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Report for the stay abroad from May to July 2018 in Hannover

In the period from 19.05.2018 – 20.07.2018 I had a research stay at the Institute for Multiphase Processes, Leibniz Universität Hannover. My topic was “Validation of electrospinning approach for the generation of porous poly(diphenylene phthalide) fiber mats.

My family is connected with Germany by quite a lot. My grandfather served there, at the time of the division of Germany into the GDR and the FRG. My father was born in Dresden. Now it is my turn to visit Germany. Honestly, it was my first real trip abroad.

After landing at the airport, I needed to use the city train (S-Bahn). Getting to the stop was very simple; it is right at the airport, you just need to go down the stairs. All the way you are accompanied by signs. It's impossible to get lost.

The S-Bahn train goes straight to the central station in the city center, and it's very convenient. The train itself moves almost noiselessly, it seems to float in the air. The trains in Russia have a specific knock, due to the difference in the construction of the railway tracks.

At the station, I met my supervisor. Then he showed where the university and the laboratory located. After that, we went to the person from whom I had to rent a house (Many thanks to my supervisor for help with finding housing). My haven

during my stay in Hanover was a small apartment. Although its dimensions were modest, I liked it and seemed quite cozy. Next, I will try to describe my first impressions.

Germany is a very green country. A large number of parks, squares, and avenues with trees. Germany is literally full of greenery. People here take great care of the environment. It was a surprise to me that bottles and cans can be returned for reuse. It's easy enough to do this; you can hand over the bottles to the machine in the store. Sorting garbage here has become quite common. I saw wind power stations here first time in my life. In Germany, I noticed quite a large number of electric cars, in addition, it is very popular to use bicycles for transportation. Germany almost completely abandoned nuclear energy. The vast majority of buses are hybrid. It is possible to enumerate for a very long time the measures taken by Germany in support of ecology, but such a caring attitude towards nature made me think. I think we should adopt this experience in Russia.

Hannover is a very nice city. Excellent transport system. Perhaps, at first glance, the transport system may seem quite complicated and cumbersome due to the presence of "zones" and the rules of buying and validating tickets. But after I started using public transport, I realized how comfortable it was. There is no metro in the usual sense in Hannover, but in the center of the city, the stations for street trams are underground. This structure of the transport system seemed very reasonable to me since you are actually free space on the roads in the city center, which is so necessary for today's realities. I can also add that for the entire period of my stay in Germany, I have never seen traffic jams.

Hannover tries to follow a unite architectural style. There are almost no buildings higher than five floors, so the feeling of "stone jungle" does not occur. I really like this approach, walking along the streets is very nice. And you must walk around Hannover; this city has a lot to offer you! A huge number of cozy restaurants and bars, parks and squares, museums and simply beautiful buildings with centuries of history are ready to reveal to you the spirit of this city. There is another great idea,

which I liked very much. Once walking along Hannover I noticed a red line under my feet. It turned out that if you follow this line, you can bypass almost all the main sights of the city! It's just a great idea!

During my visit to Germany, I participated in the ICBEM & RGC 2018 - the 11th International Conference on Bioelectromagnetism and the 13th Russian-German Conference on Biomedical Engineering in Aachen, Germany as a part of my research stay.

Aachen is a small cozy town in the west of Germany. Unlike Hanover, Aachen remained untouched during World War II. Due to this Aachen possesses a very rich cultural heritage. The cathedral in Aachen was founded in 800! Many ancient houses, the oldest was built in the 14th century, were able to convey to me the feeling of that time. I am deeply impressed by the ability of Germans (and Europeans in general) to skillfully weave historical heritage and modern trends. This ability is reflected in everything. For example, a trendy boutique can be located in one of the old houses, and it will look harmonious. Here, people take care of and appreciate their history and their traditions, but they are also always opened to a new trend.

The conference itself was held at the SuperC Congress Center of the RWTH Aachen University. Scientists and students from all over the world took part in the conference. A lot of people represented MSTU. This is my first experience of participating in conferences, and I have received tremendous experience and inexpressible impressions from communicating with such interesting and versatile people.



Artem Tretiakov at the conference

During the conference, we visited the RWTH (Rheinisch-Westfälische Technische Hochschule) Aachen University.

I was very surprised that in such a small town there is such a big and serious university, ready to compete with universities from around the world.

I rented an apartment in Hannover for the first time and at the end of my stay I moved to the "Tandem partner." Tandem exchange is an offer at the university that helps foreign students to get acquainted with the German culture. My tandem partner was a native German woman. I am infinitely grateful to her for everything. She completely took care of my cultural program. We visited many events and places, including an organ concert in church, city parks, and squares, walks around Lake Maschsee, country trips to German villages and many more. But the trip to Berlin was the most amazing.

Berlin. On one weekend I had an opportunity to visit Berlin which is very close to Hannover. I still can not believe that I've been to Berlin. In truth, Berlin is the personification of Germany's power. The capital, combining a rich history and



zeal, looking to the future. In a short period (1 day), we managed to visit many sights: Reichstag, Brandenburg Gate, Berlin Cathedral, French Cathedral and Neue Kirche, GDR Museum, Berlin Wall and etc. The Reichstag made a tremendous impression on me. Earlier I could only dream of seeing it alive.

The history of our countries is closely intertwined, and the Reichstag for me is the exceptionally special place.

Of course, I could not help visiting the Brandenburg Gate. Along with the Reichstag, the Brandenburg Gate is a national symbol of Germany. I remember my school lessons of German language where we were told about the continuity of the Brandenburg Gate and the central street of Berlin - Unter den Linden. In reality, this connection is really felt. During my visit to Berlin, near the Brandenburg Gate, roadworks were being carried out, but that did not stop to make a great photo!



Artem Tretiakov near Brandenburg Gate

Near the Berlin Cathedral, there is the GDR Museum. I am deeply interested in this period of the history of Germany since the history of my family and my homeland is closely related to the GDR. The museum perfectly conveys the spirit of that era. The pioneers, the parades of the First of May, various things and objects of that time, so familiar to me, will tell you about the amazing union between the USSR and Germany. In the museum, there is a reconstruction of an ordinary apartment in the GDR. When I entered there, I recognized my grandmother's apartment!



Installation in DDR Museum

The Berlin Wall is one more place in the history of Germany. The mood of this place allows you to feel all the sorrow and bitterness of the division of the nation. Now the site of the wall is a memorial complex. But some fragments of the wall have been preserved.

Acquaintance with culture cannot do without getting to know the cuisine. After an intense cultural program, we went to a restaurant of German cuisine. And this was an excellent end to the grandiose journey to Berlin.

The Institute of Multiphase Processes, in which I did my research stay, had a very pleasant impression on me. I spent most of my time in laboratories. During the work on my project, I used a variety of tools and scientific devices. Working with equipment of such high class is an invaluable experience for me, and I really appreciate this opportunity. At the end of my scientific project, I made a presentation at the Institute of Multiphase Processes.

The Institute has many different activities to diversify the learning process. One such event is the annual colloquium. Every year the whole institute goes to Torfhaus, where employees and students show their presentations. After the presentations, everyone is invited to the grill. The next day we had an excursion to the mountains of Harz.

Germany - an amazing country that captured me to my soul. During my trip, I met many wonderful people. They gave me very many unforgettable impressions, and I am grateful to them from my heart. I would like to come again very much and continue my acquaintance with this magnificent country!