

newsletter

Issue 3—November 2016



Welcome to the third issue of the IPCOS newsletter. The ESRs and PIs have participated in a wide range of events since our last issue and, in particular, have really enjoyed taking part in the 9th Annual Molecular Imprinting Conference held at the end of June in Lund, Sweden. Rosemarie's first impressions of the conference were:

"The content of the conference was really multi-disciplinary covering a broad range of analytical, chemical and biochemical applications. It was definitely a unique experience, meeting the pioneers of molecular imprinting and professors, of whom we had read several papers on their work by now".

To find out more about this conference and other IPCOS news, read on..



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IPCOS Summary

The ESRs are now all working hard on their PhD projects and are enjoying being part of the IPCOS programme. In this issue, Angelo Monteiro (ESR 2) shares his experience of his first year with us (pg 3).

Since the last newsletter all the IPCOS members have been involved in a number of events, conferences and outreach activities. In June, all 5 ESRs and the Project Coordinator, Prof Marina Resmini, attended the 9th Annual Conference in Molecular Imprinting (MIP2016) in Lund, Sweden. Turn to pages 4-6 where you can read some interesting articles written by the ESRs on their views about being part of this international conference. The first IPCOS workshop was held on the 1st – 2nd of September, 2016 and was run by illycaffè, at their headquarters in Trieste. You can find out more about this fascinating workshop on coffee research and quality on pg 7.

Finally, on pg 8 we have highlighted some of the outreach events that the ESRs have participated in over the past 6 months. The next gathering of the IPCOS network will be at the mid term review meeting in Brussels on the 1st of December, 2016. This will be an opportunity to get an update on the progress of the network, listen to ESR presentations and meet our EC Project Officer; Francisca Cuesta Sanchez.



Sunset in Madrid—Image taken by Angelo Monteiro while visiting the Universidad Complutense de Madrid

Angelo's first year in IPCOS

Angelo Monteiro- ESR 2, shares his experience about his time in IPCOS so far.



Park in Madrid

My adventure in the IPCOS project started on October 1st, 2015, in London, at Queen Mary University of London (QMUL), where I'm based. The first month was essentially spent getting to know the university, research group and to take care of some bureaucracies regarding the IPCOS project. Also, I became familiar with the research fields that I'll specialize in after three years: Molecular Imprinting and Sensors.

After a month, I went on my first secondment to Trieste, at the Università degli Studi di Trieste supervised by Prof Federico Berti. The work developed here regarded the design and synthesis of functional monomers (FMs). During this three and a half month period, I deepened my knowledge in computational chemistry, which turned out to be crucial in the design of FMs. I also was able to get to know the other early stage researchers (ESRs) based in Trieste. At the end of this period, the first IPCOS School took place in Trieste. This was a great opportunity to gather all the participants involved in this project, from industrial to academic partners, to exchange ideas and attend educational lectures, which in a near future will be useful in the development of the final project.

In mid February, 2016 I returned to London, and continued working on my project in Prof Resmini's lab. So far I've evaluated the interaction of my synthesized FMs through spectroscopic techniques, and started the synthesis of the polymer in which my sensor will be based. The experience at QMUL has been very positive, with several reports indicating that we are on the right path to obtain our degree. The Biological and Chemical Sciences department at QMUL has an amazing laboratory atmosphere and professors who are always ready to help us. In April 2017, I will complete my final secondment with an industrial partner.

Since returning to QMUL I have had the opportunity to attend what might be regarded as the most important conference in molecular imprinting: the 9th International Conference on Molecular Imprinting (MIP2016). The most influential people in this field were present, giving us the chance to see the very research that has been generated and to start networking, which will be very useful in our professional future.

So far, the experience as an ESR in the IPCOS project has been very rewarding. This project has allowed me to explore different research fields across Europe, which makes this experience very enriching. Meeting different people and different work dynamics help us to grow, both personally and professionally, and preparing us for all kinds of situations in the future.

