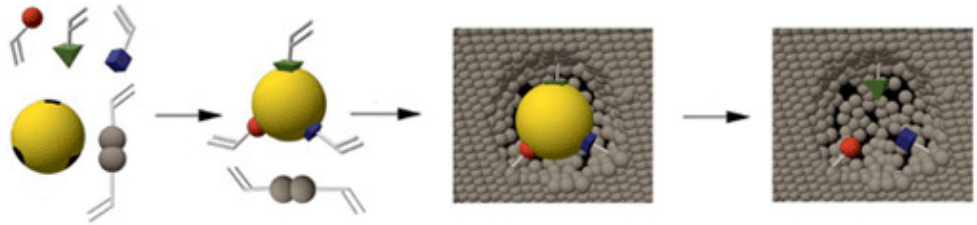


NASCENT Newsletter



Nanomaterials for Application in **Sensors**, **Catalysis** and **Emerging Technologies**

Best wishes and Happy Festive Season **First Year Report**

December is in full swing and soon most Laboratories will be closing down for the Christmas Holiday. The festive season is certainly upbeat at Queen Mary, where the MR and MW groups have enjoyed a Christmas Party on Wednesday 12th December and a Christmas lunch on Friday 14th December at the Thai restaurant on the Mile End road.

As you can see from the articles in this News Letter, our ESRs and ERs have been keeping themselves quite busy in the last few months with a number of secondments, conference trips and active collaborations all happening. These are an important part of the NASCENT training and transfer of knowledge activities and I am so pleased to see that both the PIs and the researchers take this very seriously.

The New Year, 2008, will also start on the upbeat with two NASCENT training events, that will give everyone the opportunity to experience once again the amazing atmosphere that we had at QM in September, during the first Summer School. The 'Masters course on MIP modelling and sensors' will take place at Cranfield University, for all NASCENT researchers, from the 23rd to the 25th of January. This will be followed by a two day stage on Enterprise and Innovation, organised by Kodak, UK, specifically for the experienced researchers. The ESR don't have to worry....they will have another opportunity to visit Kodak in 2009!!!

Finally I would like to use this space to wish everyone in Nascent a lovely Christmas and a Happy New Year!!!!

Dr Marina Resmini

September and October were two very busy months for all NASCENT teams with the submission of the first year report. It was a lot of hard work and I would really like to take this opportunity to thank all the Principal Investigators and their Administrators for their efforts and prompt replies to my requests. Hopefully this has been a learning experience for everyone and next year, with the mid-term report, we will not have so many problems and questions. I also would like to thank Jean Smeeth and Sylvie Fritche for their efforts and support in accomplishing this task.

In recent weeks we have had the first comments back from the EU financial officer and once again everyone has been actively engaged in providing me with the new documents and altered certificates. The project officer will then scrutinise the report and when she is happy with everything she will authorise the release of the next phase of funding. I look forward to receiving a positive feedback on all items submitted.

Dr Marina Resmini

December 2007

Volume 2, issue 4

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Groups



wish you

a Merry Christmas



ERs and ESRs News

Artur Moro (Friedrich Schiller University of Jena, Germany)

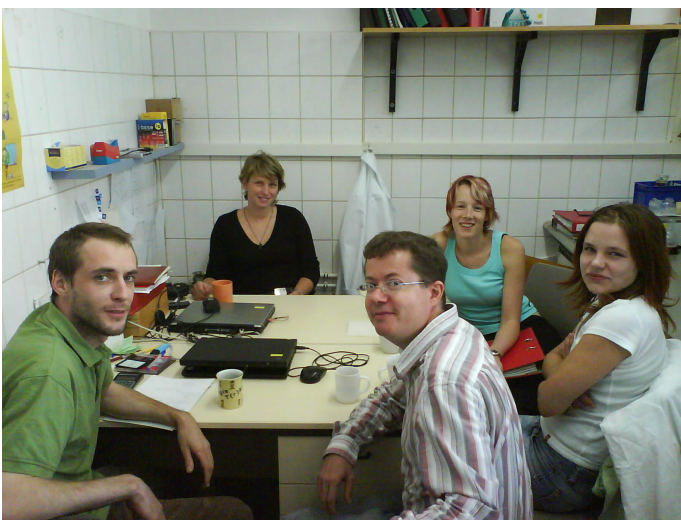
„Ich bin ein Jenaer!“

Artur Moro – Friedrich Schiller University of Jena, Germany.



