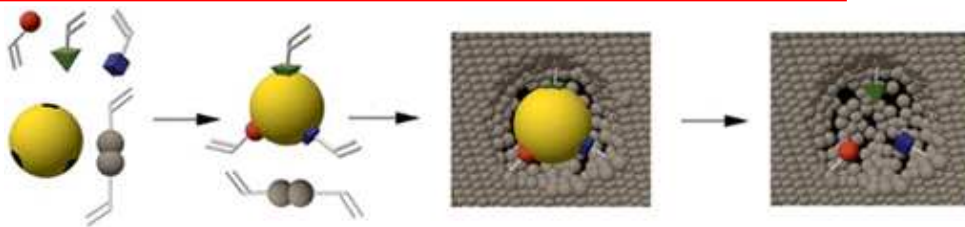


NASCENT Newsletter



Nanomaterials for Application in Sensors, Catalysis and Emerging Technologies



From the NASCENT Team



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THE RAIN IN THE NEGEV'S DESERT

by Ana Linares

The Shabbat was officially starting in a few hours, the last day of my visit to Beer Sheba with Levi's crew at BGU.

Around 30°C on the thermometer at 10:30 a.m (a really nice temperature for the fourteenth of October isn't it?). Levi, his family and some friends picked up Christina and me from the student residence for a trip to Makhtesh (hebrew word for crater) Ramon, an amazing geological formation from the Negev Desert! Just 40 km

from Beer Sheba, makhtesh ramon is a crater located in the north of Negev Desert which is 40 km long and 2-10 km wide and encloses a national park, and the best thing ... it has the shape of a heart!

In the way to makhtesh ramon, we could appreciate the change in the landscape approaching the desert zone, a very nice mixture of orange, yellow and the incredible existence of some vegetation during the dryness of the area.





to be witness of a marvelous phenomenon, the rain in the desert!

In a few minutes we could enjoy an unexpected rainbow and an infinite deserted horizon illuminated lightning, incredible. However we could not rest there enjoying the event, as we learnt that day, the desert is not the best place to be under the rain. Levi and his friends explained the dangers that the rain implies in the desert. The almost none absorption of water by the arid soil is very fast translated into floods which we could see with our own eyes on the way back to Beer Sheba, a small adventure!

The intrepid scouts that we became that day, decided to stop once more on the way back home and visited, still in the rain, the tomb of Ben Gurion and his wife, placed in a beautiful viewpoint face to a canyon that once more increased its beauty in the rain. And all this surrounded by an incredible fun of all the brand new scouts completely wet and trying not to fall down with the mud of the way...

And like in all nice stories, we need a happy ending that for us, tired and wet campers with our jeans full of mud, it could not be other than a copious dinner with a lot of ... houmous!

Once we reached our objective, the Ramon observation point, we had an explanation of the crater's formation and its fauna, and a really amazing view!

But the best was still to come. We had the opportunity of going down the crater to do some hiking, finding on the way a group of ibex which were not scared at all with whom we shared some chips and pictures. Once we started walking, some clouds appeared and we started feeling some humidity... my god it was raining! When I stopped blaming my luck – running out from the rain in Compiègne to find rain in the desert! ... wait a sec, did I say in the desert? – I realized that it was the other way around; I was so lucky! I was going

