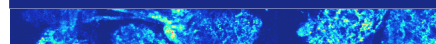




Westfälische
Wilhelms-Universität
Münster



Nonlinear Microscopy and Optical Control 2008

Advance Technical Program

Invited talks

Prof. Dr. E. Beaurepaire, Ecole Polytechnique, CNRS, Palaiseau, FR

Prof. Dr. K. Dholakia, Optical Trapping Group, University of St. Andrews, UK

Prof. Dr. F. Pavone, LENS, Florence, IT

Prof. Dr. E. Potma, University of California, Irvine, USA

Prof. Dr. J. Käs, Biophysics, University of Leipzig, GER

Session overview

Monday	17.00-18.00	Registration
Tuesday	08.00-09.00	Registration
	09.15-09.30	Opening
	09.30-10.15	Keynote talk: Imaging and manipulating bio-samples with light
	10.35-12.40	Session C: Coherent anti-Raman Stokes microscopy
	13.50-15.15	Session H: Second/third harmonic generation microscopy
	15.20-16.20	Session I: Innovative microscopy concepts
	16.30-18.30	Session P: Poster session, industry exhibition and opportunity for discussion
	evening	Conference dinner
Wednesday	08.45-10.15	Session T: Developments in optical tweezers
	11.10-13.15	Session B: Optical trapping applied in life sciences
	14.25-16.05	Session M: Optical manipulation on the microscopic scale
	16.05-16.15	Closing discussion
	afternoon	Opportunity for laboratory tours

Advance technical program, Part I - Sessions

K.1	Imaging and manipulating bio-samples with light (invited)	F. Pavone, LENS, Firenze, Italia
C.1	Getting more out of CARS (invited)	E. Potma, University of California, Irvine, USA
C.2	Shot noise limited heterodyne detection of CARS signals	Jurna(*), Korterik, Otto, Offerhaus, (*) Optical Sciences Group, University of Twente, NL.
C.3	Nonlinear spectral imaging microscopy: bringing colour to label-free live tissue microscopy	Palero(*), Dikken, Posthumus, Bruijn, Heuvel, Sterenborg, Gerritsen, (*) Molecular Biophysics, Utrecht University, 3584 CC Utrecht, The Netherlands
C.4	CARS spectroscopy around 3000 1/cm using spectral phase shaping of pump and probe pulses	S. Postma, A.C.W. van Rhijn, J.P. Korterik, J.L. Herek, H.L. Offerhaus(*) Optical Sciences group, MESA ⁺ research institute, faculty of Science and Technology, University of Twente, The Netherlands.
C.5	Visualization of lipid saturation in cell vesicles by wide-field CARS-microscopy	Ritsch-Marte(*), Heinrich, Bernet, (*) Division for Biomedical Physics, Innsbruck Medical University, Muellerstr. 44, A-6020 Innsbruck, Austria
H.1	Third-harmonic generation (THG) microscopy of tissues and embryos: mechanisms of contrast and applications (invited)	E. Beaufrepaire, Ecole Polytechnique, CNRS, Palaiseau, France
H.2	Polarized Nonlinear Microscopy of Gold Nanodots	Kauranen(*), Husu, Canfield, Kontio, Viheriälä, Niemi, Chandler, Hrin, Squier, (*) Institute of Physics, Tampere University of Technology, PO Box 692, FI-33101 Tampere, Finland
H.3	Two-photon laser scanning setup for imaging and optical manipulation of cells	Maghelli(*), Tolić-Nørrelykke, (*) Max Planck Institute of Molecular Cell Biology and Genetics, Dresden
I.1	Microscopy with phase modulated beams	Fahrbach(*), Rohrbach, (*) Laboratory for Photonic Measurement Technology, Department of Microsystems Engineering (IMTEK), University of Freiburg, Georges-Koehler-Allee 102, 79110 Freiburg, Germany
I.2	Low coherence interferometry applied to quantitative endoscopy	Criante(*), Lucesoli, Farabollini, Bonifazi, Rozzi, Simoni, (*) Dip. di Fisica e Ingegneria dei Materiali e del Territorio and CNISM, Università Politecnica delle Marche, Ancona, Italy.
I.3	Tracer- and label-free detection of microfluidic mixing processes	Holtmann(*), Eversloh, Denz, (*) Institut für Angewandte Physik, Westfälische Wilhelms-Universität, Corrensstr. 2, 48149 Münster
T.1	t.b.d. (invited)	K. Dholakia, Optical Trapping Group, University of St. Andrews, UK
T.2	Three-dimensional optical control of microfabricated building blocks	Nielsen(*), Rodrigo, Dam, Kelemen, Ormos, Glückstad, (*) Risø national lab, Technical University of Denmark, Frederiksborgvej 399 PO.49, DK-4000 Roskilde, Denmark, {jesper.gluckstad@risoe.dk}
T.3	Fast optical delivery of nanoparticles on the surface	Šiler(*), Čižmár, Ježek, Zemánek, (*) Institute of Scientific Instruments of the ASCR, v.v.i., Academy of Sciences of the Czech Republic, Královopolská 147, 612 64 Brno, Czech Republic
T.4	Changes in trap stiffness for holographic optical tweezers	Leach(*), Keen, Eriksson, Goksör, Padgett, (*) SUPA, Physics and Astronomy, University of Glasgow, G12 8QQ

