

## INTERVIEW

with Gaurav Chaudhary, doctoral student at the University of Texas  
and RISE intern at Forschungszentrum Jülich

*“What I like about Jülich is the intensive exchange on research issues with colleagues”*

To support young scientists at an international level, Forschungszentrum Jülich regularly participates in the RISE (Research Internship in Science and Engineering) Professional programme of the German Academic Exchange Service (DAAD). RISE professional offers summer research internships in Germany to Master’s and Ph. D. students from the US and Canada at companies and non-university research institutions with strong relations to industry. Interns receive a scholarship from DAAD and an additional stipend from their host company/institution to help cover living expenses. RISE professional is sponsored by the German Federal Foreign Office. In 2016, 5 RISE professional students have been undertaking an internship at Forschungszentrum Jülich, each one lasting around three months. One of them is Gaurav Chaudhary, a 25-year old doctoral student of physics at the University of Texas at Austin, Texas/USA.



Gaurav Chaudhary

You are undertaking your RISE internship in the Division “Quantum Theory of Materials” at the Jülich Peter Grünberg Institute. What is the area of research you’re involved in there?

**Gaurav Chaudhary:** “I am working on a project in the area of spintronics. This is a research field concerned with the behaviour of electron spins and their movement, just as electronics is a field concerned with how electrons move. The aim is to make use not only of the electric charge of electrons but also of their magnetic moment for information processing and computing. This would enable the development of much faster computing devices that are much more energy efficient. Faster, smaller, cooler is the mantra of new age computing technology.”

You moved from your native country India to the United States. What do you study at the University of Texas at Austin and how was your experience living there?

**Gaurav Chaudhary:** “I study solid-state physics and my PhD research is on superconductivity. I completed my bachelor’s degree in India and went to the United States for my doctorate. At first, I missed Delhi and my family – in India, you are always surrounded by a lot of people, and I missed that. But now I feel quite at home in Texas.”

How did you come to apply for the internship at Forschungszentrum Jülich?

**Gaurav Chaudhary:** “I came to Jülich upon the suggestion of my professor at the University of Texas, Allan H. MacDonald. He informed me of the opportunity to complete an internship in the Young Investigators Group “Functional Nanoscale Structure Probe and Simulation Laboratory” (FUNSILAB) headed by Prof. Dr. Samir Lounis. What I like about Jülich is the intensive exchange on research issues with colleagues. The topics of our projects are closely interconnected, and this requires a lot of discussion. At university, my experience is completely different: everyone has their own particular topic and works independently for the most part. The international flair – my group includes scientists from Algeria, Brazil, Portugal, Spain, and Germany – is also interesting. We have lunch together every day, and sometimes we even meet up for a beer after work. The working hours also differ greatly to the University of Texas at Austin: there, you meet people in the lab at any time of the day or night, even on weekends. At Jülich, on the other hand, the working hours are more conventional.”

#### How do you spend your free time?

**Gaurav Chaudhary:** “I wanted to see more of Germany and neighbouring European countries so I did some travelling. I was impressed at how easy it is to travel here. Trains are cheap, punctual, and fast, and the whole system is organized fantastically. The websites are clear and you can book everything online. In India, I have to book a seat on a train days – if not weeks – in advance. And in the United States, I have to fly, which is very expensive. Together with a friend I know from India, I visited various cities: Paris, Amsterdam, Cologne. I love big cities – the people, shops, and the international vibe.”

#### What are your plans for the future?

**Gaurav Chaudhary:** “After my doctoral degree, I want to work in academia, combining research and teaching. I was a teaching assistant in Texas, and I really enjoyed that. I plan on staying in the field of theoretical physics, but I am completely open as to what country to work in. My family lives in India, but less funding is invested in basic research there than in the United States or in Germany.

If I did have the opportunity to return to Jülich for another project, I would not hesitate.”

The interview was conducted by Kristin Mosch.