

## **Getting Experience in Germany – Interview with Michal Vasina**

**Michal Vasina** is a doctoral student of Environmental Health Sciences at the Faculty of Science of the Masaryk University. His research is focused on application of microfluidics in protein and metabolic engineering under the guidance of Prof. Zbynek Prokop in the Loschmidt Laboratories. Michal visited University of Greifswald in Germany from August to September 2021. On this occasion, we asked him for a short interview.

### **Could you tell us more about the research project you are working on in the Loschmidt Laboratories?**

My doctoral project is focused on the development of microfluidic platforms for studying enzymes and enzyme cascades. Microfluidics is a relatively new technology concept that aims to perform all laboratory procedures on a very small scale - micrometer size channels and nanoliter to femtoliter reaction volumes. Microfluidic methodologies are therefore both time and resource efficient.

### **You had the opportunity to visit the laboratory of Loschmidt Laboratories' long-term collaborator Prof. Uwe T. Bornscheuer. Was this your first research stay abroad? What project were you working on?**

The research stay in the Prof. Bornscheuer's group was not my first international experience. I was in this laboratory for a 4.5 month-long stay during my master's studies and I had been working on the same project during both visits. The project aims to develop a microfluidic platform for optimizing cell-free protein expression, i.e. production of proteins in a test tube outside the living cell. I wanted to finish the project during my recent stay and transfer the know-how of cell-free protein expression to the Loschmidt Laboratories. Moreover, I wanted to learn the incorporation of unnatural amino acids into the protein structure via the cell-free protein expression.

### **What results did you obtain during your stay and what obstacle did you face?**

The main result of the stay was that I learnt how to produce all biological and chemical materials for cell-free protein expression. By the end of my research placement, I was able to perform microtiter plate experiments with cell-free protein expression. The incorporation of uncommon amino acids into the protein structure was also successful. One of the main obstacles during the stay was that the person who developed the cell-free protein expression assay had left the university and I had to collect the know-how either from very busy colleagues or by the trial & error approach.

### What are your next goals?

The next goal is to establish a cell-free protein expression platform in the Loschmidt Laboratories and optimize the microfluidic system for its monitoring. This work is ongoing and should provide exciting new opportunities for our enzymology research in the near future.

### You relocated to Germany with your family. How did your family enjoy the time spent in Germany?



We enjoyed our time in Germany very much. Together with my wife Kamila and our six-month-old daughter Berenika, we did many trips into the surroundings of Greifswald. We visited the chalk cliffs on the island of Rügen and were impressed by the museum Ozeanum with its huge aquariums with millions of various fish species. Berenika also learned how to crawl during the time in Greifswald, thus every day was a new adventure 😊. Labmate Mark Dörr and his family invited us to their home during the last days of our visit, and we had a lovely evening with singing together.

Thank you for the interview and good luck with your project.

