

# Personal report for the GIANT research internship

Duration of the stay: 05.10.2025 – 20.12.2025

Research area: FN-MC 3 in the Group of Reji Varghese under the supervision of Claudia Höbartner

By: Niklas Stripp, JMU Würzburg in the field of Chemistry

## Laboratory work

I joined the group of Prof. Reji Varghese with the intention of learning more about nanoparticles used as drug carriers for various anti-cancer agents. But also, to learn more about synthesis of environmentally sensitive dyes, incorporated into nucleosides and oligonucleotides. In Figure 1 are the workspaces shown and given to me to work on my synthesis. However, I had to share the space in Prof. Varghese's laboratory with 2-3 other people at times, as there was a shortage of space. The situation was different at my other assigned workstation in the "Camrie." Here, I was able to work alone and at peace on one of the benches. In the working group, it was possible to set up and carry out the preparations as well as the implementations of the reaction steps presented to me beforehand. However, the processing of the reaction was done in the "Camrie", because this space was less much crowded. To familiarize myself with the topics and carry out theoretical work, I was assigned another position in the "Camrie Office", also shown in Figure 1.



**Figure 1.** Picture of the work situation in the working group (left), my assigned working space in the working group (top right), my assigned working space in the “Camrie Lab” (middle right) and my assigned office for theoretical work (bottom right).

However, one important fact regarding the working methods in the working group must be mentioned. Unlike in Germany, it is customary to carry out all processing steps, such as column chromatography, at the workstation rather than in a fume hood, which is certainly due to the lack of space available. The logical consequence of this is a feeling of uncertainty regarding health and safety and future GIANT students should be made aware of this. This can also be seen in Figure 1.

## Free time

In and around Thiruvananthapuram there are many different activities that can be experienced. One possible activity is to visit one of the many beaches in the area around, one of them being Kovalam Beach is seen in Figure 2.



**Figure 2.** Pictures of Kovalam beach.

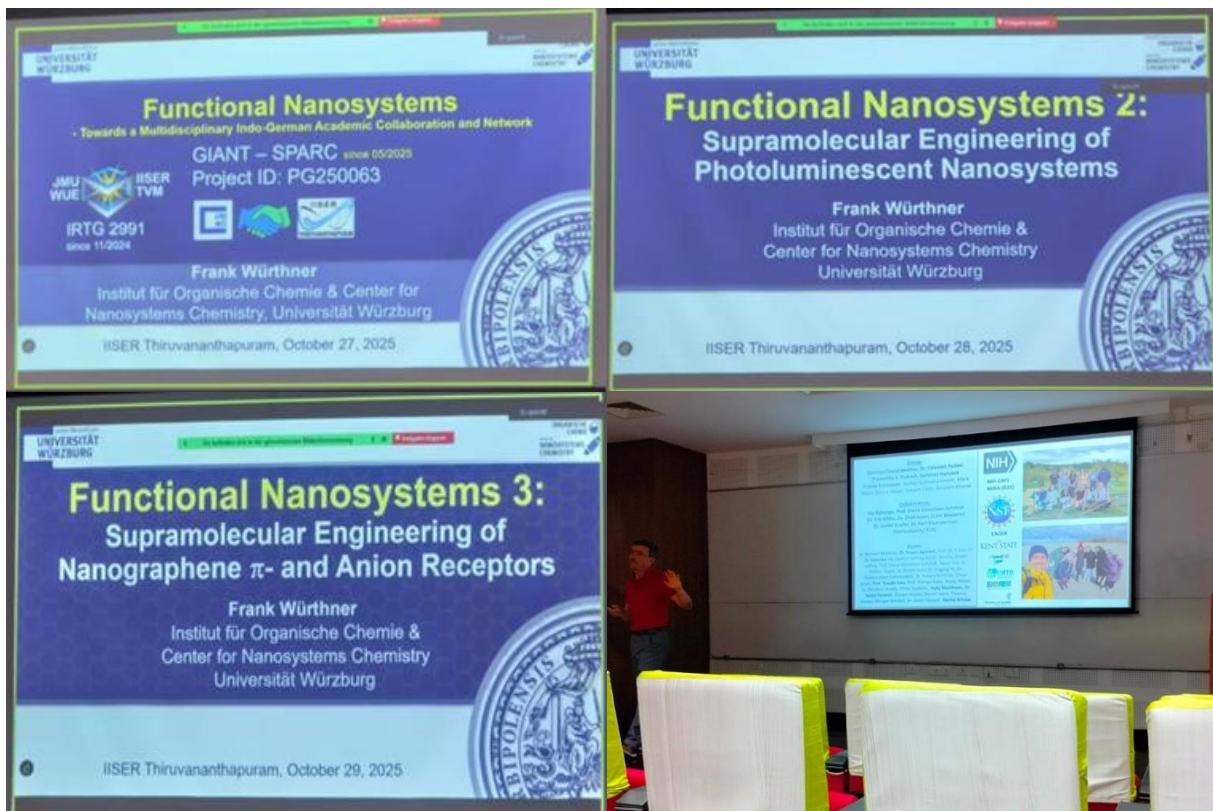
On the campus itself the possibilities are limited and because the campus is in the middle of a dschungel, a taxi or a Tuk Tuk needs to be taken to visit different tourist places. The most popular activity is climbing the nearby hill, Ponmudi. Another exciting trip you can do is the hike to the nearest waterfall, Vazhantol. In both cases, you can switch off from your everyday working life very well by either enjoying the view at 1100m or escaping the heat for a short time in the waterfall. Both trips can be seen in Figure 3.