Arrival

My adventure here in Jena, Germany, started in a very cold evening of November 2007 (0°C, as opposed to the 10/15°C that I'm used to in Portugal at this time of the year. I arrived with my girlfriend in our guesthouse in the middle of nowhere, far from the city centre and from my workplace. Of course, it's easier to get accustomed to the location when we have a laboratory colleague that lives in the same guesthouse and has a car to give a ride to work every morning... Then, upon arrival at the laboratory, I was presented to the whole working group. Since Gerhard, a.k.a. The Boss, is also taking part in another EU Project, SNIB, this has become a very multicultural group. At the moment, our group consists on 4 Germans (all women), a Portuguese, a French, a Polish and an Austrian (all men).



Some of our work group. From left to right: Tristan Dousineau, Anja Gräfe, Gerhard Mohr, Susanne Reinert and Sabine Trupp

Cultural barriers

The bureaucracy in this country is endless but comparing to my home country, it's very well organized. Well, most of it anyway... Opening a bank account doesn't present much of a problem, as it seems to be in England (you can tell us a more detailed version in September, Rita). On the other hand, getting an Internet connection is a very troublesome thing. But I guess Tristan (our French colleague from NASCENT here at Jena) can tell you a thing or two about it. The hardest thing to adjust is obviously the language, which I had never learnt before in school. Anyway, I'm a very lucky guy in this aspect, since my girlfriend speaks fluent German. Nevertheless, I started to attend a language course to learn this new and strange language.

Of course, another very hard thing to adapt to is the food. Since I come from a coastal area, fresh fish is something I was very used to, just going to the supermarket and you got tons of it everyday. But here, the gastronomic traditions are a bit different, especially when the nearest coast is approximately 500 km away. Instead of fish, this is the land of pork. Sausages and steaks are the most popular dishes to be served everywhere. If you get sick of it, you can always go to the nearest Turkish "Kebabhaus" or you can buy some frozen pizza in the supermarket, as long as you have an oven to cook it in...

Sightseeing

This region is called Thüringen and is known as the "Green Heart of Germany", both for its central location and for its natural beauty in green landscapes. Jena is located in a valley, surrounded by green hills. When the weather helps, it's very common to make some walks up the hills, to enjoy the magnificent overview of the whole city while drinking a refreshing beer at the top. We also visited the city of Erfurt, the capital of this state, with its mighty Dom

and many smaller churches and other monuments. The city of Weimar, located 25km west of Jena, is the birthplace of the Bauhaus, a very famous artistic and architecture movement/school which operated from 1919 to 1933 in Germany. This city is also famous for the influences of two of great German writers, Johann Wolfgang von Goethe and Friedrich Schiller.

Personal events

In the middle of February we moved to another flat, a bigger one and much closer to Jena city centre. The previous flat was actually just one bathroom and another room, which was served as kitchen, bedroom and living room. For one person, it wasn't so bad. For two, definitely too small...

In March, we got married on paper in the Portuguese embassy in Berlin.



Our improvised chocolate wedding cake and decoration

The ceremony had one guest, my Polish colleague Piotr Cywinski, who was also a witness for the wedding and cameraman at the same time. Afterwards, we made a small celebration in our flat, with all our new friends (the whole working group plus a Portuguese guy that we met here, and another German friend we made here).

Apart from all of this exciting experience, I faced the cruel reality of adult age, since I turned 25 in May, so now I'm closer to 30 than to 20 (NOOOOOOOOOOOO!!!!).

So in conclusion, although some of the things foreigners usually think about the German people and German traditions are true, I can honestly say that this country is most definitely worth visiting and a very nice place to live as well. And of course, with colleagues as friendly and helpful as the ones I have, it all becomes much easier...

Aurelien Auger (Universidad Complutense de Madrid, Spain)

Hola!



I have started a postdoc at the Universidad Complutense de Madrid in March 2007. I had a friendly welcome in the Spanish capital, and the colleagues became friends very quickly.