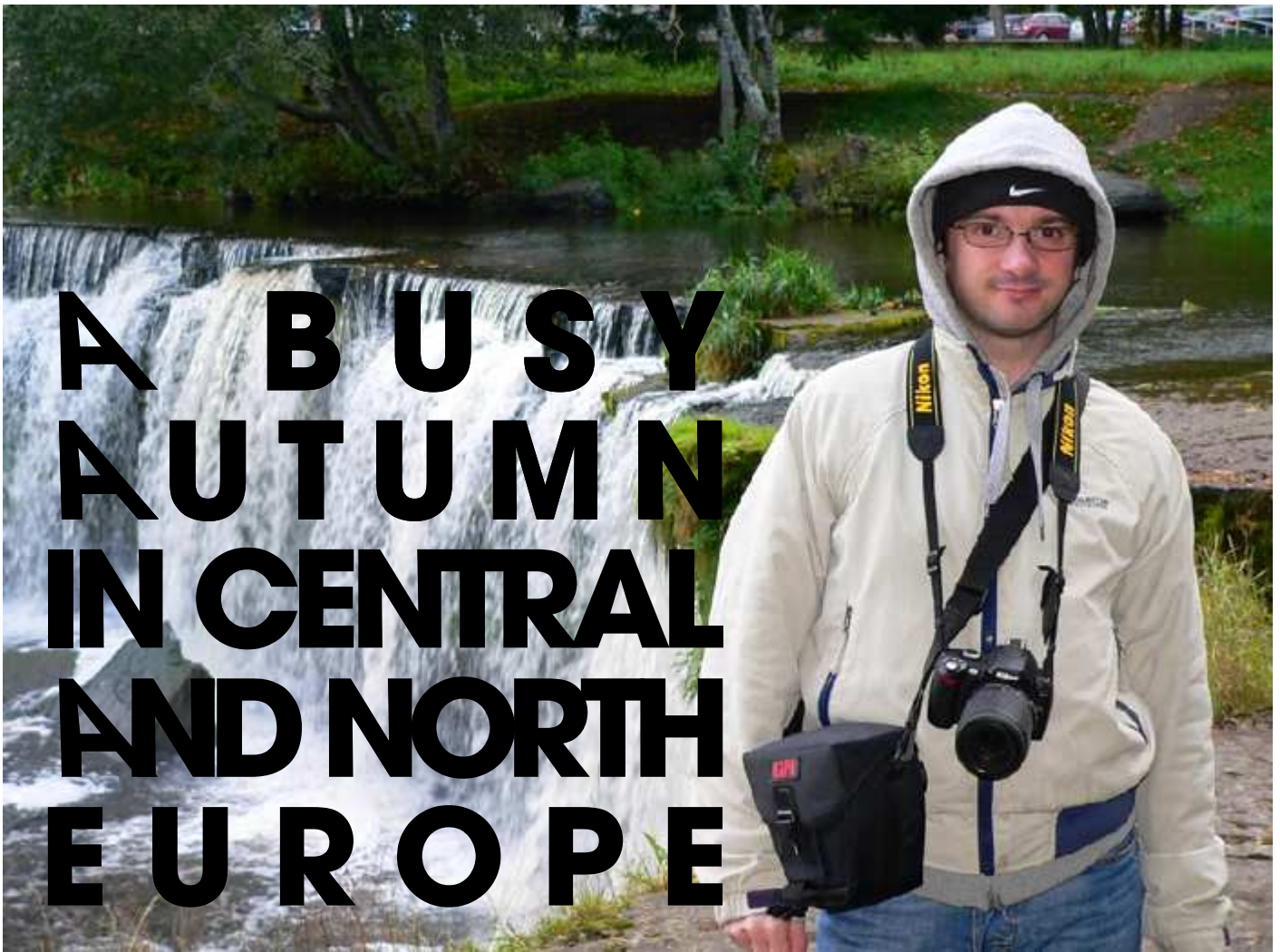


Once more I want to say thanks to Levi and his angels (Yael, Inbal and Sandra) for their warm welcome once more at Beer Sheba and the nice moments in the lab, and also to Levi and his family and friends for this wonderful experience.

See you soon guys!

Ana Linares





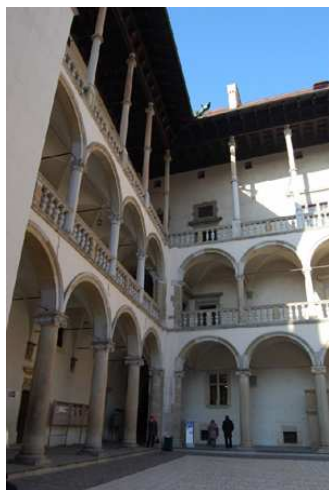
After the finish of the International meeting in Budapest, a very tight research schedule awaited me.

Thanks to a collaboration between the Hungarian Academy of Sciences and the Estonian Academy of Sciences, I had the opportunity to visit the Tallinn University of Technology in Estonia for three weeks starting at the end of September. The visit was planned to carry on some measurements related with my current NASCENT project.

