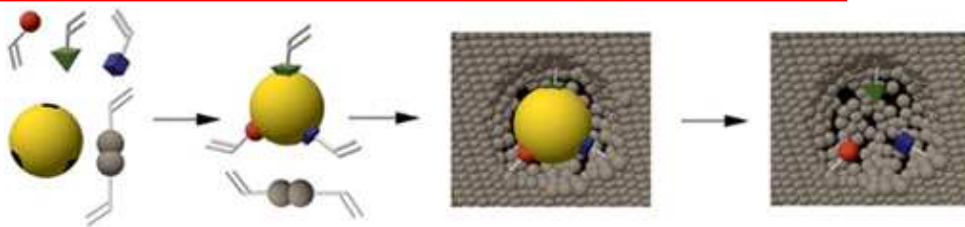


NASCENT Newsletter



Nanomaterials for Application in Sensors, Catalysis and Emerging Technologies



This year the 4th NASCENT Summer School and the 3rd International meeting were held in Budapest, at the University of Technology and Economics (BME).

Founded in 1782, BME was the first university in Europe to train engineers at university level. Several laureates from this university were awarded Nobel Prizes, in physics and chemistry and also many famous inventors graduated there, like Ernő Rubik famous

for this cube. BME is a nice venue for seminars: placed on the riverside of the Danube, it is only 10 minutes from the center of Budapest and inside the campus there are several parks and historical buildings to admire, like the central building and the library.

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September 2009

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The 4th NASCENT Summer School started on 20th July 2009

and the courses were held inside the campus. In the mornings the courses focused on proposal writing and on experimental design. The lecturers were Dr. Péter Mogyorósi and Dr. Sándor Kemény, respectively. The first one gave the young researchers an introduction on the key points necessary to apply successfully to a call for a proposal, pointing out the most useful information sources to find a suitable call and how to set-up a credible financial plan for the project.

The latter course started with a brief introduction to the design of experiment theory to finish with a real case application, using the data of a recent publication done in a collaboration between two groups of our network.

In the afternoons there were several laboratory practicals at the Department of Inorganic and Analytical Chemistry, where techniques like DESI-MS-MS, SPR and MIPs over filterplates were demonstrated.

On Thursday we had the opportunity to visit the Research Institute for Technical Physics and Materials Science. The Institute is situated in one of the hills of Budapest, about an hour by bus from the University. There, we saw the various technology they use, like their clean room for chip processing and their ellipsometry and electron microscopy lab.

On the final day, the groups gave a presentation about their results at the lab practicals together with a simulation of a project proposal.



Dr Levi Gheber



Prof. George Horvai



The school was also a good opportunity to get know each other outside the working environment. Several students spent an evening together at the famous Szecheny open-air thermal bath and there was also an

social event held at the A38 boat. This boat is an old Ukranian stone-carrier reconverted into a disco/ restaurant. The climax of the evening was a table football tournament that the researchers fought like pro-players.

Prof. Kenneth J. Shea



End of School dinner in a nice eat-all-you-want-for-a-fixed-price restaurant where there was a chance to try the typical Hungarian palinka with honey.

Organizing a meeting like this was very demanding, but in the end everything went smoothly and it came out as a very satisfying and rewarding experience.

The International meeting was held at the Gellert Hotel, just opposite the Department. The Hotel is famous for its thermal bath facility annexed.

By Dr. Viola Horath

During the two days and a half of scientific presentations, there was a social dinner in a very traditional Hungarian restaurant with a chorus singing Hungarian and International songs a cappella before dinner. There was also a



Dr Marina Resmini and Dr Viola Horvath





ASCOS 2009
Madrid

ASCOS 2009 Madrid August 26th to September 3rd, 2009



The Advanced Study Course on Optical Sensors (ASCOS 2009) has been held in Madrid from August 26th to September 3rd, 2009. ASCOS is an ECTS-accredited European initiative to establish an education, discussion and contact platform for young researchers working in the field of optochemical (bio) sensors and (bio) sensor arrays.

Optical Chemosensors & Applied Photochemistry (GSOLFA) group at Complutense University of Madrid (UCM), a member of the Nascent MC-RTN, and the Spanish National Research Council (CSIC).

We hosted 51 students from 18 countries and 17 lectur-



The course is being held as a biennial event, each time in a different European country. ASCOS combines tutorial lectures on basic principles of optical (bio)sensor techniques and student group work on specific (bio) analytical problems. Tutorials are given by renowned experts in the field.

ers from 10 different nationalities. Several Nascent researchers have actively participated in the course, namely Pinal Cakir, Tomas Martan, Levgen Obraztsov and Jolanta Zdunek.