At first, I encountered difficulties to find an accommodation due to my timing of arrival as well as the huge student demand. Once settled down, I started to explore what is, according to me, one of the most exciting city in Europe: Madrid! The touristic and therefore frequently visited places, such as "Plaza Mayor" and "Plaza de España" are really the

symbolic sites of Madrid. There is incredible sight-seeing, especially by night. I really enjoy hanging around the "Palacio Real", which architecture is remarkable. The many gardens (El Retiro), small streets (Calle León, Calle Echegaray) and museums (El Prado) give you the opportunity to never get



bored, Madrid always offers something to do. "Madrileños" really appreciate good food, which is fine by me. So do I! I enjoy the typical "Cañas y Tapas" (beers and food) with my friends, after work, and particularly when it is hot. There are many "Mercados" (Markets) which offer an incredible range of food,

including the well-appreciated and rapidly addicted "Jamon Iberico". When you start eating it, there is usually no way to stop, particularly if accompanied by Rioja (wine) and "Queso Curado" (cheese). On Sunday morning, the district of "La Latina" is invaded by thousands of people for the weekly flea market called "El Rastro". The "Rastro" has everything, from antique furniture to pirated cassette tapes of Flamenco music. Indeed, Madrid is such an exciting place that I preferred to stay over here for Easter, rather than to go home to France. Furthermore, for the football addicts like me, Madrid is home to the best football club in the world: Real Madrid Football Club. Hasta Luego.



Ana Linares (CNRS, Spain)

**One Year in France...
and keep going!**

Soon it will be one year since I arrived in France so I think is a good moment to sum up this experience even if I know that this is only the beginning.



I remember my first hours in France, arrival at Orly airport (which is near to the end of the world), tube and finally the "Gare du Nord", the biggest train station I have ever been to; with my big suitcase (that one that Kevin loves) and my laptop in my backpack, without speaking a word in French... I stopped and I said to me "what a #@*k are you doing

here?"

Next day, Compiègne, it was Sunday, I walked around the town (following the Spanish horary that means always after twelve...), and I have to say that the first sentence that came up into my mind was "where are the people?"

I found Compiègne a really nice town, the city centre is beautiful with its small streets, the style of its buildings and the Oise, a river that cross the city in one side...I've found all this full of charm but the only thing I did not found that day was...the people! The streets were empty, I was almost the only one walking, I found just one bakery open and I promise you that for a non French-speaker, it was not easy to buy a sandwich and try to find out where I could buy shampoo...

Anyway, everything changed the next day. I visited the lab and I start meeting the people from the group, I thought most of them were nice so I felt much more relaxed. At the end of the day, I came back to the city centre and... it was full of students! Where were they? Later I understood that the most common thing to do during the weekends is to go to Paris!

From Compiègne by train you are in Paris in forty minutes and when you start to know how to move in this city, is magic! Paris is a

wonderful and expensive city with hundreds of places to discover, obviously apart from the well-known ones that are better than they show in pictures. In Paris, there is always something to do or to see: concerts, museums, expositions... so finally is better for our pockets to live in Compiègne and go during the weekend.

Then, I am sure all those things are familiar to you, start learning the language, find an apartment, fill hundreds of forms and of course...my PhD! Nothing of this would have been possible without the help of some people like Amaud, who shows me the secret places where you can find everything you need in the lab. Marguerita, who spoke and translated for me into English ALL the time. Joana, a Spanish girl who taught me to "survive" in French also some tricks to deal with some "cultural differences"; and Aude and Karsten who encouraged me with our project when it was needed.

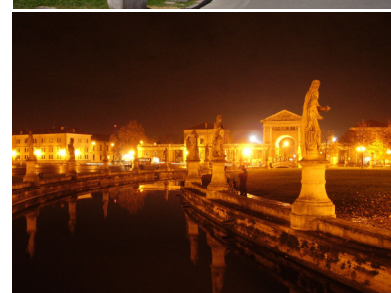
Nevertheless, at the end everything goes well, even if it is hard at the beginning. Now the mess starts to calm down and we have the sensation of building something and that is great! In addition, I think it was even better to have the opportunity to discuss about all that with you during the summer school and see that in one way we are in this all together, which helps, don't you think so?



Ciao!

Gita Dvorakova – University of Padova, Italy.

Padova is situated in the geographical center of Venetian region (40km west from Venice) and is one of the most culturally and economically alive and dynamic cities in the region. Padova claims to be the oldest city in the north Italy, allegedly founded in 1183 B.C. by Trojan prince Antenor. Padova has been famous for its University, founded in 1222. The University hosts the oldest anatomy theatre (built 1594) and the oldest botanical garden (1545) in the world.



The first thing I tasted here was "lo spritz" which I tried with my new colleagues just the second day of my stay in Padua. In Venetian region "lo spritz" is the most popular aperitif. It is a traditional drink, most consumed, most



diffused, and it is a symbol of a city atmosphere. It is a bitter, pre-dinner aperitif which is made of Prosecco, Aperol or Campari and sparkling mineral water. Usually it is served with a slice of lime, orange or with an olive.



