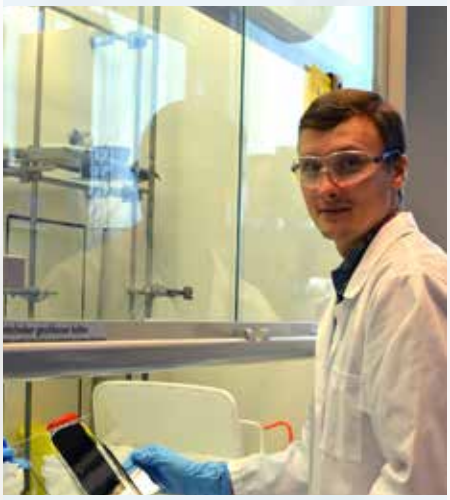
Interview with Dmytro SNISARENKO

*PhD student at **LGC** - Toulouse, France*

Dmytro started his PhD within the framework of BIOART in September 2013. His host laboratory is LGC, a chemical engineering research centre in southern France (Paul Sabatier University). Dmytro's hometown is Cherkasy, a city of 300,000 in central Ukraine, situated on the bank of Dnieper, the country's longest river. The main industrial activity of the region deals with chemical production, so Dmytro says his future was quite predetermined.



Welcome in the BIOART project Dmytro. What has your training been so far?

I got my Bachelor's degree in Chemistry from the National University of Kyiv-Mohyla Academy in Kyiv with a focus on the chemistry of polymers (polymeric membranes). I then completed a two-year Erasmus Mundus Master in Membrane Engineering. Erasmus Mundus programmes include stays in several universities. My time was divided first between Paul Sabatier University in Toulouse, then the Institute of Chemical Engineering in Prague and lastly the University of Nova in Lisbon. For my final semester, I opted for industry and worked in the R&D department of GVS Filter Technology, an international company with headquarters in Bologna, Italy. My thesis was about the development of membranes for medical filters.

What is your PhD project about? What objectives do you have to reach?

Well, let's start with the title of my work. It is "Middle molecules clearance through artificial kidneys". In fact, my PhD project deals with the filtration of small proteins (i.e. b-2-microglobuline) through a membrane (artificial kidney). The aim of the work is to develop an optimal strategy to control the transfer of medium-size molecules during blood purification procedure.

What is the best thing about taking a PhD? How challenging is it?

I would say that PhD has several great things I was not even thinking about before. First of all, it's almost independent work. I mean that it's completely unlike bachelor or master studies, where you have to follow classes at a given time and place, study courses which maybe you don't like, but you have to. On the opposite, during your PhD, there is only one obligatory meeting with your supervisor every two weeks, and for the remaining time you can schedule and plan your research in a very flexible way. Secondly, within the framework of the BioArt project, we have a close collaboration with several industrial companies and scientific institutions. Each has a specific expertise in a particular segment of artificial kidney research and may

contribute significantly to my work. Finally, several workshops are organized by BioArt. These meetings are extremely useful since all lectures are given by highly experienced researchers, who provide the most relevant and up-to-date information about their field of activity. It keeps all us (PhDs and PostDocs) informed about the very last trends in our area of research.

As for challenges, I've realized that in scientific research, the more questions you are answering, the more new ones are generated and these daily challenges keep me constantly motivated.

Secondments are planned for all BIOART's PhD students and PostDocs. You're just back from a visit to Utwente, BIOART's coordinating partner. What was the point of your visit and what did you learn there?

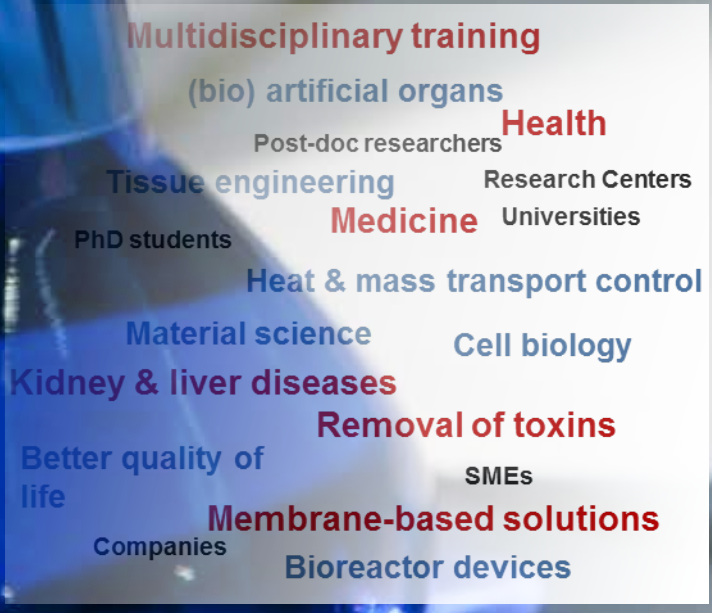
My visit to UTwente was my first secondment, during which I worked in close collaboration with another BIOART PhD student. The aim of my visit was to master the techniques of membrane fabrication and characterization, so that I can use them now that I am back in Toulouse.

The first thing I was impressed by at UTwente was the organization of work and general precision. On the very first day, I received all the required access cards, logins and passwords for the system. I was even given an introduction to laboratory safety. So, within several hours of my arrival, I was able to start working. And secondly, I was delighted by the group attitude to me: everyone was very helpful and answered immediately all my requests, no matter what it was about, either showing me an office I was looking for or giving me specific advice on how to use equipment.

You also participated in BIOART's meeting and training sessions in January 2014. What did you learn there?

The main focus of this meeting was the biological structure and functions of the natural kidney. Emphasis was laid on the pathology of this organ and the causes of its failure. To be honest, I had no knowledge at all about these topics before, so it was, on the one hand, hard to follow, but on the other hand quite informative. It significantly expanded my view on kidney diseases. Moreover, some comprehensive lectures on bio-artificial organs were given. Bio-artificial organs combine natural and artificial tissues, pursuing the development of artificial substituents for failed organs with the possibility to mimic natural functions as much as possible. Finally, we had the great opportunity to talk to a patient with a chronic kidney disease, which led him to undergo kidney transplantation. I was deeply impressed by his story about the life complications and physical restrictions he faced.

Thank you Dmytro for answering my questions, and all the best for your PhD!



BIOART in brief

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