In this edition, the ASCOS course focused on the application of optical (bio)sensors to environmental monitoring and food safety. It has been organized jointly by the

Students divided their time among the lessons, the work project preparation and the social activities that were organized along the week. On Wednesday 26th evening we had the welcome reception with traditional Spanish



“sangria”. Then, from Thursday to Sunday five teams were involved in the 1st ASCOS International Football Championship, with the participation of both professors and students. The supporters followed the matches with great interest and some of them were really exciting! The winners received a trophy as well as a bottle of fine Spanish wine. Tomas Martan, one of our Nascent ER, was in the sub-champion team. On Sunday 30th we arranged an excursion to the s. XVth El Escorial monastery, an amazing UNESCO World Heritage Site just 50 km away from Madrid. Finally, on Tuesday, September 1st, we were received by a Mayor’s Representative at the Madrid Town Hall, followed by a guided tour to the old part of the city and the course gala dinner.



There were 10 groups of 6 people randomly organised from the participants of the course. Each group was asked to solve different problem by developing an optical sensor or few sensors taking into account its cost of use. Our group was asked to develop an optical sensor for ground water monitoring for Cd and Hg ions and atrazine molecules. Other tasks were also interesting, like "nicotine/CO2 sensor in a mobile phone", or "a sensor for toxins in sea food".



The students devoted a lot of effort to solve the work project challenges that were assigned in the very first day. In the last day, each group gave a 10 minutes oral presentation to explain how their challenge could be addressed using optical sensors. One of the members of the winner group was Levgen Obratzov, our “Nascent famous photographer”, and Pinal Cakir was in one of the finalist teams. So, Nascent ESR’s were highly successful and showed how well are they uptaking their training!



We are confident that everybody enjoyed a fruitful Summer School and returned to their home institutions with deepened knowledge, renewed enthusiasm and the determination to contribute to the optical (bio)sensor community in the future.

By Prof. María Cruz Moreno-Bondi

At the end of the course, each group gave a 10-minute presentation offering their solution to the task and was asked some questions.

The presentations were scored according to originality and feasibility of the idea, quality of presentation and defence. Probably, our idea was the most original, we were asked two or three times more questions than other groups. Our group won the competition.

Pinar Cakir from the Karsten Haupt group also participated in the School. Group of Pinar took the 3rd place. As a prize for the 1st place we got 50% discount for participation in the conference on optical sensors in Prague (Czech Republic) EUROPTRODE X" next March and a bottle of nice Spanish vine for each member of our group.

For more information about ASCOS visit the website at: <http://members.aon.at/ascos/ascos2009/09index.html>

By levgen Obratzov



**European Polymer Congress 2009, EPF'09
Graz, Austria, July 12-17 2009**

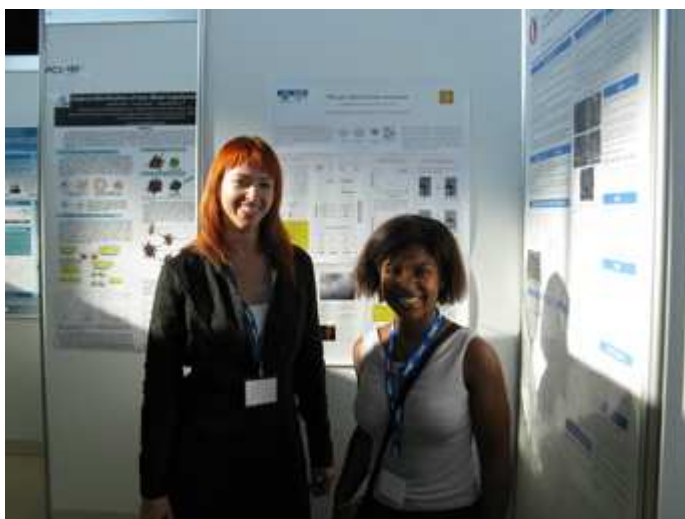
By Ania Servant

For the occasion of the European congress of polymers 2009, I had the pleasure to go to Graz, more specifically to Austria, a country I have never been to before. I was pleasantly surprised to discover this very cute little town with all these wonderful monuments to visit such as the Schlossberg, the Kunzt museum and many more.