**Figure 3.** Photo of me at Ponmudi (top left), the view from the mountain into the valley (top right), Picture of the entrance of the waterfall (bottom left), group photo of most lab members of Prof. Varghese working group (bottom right).

## Teaching activity

Throughout my stay here in India I could attend a variety of lectures on different topics. One example was a lecture held by Prof. Dr. Thorsten-Lars Schmidt from Kent Stake University, Ohio, with the topic “DNA-Lipid Nanodiscs as Tools for Single-Molecule Cryo-EM of Membrane Proteins”. Another important lecture, especially for this internship program was of course the three days lecture-series of Prof. Dr. Würthner for the GIANT-SPARC project, which both can be seen in Figure 4.

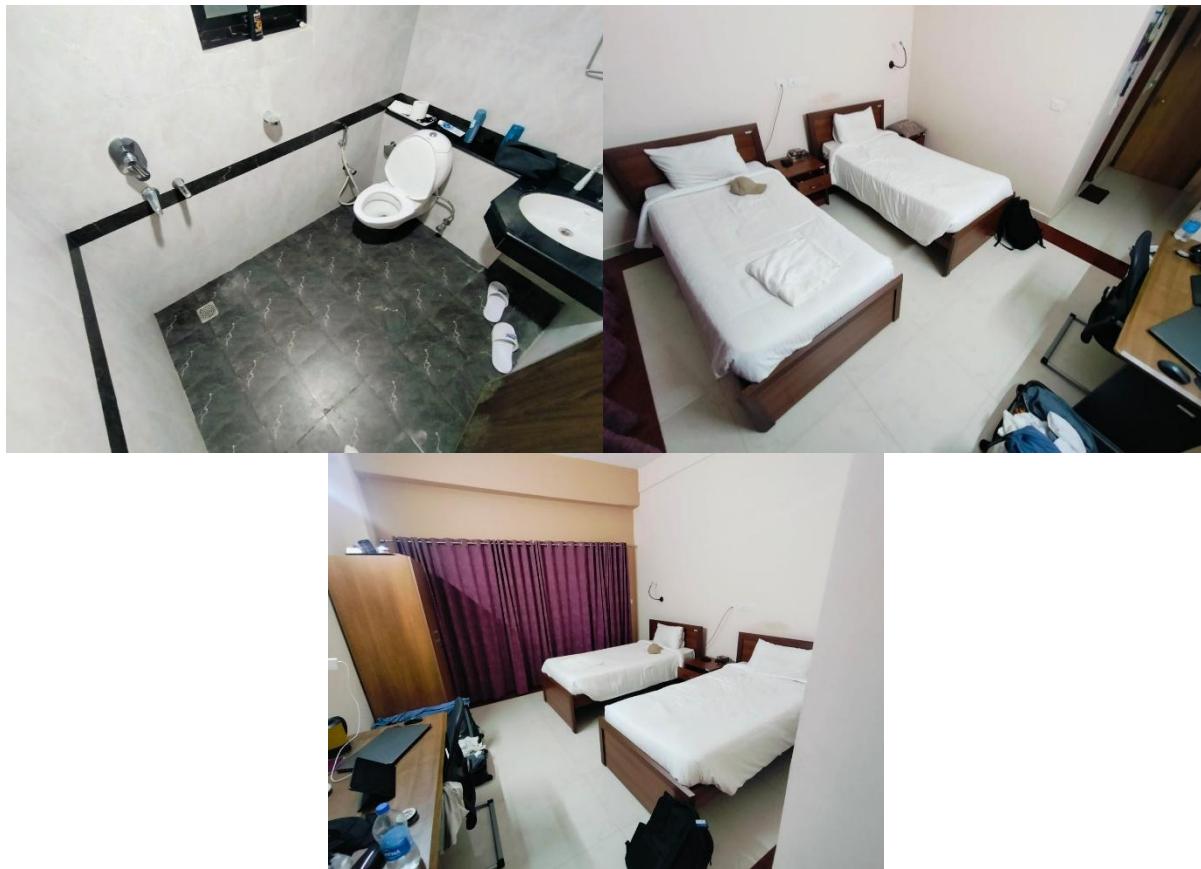


**Figure 4.** Title slides of Prof. Dr. Würthner for his presentation (top and bottom left), presentation of Prof. Dr. Thorsten-Lars Schmidt (bottom right).

Additionally, together with other German and Indian students, I was very fortunate to be able to visit the Asian and Oceanian Photochemistry Conference in Kochi.

## Accommodation and catering

Just like my predecessor Sven Kisker, I would like to include the issue of accommodation in my experience report. Just like Sven, I was also accommodated at the Visitors Forest Retreat (VFR). As can be seen in Figure 5, there was certainly no reason to complain about space and cleanliness, as well as service here. One important aspect that is worth mentioning, however, is the fact that even though the food tasted very good, it became quite repetitive after a while.



**Figure 5.** Pictures of the room that was provided to me at the Visitor's Forest Retreat (VFR) guest house.

## Cultural exchange

I would also like to include a note about an aspect that is very important to me and worth experiencing, the opportunity for cultural exchange. During my stay, me and other German students were fortunate enough to experience and celebrate a special Hindu festival called “Diwali,” the festival of lights, as can be seen in Figure 6. In addition to traditional food, outfits, and dances, we were able to learn a lot about Hindu culture but also answer many questions about our German culture from interested parties. This great experience was something I wouldn't have wanted to miss and can only recommend to everyone to experience it once in their life.



**Figure 6.** Group photo of german GIANT- and IRTG students with traditional clothing (left), picture of a traditional Hindu-dance (right).

## Conclusion

I thoroughly enjoyed my time at IISER TVM and gained insights into the synthesis work of Prof. Varghese's research group. In addition, I was able to get to know and appreciate Indian culture but also learn about the differences and similarities between it and our more western culture. I would therefore recommend this experience to anyone who is curious about cultural differences, new life experiences, but also challenges in everyday life in the middle of a tropical jungle.