SSOM

Swiss Society for Optics and Microscopy

Société Suisse pour l'Optique et la Microscopie

Schweizerische Gesellschaft für Optik und Mikroskopie

Mitteilungsblatt/Bulletin d'information 2/2008

Do they crash ?

Read more in the Centerfold Article in this Issue !

SWISS SOCIETY FOR OPTICS AND MICROSCOPY

www.ssom.ch

BOARD MEMBERS 2004 - 2007

President

Dr. Markus Dürrenberger
Zentrum für Mikroskopie ZMB,Bio-Pharmazentrum, Universität Basel, Klingelbergstrasse 50/70 CH-4056 Basel
Tel. +41 61 267 14 04, Fax +41 61 267 14 10
markus.duerrenberger@unibas.ch

Treasurer

Gianni Morson
Zentrum für Mikroskopie ZMB, Bio-Pharmazentrum, Universität Basel, Klingelbergstrasse 50/70 CH-4056 Basel,
Tel. +41 61 267 14 06 , Fax +41 61 267 14 10
gianni.morson@unibas.ch

Redactor

Dr. Reto Holzner
Apfelbaumstrasse 2, CH-8050 Zürich Tel. +41 44 312 15 63,
reto.holzner@hispeed.ch

Webmaster

Daniel Mathys
Zentrum für Mikroskopie ZMB, Bio-Pharmazentrum, Universität Basel, Klingelbergstrasse 50/70, CH-4056 Basel, Tel. +41 61 267 14 01, Fax +41 61 267 14 10, daniel.mathys@unibas.ch

Optics Section Vice President

Prof. Dr. Hans Peter Herzig
Institut de Microtechnique, Rue A.-L. Breguet 2, CH-2000 Neuchâtel, Tel. +41 32 718 32 70, Fax +41 32 718 32 01,
hanspeter.herzig@unine.ch

Microscopy Section Vice President

Dr. Sousan Abolhassani
Laboratory for Materials Behaviour / Paul Scherrer Institut, CH-5232 Villigen PSI
Tel. +41 56 310 21 91 Fax +41 56 310 22 05, sousan.abolhassani@psi.ch

Nanotechnology Section Vice President

PD Dr. Harry Heinzelmann
CSEM, Nanoscale Technology & Biochemical Sensing, Jaquet-Droz 1, CH-2007 Neuchâtel , Tel. +41 32 720 55 33 , Fax +41 32 720 57 50,
harry.heinzelmann@csem.ch

Optics Section Board

Dr. Markus Rossi
Heptagon Oy, Moosstrasse 2, CH-8803 Rüschlikon, Tel. +41 44 497 30 03, Mobile +41 79 470 24 91, Fax +41 44 497 30 01,
markus.rossi@heptagon.fi

Prof. Dr. Markus W. Sigrist
Institut für Quantenelektronik, ETH-Hönggerberg HPF D 19, CH-8093 Zürich, Tel. +41 1 633 22 89, Fax +41 1 633 10 77,
sigrist@iqe.phys.ethz.ch

Dr. Berthold Schmidt
Bookham Switzerland AG, Binzstrasse 17, CH-8045 Zurich, Tel. +41 1 455 85 94, Fax +41 1 455 85 86,
berthold.schmidt@bookham.com

Dr. Guy Delacrétaz
Laboratoire d'Optique Appliquée, EPFL, CH-1015 Lausanne, Tel. +41 21 693 51 84, Fax. +41 21 693 37 01, guy.delacretaz@epfl.ch

Dr. Beat Neuenschwander
Institut für angewandte Lasertechnik IALT Berner Fachhochschule, Pestalozzistrasse 20 CH-3400 Burgdorf, Tel. +41 34 426 42 20
Tel. +41 34 423 15 13
beat.neuenschwander@bfh.ch

Dr. Martin Forrer
Fisba Optik AG, Rorschacher Str. 268 CH-9016 St.Gallen, Tel. 071 282 31 81
Fax 071 282 33 02 , Martin.Forrer@fisba.ch

Microscopy Section Boad

Dr. Patrick Schwarb
Maulbeerstrasse 66, WRO-1066.2.16, CH-4058 Basel , Tel. +41 61 6975172,
Mob +41 79 353 49 65
patrick.schwarb@fmi.ch