Another thing which was new for me was "la festa della laurea" - a degree ceremony which - for me - was something really incredible. First of all there is an official part at Palace Bo' (historical seat of UP).



And then the better part takes place. After series of family photos, graduated is dressed by friends in a ridiculous costume and becomes the target of jokes and taunting. The graduated has to read out loud the "papiro" which is a comical caricature making the new graduate's life public.



I have to say that I like being in Padova because I found really nice people here. All colleagues are very sympatic and I like them. They are not only colleagues but also my friends.

Science and Society Events in Jena

Tristan Doussineaux – Friedrich Schiller University of Jena, Germany.

2007: Science Night

On Friday 16th of November 2007, from 6:00 to 24:00 pm, took place, for the second time in Jena “*The Long Night of Science*”. This event enables all citizens to visit not only the public organisation of research but also some private organization like Zeiss, Jenoptik or even the fittings of a dentist surgery. The communication between scientists and other citizens is developed through lectures, exhibition, games, workshops, shows (“*Explosion of the Black Powder*”).



The Jena research group of the NASCENT RTN took part in this event presenting a CO₂-chemical sensor based on the colour change of a CO₂-sensitive dye. First, people could observe clearly the reversible colour change of the dye from deep violet to yellow using plastic pipettes in which the dye was put down on the inner surface and by pumping various atmospheres like CO₂, fizzy wa-



ter and air. Next, the finalized device using this principle and including computer interface was shown.

This event encountered a great success through the whole city showing a real interest of citizens towards the work of the scientists as well as a need to understand technological progress. “*The long Night of Science*” will be for sure organized again.

2008: Friedrich Schiller University 450th birthday



A lot of events will take place in 2008 in Jena during the whole year to celebrate the 450th birthday of the University. Indeed the University of Jena was officially established by the Emperor Ferdinand I the 2nd of

February in 1558. It has been renamed in 1934 Friedrich Schiller University.

The University's reputation peaked for the first time in the 18th century under the auspices of Duke Charles Augustus when Hegel, Schiller and Goethe were on his teaching staff. Considered as one of the most politically radical universities in Germany spoken in favour of more democracy, University of Jena has undergone a high pressure coming from the government at the end of the 18th and the beginning of the 19th centuries. A second reputation's peak came in the latter 19th century thanks to the work on evolutionary theory of Ernst Haeckel who introduced also the concept of chemical ecology. During the 20th century, the cooperation between Zeiss Corporation and

University brought new prosperity and attention to Jena, resulting in a dramatic increase in funding and enrolment.

The birthday celebration will be lead under the motto “Lichtgedanken” (flashes of brilliances) as an honour to Friedrich Schiller and at the time symbolizing all the ideas that are inherent in a university and is what connects all of its faculties with each other in a trans-disciplinary way. So there will not be a week next year without celebrating this birthday here either with lectures or conferences and there either with art exhibition or music concerts.

2008: Jena City of Science

Jena has also been selected together with Potsdam as the City of Science 2008. The motto is “Wissen und Wachsen – Made in Jena” (*To Know and to Grow – Made in Jena*) and 10 related themes will be broach involving all the faculties of the University. For instance some of them are “Durchblick schaffen” (*create Understanding*), “Schliff geben” (*give refinement; refine*), “Jenaer Paradies” (*Paradies of Jena*) or “Neugierig bleiben” (*Stay curious*).



All these events are going to do Jena “the place to be” for a scientist next year. So secondment?

News from Professor Kutner's lab (IPC)

Professor Kutner's lab organized the 3rd International Workshop on Surface Modification for Chemical and Biochemical Sensing, SMCBS'2007, from 4 to 8 November in Wlodowice (a small town in a picturesque hilly region of central Poland). One hundred of people from different countries participated in it. We invited distinguished scientists to deliver tutorial lectures. Several specialists in the field gave keynote lectures. Early stage researchers, including PhD students presented either oral short

communications or posters. Ievgen Obratsov presented a poster. For details about this event, please visit our website at: <http://www.science24.com/event/smcbs2007/>

Ms. Magali Bartkowski, a PhD student supervised by Professor Karsten Haupt at CNRS (but not on the NASCENT programme), worked in Professor Kutner's lab in Warsaw for two weeks in November on the piezoelectric microgravimetry sensing

of proteins (cytochrome c) by using MIP thin films.