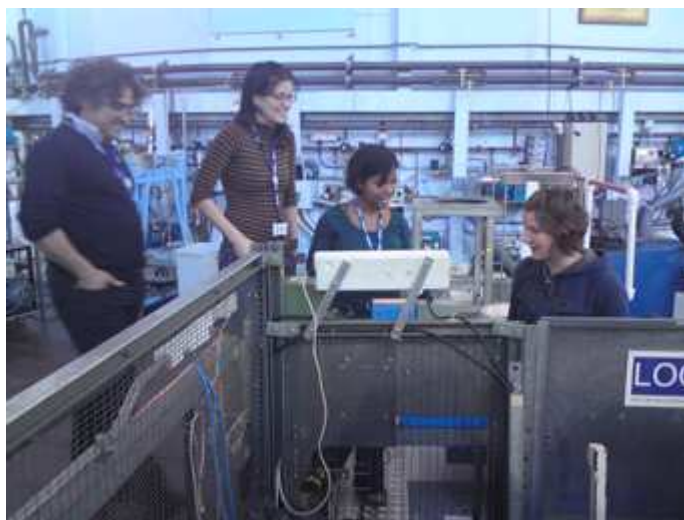
The congress was held in the conference building located in the north of the town, a 15 minute walk from my hotel. A lot of people attended the congress (more than 67 different countries was represented). I even met some colleagues from my university in France and my previous professors. It was like a big family reunion! Gita and Mark, from Karsten's group, were also there, Gita for a poster presentation and Mark for an oral presentation.

I have to admit that I was very stressed about my oral presentation especially when I had to talk in a microphone and the screen was 10 times as big as me. The five minutes that preceded my talk were horrible but my talk went ok and was followed by questions that I could answer fortunately. I also went to support Gita and Mark for their respective presentations.



**Small Angle Neutron Scattering (SANS)
Rutherford Appleton Laboratories, Oxfordshire, UK, March 2009**

By Ania Servant



As a result of a successful proposal, Rita and I had the chance and the opportunity to go to Rutherford Appleton laboratories in Didcot near Oxford, one of the world-leading centers for research in physical and life science, to use the facilities for Small Angle Neutron Scattering (S.A.N.S) measurements.

This center is well-established in the production of beams of neutrons and muons that allow the study of materials at atomic level using a suite of instruments.

We spent two days and two nights in this facility where people are working night and day. At 9 o'clock in the evening, we could hear the alarm of someone getting up to start his experiments! It was a fabulous experience to be able to use this fantastic machine, especially when the whole laboratory looks like a sci-fi spaceship. At the end of those two days we did not have any data but we had a wonderful breakfast every morning and we learned a lot about how to model S.A.N.S. data.



Chemistry in the New World

By Rita Jorge

The life of a NASCENT member is made of many plane rides and many airport waits, but for me none was quite so exciting as the one I made to Washington recently.

I attended the American Chemical Society (ACS) Fall Meeting 2009, in the American capital itself: Obamaland. Washington is a vibrant, freakishly clean city and I hopelessly fell in love with it. In this town you can start your day off with having a coffee in the diner where JFK proposed to Jackie Kennedy, stroll around the FBI Headquarters, have lunch at the White House and enjoy the sunset sitting around where the famous "I have a dream" speech galvanized a million people. Not quite as exciting as a day of analytical chemistry, of course, but close.

Being the official residence of the coolest man in the planet for the next four years, Obamaland's cool points were about to be severely increased when 16.000 chemists moved in for a week, to attend the ACS meeting. From every corner of the world (...especially China...) chemists dropped their labcoats and picked up their posters heading to the New World.

In fact, we all fell like navigators in the centuries of the discoveries because it takes a serious amount of orientation sense to get around the sheer amount of simultaneous talks by big chemistry names. Frequently people were seen dashing to the corridors, flustered entering a room with a bang, only to leave 10 seconds after realising they were in the wrong building. Not that I would ever do that....hum....

Me, Ania, and some QMUL colleagues were accepted to give talks on our work (in completely different buildings in completely different parts of town, at almost simultaneous time) and – with Levi's undying presentation rules in mind – we tried to make our Network, and Marina, proud.



All the QMUL team was really pleased with their talks. Mine and Ania's talks generated quite a good amount of interest and contacts were exchanged for future partnerships.

Most of all we realised how much training the network has been providing us in the last years, since we were sincerely calm and collected almost all the way through the day (remember those pre-presentation jitters in Paris? Gone with the wind.)

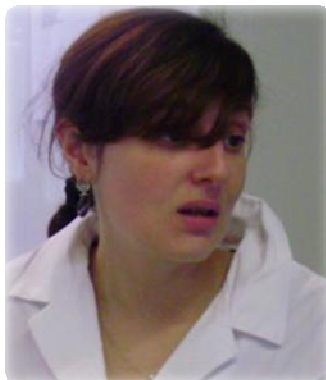
Being there, amongst White House staffers, Organic Chemists, Professors and Postgrads, Americans and Europeans, it was easy to understand how much science is a global community, much bigger than our own tiny lab, with our own tiny stories. Around 16.000 chemists you realise how far reaching your research can be, provided that you have the vision to extend your knowledge beyond your frontiers, and provided that you are able to pack your suitcase and reach beyond your fears.



The best summer end one can ever wish for!!