Dr. Heinz Gross
Elektronenmikroskopie-Zentrum der ETH Zürich, c/o Institut für angewandte Physik, CH-8093 Zürich, Tel. +41 1 633 33 04, Fax +41 1 633 11 05, heinz.gross@iap.phys.ethz.ch

Prof. Dr. Lukas Landmann
Universität Basel, Anatomisches Institut, Pestalozzistr. 20, CH-4056 Basel, Tel: +41 61 267 39 33 , Fax +41 61 267 39 59,
lukas.landmann@unibas.ch

Dr. Robin Schäublin
Centre de Recherches en Physique des Plasmas, EPFL, CH-5232 Villingen-PSI, Tel. +41 56 310 40 82, Fax +41 56 310 45 29,
Robin.Schaeublin@psi.ch

PD Dr. med Matthias Ochs
Institut für Anatomie, Experimentelle Morphologie, Universität Bern, Baltzerstrasse 2, CH-3000 Bern 9, Tel. +41 31 631 46 24,
Tel. +41 31 631 38 07, ochs@ana.unibe.ch

Dr. Marco Cantoni
EPFL SB CIME-GE , MXC 135 (Bâtiment MXC) , Station 12 , CH-1015 Lausanne, Tel 021 693 48 16, marco.cantoni@epfl.ch

Nanotechnology Section Board

Prof.Dr. Christian Schönenberger
Institut für Physik, Klingelbergstrasse 82, 4056 Basel, Tel: +41 61 267 36 90
Fax : +41 61 267 37 84
Christian.Schoenenberger@unibas.ch

Dr. Jens Gobrecht
Paul Scherrer Institute, Laboratory for Micro- and Nanotechnology, CH - 5232 Villigen-PSI, Tel: +41 56 310 2529, jens.gobrecht@psi.ch

Biomedical Photonics working group

PD Dr. Martin Wolf

Clinic of Neonatology, University Hospital Zurich, Frauenklinikstr. 10, CH-8091 Zurich, Tel: +41 44 2555346, Fax: +41 44 2554442
martin.wolf@alumni.ethz.ch

Table of content

SSOM

Optics Section

Microscopy Section

From the president

Dear members,

This issue contains a lot of little bits and pieces of information about past and upcoming activities of the National and International scene. I hope, that all of you will get the opportunity to visit the fall meetings of their sections. You will find more information about it in this issue.

The European meetings are also upcoming. As usual most of them were in September. So this ist the busy month of the year. For all those planning to attend one oft these meetings, I wish you a lot of new insights, pleasant contacts and fruitful discussions.

As always, try to convince other people, especially young ones, to become member in a society like our SSOM: young, dynamic and generous with their young members

I wish you a good time.

Markus Dürrenberger
President SSOM

Multiscale modelling in transmission electron microscopy

The difficulty in transmission electron microscopy (TEM), passed the first candid and gratifying impression of directness, is that images need interpretation. When we see the world through our eyes, brain is continuously engaged in both a heavy image treatment and a thorough comparison with the huge database stored in our memory, which is expanding since we are born. This process provides our consciousness with an understandable picture of what is in front of us. Actually, it is rather uncommon to meet a situation where we are completely unable to recognize it, or, in other words, where our brain is unable to provide an interpretation of the image sent by the eyes. When it happens we remember it, for the scare it provides - the known Aristotelian fear. More common are situations where we consciously hesitate for a while, in doubt, because of the mixture of understandable but incomplete or conflicting pieces of information and confusing indications induced by e.g. colours, geometry (3D) (Fig. 1a) or the distortion in known objects (Fig. 1b).