T.5	Quantitative characterization of potential energy wells in optical tweezers	Belloni(*), Monneret, (* Institut Fresnel, UMR6133 CNRS-Université Paul Cézanne, Marseille, France
B.1	Feeling for Cells with Light (invited)	J. Käs, Biophysics, University of Leipzig, Germany
B.2	Optical trapping and tracking synthetic model bacteria nearby living macrophages	Kohler(*), Kress, Rohrbach, (* University of Freiburg, Germany
B.3	The Optical Cell Rotator: A tool to orient living cells for single cell tomography	Kreysing(*), Käs, Guck, (* Cavendish Laboratory, Department of Physics, University of Cambridge, Cambridge, UK
B.4	Force and Motorprotein Concentration Determine Dynamics of Bacterial Pili	Clausen(*), Maier, (* Institut für Allgemeine Zoologie und Genetik, Universität Münster, Schlossplatz 5, 48149 Münster, Germany
B.5	Interaction with host cells influences bacterial pilus dynamics	Opitz(*), Maier, (* Institut für Allgemeine Zoologie und Genetik, Universität Münster, Schlossplatz 5, 48149 Münster, Germany
M.1	Surface scanning with optically trapped probes	Friedrich(*), Rohrbach, (* Laboratory for Photonic Measurement Technology, Department of Microsystems Engineering (IMTEK), University of Freiburg, Georges-Köhler-Allee 102, 79110 Freiburg, Germany
M.2	Quantitative Cell Imaging Metrology by Digital Holographic Microscopy	Kemper(*), Langehanenberg, Remmersmann, Stürwald, Kosmeier, Bally, (* Centre of Biomedical Optics and Photonics, University of Muenster, Robert-Koch-Str. 45, D-48129 Muenster, Germany
M.3	Single shot parallel photopolymerisation with complex light patterns generated by diffractive optical elements	Kelemen(*), Fábrián, Valkai, Ormos, (* Biological Research Centre of the Hungarian Academy of Sciences, Institute of Biophysics, Temesvári krt. 62, Szeged, Hungary, H-6726
M.4	Holographic optical manipulation of water droplets via thermocapillary forces	McGloin(*), Burnham, Cordero, Baroud, (* Electronic Engineering and Physics Division, Univ. of Dundee, Dundee, UK
M.5	Redistribution studies of MFI zeolite nanoparticles in acrylamide-based photopolymer holographic gratings	Ostrowski(*), Naydenova, Toal, (* Centre for Industrial and Engineering Optics, Dublin Institute of Technology, Dublin 8, Ireland

Advance technical program, Part II - Posters

P.1	Mapping local defects of extended media using localized structures	Barland(*), Pedaci, Caboche, Tissoni, Giudici, Tredicce, (* Institut Non Linéaire de Nice, UMR6618 Université de Nice - CNRS, 1365 route des lucioles 06560 Sophia Antipolis, Valbonne (France).
P.2	Adaptive Optics for improved penetration depth Coherent anti-Stokes Raman Scattering microscopy	Wright(*), Poland, Girkin, Freudiger, Evans, Xie, (* Institute of Photonics, SUPA, University of Strathclyde, 106 Rottenrow, Glasgow, G4 0NW, Scotland
P.3	Multimodal nonlinear luminescence imaging of human skin and its applications	Stracke(*), Riemann, (* Fraunhofer IBMT, Ensheimer Str. 48, 66386 St. Ingbert, Germany
P.4	Microfluidic velocimetry with a nonlinear dynamic phase contrast microscope	Woerdemann(*), Holtmann, Oevermann, Denz, (* Institut für Angewandte Physik, Westfälische Wilhelms-Universität, Corrensstr. 2, 48149 Münster

