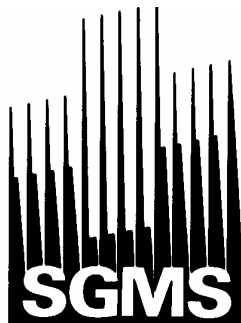


Swiss group for mass spectrometry  
Schweizerische Gruppe für Massenspektrometrie



Groupe suisse de spectrométrie de masse  
Gruppo svizzero di spettrometria di massa

## Newsletter

And again it's a pleasure to announce the

# SGMS Rigi Meeting 2004

**November 25 and 26, 2004**

**Dorint Hotel Blüemlisalp Beatenberg**

**11:15**

The final program of the meeting will be published in  
Newsletter Vol 22\_2, October 2004

Also travel information will be given at that time.

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We are very pleased to invite you to the

## **SGMS General Assembly 2004**

Dorint Hotel Blüemlisalp Beatenberg

Thursday November 25, 2004

~17:00

We hope that many people will attend our General Assembly 2004 following the afternoon session. Please refer to "Invitation and preliminary Agenda for the General Assembly" later in this issue for more detailed information.

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During the apero and the superb "Blüemlisalp Schweizer Dinner Buffet" we will have plenty of time for discussions. As usual latest news will be served at the two bars.

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Dear members and sponsors

And again ...

- ... I have the pleasure to announce the SGMS Rigi Meeting 2004.
  - ... we got 4 exciting plenary lectures for the meeting. 3 covering very interesting topics in mass spectrometry and 1 the special topic "history of microscopy".
  - ... feel free to submit an abstract for an oral presentation about new developments in the broad field of mass spectrometry and allied topics. The abstracts will be sighted by the committee. Please note that the committee will strongly favor academic related talks.
  - ... student giving a talk will be sponsored by the SGMS and will be hosted free of charge. Please submit the abstract including proof of "student" status.
  - ... we will meet at Hotel Dorint Blüemlisalp in Beatenberg. Unfortunately the meeting is scheduled very late in the year on November 25 and 26, 2004. As already discussed at the general assembly 2003 it was not possible do find an earlier date in 2004. Anyway in 2005 the meeting will be on October 27 and 28.
  - ... see you soon at Beatenberg.
-

## ***The Microscope - History of a versatile tool***

***Kurt Paulus  
Novartis Pharma AG, WKL- 127.3.70, Postfach  
4002 Basel, Switzerland***

In the mid of the 17th century, different scientists in Europe, started to dissect insects and to prepare slices of plants. One discovered bacteria, cells, sperms (so called animalculae) and much more. The instrument microscope was the most important tool of these scientists. But, how important is the microscope today in the field of science?

In my talk, I will show details of the development of the light microscope and different microscopic methods in medicine, biology and chemistry since 350 years.

Especially I will present some archeological problems, solved in my laboratory within Novartis.

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***Mass spectrometric imagery and flash photography :  
Rapid analysis of the molecular organization of biomolecules  
at surfaces***

***Ron M.A. Heeren  
FOM-Institute for Atomic and Molecular Physics  
Kruislaan 407, 1098 SJ Amsterdam  
The Netherlands***

MALDI-MS imaging is one of the emerging technologies in the study of biomolecules at surfaces. It provides a wealth of information on the spatial organization of biomolecules at surfaces. It has the potential of becoming an important diagnostic tool in biomedical sciences for the differential analysis of diseased versus healthy tissue. The characterization of the spatial organisation of macromolecules that are present in complex systems such as cells or ensembles of cells (tissue) with mass spectrometry can be realized through two approaches: spatial resolved ion generation (microprobe) or spatial resolved ion detection (microscope) of the macromolecule(s) of interest.

The highest resolution microprobe images of surfaces are generally obtained by scanning tightly focused ion beams over surfaces (i.e. SIMS). This technique is generally used for the study of semi-conductor surfaces as it provides detailed information on the distribution of a variety of elements and fragment fingerprints of organic surface molecules. The addition of an acidic matrix to biological surfaces (similar to the MALDI sample preparation process) aids in the generation of intact biological molecules, a technique referred to as ME-SIMS. We will show how this microprobe approach can be used to generate images of biomolecular distributions in nervous tissue with subcellular spatial resolution.