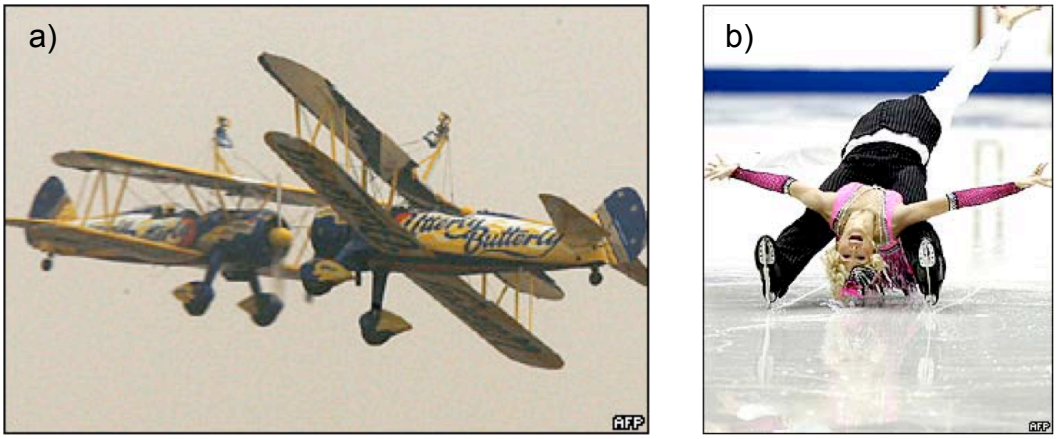


Figure 1: (a) Will they crash? Zhuhai Airshow 2004 in southern China. No: the blur in the left plane indicates they are not in the same axis. (b) What is this animal? It is Melissa Gregory and Denis Petukhov, at the Ice Dance in 2004, Nagoya, Japan. Careful inspection of the image allows sorting the convolution of the two bodies. (Images from Agence France-Presse)

An image taken in TEM is a two dimensional projection of a three dimensional object, which brings ambiguities such as in Fig. 1a, and the objects we continuously meet in TEM are not common to the unseasoned viewer; think of a nucleotide in a cell or a stacking fault tetrahedra in copper, less then for the light intensity contrasts they convey in the image. To this extent our brain is unable to retrieve them in the 'normal' database of our visual memory.

The image formation mechanisms in TEM are complex; every image detail, or contrast, appearing on the TEM phosphorescent screen is the result of the interaction of the electron beam with the sample. The origins of the TEM contrasts can be divided into three categories: *absorption contrast, diffraction contrast* and *phase contrast.* The absorption contrast, commonly used in biology, depends on the chemical composition of the sample. The heavier the chemical elements entering the sample composition are, the stronger the absorption contrast is. Diffraction contrast is related to the *diffraction condition*, that is to say to the orientation of the incident electron beam relative to the sample's crystallographic planes. It allows to image one-, two- or three-dimensional crystal defects thank to the signature they leave in the sample as a local deformation of the crystal planes. Phase contrast, related to interference phenomena between the

various beams (transmitted and diffracted), is used for example in high resolution TEM to image atomic columns. The contrast formation theories, even though based sometimes on strong approximations, give nowadays a good description of the TEM images. With the help of these theories, TEM images can be reproduced by large numerical calculations made on computers. For the *identification* of an object at the origin of an observed contrast, the image simulation appears as a powerful tool. It can also simply be used to verify the result predicted by classical methods. The *quantification* of TEM micrographs, e.g. to obtain the precise width of the dissociation of a dislocation (a crystal defect, vector of plasticity), is certainly the ideal application field of *TEM image simulations*. But they can also be used to help in improving the microscope itself, for example its spatial resolution with a new objective aperture designed by simulation [1].

The **multiscale modelling** approach is based on the simulation of the object at the origin of the contrast, using a set of simulation tools that encompass a large spatial scale. These include, starting at the lower scale, *ab initio* simulations, which consider the electronic structure of the atom, *molecular dynamics* simulations, which consider the atomistic structure of the considered object, and *mean field approaches*, e.g. dislocation dynamics, which consider solely the elastic field generated by the object. When the object is obtained, its TEM image can then be simulated using the *multislice technique* [2], when its atomistic structure is known, or the *many beam technique*, using e.g. its elastic field [3]. Figure 2 gives a wonderful example of the approach.

