation of optically fabricated particle arrays using broadband radiation**, Justo J. Rodriguez, David L. Andrews, Univ. of East Anglia Norwich (United Kingdom) [740057]

11:10 am: **Optical nonlinearity of liquid nanosuspensions: Kerr versus exponential model**, Ewan M. Wright, College of Optical Sciences, The Univ. of Arizona (United States); Woei-Ming Lee, Kishan Dholakia, Univ. of St. Andrews (United Kingdom); Demetrios N. Christodoulides, Ramy A. H. El-Ganainy, The College of Optics and Photonics, Univ. of Central Florida (United States) [740058]

11:30 am: **Particles collective effects in counter-propagating Bessel beams**, Oto Brzobohaty, Vítizslav Karásek, Jan Trojek, Pavel Zemánek, Institute of Scientific Instruments (Czech Republic); Kishan Dholakia, Univ. of St. Andrews (United Kingdom) [740059]

Lunch Break

11:50 am to 1:10 pm

SESSION 12: Optical Trapping Suites

Session Chair: **Pavel Zemánek**, Institute of Scientific Instruments (Czech Republic)

Room: TBD

Wed. 1:10 to 3:10 pm

1:10 pm: **Sensing interactions in the microworld with optical tweezers**, Cecile Pacoret, Univ. Pierre et Marie Curie (France) and Commissariat à l'Energie Atomique (France); Richard Bowman, Graham M. Gibson, Univ. of Glasgow (United Kingdom); D. Sinan Haliyo, Univ. Pierre et Marie Curie (France); Moustapha Hafez, Commissariat à l'Energie Atomique (France); Miles J. Padgett, Univ. of Glasgow (United Kingdom) [740060]

1:30 pm: **The nano-world at your fingertips**, James A. Grieve, Arturas Ulcinas, Sriram Subramanian, Univ. of Bristol (United Kingdom); Graham M. Gibson, Miles J. Padgett, Univ. of Glasgow (United Kingdom); David M. Carberry, Mervyn J. Miles, Univ. of Bristol (United Kingdom) [740061]

1:50 pm: **A comprehensive software suite for optical trapping and manipulation**, Daryl C. Preece, Richard Bowman, Graham M. Gibson, Graeme Whyte, Miles J. Padgett, Univ. of Glasgow (United Kingdom) [740062]

2:10 pm: **The mGPC method: generalized phase contrast combined with matched filtering**, Jesper Glückstad, Darwin Z. Palima, Technical Univ. of Denmark (Denmark) [740063]

2:30 pm: **Wavefront correction for holographic optical trapping**, Tomáš Cizmar, Michael Mazilu, Kishan Dholakia, Univ. of St. Andrews (United Kingdom) [740064]

2:50 pm: **Axial intensity shaping of a Bessel beam**, Tomáš Cizmar, Kishan Dholakia, Univ. of St. Andrews (United Kingdom) [740065]

Coffee Break

3:10 to 3:30 pm

SESSION 13: Novel Beams/Novel Probes

Session Chair: **Halina H. Rubinsztein-Dunlop**, The Univ. of Queensland (Australia)

Room: TBD Wed. 3:30 to 6:00 pm

3:30 pm: **Optical snowblowing of microparticles and cells in a microfluidic environment using Airy and parabolic wavepackets** (*Invited Paper*), Jörg Baumgartl, Gregor M. Hannappel, David J. Stevenson, Michael Mazilu, Univ. of St. Andrews (United Kingdom); Daniel J. Day, Min Gu, Swinburne Univ. of Technology (Australia); Kishan Dholakia, Univ. of St. Andrews (United Kingdom) [740066]

4:00 pm: **Optical path clearing**, Michael Mazilu, Antonia E. Carruthers, Tomáš Cizmar, Univ. of St. Andrews (United Kingdom); Barbara A. Capron, William A. McNeely, Boeing Space & Defense Group (United States); Ewan M. Wright, College of Optical Sciences, The Univ. of Arizona (United States); Kishan Dholakia, Univ. of St. Andrews (United Kingdom) [740067]

4:20 pm: **The optical force induced by an angular momentum carrying beam alone can never trap a particle: the damping force from the water medium is working in harmony**, Jack Ng, The Hong Kong Univ. of Science and Technology (Hong Kong, China); Zhi Fang Lin, Fudan Univ. (China); Che Ting Chan, The Hong Kong Univ. of Science and Technology (Hong Kong, China) [740068]

4:40 pm: **Dynamic properties of a micro-sphere optically trapped in air by radially polarized laser beam**, Masaki Michihata, Yasuhiro Takaya, Terutake Hayashi, Osaka Univ. (Japan) [740069]

5:00 pm: **Optical trap assisted direct write nanolithography**, Craig B. Arnold, Euan R. McLeod, Princeton Univ. (United States) [740070]

5:20 pm: **Thermal motion of an optically trapped nano-tool**, Stephen H. Simpson, Mervyn J. Miles, Simon Hanna, Univ. of Bristol (United Kingdom) [740071]

