

Campus life feels rather familiar – but outside science, life is very different

Some of the best research institutions are based in Israel. The HI-SCORE research school promotes the exchange of young scientists between Israeli partner institutions and the HZB. PhD candidate Dan Wargulski (HZB) took advantage of this opportunity and worked three weeks in a laboratory at the Hebrew University in Jerusalem. An interview:

What can you tell about your research stay in Israel?

It was great, I've visited the HI-SCORE conference at the Weizmann Institute, spent three weeks in Jerusalem at the Hebrew University in the group of Prof. Lioz Etgar and got an impression of this beautiful country and its people.

Tal Binyamin, a PhD student, has been helping our group at HZB already for a long time to synthesize perovskite nanoparticles. She taught me how to synthesize such nanoparticles and how one can control the composition and size. We performed lots of TEM imaging and optical measurements to characterize the synthesized particles. The main goal was to achieve a better understanding of the synthesis and to investigate the impact of the sample shipping to Germany.



Working in the chemical lab at Hebrew University, ©D.Wargulski

How do you benefit personally from the HI-SCORE network?

During my first week I participated at the HI-SCORE conference at the Weizmann Institute. Prior to the conference I've met Dr. Ifat Kaplan-Ashiri, a staff scientist at Weizmann, who gave me a tour of the Weizmann campus. I saw the microscopy department and other labs and we had very interesting discussions about our work. The collaboration with the Hebrew University and therefore my stay there would not have been possible without the HI-SCORE network.



One station during the Guided Food-Tour in the Carmel Market Tel Aviv with HI-SCORE students. ©D.Wargulski

What was your specific task there in Israel? Describe your daily routine.

I participated in several syntheses runs of perovskite nanoparticles of different sizes and compositions. We conducted subsequential characterizations of the synthesized nanoparticles to confirm whether the synthesis goal was achieved or not. I also did some synthesis by myself like alloying chloride into the NPs with subsequent optical characterization.

In addition, I've joined cathodoluminescence measurements that my Israeli colleagues were undertaking, and I tried to help with my experience since they had purchased the system only recently, and it is like the one at HZB.



Visiting the Israel Museum, ©D.Wargulski

What did you find in the lab or in the work conditions that was different from here at HZB?

It depends on the institute. At the Weizmann Institute everything seemed very new and modern, whereas at the Hebrew University, it was more comparable to universities in Berlin or the HZB. There you find a mixture of working but aged equipment and older buildings and very new equipment such as in the Nano Center with several recently purchased Scanning Electron Microscopes (SEMs).

One interesting fact, about which we don't know in Germany, is that they are restricted in their equipment due to their isle-like location. For example, they have almost exclusively FEI-electron-microscopes, because it is the only SEM/TEM company with service staff in Israel.

I don't know how representative it was, but the office space was rather small for so many students and I've got the impression that the salaries for PhD students and for scientists as well are a bit lower. Doctoral students are more dependent on additional paid work in student teaching. I guess it is comparable to the situation in Germany several years ago when PhD students just got 50% positions and teaching was mandatory at universities. It's important to mention that Israel is quite expensive, and prices increased a lot in previous years independently from Ukrainian war or pandemics.

Did you have any setbacks?

I've learned a lot, and Tal was investing an incredible amount of time to help me. The main issue of synthesizing particles of proper size was not solved, yet, but we are confident, that we can make it in near future. Another issue was that, sometimes, the samples, which are nanoparticles dispersed in a solvent, arrived completely dry in Germany and the sample batches differed often in stability and quality. By investigating them freshly synthesized and conducting some experimental treatments, we could exclude the shipping or the batch quality as a major issue and identified my previous sample treatment for preparing the nanoparticles for the electron microscopy analyses as too aggressive. This was a very important knowledge gain.

Who was helping you, advising you and motivating you?

My peer Tal, but also the rest of the group was very supportive. And of course, via Zoom I was in frequent contact with my supervisor, Daniel Abou-Ras, who is always helping and motivating me.

What was the most interesting thing you came across at work or beyond?

At work: Maybe the most interesting thing at work was that it is not so "interesting" at all, and with "interesting" I mean surprising. Only details differed. Science is so international and universal that the campus world is very similar to that what I know, and it doesn't feel foreign. The work and life on campus, and how students interacted with each other, was very familiar and gave me the feeling that I would not have any problem with staying longer there.

Beyond: Of course, the special situation in Israel, its complexity and unsolved conflicts are very interesting. It was important to me to get an impression of its impact, like the higher security standards and the always visible military.

I pondered a lot about the role of religion and Judaism. The contrasts between secular and ultra-orthodox Jews and in general the self-conception of Israeli people. Nationality, religion, and personal ethnical background seem much more merged and inseparable from each other. To experience the

quiet and silence of Shabbat was overwhelming. Seeing the ultra-orthodox reading books all the time but also dropping their hat and coat for a few minutes to do some weight training while still wearing leather shoes and suit pants is nothing you could find in Germany.



Jerusalem near to Old City @D.Wargulski

(Interview questions Ulrike Goldenblatt)