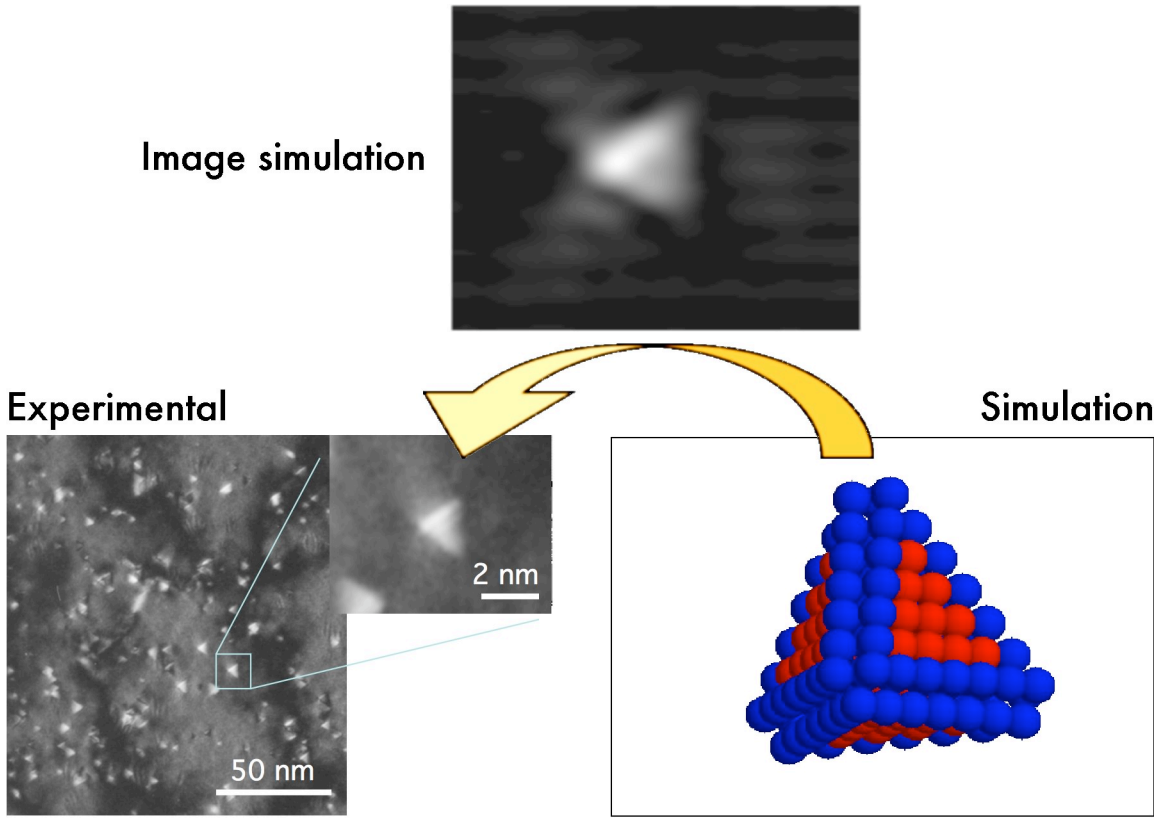


Figure 2: Retrieving the object at the origin of (left image) a white triangular contrast observed experimentally in the TEM in copper: (right image) the simulated atomistic model of the candidate object, a nanometric stacking fault tetrahedron, where the blue atoms are in the bording dislocation cores and the red atoms are in the stacking faults. The top image shows its TEM image simulated using the multislice technique with the EMS code [4]. The good match with the experimental image confirms the existence of the stacking fault tetrahedra in copper [5].

Based on a *best match approach*, the simulation method, if seducing, should be handled with precautions and with a good comprehension of the image formation theories, as the possibility of simulating a correct contrast with the wrong object exists. It is of course complementary to "classical" methods (gb=0 rule for crystal defects, stereographic projection, etc...). These methods should be completed as thoroughly as possible to provide accurate *data sets* for the simulations. Simulation becomes more and more common in science, akin to an additional experimental tool in the toolbox of the scientist, as the constant computer acceleration allows for faster calculations of an increasing range of TEM related problems.

Robin Schäublin

EPFL, Centre de Recherches en Physique des Plasmas, Villigen PSI

Some more reading:

[1] Schäublin R. 2006 Nanometric crystal defects in transmission electron microscopy. Microscopy Research and Technique, 69 (5):305-316

[2] Cowley JM, Moodie AF. 1957. The scattering of electrons by atoms and crystals. 1. A new theoretical approach. Acta Crystallographica 10(10):609-619

[3] Schäublin R, Stadelmann P. 1993. A method for simulating electron microscope dislocation images. Materials Science and Engineering A 164(1-2):373-378

[4] Stadelmann PA. 1987. EMS - A software package for electron diffraction analysis and HREM image simulation in materials science. Ultramicroscopy 21(2):131-145

[5] Schäublin R, Almazouzi A, Dai Y, Osetsky YN, Victoria M. 2000. Quantitative analysis of CTEM images of small dislocation loops in Al and stacking fault tetrahedra in Cu generated by molecular dynamics simulation. Journal of Nuclear Materials 276(1-3):251-257

News from the SCNAT

Dear SSOM members,

The SSOM is a member of the SCNAT (Swiss Academy of Natural Sciences).

