

# Mac Robertson Postgraduate Travel Scholarship Report

## About me

My name is Saphia Matthew and I am from Dundee, Scotland. I am currently in my fourth year of PhD study in the Strathclyde Institute of Pharmacy and Biomedical Sciences, University of Strathclyde. My research in the Seib Group has been interdisciplinary, mainly revolving around the application of silk as a nanomedicine carrier material. I was awarded the Mac Robertson Postgraduate Travel Scholarship (£2,200) in my third year to undertake a research stay in Leibniz Institute of Polymer Research (IPF) in Dresden, Germany.



**Figure 1. Travelling on the railway between Berlin and Dresden.**

## Why did I apply for the Travel Scholarship?

I applied for the Mac Robertson Travel Scholarship as it would allow the Seib Group to advance silk nanomedicine design. The orthogonal research would introduce me to state-of-the-art measurement capabilities currently absent in Glasgow and unique expertise at the Leibniz Institute of Polymer Research (IPF) in Dresden. Optimisation of carrier design was planned for by manufacturing silk nanoparticles using microfluidics at SIPBS, followed by biocompatibility assessment by the Maitz group at my host institution in Dresden.



**Figure 2. The Leibniz Institute of Polymer Research and the Max Bergmann Center of Biomaterials.**

### **Details of the visit**

In February 2023 I travelled to Leibniz Institute of Polymer Research (IPF) in Dresden, Germany for a 5-week research placement in the Maitz Group. I was warmly welcomed to the institution by Dr M. Maitz, S. Deke, J. Renc, and Professor C. Werner.

The opportunity to work with Dr M. Maitz was beneficial for future optimisation of silk nanomedicine design. The Maitz Group are interested in hemocompatibility to improve the design of biomedical devices and nanomedicines. Their knowledge of experimental design using *in vitro* techniques to estimate the biological response that occurs within the circulatory system expanded the scope and raised the impact of silk nanomedicine therapeutic response studies.

During the placement I was involved in *in vitro* studies helmed by Dr M. Maitz and was exposed to new techniques I would not have had the chance to experience in Glasgow. In my free time, I had the opportunity to walk around Dresden and observe the Baroque architecture.



**Figure 3.** The foyer and view from the Maitz Group lab within the Max Bergmann Center of Biomaterials.



**Figure 4.** The guesthouse at IPF Dresden.

### **Impact of the Travel Scholarship**

The Mac Robertson Travel Scholarship provided me with the opportunity to broaden my biocompatibility knowledge. The work that was carried out on the placement can be used to complete a research paper in an academic journal, which could strengthen the collaboration between Glasgow and Dresden.



**Figure 5.** Part of the hemocompatibility experiment setup.

## **Acknowledgements**

Firstly, I would like to thank the Mac Robertson Trust for granting our proposal. I would like to thank Dr M. Maitz for welcoming me into his group, supervising me and directing the experiments. Further, I would like to thank my supervisor Dr F. P. Seib who encouraged and facilitated organisation of the placement. Finally, I would like to thank Professor C. Werner, the Maitz Group members, S. Deke, J. Renc and the wider staff at IPF Dresden for welcoming and accommodating me at the institution.