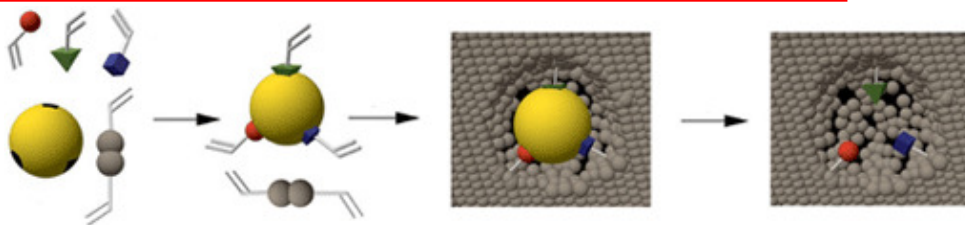


NASCENT Newsletter



Nanomaterials for Application in Sensors, Catalysis and Emerging Technologies

NASCENT Researchers on the move



Sofia Martins
Lab: UCM, Spain
Secondment: QMUL, UK
June 2007



Jan Svoboda
Lab: UP, Italy
Secondment: QMUL, UK
November 2007



Ania Servant
Lab: QMUL, UK
Secondment: CNRS, France
June 2007



Daniel Owsiejewicz
Lab: BGU, Israel
Secondment: CNRS, France
May 2007



Rita Jorge
Lab: QMUL, UK
Secondment: UP, Italy
July 2007



June 2007

Volume 2, issue 2

The next few months will be very interesting for all of the NASCENT members with the first Summer School and first Network Meeting both taking place at Queen Mary, University of London. This will be a fantastic opportunity to meet each other, exchange ideas and have some fun!

A number of NASCENT researchers are also on the move, going to visit other members and receive specific training. These secondments are an important part of the training and transfer of knowledge activities of this Network and I look

forward to hearing the outcome of these first experiences. I strongly encourage all ESR and ER to discuss with their supervisors the different possibilities and consult the NASCENT intranet website that provides a lot of information on the expertise of each group and the best times to visit.

I look forward to meeting all of you in September in London and hope that you will find the experience interesting and useful!!!

Dr Marina Resmini

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Scientists news

Passover – the story and the tale for NASCENT scientists.

Levi A. Gheber – Ben Gurion University of the Negev, Beer-Sheva, Israel.

Foreword: I was asked to contribute a little something to the NASCENT newsletter, preferably about Passover that we celebrated a while back. Someone who has celebrated a holiday since he can remember himself may find it pretty difficult to tell something about it... think of it: we normally have the most trouble explaining the most "trivial" things. Imagine having to explain what "man" means, to someone who is not one. Of course, you know what it means, in fact you know too well what it means, so well that in fact you're not sure where to start explaining... "it has two arms, two legs..." no, this is too detailed... "it is a mammalian..." no... too scientific... "It was created on the sixth day of creation"... come on... a man! I am one, we all are, there must be a logical, short and compact way of explaining what that is! Probably so, but it's not an easy task!

So, after postponing and trying to escape, I took on the challenge, to try and explain to you what for me is self explanatory, in a concise way, without boring you to death, and while preserving the important aspects. If I succeeded, I am glad; if not, at least we have something in the NASCENT newsletter.

Geography: Canaan, a land approximating to present-day Israel, West-bank and Gaza, plus adjoining coastal lands and parts of Lebanon and Syria (<http://en.wikipedia.org/wiki/Canaan>).

Time: Over 5,000 years ago, Depending on whom you ask. For reference, the Jewish calendar today counts 5,767 years, and the counting started probably around the time when the story told here ends, give or take a few centuries, but we're not going to argue about it. Officially, the counting starts from the moment of creation (remember? six days, Sun, Stars and Moon, Adam and Eve, apple, snake and MIPs...), but this conflicts with some facts (although we normally don't let ourselves get confused by facts), like dinosaur skeletons and so on, so who knows... A more rigorous discussion about the Jewish calendar can be found here: <http://www.jewfaq.org/calendar.htm> (this will help the coordinator understand why I can never remember when the holidays occur in Israel *this* year, when we're trying to set an appointment).

Heroes: (by order of appearance), Jacob (A.K.A. Israel (this is not a joke, Jacob=Israel and vice versa: The sons (or children) of Israel=Jacob's sons)), Joseph (Jacob's son), Pharaoh, Moses, Aaron and me (I am a hero for writing these lines).