Being your president, I visited the meeting of the Plattform MAP (Mathematics Astronomy and Physics) of which the section Microscopy and the section Nano are members. The section optics is member of the SATW (Swiss Academy of Technical Sciences), by the way an unique constellation that one society is member of two Swiss Academies.

The meeting of Mai 9th brought us the following news:

- There is an interesting historical lexicon of Swiss Science: www.hls.ch
- 2009 is the Year of Darwin (celebrated by the Plattform Biology)
- 2009 is also the Year of Astronomy (celebrated by the Plattform MAP)
- Financial support from the SCNAT is only possible for activities based in a paper called 'Leistungsvereinbarung'. I've got one of these and who ever is interested, can have an insight at a visit in my office here in Basel, but please call me before, not to provoke a crush.

There are very interesting events coming up for 2009 about Darwin and Astronomy, but nothing is yet final. My recommendation: follow Darwin and Astronomy in the Internet.

Markus Dürrenberger

SSOM Optics Section Meeting 2008

Am 3. Juni 2008, fand das Sektionstreffen der Optik im "Salon International de Beaulieu" in Lausanne statt. Das Sektionstreffen war Teil einer mehrtägigen Optik Tagung, welche vom 3. – 6. Juni zusammen mit der Mikrotechnik Ausstellung EPMT (Environnement Professionnel MicroTechnologies) organisiert wurde. Es war eine einmalige Gelegenheit verschiedene im Gebiet der Optik aktive Organisationen und deren Vertreter kennen zu lernen. Neben der SSOM, waren dies das Netzwerk für "Biomedical Photonics" und das Swiss Laser Net.

Die interessanten und didaktisch aufgebauten Vorträge waren ideal geeignet, um sich über aktuelle Gebiete der Optik auf dem Laufenden zu halten. Damit sich auch die Doktoranden, Forscher und Ingenieure aus dem Elfenbeinturm herauswagen, um industrierelevante Themen kennen zu lernen, ihre zukünftigen Arbeitgeber zu treffen und sich im Netzwerken zu üben, wurde eine Posterausstellung organisiert mit attraktiven Preisen.

Für alle die es vorzogen zu Hause zu bleiben, seien hier noch einmal die Vorträge kurz aufgelistet.

Für weitere Informationen, insbesondere betreffend der Poster Preisträger, möchte ich auf die Pressemitteilung (Seite 12) hinweisen.

Herzlichen Dank an alle, welche zum erfolgreichen Sektionstag beigetragen haben, insbesondere dem Hauptorganisator Prof. René Salathé und seinem Team.

Hans Peter Herzig

Programm EPMT
(Environnement Professionnel MicroTechnologies)
3.-6. Juni

3 juin 2008 **Metrology – Métrologie**

09:00 **Prof. Andreas Ettemeyer,**
Interstate University of Applied Sciences of Technology Buchs NTB
Optical 3D-Measurement Techniques for Micro Structures

09:30 **Prof. Pierre Jacquot,**
Ecole Polytechnique Fédérale de Lausanne
Mesures par interférométrie : exemples d'aide à la solution de problèmes de mécanique appliquée

10:00 **Prof. Yves Salvadé,**
Haute Ecole ARC Ingénierie, St-Imier
Mesures de distances absolues : techniques et applications

10:30 **PAUSE**

11:00 **Dr Toralf Scharf, Omar Manzardo,**
Institut de Microtechnique, Université de Neuchâtel
Wavelength measurement using miniaturized spectrometer

11:30 **Dr Rudolf Thalmann,**
Bundesamt für Metrologie METAS, Bern-Wabern
From optical frequency standards to dimensional measurements

12:00 **Prof. Pierre Thomann,**
Institut de Physique, Université de Neuchâtel
Mesure précise du temps : horloges atomiques et applications

4 juin 2008 **Biomedical Photonics - Photonique Biomédicale**

09:00 **Dr Martin Forrer,**
FISBA OPTIK AG, St. Gallen
Optical systems engineering for biomedical applications, requirements and examples

09:30 **Michael Jaeger, Michael Kitz und Prof. Martin Frenz,**
Institute of Applied Physics, University of Bern
Optoacoustic imaging

10:30 **PAUSE**

11:00 **Dr Pierre Marquet,**
Université de Lausanne
La dynamique des cellules explorée par holographie numérique