Prof. Tatyana S. Zhuravleva of the Emanuel Institute of Biochemical Physics, Russian Academy of Sciences, Kosygina 4, Moscow, 117977, Russia, paid a short (3 days) visit to IPC lab in November. Together with Prof. Kutner they planned their joint experiments. In her lab in Moscow, she can determine different modes of conductivity of thin films.

NASCENT in the US

Professor Karsten Haupt was invited by the organisers of the Materials Research Society (MRS) Fall Meeting in Boston, USA, to give an oral presentation in November 2007. Miss Ana Linares and Mrs. Aude Cordin (Assistant Professor and co-supervisor of the PhD thesis of Miss Linares), co-authored the presentation, also attended the symposium. This is one of the most important events of the year in the Materials area. Moreover, this particular MRS meeting hosts a special symposium on "Synthesis and Surface Engineering of 3D Nanostructures", which is exactly what the activity of CNRS group within the NASCENT network. There were several other interesting sessions on nanomaterials and nanostructured materials, their characterisation and applications, that are very relevant to the research activities of NASCENT. For more information about this event visit the MRS website at: http://www.mrs.org/s_mrs/index.asp.



Ana Linares kindly wrote her impressions of this event and shares her photos:

"Coming back from MRS Fall Boston 2007

Hi all! Recently I had the opportunity to travel with Karsten and Aude to the MRS Fall Meeting in Boston. This conference is organised by the Materials Research Society and there are two sessions each year, spring and fall. The next session will be in China, just in case any of you are interested on attending.

In my case, it was my first time in a huge international conference like this one, and it was a great experience to learn how to manage these kinds of events. At the beginning, I found it exhausting: 35 conferences at the same time, so you really have to choose one, make a plan and run from one room to another to try to achieve the maximum information... and then the posters...

Nevertheless, when you get it, it is amusing, and then you start getting involved, asking questions without fear (not easy), exchange opinions, references, addresses and even possible collaborations. Another good point is the opportunity to realise how fast science moves, above all in the nanotechnology area and all the original things we can do in our projects if we think a bit more before start working.

Even if we did not have a lot of time to

visit Boston, I just can say that is a beautiful city, it reminded me London in the architecture style but in the "States way", I mean, everything bigger and with a lot of chocolate! It has a nice seaport and the people there are very friendly but there is a problem: the coldest winter's day in Compiègne is tropical weather in comparison with Boston! Boston is fjh=(/n'+ cold!

Here I share with you some important points I have also learned in Boston:

- Do not try to show off saying that you have designed a new superstructure if the one who has done it BEFORE you is attending your talk (it happened to a Harvard PhD student, I was there).
- Even your advisor, the one you admire, does not know how to do everything (guess who cannot play yo-yo).
- Each country has its own way to "speak" English, and MAYBE you do not understand all of them.
- Everything in the States has double of sugar than its equivalent in Europe.
- Finally, if you fly with Delta Airlines, avoid checking in your suitcase because MAYBE they can lose it on the way back...

See you soon, plein de bisous, muchos besos!"



Secondment

Dr Jan Svoboda from the University of Padova, Italy, did his secondment at QMUL and has worked under the supervision for Dr Resmini from 29th October to 16th November 2007. During this time Jan worked in collaboration with Miss Rita Jorge on the synthesis and characterization of template phosphonates and cobalt ligand complexes using NMR spectroscopy. The results have been very good and will form part of a joint publication.

In November 2007 **Dr Kevin Flavin** (QMUL) has spent two weeks at Ben Gurion University, Israel, to work with Dr Levi Gheber's group. Kevin used an electrospinning technique and the nano fountain pen in order to produce sol-gel nanostructures in the presence of a click generated fluorescent zinc sensing macrocycle. He also attempted to produce imprinted nanofibres by an electrospinning process to produce a novel catalytic material.



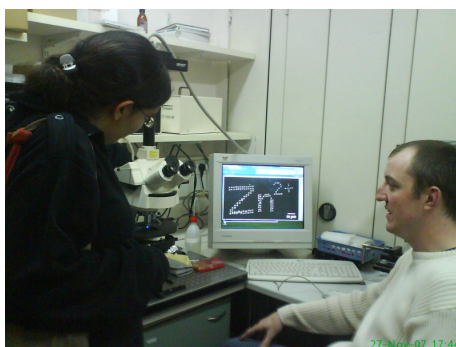
Kevin operating the nano fountain pen all on his own (and seems to be enjoying it)

Silvia Piperno reported: "The secondment of Kevin in our lab is now finished. It has been amazing!!!!