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The fastest mass spectrometric imaging technique is without doubt the mass microscope approach. The instrumental features and benefits for the rapid study of spatial organization of macromolecules on biological surfaces with sub-micron spatial resolution will be described and discussed. It will be shown to improve the combination of spatial resolution and speed of analysis. This novel stigmatic mass spectrometric ion imaging instrument records the spatial distribution of MALDI generated peptide ions over an area of 150 by 150 micrometer with a spatial resolution exceeding 1 micrometer in a single laser shot. In this new approach the MALDI-MS spatial resolution is no longer determined by the spot size or the wavelength of the desorption beam but by the quality of the ion optics and the spatial resolution of the 2 D detector. Moreover, the molecular flash-photography approach also allows the usage of different desorption and ionization techniques that would not deliver useful images with the microprobe approach.

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## ***Supramolecular mass spectrometry : a new technology for the study of non covalent interactions in biology***

Noelle Potier, Guillaume Chevreux, Emmanuelle Leize, Alain Van Dorselaer  
Laboratoire de Spectrométrie de Masse Bio-Organique  
Louis Pasteur University, UMR 7509 CNRS, Strasbourg  
France

Mass spectrometry was always dealing with molecules. In addition, to this molecular mass spectrometry, about 10 years ago, a new type of mass spectrometry emerged: supramolecular mass spectrometry, which allowed to measure the mass of non covalent complexes. Complexes of several molecules attached by specific interactions can be volatilized without destruction of the specific non covalent interactions.

It took 30 years research effort to the mass spectrometrists community to develop the methodology for the characterization of tryptic peptides at attomole level and the automatic interpretation of fragmentation spectra are. Today, this is routinely used as the key step for the identification of proteins in proteomic studies. Huge amounts of data are now collected in proteomic studies allowing to establish the proteomes of cells, tissues, ...

We believe that supramolecular mass spectrometry will play a role in what is the next step after proteomics; the complexomics, but several years of efforts, if not several decades, will be necessary to fully develop this technology.

In Supra Molecular Mass Spectrometry, the instrument is modified and tuned so that specific interactions are maintained during the ionisation/volatilization process.



In these conditions, answers may be given to the following questions:

1. Is there a specific interaction between a protein and a possible ligand?
2. What is the stoichiometry of a multi-protein complex ?
3. Can we detect a cooperativity in the addition of a cofactor?
4. Is there a cooperative effect in the addition of a cofactor ?

Data will be presented where enzyme/ligand interactions are detected and characterized. Mass measurement of multi-protein complexes of more than 2 million Daltons were obtained and will be discussed.

## ***Chromatographic and Mass Spectrometric Characterization of Polymers***

***Peter Schoenmakers and Petra Aarnoutse  
Polymer-Analysis Group, Department of Chemical Engineering  
Faculty of Science, University of Amsterdam  
Nieuwe Achtergracht 166, 1018 WV Amsterdam  
The Netherlands***

***Dutch Polymer Institute, P.O. Box 902  
5600 AX Eindhoven  
The Netherlands***

Polymer samples constitute complex mixtures of large molecules. The different molecules vary in size (molecular-weight distribution), chemical composition (chemical-composition distribution), functional groups and end-groups (functionality-type distribution), architecture (e.g. degree-of-branching distribution, block-length distribution), regularity (tacticity distribution). Also, many of the properties of polymers and materials are affected by these variations in molecular structure. Unavoidably, the characterization of molecular distributions requires separation techniques.

For polymers, liquid-phase separations appear the obvious choice. Soluble polymers can be separated according to size using size-exclusion chromatography, field-flow fractionation or hydrodynamic chromatography. Interactive liquid chromatography allows separation of macromolecules according to chemical composition or functionality. Capillary electrophoresis and related techniques provide options for high-resolution separations.

When several distributions must be characterized simultaneously, multi-dimensional separation techniques are required. Comprehensive two-dimensional liquid chromatography is a very useful tool for separation polymers. However, it also poses challenges by requiring both high-resolution miniaturized separations (first dimension) and fast, yet efficient separations

in the second dimension. If only because of these requirements contemporary developments in the field of LC, such as the use of monolithic columns or very high pressures are highly relevant in the area.

Perhaps more surprising, but equally relevant have been the developments in mass spectrometry for the characterization of polymers. The emergence of soft ionization techniques (matrix-assisted laser-desorption ionization, MALDI, and electrospray ionization, ESI) in combination with Time-of-Flight MS has created fantastic possibilities. Yet, for characterizing polymer distributions MS techniques still have their limitations. Both MALDI and ESI are limited to specific classes of polymers and, most of all, require samples with relatively narrow distributions.