11:30 **Thomas Mühlemann, Dr. Daniel Haensse, PD Dr. Martin Wolf,**
Clinic of Neonatology, University Hospital Zurich
New applications of in vivo near infrared imaging in science and medicine

5 juin 2008 **Laser Processing - Usinage Laser**

09:00 **Dr Kurt Weingarten**
Time-Bandwidth Products AG, Zürich,
High average power and high pulse energy picosecond lasers for material microprocessing

09:30 **Dr Ulrich Dürr et Michel Normandon,**
LASAG AG, Thun
Strategies in modern laser microwelding

10:00 **Dr Marc Sentis,**
LP3 - CNRS, Marseille
Micro/nano usinage et structuration de surface par laser femtoseconde

10:30 **PAUSE**

11:00 **Dr Sascha Weiler,**
TRUMPF Laser GmbH + Co. KG, Schramberg
Ablative laser micro processing with short and ultrashort pulses

11:30 **Dr Jeffrey P. Wojtkiewicz ,**
Quantronix, East Setauket, NY
Hybrid fiber-Ti : sapphire amplifiers enable compact and robust high-energy, ultrafast systems for femtosecond laser micromachining

6 juin 2008 **Visit to the "Institut de Microtechnique" at EPFL**

Oben vlnr : O. Sänger (Vertreter EPMT), Y. Emery (Lyncée Tec, Industrie), René Salathé (Vertreter Unis), J.J. Goy (GMP, Industrie) und E. Debétaz (EPMT, Beaulieu)
Unten vlnr : die drei Preisträger Soenke Pilz (IAP/Uni Bern), Martin Villiger (LOB/ EPFL) und Steve Bühler (Optolab/BFH Biel)

EPHJ
ENVIRONNEMENT PROFESSIONNEL HORLOGERIE JOAILLERIE
SALON INTERNATIONAL

3 - 6 Juin 2008

EPMT
ENVIRONNEMENT PROFESSIONNEL MICROTECHNOLOGIES
SALON INTERNATIONAL

3, CHEMIN TAVERNEY
1218 GENÈVE
WWW.EPHJ.CH
WWW.EPMT.CH
TEL +41 (0)22 750 45 95
FAX +41 (0)22 790 10 36

Communiqué de presse
Lausanne, le 5 juin 2008

Recherches scientifiques et savoir-faire industriel récompensés dans le cadre d'EPMT

Dans le cadre du salon de l'Environnement Professionnel des Micro-Technologies (EPMT), qui se tient jusqu'à vendredi 6 juin à Beaulieu Lausanne, une centaine de scientifiques exposent les conclusions de leur projet de recherches sur l'utilisation de la lumière dans les techniques de mesures, l'usinage laser ou le domaine biomédical. Sous l'impulsion de l'EPFL, trois matinées de conférences permettent l'interaction entre les milieux académiques et les industriels. Les procédés présentés n'ayant pas encore été agréés par les communautés concernées, ils trouvent ici une résonance particulière. EPMT représente une occasion unique de mettre en contact les têtes pensantes et les concepteurs ; d'une part les résultats de recherches apportent des solutions à la médecine ou à l'industrie, qui d'autre part encouragent la mise en œuvre de tels projets.

Les résultats des groupes de recherches sur l'optique sont exposés depuis mardi 3 juin, sous la forme scientifique de posters. Il s'agit d'une présentation papier structurée, simple, qui contient les informations principales sur l'état des recherches. Au terme des trois jours de conférences, MM Goy et Emery, qui représentent les industriels exposant à EPMT et le Professeur Salathé, qui représente les chercheurs, ont désigné les trois meilleurs posters. Originalité, vulgarisation du message, pertinence du sujet et le potentiel de valorisation ont été les critères essentiels dans le choix des vainqueurs.

Cet après-midi, le premier prix d'une valeur de 3000 francs, offerts par les organisateurs d'EPMT, est revenu au groupe de Martin Villiger de l'EPFL. Le jury a récompensé le niveau scientifique très élevé et le potentiel d'application en bioingénierie et microtechnologie d'une nouvelle méthode d'imagerie optique. Le deuxième prix est remporté par le groupe de Soenke Pilz de l'Institut de Physique Appliquée de l'Université de Berne, pour son projet sur les fibres laser. Le groupe de Steeve Bühler d'Arcoptix a reçu le troisième prix pour sa détermination à créer un instrument de mesure de précision basé sur l'interféromètre.