P.5	Compact solution for implementation of various laser based techniques into optical microscope	Šerý(*), Jonáš, Lošťák, Pochylý, Zemánek, (* Institute of Scientific Instruments of the ASCR, v.v.i., Academy of Sciences of the Czech Republic, Královopolská 147, 612 64 Brno, Czech Republic
P.6	Development of laser-based imaging systems for medical diagnostics	Witte(*), Peterman, Brakenhoff, Dongen, Groot, (* Laser Centre Vrije Universiteit, De Boelelaan 1081, 1081 HV Amsterdam The Netherlands
P.7	Analysis and visualization of ferroelectric domain structures by nonlinear confocal microscopy	Berth(*), Hüsch, Wiedemeier, Quiring, Sohler, Zrenner, (* Center for Optoelectronics and Photonics Paderborn, University of Paderborn, Warburger Strasse 100, 33098 Paderborn, Germany
P.8	Multi-dimensional imaging and analysis of micro- and nanosystems by confocal Raman spectroscopy	Berth(*), Hüsch, Wiedemeier, Panfilova, Pawlis, Lischka, Zrenner, (* Center for Optoelectronics and Photonics Paderborn, University of Paderborn, Warburger Strasse 100, 33098 Paderborn, Germany
P.10	Distorted potential energy wells in holographic optical tweezers	Monneret(*), Belloni, (* Institut Fresnel, UMR6133 CNRS-Université Paul Cézanne, Marseille, France
P.11	Interaction potential of several diffusing particles in an optical line trap	Speidel(*), Rohrbach, (* Laboratory for Photonic Measurement Technology, Department of Microsystems Engineering (IMTEK), University of Freiburg, Georges Köhler Allee 102, 79110 Freiburg, Germany
P.12	Towards a compact particle manipulation system based on arrays of vertical-cavity laser diodes	Kroner(*), Rinaldi, Rösch, Kardosh, Michalzik, (* Ulm University, Institute of Optoelectronics, 89069 Ulm, Germany
P.13	Enhanced holographic optical tweezers by random mask multiplexing	Roth(*), Pleguezuelos, Martín-Badosa, Montes-Usategui, (* Universitat de Barcelona, Departament de Física Aplicada i Òptica, Martí i Franquès 1, 08028 Barcelona, Spain
P.14	Acrylamide-Based Photopolymer Layers Doped With Nanoparticles For Holographic Recording	Leite(*), Naydenova, Mintova, Toal, (* DIT - Dublin Institute of Technology, Kevin Street, Dublin 2, Ireland
P.15	Photoswitchable ML ₅ NO ^{±m} complexes for nonlinear optofluidics	Dieckmann(*), Imlau, (* Department of Physics, University of Osnabrück, Germany
P.16	Correction of aberrations in holographic optical tweezers using a Shack-Hartmann wavefront sensor	López(*), Andilla, Montes-Usategui, Martín-Badosa, (* Grup de Recerca en Òptica Física (GROF), Departament de Física Aplicada i Òptica, Universitat de Barcelona. c/Martí i Franquès 1, 08028 Barcelona, Spain
P.17	One-dimensional long-range self-arranged optically bound structures	Brzobohatý(*), Karásek, Čížmár, Zemánek, Dholakia, Garcés-Chávez, (* Institute of Scientific Instruments of the ASCR, v.v.i., Academy of Sciences of the Czech Republic, Kralovopolska 147, 612 64 Brno, Czech Republic
P.18	Optical manipulation of cell cultures in micro-opto-fluidic systems	Sinzinger(*), Oeder, Amberg, Metze, Grodrian, Kremin, Hoffmann, (* Technische Universität Ilmenau, Institut für Mikro- und Nanotechnologien, Postfach 100565, 98684 Ilmenau, Germany