The story: A long time ago, in a very distant land (for most of you, but for me it was right here; actually, come to think of it, it's not that far for the rest of you either... ask Daniel, who is getting his "travel allowance" according to the distance Paris-Ber-Sheva, and thinks that it's too close!). Jacob and his extended family (tribe) moved South to Beer-Sheva (this is worth telling the whole story, just to mention my city): Genesis 46:1: "And Israel took his journey with all that he had, and came to Beersheba, and offered sacrifices unto the God of his father Isaac". (You have to realize that "b" and "v" differ by one single little dot in Hebrew, therefore translations of the bible to other languages may suffer from small mistakes in confusing "b" and "v", but "sheva" in Hebrew means "seven", while "sheba" means nothing. ("Beer" means "well" (water well)-not a 5% alcoholic drink made of cereals...). Never mind, this is a different story... Whoever asked me to write this report should have known that I easily get carried away...



So, Jacob goes down to Beer-Sheva. Once he gets there, God tells him to pack his stuff and continue further south to Egypt (go on reading Genesis 46:3: "fear not to go down into Egypt; for I will there make of thee a great nation"). So they take everything they have, and walk to Egypt. Joseph becomes a big star, due to his abilities to interpret Pharaoh's strange dreams (and his well known Amazing Technicolor Dreamcoat)). A great famine strikes Canaan, so Joseph invites his family to come to Egypt (where food is plentiful, in part due to his good administration), and live there for a while. Pharaoh (the king of Egypt) receives them nicely and all goes well un-

til... a new king comes to power in Egypt, "who did not know Joseph" (Exodus, 1:8). Then the trouble started, and the sons of Israel were enslaved by the Egyptians. The situation deteriorated over the years, to the point where Pharaoh felt threatened by the Jewish slaves and ordered all their male sons killed (see, girls, chauvinism is not always bad for women!).

Moses was the newly born son of a Jewish mother (from the Levi tribe, by the way!), who, in order to save him from his abovementioned fate, put him on a basket and sent him downstream the Nile River. Pharaoh's daughter fished him out of the water ("Moses" in Hebrew is "Moshe" and this word has a meaning: it means something like "drawn out") and raised him as the Prince of Egypt (see the animated movie: The Prince of Egypt). When he grew up, he was contacted by God, who explained to him that it's time he got his act together and lead the sons of Israel out of slavery and into freedom!

I'll spare you the long negotiations Moses had with Pharaoh, aided by his brother, Aaron ("Let my people go!!"). They included many threats, miracles, frogs, darkness, and finally the killing of all Egyptian first born sons (IP violation? It was Pharaoh's original idea, after all!). This last (tenth) plague is the most important one, because it is the origin of the holiday's name: Passover (in English means just that: passing over), and "Pesach" in Hebrew meaning: "skipping" is because God (well, actually the death angel) skipped over, or passed over, the houses of the Israelites, when he was going from house to house and taking the lives of the first born Egyptians, on that terrifying night.

Anyway, Pharaoh got finally scared, and set the Israelites free. Moses, who learned by then how temporary success can be (no, he was not a scientist), ordered his people to drop everything they were doing and prepare ASAP for departure. Since they were in such a rush, they didn't have time to let their dough leaven (yeast can be so slow sometimes...), so they made unleavened bread.

Moses was of course right, and soon enough Pharaoh's army was chasing the departing ex-slaves, who found themselves trapped between the Red sea in front of them and Pharaoh's army behind them. This is when God parts the sea and lets them pass, etc. During their 40 years journey back to Canaan (no GPS reception), they received the 10 commandments somewhere in the Sinai Peninsula, and got used to the idea of freedom, law, you know... started to become a nation.

Passover: Passover is the holiday that commemorates these dramatic events. It is regarded as the point in history when the Jews became a nation, it is a holiday celebrating freedom, it is also celebrating the arrival of spring. It is one of three major Jewish holidays, on which, while the temple existed, everybody was going on pilgrimage to Jerusalem and bringing from their goods (animals, cereals, fruit, etc.) to the temple (i.e. the priests). See <http://en.wikipedia.org/wiki/Passover> for more details.