Ana's experience at the Lund conference (MIP 2016)

An article from Ana Oreski, ESR

On the last Sunday in July **The International Conference on Molecular Imprinting, 2016** began. After an incredible journey from Trieste to Lund in Sweden, we were kindly welcomed at the Elite Hotel Ideon, where the conference took place. Equipped with name-tags we unpacked in our rooms and eagerly joined the rest of the delegates at the evening reception.

Reunited with the rest of the IPCOS team and after battling a giant breakfast, we attended the first couple of lectures, given by big names in the world of molecular imprinting from all over the world. Together, with Prof Marina Resmini presenting **Molecular imprinted polymers for the detection and delivery of drugs**, they spoke about various kinds of molecularly imprinted polymers, different methods of molecular imprinting and its applicability to not only chemistry, but many other areas of research. All 17 talks (on a very productive Monday) were brilliant and well presented, and as such succeeded greatly to preserve our undivided attention. Undoubtedly, several kinds of picturesque snacks during the coffee breaks provided deserved assistance in the process. Day one concluded with a poster session in which many PhD students gladly contributed. Many projects were presented and numerous ideas were exchanged.

After successful experimentation with the waffle machine during breakfast number two, we started with several more oral presentations. This time the PhD students got to speak about their projects as well. The topics were thematically a bit more dispersed, telling a never-ending story that molecular imprinting, is and once again confirming, playing an increasing role in science. In the afternoon the social event was scheduled, starting with a boat dragging competition and ending with dinner. At this point the IPCOS group split for a little while, with some of us enthusiastically researching the city of Malmö and the rest taking the boat dragging competition more seriously. We do, hereby and thanks to Luca, proclaim it as our victorious sport discipline, as he made an important contribution to the winning team.

Wednesday was the day of the IPCOS team. Luca gave his oral presentation in the early afternoon, entitled: **Computational selection of functional monomers for the synthesis of molecularly imprinted polymers specific for caffeine**, and in the evening Anggy, Angelo and I presented our posters. With titles **Synthesis of p-coumaroylquinic acids and evaluation of functional monomers for a MIP based sensing element**, **Design, synthesis and evaluation of functional monomers for detection of chlorogenic acids in coffee** and **Coffee terpenes: extraction and selection of functional monomers**, we described our results to date. Once again, the evening was dedicated to a whirlwind of ideas regarding all of the presented projects.

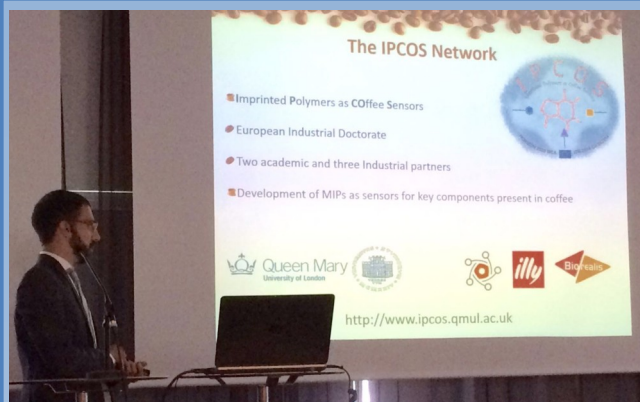


Anggy and Ana sightseeing in Malmö

On the last day of the conference, just a couple of lectures remained. The Italian part of IPCOS unfortunately had to depart a bit sooner due to an earlier flight home, the rest, however, got a chance to finish attending all the lectures, even further expanding their newly acquired knowledge. In the afternoon they departed from the small city of Lund as well, continuing their Swedish expedition.

My first talk at an international conference (MIP 2016)

Luca Redivo- ESR 4, provides some insight on speaking in front of a scientific audience



Here we are with a new issue of the IPCOS Newsletter. Now the team is complete and each of us is working hard on their project, but for 5 days in June 2016 we had the opportunity to take a break from the routine and experience something different. In Lund, the best scientists in the field of molecular imprinting (MIP) met to share their latest results, discuss the latest gossip about MIP, and find collaborations. Personally, I have to say that the level of all the talks and posters was very high, and since the conference was very specific, a relative small group has assembled and thus the at-

mosphere was like a big family. It was easy to meet other researchers, from all over the world, share experiences and find new inspiration for my work.