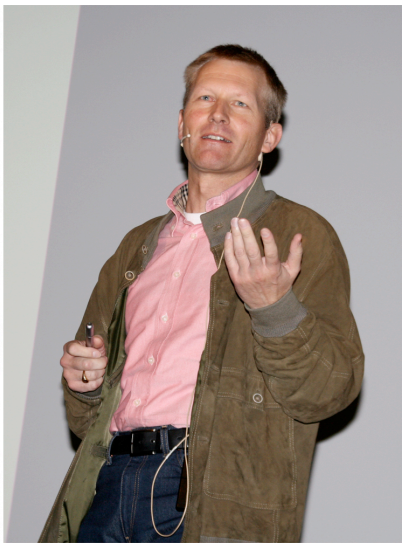
Dans le but d'encourager l'échange de savoir-faire, EPMT souhaite reconduire la collaboration avec l'EPFL et ouvrir ainsi de nouvelles perspectives de réflexions à ses visiteurs lors de la prochaine édition.
En 2009, EPMT et EPHJ se tiendront du 12 au 15 mai, à Beaulieu Lausanne.

Renseignements
Professeur René Paul Salathé, 078 889 30 88

European Light Microscopy Initiative (ELMI) annual Meeting in Davos 2008

Dear members,

The SSOM hosted the 2008 ELMI meeting in Switzerland. It was held Mai 27. – 30. at the Congress Centre in Davos. ELMI was created in 2001 to establish a unique communication network between European scientists working in the field of light microscopy and the manufacturers of their equipment. It is an international movement of the light microscopy central facilities (http://cci.sahlgrenska.gu.se/ELMI), therefore a specialized small subdivision of microscopy in general. The meeting was structured in scientific plenary sessions and workshops organized by the supplying companies in this field of microscopies. In addition, there was a poster competition organized. This seems to be an attractive mix, especially for the suppliers. All types of specialized Light Microscopes including Confocal Microscops, Video Microscopes and preparational aids were demonstrated on site. The success has been demonstrated by attracting about 180 registered participants from all over Europe and about 260 participants in total, including the exhibitors. The local organizers made good job: Patrick Schwarb, Jens Rietdorf, Gabor Csucs and Nathalie Garin were the responsible members of the SSOM on the ELMI board. Also this is a rather familiar meeting, the quality standard of the organization of the meeting was high and left once more an excellent image of the SSOM. Thanks to the organizers and supporting staff.



Science, Workshops and Pleasure, this was the ELMI 2008 meeting in Davos

More information and images can be found on www.elmi08.unibas.ch

The next ELMI meeting will be 2009 in Glasgow. See you there.

Markus Dürrenberger

Microscopy Conference 2009 in Graz

Dear SSOM members,

Next year (2009), there will be the 9th Multinational Microscopy Conference & Dreiländertagung in Graz (Austria) from 30th of August to 4th of September. Gianni Morson and me were invited by the ASEM to Graz to evaluate the site and initialize the scientific program.

Here is a personal impression of our visit:

The conference centre is in the middle of the historic city of Graz. Graz is a very charming city that has still a lot of historic buildings originating from the middle ages over the flowering König & Kaiser time up to the recent time. 2006 Graz was elected as cultural capital of Europe.

The conference centre has been built at the beginning of the 20th century and is a very impressive historical witness of the ending period of the K & K time (entrance hall upper left). It will harbor an industrial exposition as well as all the scientific activities. There will be workshops, plenary lectures and 21 sessions in the fields of Instrumentation & Development, Material Sciences and Life Sciences.
Concerning the meeting, we decided to keep the registration fees for students as low as possible (below 100 Euro) on costs of the registration fee for other attendants and prices for the industrial exhibition.

Responsible for the organization is the Austrian Society for Electron Microscopy (ASEM), sharing the financial risk with the DGE and the SSOM. Local organizer is Ferdinand Hofer from the Graz University of Technology. You will find updated information on the world wide web at: http://www.microscopy09.tugraz.at

As president of the SSOM, I can recommend you to reserve the time slot in your calendar, since it is the most important microscopical happening in Europe for 2009. I send my best wishes to the local organizer Ferdinand Hofer and I am convinced that he will bring this meeting to a success.