The narrow fractions obtained from one- and two-dimensional separations are very suitable for analysis by MS. Inversely, the mass and structural information obtained by MS is invaluable for calibrating and interpreting separation data. Thus, liquid-phase separations and MS are harmoniously complementary for the characterization of polymers.

***(pjschoen@science.uva.nl)***

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## ***President's Report 2003***

The first year on top of the SGMS has passed really fast and I would like to thank all of the Committee members for their continuous commitment and involvement in the management of the SGMS. After a long vacancy for Vice-President of the SGMS Jean-Luc Wolfender accepted to fill that position after an e-voting through the Committee early this year. We have an overall friendly atmosphere that makes every meeting and phone call very enjoyable. Unfortunately we met only once at Hoffmann-La Roche in February 2003 for discussing about the invited speakers 2003. We had a lucky hand and all four top of the list candidates accepted the invitation.

Our Society is still in a good financial shape with 188 members and five private companies being financially committed towards the SGMS, namely Agilent, Applied Biosystems, Brechbühler, Shimadzu and Waters MS Technologies. I would like to acknowledge their contributions. It is mainly due to their financial support that we are able to invite top shot scientists from universities and companies for keynote lectures.

Given the number of people that are registered at this meeting - we passed the magic number of 100 - I suppose that the Committee did a very good job by the selection of invited speakers but also by the choice of the Hotel Dorint Blüemlisalp. Due to unpleasant payment moral the Committee decided to place a late payment fee for payments and registrations received after September 30, 2003. Thanks for understanding.

2003 was the second year the Committee was promoting the active participation of students during the Rigi Meeting. I am very pleased that Sven Heekmann, Niels Lion and Kornel Nagy are our three invited students. Please enjoy their contributions during the meeting.

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2003 was an extraordinary year due to the 16<sup>th</sup> International Mass Spectrometry Conference at Edinburgh on August 31<sup>st</sup> to September 5, 2003. Over 1400 delegates from all over the world participated. It was the first year the SGMS could participate as a member of the International Mass Spectrometry Society and I was overwhelmed by the warm and friendly welcome through Nico Nibbering, John Monaghan and colleagues. The overall impression of the meeting was good and many excellent contributions were given including a final session by 2002 Nobel Laureates Koichi Tanaka and - a never ending story by - John Fenn. The 17<sup>th</sup> International Mass Spectrometry Conference will be in Prague, Czech Republic, August 27 to September 1, 2006.

I would like to conclude by thanking once again to those who helped me keep the SGMS going, especially to the other members of the Committee. On behalf of the Committee I wish you all the best for the upcoming year.

The President

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## ***Minutes of the 2003 General Assembly of the Swiss Group for Mass Spectrometry***

***Beatenberg, Hotel Dorint – 30. October 2003 – 17:30***

1. **Nomination of the scrutinizers:**  
Jürg Hau and Christian Guenat are nominated as the scrutinizers.
  2. **Approval of the minutes of the 2002 general assembly**  
*Note: Urs Ranalder and Peter Oggenfuss and not Peter Hirter and Kurt Schellenberg have been auditors for the 2002 treasurers report.*  
With these corrections, the minutes of the 2002 general assembly are approved by 100% of the members.
  3. **President's report and it's approval:**  
The president, Andreas Stämpfli, reads his 2003 report (see this Newsletter). The report is approved with applause by all members.
  4. **Treasurer's report:**  
Hanspeter Moser, our treasurer informs the assembly about the current status of the accounts. The bank account has a balance of CHF 14'239.53 per 30<sup>th</sup> September 2003 (Balance was CHF 13'417.65 per 1<sup>st</sup> October 2002). The Postal Account has a balance of CHF 15'650.49 per 30<sup>th</sup> September 2003 (Balance was CHF 22'181.09 per 1<sup>st</sup> October 2002). Cumulative Balance is as follows: **Total Balance CHF 29'890.02 per 30.9.2003** (CHF 35'598.74 per 1.10.202). The reduction of the fundings can be explained with the exeptional expenses to celebrate the 20<sup>th</sup> Anniversary Meeting in 2002 in style.
  5. **Auditor's report and approval of the treasurer's report and auditor's report:**  
Peter Oggenfuss and Urs Ranalder confirm the perfect bookkeeping and suggest to approve the treasurers report. Both, the treasurer's report and the auditors report are approved by 100% of the members.
  6. **Decision of the 2004 membership fee**  
The membership fee for 2004 remains at CHF 25.00 per year and member. This is accepted by all members.
-



7. **Admission of new members:**

The following new members are admitted and welcome with applause!