The most important day for me was Wednesday, when in the afternoon I presented my work with a 15 min talk. I must confess that the night before I didn't sleep well, and in my mind the speech was running over and over, until I finally fell asleep. Then the day came, and after the first lectures of the morning, and a quick lunch I ran upstairs to wear something more elegant and appropriate and then returned for the afternoon session. While waiting to present, I was completely focused on my presentation, thinking of any possible



question that could eventuate. Then it was my turn. I switched on the microphone and I started, presenting first the IPCOS network and then going in to the details of my work. After the usual acknowledgements the question time started and it was actually a very nice moment (now that I'm thinking back LoL) as people were asking specific questions and showing interest in what I was presenting. When I then switched off the microphone it took me a while to relax and understand what a wonderful experience it was. It was great. I think it is something very important for every PhD student and I hope that each of us will have the opportunity to feel it. If the talk was good I must thank also my supervisor, Marina, for having reviewed my slides, helping me in preparing bomb-proof slides and teaching me how to present them. Now we are all back to our work, with a better knowledge of molecular imprinting and the possible applications of this method.



Lund centre

Lund, the city where everybody talks about imprinted polymers!

An article from Rosemarie Anastasiadi, ESR 5.

After 6 months at Queen Mary University and getting deeper and deeper in the scientific part of my project, while still in the beginning of my PhD life, the big event was upon us... The 9th MIP conference in Lund, Sweden!

The content of the conference was really multi-disciplinary covering a broad range of analytical, chemical and biochemical applications. It was definitely a unique experience, meeting the pioneers of molecular imprinting and professors, of whom we had read several papers on their work by now. On the first day of the conference, Prof Marina Resmini was invited to give a talk and she presented some of the latest results on imprinted polymers for the detection and delivery of drugs. Luca also presented his work representing the IPCOS team, standing there and carefully answering all questions. Moreover, we met several PhD students and younger researchers from various universities around the world presenting some of their work, had some interesting conversations and hope to see them again at the next MIP meeting in two years!

In addition to the scientific part of the conference a social event and a Gala dinner were scheduled that brought people together in a less professional level. The Gala dinner took place in a great location in Malmö. A quiz about general knowledge on molecular imprinting was organised, and we realised that we know less than we thought! After the end of the conference we left Lund, the city where everybody seems to know about imprinted polymers, with the best impression. Once back in London we regrouped, put down all our new ideas and designed experiments to carry out in the lab.

We all met again at the IPCOS, illycaffè workshop in Trieste, where a workshop took place on the 1st and 2nd of September, 2016. All IPCOS members attended and also some delicious espressos coffees were tasted! See page 7 for all the details.



Malmö city centre



Selfies in Malmö

Illycaffè Coffee Research and Quality Workshop, Trieste

The first specialised IPCOS workshop “Coffee Research and Quality” was held at illycaffè headquarters in Trieste on the 1st and 2nd of September, 2016. All IPCOS partners and fellows attended the workshop which included seminars on case histories in coffee research, sensory analysis and a complementary training module on public speaking. The workshop started with an introduction by Dr Luciano Navarini (illycaffè s.p.a. Research & Scientific Coordination), where the relevance of research in the successful life of the Company and the importance of quality as a central target to be achieved in any industrial activity, in particular in the Coffee Sector, were highlighted. Andrea Appelwick (illycaffè s.p.a. - Università del Caffè) then gave the complementary training module on “The Art of Speaking in Public”. Moreover, two different case histories in coffee research were delivered as lectures for the ESRs by Dr Paola Chrisafulli and Dr Luciano Navarini.

In the afternoon, all the ESRs and the other IPCOS project participants visited the illycaffè production site and the Aromalab and Biolab laboratories located in AREA Science Park (Trieste), one of Italy’s leading scientific parks.