It has been what the EU call "transfer of knowledge". Kevin has taught us all tricks that a good chemist has to know, we have introduced him to the fantastic world of the nanotechnology and... why not, even this one is transfer of knowledge, Kevin has taught me to play snooker.

We have had funny moment, like when he has helped to Daniel to distil 4 vinyl pyrrolidone.

Obviously, I could not allow Kevin to come back to London without inviting him for dinner, clearly Italian dinner and without showing him Jerusalem. We have had a nice trip through an historical and characteristic place in Israel, like holy sepulcher church, the western wall and the Muslim market in the old city. The secondment, I think, has the purpose to train us to work in team but specially to



Kevin and Inbal, a Ms.C. student from Levi's team are observing the fluorescence picture of what Kevin was writing with the nano fountain pen.

push us to socialize and to form a future network of researcher. "



Kevin and Daniel enjoying Silvia's dinner



Kevin with Levi and his group playing pool

Dr Aurelien Auger from UCM has started his secondment at CNRS on 2nd December and will work there for three weeks with Professor Karsten Haupt's group to learn some interesting chemistry.

Recruitment update

Welcome to **Dr Tomáš Martan** and **Dr S Subramanian**.

Dr Martan has started his employment on 15th December at CiS, Germany. Dr Martan is from the Czech Republic and he did his thesis at the Faculty of Electrical Engineering at the Czech Technical University in Prague in 2006. His professional interest is focused on optical sensors, optoelectronics, optical sources and detectors. He has dealt with photonics in the Institute of Photonics and Electronics of the Academy of Sciences of the Czech Republic since 2001. His PhD study programme "Electrical Engineering and Information Technology" was also focused on optical fibres, optoelectronics, and

applied optoelectronics in medicine. He studied subjects concerning with applications of optoelectronics in medicine during his postgraduate study stay at the Institute of High Frequency Technology, Aachen University of Technology. The main focus of his work is directed to colour sensors based on our MORES sensor. This issue aims to the planned combined sensor module with our partners from Jena.

Dr S Subramanian will start his employment at IPC, Poland, in the new year. Dr Subramanian is from India. He did his PhD at the Indian Institute of Science in Bangalore. His research project focused

on the "Structure, Stability and Interfacial Studies of Self Assembled Monolayers (SAMs) on Gold and Silver Surfaces." He is familiar with spectroscopic techniques such as grazing angle IR, ATIR, microscopic techniques such as AFM and STM and several electrochemical techniques. He studied organic thin films (self assembled monolayers) on metallic surfaces. The stability and wetting characteristics of modified surfaces have been probed using the above mentioned techniques. He is also familiar with the approach of formation of thin films, monolayer fabrication, layer by layer assembly for the absorption of biomolecules.

NASCENT

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*CNRS, Université de Technologie de
Compiègne, France*



Forthcoming NASCENT Events

Workshop at Cranfield University

The two and a half day masters course on MIP modelling and sensors will be held at Cranfield University, Silsoe campus, Bedfordshire, UK from 23rd to 25th January 2008. Researchers are expected to arrive at Cranfield University on the afternoon/evening of the 22nd January 2008. You will stay at the [Silso Conference Centre](#) for three nights (22, 23 and 24 January). You will leave Cranfield after lunch of the Friday 25th January 2008. Programme, directions and map are on the NASCENT Intranet.

Stage on innovation at Kodak

This two day workshop for experienced researchers only will take place at Kodak European Research, Cambridge, UK, on the 28th and 29th January 2008. ERs will have to arrive at least on Sunday evening and will have to travel back on Wednesday. Researchers will stay at the New Hall Conference Centre, not very far from the city centre. Visit the NASCENT Intranet for further information.

The **Second NASCENT Summer School** will be held at Compiègne, France from 20th July to 25th July 2008.

The **Second NASCENT International Meeting** will be held in Paris from 27th July to 30th July 2008.

More details on these events will be published soon on the NASCENT Intranet.



Kodak, Cambridge, UK



Photo contest



**Congratulations to
Ievgen Obratzsov
who won the
first NASCENT
photo contest!**

**Ievgen will receive a surprise prize at the next
NASCENT Summer School**

**Photos from all participants can be seen on the
NASCENT Intranet**