

news letter

Issue 1—November 2015



The IPCOS team at the EXPO Milano - From left: Prof Federico Berti and Prof Cristina Forzato (Units), Dr Luciano Navarini and Ms Anna Illy (Illy), Dr Marina Resmini (QMUL), and the IPCOS ESRs Luca Redivo, Ana Oreski, Anggy Gutierrez.

The IPCOS (Imprinted Polymers as Coffee sensors) project kicked-off in January 2015.

It aims to bring innovation to the field of food quality by offering an international, interdisciplinary and intersectorial doctoral training programme that will target the development of chemical sensors, using the molecular imprinting technology, for application in the coffee industry, focusing on three main groups of targets: a) chlorogenic acids, b) cafestol and kaurene terpenes, c) caffeine.



This project has received funding from the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement No 642014.



Queen Mary
University of London

The IPCOS-partners in brief

IPCOS brings together 2 academic teams (University Queen Mary London, University of Trieste), 1 large international company (Illy Caffé s.p.a), 1 SME (Biorealis) and one non-profit research centre of excellence (Cobik), supported by 4 associated teams, with a very multidisciplinary and multisectorial expertise.

COBIK, the **Centre of Excellence for Biosensors, Instrumentation and Process Control**, fully operates since 2010. It is a private found research institution and works in the most challenging and promising fields, such as bio-chemistry, bio-instrumentation, optics, new materials and advanced purification processes in pharmacy.



ILLY's story begins in Trieste, Italy, the Adriatic port town where coffee first entered Europe, and where in 1933, company founder Francesco Illy developed the modern espresso machine. The story is still being written today by President and CEO Andrea Illy, representing a third generation of illy family leadership.



Illy has a very large R&D facilities, an outstanding track record of collaborative works with academia and training of young researchers.

Biorealis, Ltd. is a progressive high-tech company acting in the field of biotechnology and nanotechnology, focused on the research and development of sensors and biosensors. The company's aim is targeted on R&D, production and commercialisation of small analyzers based on biosensors mentioned above. Measuring systems of Biorealis Ltd. are thought to detect several analytes, which are important in many sectors of food and biotech industry.



Founded in 1924, the **University of Trieste** is a medium-sized university with a student population of approximately 20,000. It offers a wide range of degree programmes at bachelor, master and doctoral level as well as short vocational masters, advanced masters and specialisation programmes, most of which are in the medical area.



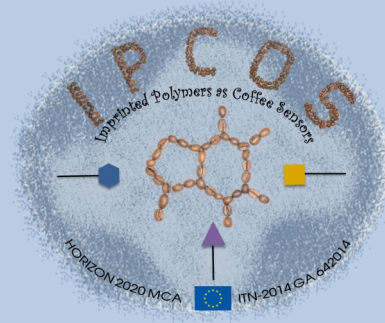
Queen Mary University of London is one of the UK's leading research-focused higher education institutions.

With around 17,840 students, 4,000 staff and an annual turnover of £300m, it is one of the biggest University of London colleges.



Associated partners are CampdenBri, Food & Drink innovation (UK) ; the University of SS. Cyril & Methodius of Trnava, Slovak Republic ; T&B Associati, Management and training in Italy; and the International Coffee Organisation - ICO.

Ana's first steps as a Marie Curie Fellow



An article from Ana Oreski, ESR.

My work on the IPCOS project started in the headquarters of illycaffè in Trieste, joining some of the lectures of the Masters of Coffee Sciences and Economics programme. While meeting new colleagues from all over the world, I have also had the opportunity to listen to many experts from the world of coffee, from both – scientific and economical point of view. Thus I attended a workshop with a Brazilian professor,



From left: Ana Oreski, prof Federico Berti, prof Cristina Forzato, Luca Redivo, Dr Mauricio Galindo, Dr Luciano Navarini.

Mr. Teixeira, on coffee bean defects, lectures with Mr. Bonsignore on marketing, along with practical training in coffee tasting and many many other activities. Although my entrance into the project did not start purely in a scientific way, it offered me a broad knowledge in topics more related to coffee industry.

Perhaps one of the most outstanding events was a visit from the International Coffee Organization's Head of Operations, Dr. Mauricio Galindo. On a morning in April he lead us through many interesting topics, talking extensively about the effect of climate on coffee growth and its future perspectives, the gap between coffee growers and finance and what has been and is planned to be done to bridge it. He finished his lectures with introducing us to supply and demand of coffee into great lengths.