The second day was dedicated to courses illustrating the remarkable importance of sensory analysis in the food industry. In particular, Dr. Paola Muggia (Sensorylab – illycaffè s.p.a.), with the presentation entitled “Sensory analysis in the Coffee Sector”, offered an overview of the methodologies applied to the coffee sector and the complexity in managing a sensory panel, ranging from recruitment and training up to statistics to process sensory data. The final invited lecture, entitled “Genetic differences in taste perception and correlations with food selection and health status”, was given by Dr. Antonietta Robino (Institute for Maternal and Child Health - IRCCS “Burlo Garofolo”, Trieste). During this lecture, a test on the individual and genetically driven perception of bitter taste was performed by all the ESRs. This test was related to a final video presentation describing a recent expedition on the Silk Road by scientists of the IRCCS “Burlo Garofolo” (Trieste) organised to gather information on the relationships between genetic differences in taste perception and food preferences.

Overall, the workshop was a great success and the fellows found the modules informative and inspirational. In particular, they were able to get a better sense of the manufacturing process and the many different areas of coffee research that are carried out.



An espresso making demonstration and visiting the illycaffè production site



A lecture at the illycaffè workshop

Outreach events

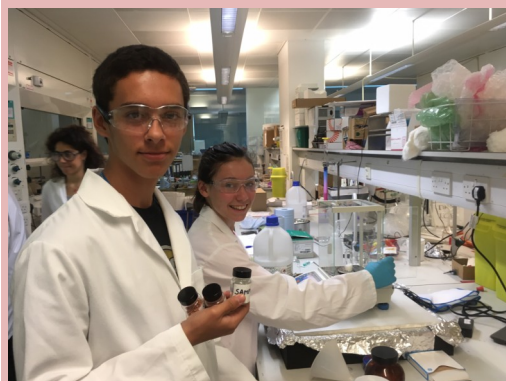
QMUL CREST Bronze Award programme, June 2016

Two high school students spent several days in Prof Resmini's lab at QMUL to experience working in a scientific environment. Both the students were part of the Bronze Award scheme, which allows students to experience the project process, improving their enquiry, problem solving and communication skills.

The CREST awards scheme is the British Science Association's flagship education programme. It is a UK award scheme for 11-to-19 year olds recognising success, building skills and demonstrating personal achievement in STEM project work. The Bronze Award focuses on fun and transferable skills and requires around 10 hours of work on one project. Since the programme's inception in 1986, over 400,000 students have been rewarded for their achievements.



Crest students in the Lab



Crest students working at the bench

Univeristy of Trieste, September 2016

Ana Oreški and Anggy Gutierrez were invited to hold two presentations at the event "I giovani e la chimica nel Friuli Venezia Giulia" organised by the Italian Chemical Society. This dissemination event was aimed at presenting young chemists to both the chemical community of our region and to the high school students potentially interested in studying chemistry.

Additionally, Anggy and Ana will present seminars in Italian and Slovenian (mostly for the students of the Slovenian-speaking high schools on the Italian side of the border). Anggy's seminar is entitled: A chemist and a cup of coffee and Ana will offer a second seminar: Chirality in nature. The schools participating in the event will have a chance to will book these seminars in the coming months.

QMUL Open day, 8th October 2016

QMUL was open to high school students and their families, to give them an opportunity to experience QMUL and all the courses it offers. All departments were involved, and in the chemistry department interested students could take tours of the building, visit the student labs and the labs where the researchers work. Furthermore, a brief talk on the organisation of the chemistry course was also given. Rosemarie Anastasiadi was involved in the student lab, where she demonstrated how to make ice cream with liquid nitrogen to interested and hungry visitors. She also talked about what it is like to study chemistry. Rosemarie found the experience engaging and gave her an opportunity to explain how she became a PhD student and her passion for science and chemistry.



Rosemarie making ice cream at the QMUL Open Day

Forthcoming events

Network events



- The Midterm review meeting will take place in Brussels on the 1st of December, 2016.
- The 2nd IPCOS school and meeting will be held on the 6th-10th of February, 2017 at QMUL.

Conferences

- E-MRS Spring meeting, Strasbourg, France, 22nd-26th May, 2017.
- E-MRS Autumn meeting, Warsaw, Poland, 18th-21st September, 2017.
- UK Colloids, Manchester, 10th-12th July 2017.
- Biosensors 2018, Miami, Florida, 12th-15th June, 2018.

Workshops

- The food quality and coffee workshop will take place on the 8th of Feb 2017 at QMUL.

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