The holiday takes seven days, during which observant Jews eat only unleavened bread (Matza) and unleavened everything (tastes pretty bad, let me tell you). The rest of us make sure to have a lot of bread in the freezer, because you can't get even one crumb in the supermarket, for a whole week. Nothing that has fermented is allowed! Beer is out too!! The first evening is the most important one, and it revolves around a festive dinner called "Seder", which means "order". The idea is to gather whole families around the table, and have a dinner which has a prescribed order. The order is written down in a book called "Haggadah", which means something like "Tale" or "Telling". The Haggadah was compiled many years after the story of the exodus from Egypt, and its purpose is to reiterate the story of liberation from slavery to freedom, from darkness to light, and to tell this story to the young generations, so that it is remembered. An interesting fact is that Jesus Christ's last supper was in fact a "Seder" dinner. This is also why Easter and Passover occur so close to each other (the difference in dates every year is again, because Passover is celebrated according to the Jewish calendar).

Summary: Passover in Israel 2007 is an official state holiday. The first and last day is a whole day off, the period in between is officially "half-working day", schools are on vacation (for some three weeks! terrible!), most of the population is taking a short (or long) "vacance" and travelling; some abroad, some in the country. Flight ticket prices are a night-

mare during this time. Since spring is usually already here, it's really nice to walk around outside (this is changing within a few months, then it's hot!). The Negev desert is a beauty, it's green and wild flowers are blooming everywhere (for a month or so). The University is shut down; they are usually performing maintenance on air conditioners, internet, generators, etc. Not a good time to do research... The vast majority of the population (I would guess 99.8%) does have a Passover "Seder", regardless of their beliefs. It's tradition, it's nice, it's a good opportunity to get together with the family, eat and drink something (always a good idea, especially if you are invited to a Seder). The young generation has a special role on the Seder: they need to ask four questions (all written in the Haggadah). Basically "why all the fuss, and why aren't we eating bread?". The oldest person has the role of answering their questions (also directly from the Haggadah). The answer is basically "God almighty took us out of slavery into independence, and if He wouldn't have done so, then we and our sons, and our son's sons would have been still slaves in Egypt". The most important order for Passover is probably "Tell your son!".

The kids are also stealing a special piece of Matza (very educational!!) called Afikoman from the Seder table, a piece that is absolutely required in order to end the Seder (it says so in the Haggadah!), and when the time comes and it is needed, the Seder leader obviously can't find it! "Who stole it?", "We did!!" (happy laughter, very funny)... and after a negotiation, the kids get some presents and return the Afikoman, so that the Seder can be ended as prescribed. The true intention of the habit is to keep the kids awake and interested (to some extent) in the endless tales about the exodus from Egypt...

The Haggadah ends with the sentence: "Next year, in Jerusalem!". Perhaps we can have some NASCENT meeting in the promised land, next year?... but not on Passover, or you'll have to eat Matza a whole week!



It's time to get moving...

Dr M. Resmini - NASCENT Coordinator,
Queen Mary, University of London.



'When April with its sweet showers has pierced the drought of March to the root, and bathed every vein of earth with that liquid by whose power the flowers are engendered; when the zephyr too, with its dulcet breath, has breathed life into the tender new shoots in every copse and on every heath, and the young sun has run half his course in the sign of the Ram, and the little birds that sleep all night with their eyes open give song (so Nature prompts them in their hearts), then, as the poet Geoffrey Chaucer observed many years ago, folk long to go on pilgrimages. Only, these days, professional people call them conferences.

The modern conference resembles the pilgrimage of medieval Christendom in that it allows the participants to indulge themselves in all the pleasure and diversions of travel while appearing to be austere bent on self-improvement. To be sure, there are certain penitential exercises to be performed- the presentation of a paper, perhaps, and certainly listening to the papers of others. But with this excuse you journey to new and interesting places, meet new and interesting people, and form new and interesting relationships with them; exchange gossip and confidences (for your well-worn satires are fresh to them, and vice versa); eat, drink and make merry in their company every evening; and yet, at the end of it all, return home with an enhanced reputation for seriousness of mind. Today's conferees have an additional advantage over the pilgrims of old in that their expenses are usually paid, or at least subsidized, by the institution to which they belong, be it a government department, a commercial firm, or, most commonly perhaps, a university.'