Tallinn is a small, but very beautiful medieval town. In the center there are several historical building and the outskirts are characterized by a huge number of soviet-style buildings.

The Technical University is placed about 20 minutes by bus from the center and it is surrounded by a forest. Even if the weather wasn't very nice (about 5 degrees and always raining a little) I had a couple of days of sun during the weekend to travel around and take some pictures.





At the beginning of November, I also attended the 4th International Workshops on Surface Modification for Chemical and Biochemical Sensing, in Krakow.

There, I gave a short communication lecture of my work and I could spend some nice time with several NAS-CENT friends as well as meeting a lot of new colleagues.

As part of the conference social event, we also went to visit a famous salt mine near Krakow, famous for its salt statues and a very big church hall dug inside the mine. It was a very busy autumn but it was also very rewarding for me.

Giorgio Ceolin



VIVE LA FRANCE !



I have started a postdoc at Polyintell S.A.S in February 2009. The very first days, I tasted my first Normandy cheese, and now, after nine months of daily dietary supplementation between Camembert and Crème fraîche resulted in a laboratory blood test, I decided to sum up my experience in the country of “Liberté, Égalité, Fraternité”.

I arrived in Rouen together with my girlfriend Martina just one week before starting my new job, in order to find a suitable flat and I had a surprising “friendly” welcome in the historic capital city of Normandy: the *Rouennais* people, in spite of their proximity to England, don't like to speak (or to try to speak) English. So, since neither Martina nor I had studied French before, finding a flat was more difficult than we had expected! Knowing that we were facing a deadline, we worked really hard for 6 days finding finally what we were searching: a 38m² flat without furniture! During the research of our flat, we also discovered the first “French paradox”: in order to rent a flat, you need an indeterminate time job contract, a French guarantor and, moreover, a French bank account that, anyway, you cannot open if you don't have a French residence...

... However, I am actually living in this “hard finding” flat and I have to admit that Rouen, famous for its surviving half-timbered buildings, together with its old center made up of narrow streets surrounded by “colombage” style buildings and the Seine River that crosses the city into “two social class”, is a very nice “ville”! Rouen Notre Dame is a very beautiful Cathedral and it was the subject of different pictures painted by Claude Monet.

In January, Polyintell's site has moved from Rouen to a new production site with 600m² fully equipped laboratories situated at Val de Reuil, a small town situated 90 km from Paris and 25 minutes by train from Rouen.

The train trip was the first occasion for me to meet and know people of Polyintell group, in fact all of them, except Delphine “*le parisien*”, live in Rouen and they usually take the train all together to go to work.

From the very beginning my colleagues were very nice to me, even when they tried to speak only French in order to improve my knowledge of this diplomatic language.

The opportunity to work at Polyintell, thanks to the Marie-Curie Research Training Network NASCENT, was really a great chance for me. Working for a private company is completely different from my previous work experience related to an university context: in fact It will completely change the way you think, the way you work and the way you choose a certain direction during the experiment....!

Moreover, I have never worked on Molecularly Imprinted Polymers, since my PhD research has been focused primarily on the chemical characterization of the functional foods and evaluation of their health-promoting and/or disease-preventing property. This was a new professional challenge! Now, after a nine month period, I am totally aware of the fact that this post-doctoral position represent for me an important career development opportunity and an exceptional chance to join a highly qualified team of researchers.

At the end of July 2009, I attended my first NASCENT event, taking place in Budapest. It was very enjoyable and interesting, and it was most of all a wonderful opportunity for me to meet other researchers coming from different countries (*in primis* my room-mate Fernando)

and to see their fantastic scientific works during the Third NASCENT Scientific International Meeting!

On November 2009, I participated to the 4th International Symposium on Recent Advances in Food Analysis (RAFA 2009) where we presented a poster. RAFA 2009, taking place in the magic city of Prague, has focused on recent analytical and bioanalytical technologies and emerging food related applications in the area of residues and contaminants, authenticity, traceability, fraud, mycotoxins, marine and plant toxins, allergens etc. I have found it very interesting since the thematic research was very close to my background and I got the opportunity to know more people (also Italian researchers!) and to take further contacts for the future.