5:40 pm: **Using holographic optical tweezers to measure forces with SPM-like probes**, David M. Carberry, Leo Ikin, Univ. of Bristol (United Kingdom); Graham M. Gibson, Miles J. Padgett, Univ. of Glasgow (United Kingdom); Mervyn J. Miles, Univ. of Bristol (United Kingdom) [740072]

Wednesday Poster Session

Room: TBD

Wed. 6:00 to 7:30 pm

Multiple optical traps created with an inclined fiber optical tweezers, Yuxiang Liu, Miao Yu, Univ. of Maryland, College Park (United States) [740081]

Optical rotation of the shrunken multi-lamellar vesicle in optical tweezers, Chungil Ha, Hyuk Kyu Pak, Pusan National Univ. (Korea, Republic of); Kipom Kim, Univ. of California, Santa Barbara (United States) [740082]

Measurement of trap length for an optical trap, Susan Y. Wrbanek, NASA Glenn Research Ctr. (United States) [740083]

Target tracking for cell in the fluid by joint transform correlator and wavelet transform, Hui Chi Chen, Yui Han Gong, Fu-Jen Catholic Univ. (Taiwan) [740084]

Analysis of the trapping forces on a spheroidal microparticle, Hector Sosa-Martinez, Julio C. Gutiérrez-Vega, Instituto Tecnológico y de Estudios Superiores de Monterrey (Mexico) [740085]

SONOPTICS: spatio-temporal micromanipulation by light and sound, Paul A. Campbell, Univ. of Dundee (United Kingdom) [740086]

Kingdom); Kishan Dholakia, Univ. of St. Andrews (United Kingdom) [740086]

Rectification of Brownian motion by dielectrophoresis, A. Covarrubias-Jaramillo, Univ. de las Américas Puebla (Mexico); Daniel A. May-Arrijoa, Julio C. Ramirez-San-Juan, Nikolai A. Korneev, Rubén Ramos-García II, Instituto Nacional de Astrofísica, Óptica y Electrónica (Mexico) [740087]

Thursday 6 August

SESSION 14: Optically Driven Systems and Micromachines

Session Chair: **Jesper Glückstad**, Danmarks Tekniske Univ. (Denmark)

Room: TBD Thurs. 9:00 to 10:30 am

9:00 am: **Optical trapping and guiding of absorbing nanoclusters in air** (*Invited Paper*), Vladlen G. Shvedov, Yana V. Izdebskaya, Anton S. Desyatnikov, Andrei V. Rode, Yuri S. Kivshar, Wieslaw Z. Krolikowski, The Australian National Univ. (Australia) [740073]

9:30 am: **Optimization of optically-driven micromachines**, Vincent L. Y. Loke, Theodor Asavei, Timo A. Nieminen, Norman R. Heckenberg, Halina H. Rubinsztein-Dunlop, The Univ. of Queensland (Australia) [740074]

9:50 am: **Optical paddle-wheel**, Theodor Asavei, Vincent L. Y. Loke, Timo A. Nieminen, Norman R. Heckenberg, Halina H. Rubinsztein-Dunlop, The Univ. of Queensland (Australia) [740075]

10:10 am: **Detaching and optical trapping of micro-part solidified using microstereolithography**, Md. Tallal Bin Najam, Yong-Gu Lee, Gwangju Institute of Science and Technology (Korea, Republic of) [740076]

Coffee Break

10:30 to 11:00 am

SESSION 15: Nanostructures

Min Gu, Swinburne Univ. (Australia)

Room: TBD Thurs. 11:00 am to 12:20 pm

11:00 am: **Optically tunable surfaces via trapped particles in microcavities**, Rebecca Sainidou, Francisco Javier Garcia de Abajo, Consejo Superior de Investigaciones Científicas (Spain) [740077]

11:20 am: **Manipulating vanadium oxide nanotubes with optical tweezers**, Woei-Ming Lee, Univ. of St. Andrews (United Kingdom); Jose Luis Hernández-Pozos, Liliana I. Vera-Robles, Antonio Campero Celis, Univ. Autónoma Metropolitana-Iztapalapa (Mexico); Kishan Dholakia, Univ. of St. Andrews (United Kingdom) [740078]

11:40 am: **Measurement of the axial rotation of nanorods trapped by a laser beam**, Sun-Uk Hwang, Gwangju Institute of Science and Technology (Korea, Republic of); Yong-Jin Kim, Gyu-Chul Yi, Pohang Univ. of Science and Technology (Korea, Republic of); Yong-Gu Lee, Gwangju Institute of Science and Technology (Korea, Republic of) [740079]

12:00 pm: **Micro-crystal sample manipulation for X-ray microdiffraction experiments**, Silvia C. Santucci, Enrico Ferrari, Lab. Nazionale TASC/INFM (Italy); Michael Rappolt, Heinz Amenitsch, Barbara Sartori, Benedetta Marmiroli, Institute of Biophysics and X-Ray Structure Research (Austria); Manfred Burghammer, Christian Riekkel, European Synchrotron Radiation Facility (France); Danut-Adrian Cojoc, Lab. Nazionale TASC/INFM (Italy) [740080]