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Research stay at the University of British Columbia, Vancouver

October 7<sup>th</sup> - October 24<sup>th</sup>

Within the UAS Mobility Program, I visited the research group of Prof. Jayachandran N. Kizhakkedathu, which is part of the Center for Blood Research at the University of British Columbia. The main objective was to learn the synthesis of a polymer that both research groups are studying, as well as to strengthen the cooperation and to compare the approaches of both groups towards certain scientific and organizational issues. This stay gave me as a technical employee the rare opportunity of a scientific stay abroad. I experienced a different kind of sustainability that revolves not only around ecological aspects but also around the conservation and transfer of knowledge in a fast-moving academic environment.

What was the aim?

The focus was on the sustainable production of particularly high-molecular, biocompatible polymers, which serve as the basic framework for the modification of mucus-like structures. Mucus is the protective layer that covers all mucous membranes of the human body. The functions of this mucous membrane are manifold; it plays an important role, for example, in the defense against pathogens. Sometimes the formation of this protective layer can be disturbed. Our macromolecular scaffolds are designed to enable studies on multivalent interactions and biological applications (e.g. tests of antiviral activity, especially against certain influenza strains).

What did I do at UBC?

When I arrived at UBC, Prof. Kizhakkedathu and his lab manager Ms. Iren Constantinescu warmly welcomed me. After a safety introduction and a tour, during which I met the other group members, we directly started working in the lab. Most of the time I worked together with Ms. Irina Chafeeva, an experienced chemical technician, who patiently explained and showed me everything until I found my way around the laboratory on my own. Together, we synthesized, purified and characterized several batches of the polymers described above in a multi-stage process.

Besides the laboratory work, I always had enough time for the documentation of my experiments and interaction with other group members. Dr. Srinivas Abbina, who is a postdoctoral fellow, provided me with expertise; together we analyzed the results, discussed problems and decided on how to proceed. Prof. Kizhakkedathu himself also asked me regularly how things were going, whether I needed anything and advised me regarding the syntheses.

An interesting event that I remember was a prize-giving ceremony in my first week when a postdoc was honored for his research regarding the preparation of universal donor blood from different blood groups. I experienced a climate of esteem; the atmosphere was relaxed and easy, without the seriousness falling behind.

During the breaks, the other employees integrated me into their group very soon. I was able to take part in interesting discussions about political, social, environmental and trivial topics and received many tips on what to do in Vancouver and the surroundings. After finishing work and occasionally also during breaks, I took the time to explore the wide and very green campus on different routes, sometimes accompanied, sometimes alone. Even if I got lost, I could be sure to meet someone who would kindly show me the way. Throughout my whole stay, I met only friendliness and hospitality everywhere, so I enjoyed my time at UBC a lot.

The campus is located at the end of a peninsula, surrounded by water on three sides and bordered by a huge forest on the fourth side. Within the campus, which appears to be a small, almost self-sufficient city, I registered a very harmonious symbiosis of learning, working, living, leisure and nature. Especially the magnificent autumn colors of the trees and bushes, which line all streets and pedestrian zones, as well as the view onto the sea and the mountains in the north of Vancouver by simply walking down the Main Mall impressed me deeply and will remain in my memory long after.

How will the cooperation continue?

The working groups of Prof. Kizhakkedathu and Prof. Haag have held contact for many years and both wish to further intensify their cooperation based on the latest results. The focus could be on tailor-made polymers, their reproducibility, upscaling and the further optimization of the synthesis process with regard to resource conservation. Furthermore, we will strive for the mutual provision of resources and infrastructure that are not available to the other working group. For this reason, the temporary exchange of employees is also desirable in the future, since expertise can be preserved in the long-term and new ideas and approaches can be stimulated and immediately transported. Our long-term goal is to extend the cooperation and to create a sustainable structure for the “joint lab”.

What is my personal benefit out of this experience?

It was a pleasant experience to be a guest in another working group and to supervise only one single project at a time, without any secondary activities, which of course are not missing in the daily routine. There is always something to organize or someone who has a question, etc. - I was not so aware of that before. Due to the absence of these side events, I had more time to review and document my experiments, to talk about them with others, to recognize problems faster and to find solutions. Therefore, a consequence for my daily work could be to create time slots when I am only concerned with synthetic projects and other time slots for organizational matters, services, etc.

In addition, I would like to keep the incredibly positive attitude that I have experienced and inherited from my Canadian colleagues.

Apart from that, I left my comfort zone in many regards, finding my way in a foreign environment using a foreign language, solving problems on my own, asking my way, making small talk, getting involved. Also linguistically, I have learnt a lot, trained my listening comprehension and gained the insight that it is not that bad if you make grammatical mistakes or get muddled. This also happens to others. I have always found a lot of understanding and consideration, friendliness and helpfulness and emerge from this project more self-confident and with a positive, relaxed attitude.

I can only recommend such a stay abroad to everyone, especially to technical employees who do not have the opportunity to do so as often as students do, for example. It broadens the personal horizon in many ways.

Finally, I would like to thank everyone who made this stay possible and supported me before, during and afterwards!