Abstract from 'Small World' by David Lodge.

I thought that the abstract above would be very appropriate for this newsletter and might encourage some of you to read the whole book, which is an interesting novel that contains unparalleled wit and insight into the academic world.

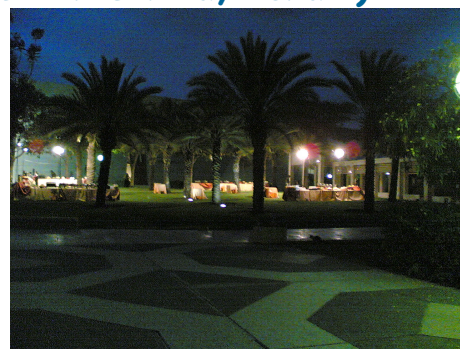
ERs and ESRs News

Daniel Owsiejewicz (Ben Gurion University, Be'er Sheva, Israel)

Daniel did his first training at CNRS, Compiègne, France, in May 2007. He learned a lot about MIPs and he is now a mini expert in this field. He is able to do experiments in Levi's lab, using tools of structuring and analysis at nano-scale.

Daniel reported: "I met very nice people at the CNRS lab in Compiègne. My training was very useful and I learned a lot about chemistry and rules. The NASCENT researchers: Ana and Franck

spent time with me explaining their projects. Dr Karsten Haupt taught me how to apply a protocol for the design of MIPs. From the selection of the products to the fabrication of the good solutions. They explained – giving me huge amounts of hints – how to make MIPs using ultra sophisticated devices. I am now back at Be'er Sheva where the summer heat reaches 39°C!!! The weather here is beautiful and sunny everyday, it is a great pleasure."



Ania Servant (QMUL)

I have done my secondment in France, in the group of Dr. Karsten Haupt during 2 weeks from June 4th to June 15th. I really enjoyed my time over there, everybody from Dr. Haupt's group is so friendly, it was a pleasure to work in this environment.

I had a big surprise when the team celebrated my birthday only after two days working in the lab! I was extremely stunned that they knew it was my birthday and wondered who had told them. I must say that the home made cakes from Aude, who is a fantastic cook, were truly delicious. I would like to

thank them all for their really great and friendly welcoming.



Ania celebrated her birthday both at QMUL and CNRS.

There is also plenty of very good and modern instruments. That's permits me to fully characterize the polymers that I have been synthesizing so far. I have to admit that I didn't have any time to get bored!!!! These two weeks were, to my mind, too short and I would like to come back to Compiègne in a close future.



Sofia Martins (Universidad Complutense de Madrid, Spain)



I started my PhD in February 2007 at Complutense University of Madrid. As part as my secondment I was at Queen Mary University of London in June 2007: It is always a great experience to travel and know a different city and culture. When work is involved the experience may be more useful.

London is an amazing city, to see marvellous places such as "Big Ben", "Buckingham Palace", "The London eye", "Hyde Park", or only to enjoy the view at night near the River Thames was an incredible ex-

perience. The uncertain weather in England, the possibility of change from a sunny to a rainy day in five minutes can make your tour of London more exciting.

But the opportunity to know a different research group, a different way of work was the most benefit of my stay. I have been learning about micro-gel synthesis, during two weeks with Ania and Kevin. To learn something new is a challenge and they provided me that opportunity with great pleasure. The micro gels are a good support for the molecularly imprinted science and can be very use-



ful for my PhD project. The experience was really good.

The research life is not always easy. The good relations between colleagues, the sharing and the discussion of ideas, are a good incentive to come back to your country (...or maybe another as I am from Portugal and work at UCM, Spain) and proceed to work with new ideas.

The opportunity to go to other countries and labs is a big advantage in a research work and I look forward to my next secondments.

Recruitment update

Dr Dietmar Starke (CiS) and Professor Wlodzimierz Kutner (IPC) have received lots of interests for the positions of Experience Researchers and are currently in the process of appointing new members at the Network. We are hoping to meet the two new ERs at the Summer School and International meeting in September. Welcome to **Dr Silvia Piperno**, from Rome, Italy, who will start her em-

ployment at Ben Gurion University as an Experienced Researcher in July 2007.

Silvia has a background in the field of semiconductor and organic material. Her specialization is the technique of micro-fabrication in clean room and electrochemical method to growth nanofibers, spectroscopy technique for the morphological, structural and chemical characterization.