The 4th Scientific International Meeting NASCENT will be held in Israel from 31th January to 7th February 2010. I am very excited to go to Israel as I have never visited this country before, and I am eager to see all of you NASCENT researchers once again.

Ad maiora!

Paulo Lucci





Fig. 1. The Szabadság Híd (bridge) in Budapest.

Hi everybody. As you probably know, my “NASCENT contract” at the CiS - Institut für mikrosensorik und photovoltaik, GmbH, Erfurt finished last December 2008. I would like to inform you about my continuing work, conference contributions, and traveling which I realized this year.

First of all I have to mention our 3rd NASCENT International Scientific Meeting that was held in Budapest 27th – 29th July, 2009. I was glad I could be at this lovely place and I could meet other NASCENT members. I would like to thank organizers of this event. It was my first time in Budapest and this place impressed me because it is really nice historical city. Photo of the Szabadság Bridge situated close to the Hotel Gellért where our meetings were held is in Fig. 1.

I travelled to Paris not so long after this event.



Fig. 2. The WIO 2009 participants

WIO 2009, Paris

I participated in the 2009 Euro American Workshop on Information Optics (WIO 2009). The WIO workshop was held 20th – 24th July, 2009 at Ecole des Mines in Paris, France. Joint photo of participants is in Fig. 1. During WIO 2009 were presented the latest advances in information optics and photonics, imaging sciences and engineering, 3D image sensing and displaying, biophotonics, and novel sensors. My contribution named “*Miniaturized remission sensor for carbon dioxide detection*” was focused on development of remmission sensor that was done during my stay at the CiS Institute last year. The newest results can be concluded in this way: the novel type of rugged portable planar remission sensor module based on sensitive dyed polymer layer, LED and PIN diodes was designed and developed. The functionality of whole sensor system was successfully tested. The limit of detection of the sensor was found 0.02 ppm. The best sensitivity was reached $2.22 \cdot 10^{-4}$ [1/ppm]. Nearly linear calibration curve was observed in the concentration range up to 10000 ppm (1 % vol.). Non-linear behavior of calibration curve above this limit can be explained by CO₂ saturation of the dyed-polymer layer. Time response corresponded to thickness of sensitive layer. The shortest response ~ 1s was obtained with dyed-polymer layer of thickness 900 nm.

I discussed with American, Japanese, and French participants of this workshop e.g. with Prof. H. John Caulfield (Center for Irradiation of Materials Department of Physics Alabama A&M University, President Diversified Research Corporation), Prof. Kazuo Kuroda (Institute of Industrial Science of the University of Tokio), Prof. Masayuki Tanimoto (Department of Electrical Engineering and Computer Science Graduate Schoole of Engineering Nagoya University, President of The Institute of Image Information and Television Engineering), John C. Harker (Springer, Physics editor, USA), Marius Costin (France).

ASCOS 2009, Madrid

At the end of summer holiday I participated at the ASCOS 2009 that was held in Madrid. I have to thank to organizers of this event because everything was very well organized. There were many very interesting lectures. I also appreciate of organization of the 1st ASCOS soccer match. Our team No. 5 (see Fig. 3) was favorite of this soccer match but at the final match did not win.

The CiS Institute, Erfurt

I visited the CiS Institute twice this year so that our collaboration could continue. I was in Erfurt after the NASCENT international scientific meeting in Budapest and my second working visit was in November. During these visits I consulted technical teams and the possibilities of future collaboration between Institute of Photonics and Electronics, ASCR, v.v.i. (UFE AS CR) and the CiS institute. I spoke about it especially with Dr. Matthias Will, Dr. Olaf Broderson, and Dr. Dietmar Starke.



Fig. 4. The CiS building (November 2009).

So, this was something about me and my activities this year.

I wish you a merry Christmas and good luck to all “old and new” NASCENT members to New Year 2010. See you in February in Israel or later in March in Prague during Eurotrode X conference.

Tomas Martan



Fig. 3. The 1st ASCOS soccer match team No 5

NASCENT

5th Winter Training School and 4th International Scientific Meeting in Israel

Winter Training School

Ben-Gurion University of the Negev
1st to 3rd February 2010

Scientific International Meeting

Dead Sea

5th to 7th February 2010

NASCENT

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