Markus Dürrenberger

SSOM Agenda 2008

Veranstaltung	**Ort**	**Datum**	**Bemerkungen**
SSOM Vorstandssitzung	Bern	18 January	
SAOG/GSSI Meeting	Fribourg	26. Januar	Controlled Growth of Surface Nano Structures
Swiss Physical Society	Geneva	26-27 March	Annual Meeting
SSOM – Sektion Optik	Lausanne	3 June	Sektionstagung im Rahmen der EPMT
Biomedical Photonics Network	Lausanne	4 June	Annual Meeting

July

3 – 4	**FIB Workshop 2008** Luzern, Switzerland
7 – 10	**ICO-21 2008** Sydney Australia www.iceaustralia.com/ICO2008/
20 – 25	**ICN+T 2008** Keystone, Colorado, USA www.icnt2008.us

August

10 - 14	**Optical MEMS and Nanophotonics** Freiburg, German www.ieee.org/organizations/society/leos/LEOSCONF/MEMS2008/

September

1 – 5	**14th European Microscopy Congress EMC 2008** Aachen, Germany
15 – 18	**MNE '08** Athens, Greece www.mne08.org
21 – 25	**ECOC 2008** Brussels, Belgium www.ecoc2008.org
23 – 25	**Nanotech Northern Europe** Copenhagen, Denmark www.nanotech.net
25 – 27	**MOC 2008** Microoptics Conference tona.vub.ac.be/MOC08/
29 – 2 Oct	**EOS Annual Meeting 2008** Paris, France www.europeanopticalsociety.org/events

October

19 – 21	**Tip-Based NanoFabrication** Taipei, Taiwan www.ntust.edu.tw/tbn2008/

2009

January 2009

5 – 8	**IEEE – NEMS: the 4th Annual IEEE International Conference on Nano/Micro Engineered and Molecular Systems** Shenzhen, China www.ieee-nems.org/

For further events see also according pages on
www.ssom.ch
www.ssom.ch/bmpn/activities.html
www.ssom.ch/bmpn/activities.html
www.myeos.org/events

SSOM

Swiss Society for Optics and Microscopy

Société Suisse pour l'Optique et la Microscopie

Schweizerische Gesellschaft für Optik und Mikroskopie

☐ **Anmeldung zur Mitgliedschaft / Demande d'Adhésion**
☐ **Adressänderung / Changement d'Adresse**

Name/Nom : .....
Vorname/Prénom : .....
Institut/Firma/Institution : .....
.....
Adresse : .....
.....
PLZ/Code Postal : ..... Ort/Lieu : .....
Telephon : ..... Fax : .....
E-mail : .....

Mitgliedschaft in Sektion oder Arbeitsgruppe / Demande d'adhésion en section ou groupe de travail
☐ Optik ☐ Mikroskopie ☐ Nanotechnologie ☐ Biomedical Photonics

---

Jahresbeiträge als / Cotisations annuelles (Zutreffendes bitte ankreuzen)
☐ Einzelmitglied / Membre individuel : **CHF 30.-** (Optik **CHF 42.50**)
☐ Kollektivmitglied / Membre collectif : **CHF 150.-**
Haupt-Delegierter / Délégué principal : .....
Kollektivmitglieder, Namen und Adressen der Delegierten / Noms et adresses des délégués (max. 10)
.....
.....
.....
.....

Datum / Date : .....
Unterschrift / Signature : .....

Bitte Anmeldung an Kassier / A renvoyer au caissier svp :
Gianni Morson, Universität Basel, Zentrum für Mikroskopie,
Pharmazentrum, Klingelbergstrasse 50, CH-4056 Basel
Tel. (061) 267 14 06, FAX (061) 267 14 10,
Email: Gianni.Morson@unibas.ch

Redaktion: Dr. Reto Holzner
Apfelbaumstrasse 2
8050 Zürich

Tel. 044 312 15 63
reto.holzner@hispeed.ch

Adressänderungen : Bitte direkt an Gianni Morson
mit umseitigem Formular.

Redaktionsschluss : 15. Februar, 15. Mai, 15. August, 15. November

Die SSOM ist Mitglied bei der

Schweizerischen Akademie der Naturwissenschaften
Schweizerischen Akademie der Technischen Wissenschaften

Druck: Druckerei Dietrich AG, Pfarrgasse 11, 4019 Basel

Der Druck wurde unterstützt von der
Schweizerischen
Akademie der Naturwissenschaften

sc | nat
Member of
the Swiss Academy of Sciences