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Will she Study Chemistry? Or Would she Prefer Physics?

Annika from Dresden is completing her FSJ at LIKAT in Rostock

Annika Queißer has to stretch quite a bit to reach the top shelf with the equipment in the glovebox. Her hands are covered up to her upper arms in coarse black rubber gloves, which doesn't exactly make it any easier to work behind the glass pane. "There's a protective gas atmosphere in the box," explains Annika. This means that the glass box is hermetically sealed and contains argon gas. "In normal air, the substances would react immediately." And thus spoil. Annika knows all about it.

Small advantage for chemistry

She is completing her "Voluntary Social Year in Science, Technology and Sustainability", as it is officially called, at the Leibniz Institute for Catalysis in Rostock until August. It is a special form of FSJ, coordinated by the organization "Internationale Jugendgemeinschaftsdienste" (International Youth Community Services), and is intended to provide a thorough insight into research and technology.

Fig: Annika in the lab. She has learned to appreciate experimenting here. (Photo: M: Höhne)

"I've always been interested in science," says the high school graduate. Perhaps with a slight advantage for chemistry. But unfortunately, chemistry was not available as an advanced course at her grammar school in Dresden. So Annika initially chose biology, and when she wanted to switch to physics at short notice, it was too late. She smiles. "It is what it is."

In Rostock, she now spent almost a year in close contact with chemistry. In Torsten Beweries' research department, she produced compounds that could be used to create catalysts with new properties. "The aim is to create so-called metal-fluoride complexes, for which we are testing the suitability of the three metals nickel, palladium and platinum," explains Torsten Beweries. And at least one metal is already working well.

Wanted: Bond strength of the atoms

Annika patiently piles a light-colored powder into a glass tube with a tiny spatula. The sample will be analyzed today using nuclear magnetic resonance spectroscopy, or NMR for short. The aim is to characterize the strength of the bonds between the atoms, as Torsten Beweries explains: "So far, the fluorine in this type of complex has behaved completely differently than expected."

The chemist hopes that the analyses will provide insights into the influence of the metal on the fluorine atoms. The catalytic suitability of substances is thus explored step by step. Annika is responsible for evaluating the NMR spectra. This is pure basic research.

That's fine with Annika. Even at school, she preferred to stick to theory, substance classes and formulas rather than experiments. Annika loves mathematics, which is why she is also interested in physics and engineering. Even after this FSJ at LIKAT, many things will still be open, she says. However, here at LIKAT she has learned to appreciate the experiment, the practical work in the laboratory.

Guidance in a sensitive phase

As the father of two daughters, Torsten Beweries is familiar with the sensitive, "even critical" phases of career decisions. And as a chemistry professor, he now gives special lectures to two or three young people where ten sat years ago.

"Nationwide, we are complaining about dwindling interest in the so-called STEM subjects," he says. Of course, society has a role to play here. And also the individual. Who else should show people at an open point in their career path? Science is different to what you learned at school!

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