

Report about the summer school on Fluidic MEMS – Wilhelmshaven, Germany

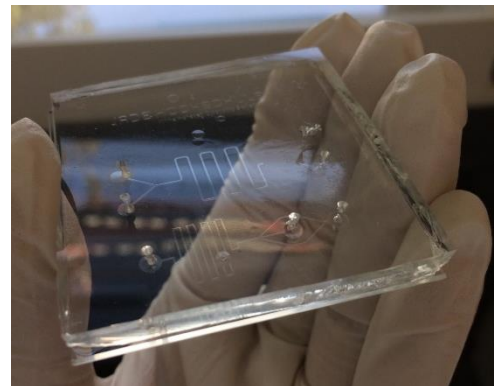
As a student who comes from a small and poor country three weeks of living in Germany were a great opportunity to see how people live and work in a developed country. My trip from Belgrade (Serbia) to Wilhelmshaven was about 12 hours long and I had to switch two planes, tramp, two trains and a bus – so it was a real adventure. At that moment, tired after the long trip, I really did not have an idea of how wonderful time I will have during the next three weeks in Wilhelmshaven.

My motivation for attending this summer course was my physics background and master thesis that I had done in microfluidics before the summer school. This summer course was a great opportunity to give me a wider knowledge of the field and new ideas for future PhD studies. Great topics and a lot of laboratory work motivated me to apply for the summer course.

During the three-week summer course of Fluidic MEMS in Wilhelmshaven in Germany, we had theoretical lectures and laboratory work. The accent was on the practical application of theoretical knowledge. I find this way as the best way to learn and really understand something. In Wilhelmshaven, we had an opportunity to work with good laboratory equipment and with kind people that were ready to help and share knowledge with us.

During laboratory work, the course group was divided into smaller groups of four or five people. Working with people from different countries helped me to find out what is the way of their approach to problems and meet different ways of thinking. Besides that, teamwork gave me great lectures about helping each other, discussing together and exchanging ideas.

The first week topic, basics of microfluidics was familiar to me but I had an opportunity for the first time to do the lithography process on my own. Before that, I had only read about that process so I was happy to have an opportunity to apply my theoretical knowledge. The second week of the summer school was the most interesting for me. My group was making a microfluidic sensor for glucose. That sensor is a compact Lab-on-a-chip system that contains integrated optical fibers and enables transparency measurements in a miniaturized system. From transparency results, we could calculate glucose concentration in the sample. For me, the most impressive moment was the automatization of the whole testing process. We could set a flow profile for the syringe pump (that was a part of experimental set-up), so the system can work independently and syringes can be automatically filled after the emptying. It means that the whole system can do testing process without us and give us the results that we have to analyze. The third week was sad because the end was coming. Lectures were about physics on the microscale and mathematical description of fluid motion. That was my favorite topic. Besides that, we were using a very useful software named ImageJ for microparticle motion inside the microfluidic chip. That knowledge I will use for sure in the future work.



Microfluidic chip made in PDMS technology

Every week was ended with a presentation of each group work. We had good discussions during these presentations and I learned a lot from my colleagues. Besides that, presentations were a good opportunity to practice speaking in English because for most people English is not a mother tongue.

Besides science, the days that we spent together with people from other courses on the houseboat were beautiful. During free time, we were enjoying the view of North Sea, going to the swimming pool, walking along the beach and in the evening playing cards, singing and dancing. After this summer course, I have a strong will to learn Latin American dances, to speak Spanish language, to eat Turkish food, to drink Arabic coffee, to play Hungarian music, to eat Italian pizza and dance Greek Sirtaki. All of my new friends from summer school taught me many new things from different nations. During weekends, we had a lot of free time to meet each other - weekends were reserved for trips. During first weekend, we visited Mayer shipyard where we were informed about cruiser construction and a long history of Mayer family. That trip was interesting for me because I have never taught about cruiser construction, places, and ways how people do that. Everything related to that place is impressive – long family history, numbers related to cruisers and all beautiful cruisers made in that place. Also, I have nice memories from beautiful Bremen. The second weekend in Hamburg was really emotional because we all met each other and make strong friendships. With my roommates from Turkey, Mexico, Greece and China, I had a really nice time and funny moments that I will never forget. Visiting Miniatur Wunderland, Airbus Company and Party Mile Street were also fascinating.



Last week presentation



This summer school helped me to improve my microfluidic knowledge and gave me good ideas about future PhD work. Besides science, I had an opportunity to meet people from 14 countries, make new friendships and make ideas about future collaborations. This experience was special for me and I have already started recommending this summer school to younger colleagues.

Thank you for beautiful three weeks!