A month spent in Compiègne at CNRS, has become truly the greatest adventure to begin my 2nd year in NASCENT.

Surviving this time without the personal cook and the person that usually takes care of me, day by day, could be considered as a special challenge for me. But thanks to everyone in the lab, especially the girls – Pinar, Natalia and Ana - as well as Karsten, Aude and Bernadette, I felt as I would have never left home.



And of course the last, but not least “person” to mention – MIPO - new handsome male lab worker, that was giving us the best hugs ever anywhere and anytime we wanted.

Despite the many warnings I had been given before coming here, about how badly you can get bored here, let’s admit – I did not have even a minute that I would have felt like that. And I do not mean only working in the lab, but more than anything else “activities” outside the research centre. All the great events (the most delicious Mexican dinner at Karsten’s or most amazing birthday party at Ana’s) or simply “having a bear”, makes it possible for me to know all those wonderful people that are responsible for the friendly atmosphere here.



Although maybe I should listen when they told me – “Bring some really warm clothes” – in disbelief I found out that the weather in the north of France, can be as tricky as in Poland at this time of the year.

Even so the town (Compiègne) is not too big, you cannot say that it is not the charming place. Full of beautiful places to see and to admire, gives you at the same time the possibility to relax or just listen to the silence outside your very own window.



And if you need something more adventurous to do or a busy place to go to, Paris is just “around the corner”. I do not think I have to say that but –yeah we did it, we did Paris! At the end of the day tired but happy we made a promise to ourselves – to keep this friendship alive as long as possible.



Although I met NASCENT people before, and manage to get to know them at least a little bit, I did not think that doing the secondment would make me like you even more. But in fact it did. Anyway I hope to see all of you soon again.



Au revoir mis amigos!
Jolanta Zdunek

NASCENT

Dr Marina Resmini
School of Biological and
Chemical Sciences
Queen Mary, University of London
Joseph Priestley Building
Mile End Road
London, E1 4NS
United Kingdom

Tel.: +44 207 882 3268
Fax: +44 207 882 7794
Email: m.resmini@qmul.ac.uk
URL: <http://www.nascent.qmul.ac.uk/>

Please send all your news and photos
to the NASCENT Administrator:
s.fritche@qmul.ac.uk

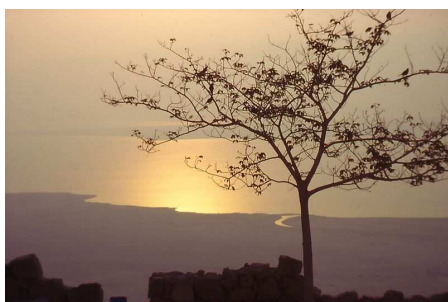


Forthcoming NASCENT Events

NASCENT
Winter School
and
4th Scientific International
Meeting



February 2010
Ben Gurion University
Be'er Sheva
Israel



New ER at QMUL



NASCENT welcomes a new ER, Paolo Bonomi, who started his employment at QMUL on 1st September 2009.

Paolo Bonomi was born in 1975 in Vigevano (PV) a town in the province of Pavia, Lombardy, northern Italy.

He obtained a degree in Chemistry and Pharmaceutical Technologies (CTF) in 2005 at The University of Pavia. Paolo defended his PhD at The University of Milan in 2008.

His research was focused on a chemo-enzymatic approach, developed in a laboratory of the University of Pavia, for the synthesis of oligosaccharides useful for the preparation of glycoproteins with potentially application as vaccines. Another project was pointed on the synthesis of hydroxy tetralols in enantiomeric pure forms as precursor in the synthesis of molecules with activity against neuronal diseases.

IPC recent activities

IPC submitted the following patent application to the Polish Patent Office:

Pietrzyk, A., Kutner, W., Chitta, R., Zandler, M. E., D'Souza, F., Sannicolò, F., and Mussini, P. R., Polish Pat. Appl. P-388565, 18 July 2009, "Polimer wdrukowany molekularnie, sposób jego wytwarzania oraz chemiczny czujnik piezoelektryczny do wykrywania i oznaczania substancji biologicznie czynnych wybranych z grupy amin biogenicznych, korzystnie melaminy" ("Molecularly imprinted polymer, method of its preparation, and piezoelectric chemical sensor for detection and determination of biologically active substances selected from a group of biogenic amines, advantageously melamine").

Prof. W. Kutner presented his recent research results at the 60th Annual International Society of Electrochemistry Meeting, Beijing, P. R. China, August 16-21, 2009. His lecture was entitled: "Piezoelectric chemosensors using recognition films of molecularly imprinted polymers of bis(bithiophene) derivatives for selective determination of biogenic amines". Authors: Kutner, W., Pietrzyk, A., Suriyanarayanan, S., Chitta, R., D'Souza, F.