After the lecture, Dr. Galindo was kind enough to join Dr. Luciano Navarini, Prof. Federico Berti, Prof. Cristina Forzato, Luca and me for lunch. We introduced him to the title of our project along with the researchers currently involved and the ones yet to join us. He took a great interest in the way we intend to reach the goals we have set to ourselves regarding Chlorogenic acids and their derivatives, Caffeine and its metabolites and Cafestol and 16-O-methylcafestol, along with the importance of our findings for the coffee industry. Afterwards he offered us help with any information we might need in the future. He patiently answered all of our questions about his work and functioning of the International Coffee Organization.

We all immensely appreciate the hours spent with Dr. Galindo, for offering us his broad knowledge and experiences with coffee and subjects related to it, and also for his willingness to get acquainted with our work. As International Coffee Organization is one of the partners of our project, we do look forward to

Ana

The expo in Milano: A unique experience for the IPCOS fellows!

Ana Oreški, Anggy Gutiérrez Ortiz and Luca Redivo had the chance to present their work at the Coffee Cluster of EXPO2015 on the 10th of June 2015 in Milan, Italy. The Coffee Cluster was curated by Illycaffè, EXPO 2015's official Coffee Partner, and created in collaboration with the International Coffee Organization (ICO).



Official Coffee Partner

An article from Anggy Gutiérrez Ortiz.

Our experience at Expo Milano 2015 in my opinion can be summarized in one word: amazing! Visiting the expo is a very nice experience, in fact I think that everyone who has the opportunity should go, but visiting the Expo to present your PhD project as a Marie Curie Fellowship at the illy's coffee cluster is definitely something that we can tell our grandchildren with a very big smile in our faces. What a nice first experience as PhD students.

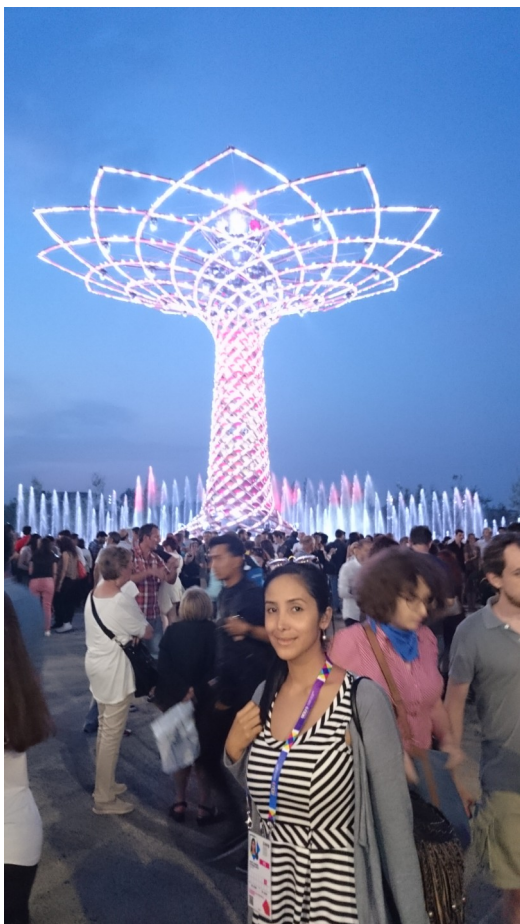


Of course, at the beginning when we were informed that we should prepare a presentation of around 45 min, a lot of questions immediately came to our minds, we felt confused, anxious and nervous. Our first meeting to talk about it was via skype, I must say that for being three people, who did not know well each other, we quickly

agreed on the parts of the presentation and who would be responsible for each one. I guess that is a proof that we are a very good team is not? Then, when finally we were all together in Trieste, We had the second meeting in order to complete the presentation and I remembered Luca had this wonderful idea about the design, very nice coffee grains in the border of each slide! So, missing one week and with all possible expectations we finished our presentation, by the way we were quite proud the final result. In that time we just had to make some test presentation with our Professors, which sounds easy but our legs were shaking, and two days later take the train.

We met very early in the morning at the train station that day, although we were sleepy we talked during the entire trip, I think people next to us were tired of listening to us. After 3 hours We were in Milano, we figured out how to go to the hotel and a couple of hours later we were checking on internet the most





interesting things to see in Milano, I guess I should say thank god for GPS and for smartphones. As you can imagine the first thing we saw was the Doumo, which is absolutely beautiful, following our list that we called “thing to do in Milano” we went to Galleria Vittorio Emanuele II to Castelo Sforzesco, Park Sempione and to the Aquarium and a science museum. According to one of our cell-phones after exactly 33500 steps we returned to the hotel, the next day would be our presentation day!

