Armourers & Brasiers’ Company  
81 Coleman Street  
London  

Cambridge University CaMPUS Scheme

Dear Sir/Madam,

It is with deep gratitude that I am writing, in order to express my thanks for the generous support provided by the Company for my recent European placement at the Erich Schmidt Institute, Leoben, Austria, through the Cambridge University CaMPUS scheme. My experience over the past two months has been extremely positive and I have greatly benefited from the internship in many ways.

Please find enclosed a full report of my placement, giving more detail about the project I undertook, as well as other details about my experience and learning as a whole.

With my appreciation,

Yours faithfully,

Joe Grimwood
During busy and deeply-enriching, albeit sometimes quite stressful, terms at Cambridge University, I always look forward to the long summer vacation as an opportunity for some extended rest and to be able to take part in different activities that a Cambridge term does not allow. For me, ‘giving up’ a whole summer to perform a summer project and further academic study seemed quite a tough idea to get used to! However, knowing the longer-term benefits of such a scheme in providing valuable research and experimental experience for future projects, I applied for the CaMPUS scheme for the summer at the end of Part II (third year). Fortunate enough to get given a place at the Erich Schmidt Institute (ESI) in Leoben, Austria, I have greatly enjoyed the summer, and the whole experience has greatly surpassed my expectations.

In many ways, the ESI was an ideal location for me to be placed over summer. I am studying Materials Science at Jesus College. The Institute excels in a number of areas of the same field and, like my college, maintains a relaxed atmosphere.

My project was investigating the mechanical properties and structure of steel electrodeposits. I was working alongside Timo Müller, a German PhD student at the institute. He had independently developed a technique to deposit thick steel layers from solution, with some promising initial properties. Initially, I worked virtually unaccompanied to prepare samples; the material was very brittle, so many of the samples broke, testing my patience as well as my preparation skills. After this, I worked more directly alongside Timo to investigate the steel’s properties, including hardness and ductility, after heating in a furnace at a range of temperatures. We related these to the structure observed from Scanning Electron Microscopy and X-ray Diffraction. I was able to use principles that I had been taught at Cambridge, but it gave me much more experience in applying these in an extended situation. I also investigated the topic from literature, wrote up a report and gave a presentation at the end of my time. So the project very helpfully employed a variety of skills and working environments. The results we found were insightful in determining the next steps of investigation for the material, and will hopefully be used in publication in the near future.

Living abroad was a new experience for me, with week-long vacations to Europe being my only previous visits outside the UK, and was overwhelmingly positive. The majority of Austrians we met were very friendly, and I greatly enjoyed looking at differences between

Novel set-up which we developed to compress samples, using a rotated microscope to view displacement of samples.
Austria and the UK, from the food sold in supermarkets to different types of coffee sold in Leoben’s Hauptplatz (central square).

Moreover, I have made and deepened a number of friendships through the summer, both with Chris May-Miller, a fellow student from Jesus College, as well as others from across Europe with whom I was working or living.

Another advantage of being in Leoben was the stunning surrounding area. Alongside working during the week, the scheme gave a great opportunity to travel and explore. This included trips to nearby cities, including Salzburg, Vienna and Graz, where I got a flavour of the Austrian culture, as well as viewing world-famous attractions, such as the ‘Festung Hohensalzburg’ castle (top banner picture), climbing the locally-famous peak ‘Mugel’ and the insightful Styrian armoury (pictured below), which prompted many discussions about the choice of material and processing-route for each piece of armour’s application!

I was also really looking forward to being able to use and improve my German whilst living abroad. I had taken a B1/2 level German course as part of my degree during third year, which proved to be very useful. Although my German has improved, especially in everyday conversations and in listening to others, it was not as easy to converse as I had expected. We were living in student accommodation, but not with confidently fluent Germanic speakers for the majority of the time, and we were addressed almost exclusively in English at the Institute. Coupling this with the tricky Austrian dialect that I was not at all familiar with, it made communication with local people difficult. However, this was not the primary reason for taking part in the scheme, but it will certainly motivate me to take other opportunities to improve my language skills.

In conclusion, my overall experience has been positive, and I have found the placement very insightful. Being able to take part in an extended research project will prove valuable for a similar project as an element of Part III in the year ahead, and has given me a taste of what taking a PhD might be like. I am currently unsure if this would be the right decision for me on completing Part III, but feel much more informed about it, and can see myself working in materials science in the future in some capacity. In terms of living abroad, I feel that I have learnt a lot about myself, seeing both the benefits, such as a greater cultural experience, and the difficulties, for example, a sense of loneliness at times, which can result from living as an ex-pat. However, in the right situation and circumstance, I feel I could really enjoy such a life.

And finally, I would like to thank once again the Armourers & Brasiers' Company for their generous support in helping me to take part in the scheme, which has been so valuable to me.