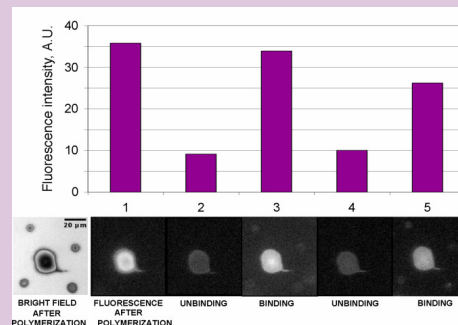
New publication from NASCENT Scientists

Dr Levi Gheber (BGU, Israel) and **Professor Karsten Haupt** (CNRS/UTC, France) have written a paper on Nano MIPs that has been accepted for publication in March 07.

Dr Gheber says: "Molecularly imprinted polymers (MIPs) constitute a very appealing avenue to parallel sensors of a multitude of small target molecules due to their stability, relative ease of preparation and their ability to recognize targets for which natural capture molecules do not exist. We present here a way of arraying MIP structures with nanometer dimensions, using nano fountain pen

(NFP) and demonstrate their functionality using a fluorescent template molecule. More details are available at <http://www.bgu.ac.il/~glevi/website/NanoMIPS.htm>, and the accepted paper will soon be available for downloading there too."

Levi and Karsten were approached by a journalist from nanotechweb.org, Belle Dume, who wrote an article about their research. The article entitled "Nano-pen prints polymers" can be found at: <http://nanotechweb.org/articles/news/6/5/26/1> (You will need to register to become a member before accessing the article).



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Queen Mary, University of London



First NASCENT Summer School and International Meeting London, 3-12 September 2007

The First NASCENT Summer School and International meeting will be held at Queen Mary, University of London from 3rd to 12th September 2007.

Programme, Summer School timetable, International Meeting agenda, travel, accommodation and many other useful information can be found on the NASCENT intranet. An information pack will be given to all participants upon arrival. Researchers attending the Summer School are expected to arrive at QMUL on Sunday 2nd and leave on Wednesday 12th September afternoon.

Scientists and guests attending the International meeting are expected to arrive on Sunday 9th and leave on Wednesday 12th September afternoon. This event is a great opportunity for ESRs and ERs to interact with senior researchers and outside experts and to disseminate research results among the

teams. The Summer School will provide workshops and courses focusing on specific issues and techniques invaluable to PhD students. They will be taught by senior members of the network and by invited guest lecturers. Scientists and researchers will present papers on their research progress at the International Meeting.

A dinner cruise on the River Thames has been organised for all participants of the International Meeting on Tuesday 11th September. You will see some of the best views of London's skyline whilst dining in style with a musical blend a jazz. So please bring a smart outfit, otherwise you will not be able to embark for this enjoyable evening. If you have any special dietary requirements, please to inform the NASCENT Project Administrator (s.fritche@qmul.ac.uk).



PIs' meeting in London

PIs will need to have completed their MCA—Financial statement for Multi-Partner contract report (Form C) on SESAM and bring a copy to the International Meeting. A meeting has been arranged on Monday 10th September at 17.30 in order to complete the summary financial report with all partners' Form C.

Rooms with a view

Your accommodation at Westfield Student Village, Queen Mary, University of London has a view overlooking Regents Canal, which runs from Little Venice, near Paddington via the London zoo and onto the Thames. The canal provides a colourful combination of scenery with towpaths surrounded by greenery and wildflowers for people to enjoy. Narrowboats regularly pass by leisurely and wait at the nearby lock for the water to rise or fall. It is a haven for a variety of wildlife with native and migrating birds resting, nesting or cruising along the canal. It is also a home for many fish and aquatic plants. In the summer the

water is covered with tiny blue tailed dragonflies. The canal is a very pleasant place to have a lunch break. It offers a retreat from the bustle of city life, creating a calm and stress-free environment.

The Westfield Student Village was recently featured in the Guardian for creating an exceptional new student mini-village with the comforts of a fully supported campus. Last year a journalist from the Guardian tried out QMUL holiday apartments and wrote an article about her experience:

<http://education.guardian.co.uk/egweekly/story/0,1827629,00.html> (The Guardian, July 25, 2006).