Bartelmus	Christian
Corthals	Garry
Dayer	Jérôme
Dudd	Stephanie
Fuhrer	Katrin
Gonin	Marc
Kühnöl	Jürgen
Kussmann	Martin
Lion	Niels
Spokert	Frank
Stalder	Urs

**Laurent Fay** and **Annemarie Weibel** are proposed as honorary members and all the members agree with applause.

8. **Election of 2 Auditors (for the next 2 years)**

**Peter Oggenfuss** and **Peter Fischlewitz** are voted as the new auditors for the next 2 years by 100% of the members.

9. **News from the NSCG – Hansjörg Walther**

No news because of missed meeting due to information which was not passed to Hansjörg Walther. Protocol will be put on the web later.

10. **News from the ESMS – Raffaele Tabacchi**

The meeting had been cancelled because IMSS takes over more and more meeting organisations.

11. **News from the IMSS – Andreas Stämpfli**

The IMSS Conference 2009 will be held in Bremen.

The idea to have a 2 year instead of a 3 year cycle for the IMSS is accepted and will be addressed during the next Conference in 2006.

12. **Individual proposals**

No individual proposals

13. **Miscellaneous**

New members for the committee are searched for 2004 to follow Hanspeter Moser and Raffaele Tabacchi who will resign at the next general assembly. Laurent Bigler is willing to work in the committee. Now, we need another member for the committee 2004. Suggestions are

welcome. Election of the new members of the committee will take place during the General Assembly 2004.

Presentation of Dr. V. Raverdino: The group of MS Technologies in the Clinical Chemical Society was founded 3 years ago with the goal to transfer knowledge and training. Further info can be found at <http://www.sccc.ch>

Marc Suter presents some Internet News: The Job Page is the most used page on the SGMS Homepage but also in general the Homepage is often used (8000 unique visitors; 20000 sessions from Jan to Sept 2003). This is an increase from 5700 visitors / 14800 sessions in 2002.

Andreas Stämpfli explains that **for the 2004 Meeting, only November 25+26, 2004** are available but for the 2005 Meeting a preliminary reservation for October 27+28, 2005 has been made.

The General Assembly closes at 18:25

Thomas Läubli

Secretary of SGMS

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## ***Rigi Meeting 2004, November 25 and 26, 2004***

Dorint Hotel Blüemlisalp, Beatenberg

### **Oral communications / Abstracts:**

The meeting will be supplemented by oral communications from various participants. The time allotted will be 20 minutes. The abstract incl. author's name and address should be send before **August 31, 2004** directly to the SGMS president, Andreas Staempfli, F. Hoffmann-La Roche Ltd, Basel. The abstract should be no longer than 2500 characters. Please send your abstract only by e-mail to our president (andreas.staempfli@roche.com).

### **Registration and Accommodation:**

A **registration form** and a payment form are included with this mailing. Please, send your registration (completely filled in form!) to Andreas Staempfli not later than **October 31, 2004**.

There is absolutely no need to register personally at the Hotel Dorint, Beatenberg! The SGMS committee will again manage the hotel reservation and payment.

Only the "extras" will be paid directly at the hotel-reception (like: phone-calls, mini-bar ... etc.). We will again strictly follow the order of registration for the distribution of the hotel rooms (100 rooms available!).

**Registration fees** including Hotel accommodation, business lunch, dinner buffet and breakfast:

**CHF 250/ person** (single room occupancy)

**CHF 225/ person** (double room occupancy; please indicate your roommate)

**Late Fee : An additional late fee of CHF 50** for registration will be applied to all payments received after September 30, 2004.

**NOTE:** to qualify for the regular rates **payment MUST** be received **by October 31, 2004** - receipt of the registration form without payment will not qualify.

There is **no** possibility of attending the meeting only, without Hotel accommodation. Thanks for understanding!

Please, pay your registration fee with the enclosed pink payment form (marked RIGI Meeting) or direct to the bank account:

Credit-Suisse    BCL: 4094, 0094-919402-50  
IBAN: CH62 0409 4091 9402 5000 0  
SWIFT: CRESCHZZ30A

Schweizerische Gruppe für Massenspektrometrie, CH-4102 Binningen

Don't forget to **clearly mark your name and address on payment form.**

### **Cancellations**

Cancellation requests, received in writing before **October 31, 2004**, will qualify for a refund of the fees paid, less an administration handling charge of 25% of the total payment. After **October 31, 2004**, no refunds will be made; however, substitute participants can be nominated to attend. **ALL such changes must be notified to Andreas Staempfli, in writing, before the meeting. Changes will not be accepted at the meeting.**

### **No shows:**

No refunds will be made.

