

Trends in Optical Micromanipulation II

Universitätszentrum Obergurgl, Tyrolean Alps, Austria

11. - 16. 4. 2010



Optical Micromanipulation makes clever use of the physical properties of light to influence microscopic particles: The photon energy can be applied to heat, weld, cut or fuse; the momentum that light carries may accelerate, trap or stretch particles; and since light may carry angular momentum, we even have a “handle” to induce torques or induce rotations, respectively.

Optical micromanipulation is very appealing as a technology for instance in cell biology, as it is clean, safe (typically one uses milli-Watt laser beams), relatively cheap and allows interactive monitoring under the microscope. Besides being a contactfree means for “manoeuvring” particles in desired ways, optical traps can also be used as measurement devices for tiny forces in the pico-Newton regime.

Being strongly interdisciplinary and close to industry, the topic reflects the typical characteristics of present day research. Optical Micromanipulation is a very rapidly growing field, a fact that creates a large demand for cross-linking among the increasing number of groups on the development and on the application side. The conference will be dedicated to these emerging new technologies for the laser-manipulation of particles in the micro- and nano-world. It will cover topics on optical traps including holographic optical tweezers, optical binding and self-assembly of particles, laser micro-beams, and biological and technological applications of these.

Apart from these main topics, stimulating “side-glances” to related topics ranging from biological imaging to nanotechnology and microfluidics will be included.

We will bring together major trend-setters and promising young researchers in the field, in an environment with excellent opportunities for scientific discussion, better than typically possible at large scale conferences. We offer to be a platform for exchanging views and sharing experience in the challenging goal to bridge the gap towards applications in biology and other disciplines or to intensify and strengthen existing links.

Application & Registration:

Application open:

11th of November 2009 to 11th of January 2010

Early Registration at reduced rate:

11th of January 2010 to 1st of March 2010

http://www2.i-med.ac.at/medphysik/ToM_II/registration.html



Chair:

Monika Ritsch-Marte
Innsbruck Medical University

Vice-Chair:

Stefan Bernet
Innsbruck Medical University

Confirmed invited Speakers:

Bernet Stefan (AT)

Bockelmann Ulrich (FR)

Curtis Jennifer (US)

Denz Cornelia (GE)

Dholakia Kishan (UK)

di Leonardo Roberto (IT)

Emiliani Valentina (FR)

Fournier Jean-Marc (CH)

Glückstad Jesper (DK)

Goksör Mattias (SE)

Greulich Karl Otto (GE)

Helmerson Kristian (AU)

Käs Josef (GE)

König Karsten (GE)

Krolikowski Wieslaw (AU)

Losert Wolfgang (US)

Martin-Badosa Estella (ES)

McGloin David (UK)

Ormos Pal (HU)

Ou-Yang Daniel (US)

Padgett Miles (UK)

Pavone Francesco (IT)

Petrov Dimitri (ES)

Rohrbach Alexander (GE)

Rubinsztein-Dunlop Halina (AU)

Rusciano Giulia (IT)

Segev Moti (IL)

Spaldin Gabriel (US)

Swartzlander Grover (US)

Van Blaaderen Alfons (NL)

Wuite Guijs (NL)

Zemanek Pavel (CZ)

Zheludev Nikolay (UK)



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