The day had arrived! And there we were very elegant in formal dresses, with what people call, butterflies in our stomachs, in fact we could not eat very much that morning. We arrived to the Expo and our first impression was literally wow! What an incredible place! After visiting some of the Pavilions we returned to Illy’s Coffe cluster and of course we had some coffee. A couple of minutes later and with our legs shaking more and more we were ready to start or even if we were not ready it was our turn to start, so “we can do it” we said, and the presentation started.

It was incredible how fast the time passed while we were talking, it seemed that after 5 minutes instead of 40 min we had finished, the presentation went very well, everyone was happy with the result and also we were very happy and relieved. We spent the rest of the day visiting as much pavilions as we could at the Expo and having fun, with the satisfaction of having accomplished our goal.

The last day In Milano we went to The San Siro stadium, it was really nice! And after seeing Milano from the Duomo roof, the time of our return arrived. We took the train very proud of ourselves and with a very nice and incredible experience that will be forever in our memories. And this is how three PhD students made a presentation at The Expo Milano 2015, or even better this is how three members of the IPCOS project made a presentation at the Expo.

Anggy



Luca's first six months in IPCOS

An article from Luca Redivo, ESR.

My PhD started with a secondment, destination Trieste. There I performed some computational simulations, in other words, I let my lab coat hang for a while. First there was the intense training part, which gave me a background to understand all the ufologic acronym, computational chemists use. It was really like learning a new language. The first articles I read, I wasn't able to understand what they were doing and why. Fortunately nowadays you can google everthing, and find an explanation. However, thanks to Prof Berti and the courses attended, we set up our work and switch on the computer, knowing what to do. There was also the wonderful opportunity to work at the ICTP (International Centre for Theoretical Physics) in Trieste, a wonderful place near the sea and close to the park of the castle of Miramare. I was amazed by this new building with a lot of mysterious equations written on the wall, and with a lot of young researchers and student coming from all over the world. Some beautiful minds work there, and I was proud to step in and collaborate with Prof. Peressi.

I didn't spend all my time in front of a computer, since I met really nice lab mates there were a lot of chances to have fun, both in the lab and outside. Trieste is a wonderful city, near the sea and with lots of places to hang out in the evening. I already knew this city, since I studied there chemistry and it was nice



to see the old friends and meet new ones. Luckily my six months secondment involved also summer months. Barcola was too close to do not take a bath and have an aperitivo on the seaside. Great time.

Since I was in Trieste I was also lucky to meet our Italian mates, Anggy and Ana, and it was immediately clear that a great team was born. The occasion to show it was at the EXPO Milano, where we had the opportunity to present the IPCOS network. For me as an Italian researcher, it was a very special moment and I really felt proud of having been and talked there. In Milan we had a great time, and with Anggy and Ana we established a real friendship that will make these upcoming years more enjoyable.

Trieste is also close to my hometown, so on the week-end I could move there to see my parents, and my friends. I took also some amazing trip with my bike in the beautiful Friuli. I discovered really nice places and hard climbs to fight. That's why I like this sport.

Well, I spent 6 lovely months in Trieste and I thank you all *muli* (guys). Now it is time to wear again my missing lab coat and go back to the lab here in London.

Luca



LAST MINUTE

The fifth (and last) IPCOS - Early Stage Researcher has been offered the position of ESR5 at Queen Mary University of London!

Rozalia-Maria was born in 1990 in Athens, Greece. After high school graduation she did a four-year bachelor in Chemistry and specialised in Organic Chemistry at University of Ioannina, Greece. She carried out part of her bachelor at Università degli studi di Padova, Italy. In 2013 she obtained her bachelor degree and started her master in Food Science and Technology at Wageningen University, The Netherlands.

She has worked already in the industrial sector in various locations, such as Leonidas S.A. in Brussels, Belgium.

In free time she likes to hang out with friends, travel, go to the cinema, do sports, among other activities.

Rozalia-Maria should join the IPCOS-team in January 2016, and begin her PhD at Queen Mary University of London. We look forward to welcoming her in the IPCOS family.



First days in London!

An article by Angelo Monteiro, ESR

Recently, I've become the newest member of the IPCOS project, more precisely on the 1st of October 2015, and my first days were spent in London, where I'll spend most of my PhD under supervision of Prof. Marina Resmini from Queen Mary University of London (QMUL). I've said first days because now I'm writing from Trieste (Italy) where I'll work for a short period with another partner of this project, Prof. Federico Berti from Università di Trieste.

Before arriving in London, among all the preparations to start, maybe, the most important period of my life, I have to say that one of the most difficult things was to book a room in London, moreover for a short period of time, one month. Whilst not being in London, booking a room is very difficult because in almost all houses the owner requires a viewing to the room/house of the interested person to avoid creating any false expectations. This viewing also works as an interview to the interested person by the landlord to analyse if the coming person is indicated to live in the house and share it with the current occupants. Lesson learned!