### **Students support program:**

Students giving a talk (selection by the SGMS Board members) will be hosted free of charge. For more information, please call any of the SGMS Board members.

### **Travel Information:**

Details will be published together with the complete program and our official invitation, which will be sent out in October and which will be posted on our homepage ([www.sgms.ch](http://www.sgms.ch)).

### **SGMS-Membership-Fee:**

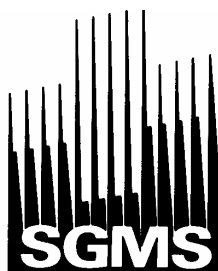
Included is a pink payment form for the **annual membership fee of 25 Fr.** You are kindly asked to pay this fee as soon as possible. Please write your name in the comment field of the payment form! The cashier appreciates your cooperation. For those who have missed to pay the previous year, please pay a total of 50 Fr. for two consecutive years.

Only members from abroad may pay the membership fee directly to our treasurer H.P. Moser during the "Rigi Meeting".

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Swiss group for mass spectrometry  
Schweizerische Gruppe für Massenspektrometrie



Groupe suisse de spectrométrie de masse  
Gruppo svizzero di spettrometria di massa

Please join us for the

## ***General Assembly of the SGMS 2004***

Thursday, November 25, 2004

~1700 h

Dorint Hotel Blüemlisalp, Beatenberg

### **Agenda**

1. Nomination of the scrutinizers.
2. Approval of the minutes of the 2003 general assembly.
3. President's report and its approval.
4. Treasurer's report.
5. Auditor's report and approval of treasurer's and auditor's report.
6. Decision on the 2004 membership fee.
7. Admission of new members.
8. Election of the President.
9. Election of new members for the committee of the SGMS.
10. Statutes
11. News from the NSCG - HJ. Walther.
12. News from ESMS - R.Tabacchi.
13. News about the SGMS homepage.
14. Individual proposals.
15. Miscellaneous.

Individual proposals must be **sent by (e) - mail before November 9, 2004**  
to the president: [andreas.staempfli@roche.com](mailto:andreas.staempfli@roche.com)

The President  
Andreas A. Staempfli

*President* [Andreas A. Stämpfli](#)  
F. Hoffmann-La Roche AG  
PRBT-S, Bau 65 / 109  
CH-4070 Basel  
[andreas.staempfli@Roche.com](mailto:andreas.staempfli@Roche.com)  
Phone +41-61-688 3131 Fax +41-61-688 7408

*Vice President* [Jean-Luc Wolfender](#)  
Institute de Pharmacognise et Phytochimie  
Université de Lausanne, BEP  
Dorigny  
CH-1015 Lausanne  
[jean-luc.wolfender@ipp.unil.ch](mailto:jean-luc.wolfender@ipp.unil.ch)  
Phone +41-21-692 4541 Fax +41-21-692 4505

*Secretary* [Thomas Läubli](#)  
Brechtbühler AG  
Steinwiesenstrasse 3  
CH-8952 Schlieren  
[ThomasLaeubli@compuserve.com](mailto:ThomasLaeubli@compuserve.com)  
Phone +41-1-732 3131 Fax +41-1-730-6141

*Treasurer* [Hanspeter Moser](#)  
Novartis Pharma AG  
K-127.3.12  
Postfach  
CH-4002 Basel  
[Hanspeter1.Moser@pharma.novartis.com](mailto:Hanspeter1.Moser@pharma.novartis.com)  
Phone +41-61-696 7546 Fax +41-61-696 7828

*Internet* [Marc J.-F. Suter](#)  
EAWAG  
Ueberlandstr. 133  
CH-8600 Dübendorf  
[suter@eawag.ch](mailto:suter@eawag.ch)  
Phone +41-1-823 5479 Fax +41-1-823 5028

*EMS representative* [Raffaele Tabacchi](#)  
Institut de Chimie  
Av. de Bellevaux 51  
CH-2000 Neuchâtel  
[Raphael.Tabacchi@unine.ch](mailto:Raphael.Tabacchi@unine.ch)  
Phone +41-32-718 2429 Fax +41-32-718 2511

*NSCG representative* [Hansjörg Walther](#)  
c/o Solvias AG  
WKL-127.5.58  
Postfach  
CH-4002 Basel  
[hansjoerg.walther@solvias.com](mailto:hansjoerg.walther@solvias.com)  
Phone +41-61-686 6165 Fax +41-61-686 6100

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