Now in London and after a few days in, my life in London as PhD student starts. The first day were a little busy, with the enrolment in University and a couple of presentations and inductions to go as new postgraduate student of QMUL, more precisely of the School of Biological and Sciences (SBCS). It was a great opportunity to know the University, the building where I'm going to work, all my rights and duties as PhD student, and also to get to know the other new postgraduate students, who potentially will become the more important friends in this crucial moment of my life. It was very interesting to know and hear from each new student from different areas of research as well as its PhD project. On this day, I also met the other IPCOS member, under supervision of Prof. Marina Resmini, named Luca Redivo, a stand-up fellow.

The first two weeks were, I think I can call it, "introduction weeks". In this time I was introduced to the project itself complemented with extensive bibliographic research, to the research group of which I'm proud to be part and to the department and its facilities, which included some inductions and trainings. It's important to mention that health and safety in this University is a very important issue and all training related with it is mandatory in order to perform our work in safety, preventing any accident, and to know how to act in case of any incident. In addition, the life of a PhD student is also important for the University and a lot of courses are available to help us in a lot of different ways. After these two weeks I've started to work on my PhD project itself. I only had three weeks before my departure to Trieste, but these were enough to get some work done and obtain some interesting results.

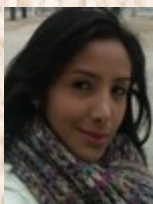
What is in my memory of my stay London? A lot of sunny days, unusual for this city, a city with a lot of movement with something always happening in several points of the city, a cultural diversity very present (something that has always fascinated me), a lot of green spaces contrasting with a sky sometimes dark, and a list of other things for which one paper won't be enough to write.

I'm looking forward to meeting you again London!

Angelo

P.s. Unfortunately, London is not the ideal place to drink a good coffee!

Everything you always wanted to know about the IPCOS - ESRs...



Anggy Gutiérrez Ortíz was born in Santa Bárbara (Barinas-Venezuela). After high school graduation she started her studies in Chemistry, in a full time study program for five years at University of Los Andes (ULA, Mérida-Venezuela). She obtained her degree in 2012. After her graduation she worked at the Venezuelan Institute for Scientific Research (IVIC), in the Laboratory of Synthesis and Characterization of new materials.

In her free time she likes going out with her friends, doing exercise like pilates and listening to music.



Ana Oreški was born in 1988 in Maribor, Slovenia. After high school graduation she enrolled in Faculty of Pharmacy, University of Ljubljana, where she had focused on studying drug development substances and consequential drug analytics and control coupled with its application in pharmaceutical industry.

Whilst and after successful graduation as Master of Pharmacy she has been working in pharmaceutical industry as regulatory affairs associate for companies Sanofi-Aventis, Sandoz and raPHARM.

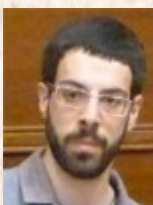
In her free time she likes to travel, write short stories, read, do sports and listen to music.



Ângelo Monteiro was born in Lisbon (Portugal). After high school graduation he obtained a bachelor degree in Applied Chemistry (Organic Chemistry Profile) at Universidade NOVA de Lisboa (FCT-UNL) in 2011. Three years later, he obtained his master degree in Pharmaceutical and Medicinal Chemistry at Faculty of Pharmacy, University of Lisbon.

After completion of his master, he was awarded with a research fellowship at Universidade NOVA de Lisboa (FCT-UNL). He was involved in the development of new Polymer Dispersed Liquid Crystal (PDLC) devices with permanent memory effect, to be applied in smart windows.

In leisure time he likes to travel, get to know new places, people and cultures, have fun with his friends, do sports (preferably handball), listen to music, among other things.



Luca Redivo was born in Pordenone (Italy) in 1990. After high school graduation he moved to Trieste where he studied chemistry at Università degli studi di Trieste. He obtained the bachelor degree in 2012 and the master degree in 2014. During the last year of his master he synthesized different peptidic structure based inhibitors of deubiquitinases enzyme. During this work he improved his knowledge in peptide synthesis, mono and bi dimensional NMR experiment for characterization.

In his free time he likes to hang out with friends, cycling, go to the swimming pool, listen to music and play guitar.

Forthcoming events

Network event



First IPCOS School and First IPCOS Meeting
Trieste
8-9-10 February 2016

Conference - Marina would like to draw your attention to this forthcoming conference. If you have any other suggestions please let us have the details.



The 9th International Conference on Molecular Imprinting (MIP2016)
Lund, Sweden
26th to the 30st of June 2016
<http://mip2016.com/>

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