Timothy Campbell

Research Student

Continually developing technologies and implementing new ones is crucial to being able to better meet the growing demand and complexity of the chemical industry.

As processes become larger and more costly it becomes even more critical to develop accurate representations which can better predict and simulate these processes.

Across the industry better digital representations of processes can help improve them in many ways. One of which is to reduce their environmental impact of a process by increasing yield and decreasing the waste disposed.

My research is in mathematical modelling and digital representation to develop digital twins of pharmaceutical processes so they can be better controlled in the future. These digital twins can simulate processes and their changes in order to better predict their responses to changes in the surrounding environment.

Post 16 Education	**Higher Education**
A Levels Mathematics, Chemistry & Physics	MEng Chemical Engineering with Management Now studying for a PhD in Chemical Engineering

Timothy's experience as a student

In a word; varied. Loughborough University provides a fantastic range of extracurricular activities in addition to great opportunities to develop a career.

I was chair of the surf club in my third year and this was a great community to connect with like-minded people and gave me the opportunity to learn management strategies. With the surf club I travelled to Spain, Portugal, France and Morocco as well as some great trips in UK waters.

The degree teaching here is also second to none and why I came back to do my PhD here. My favourite year, contradictory to many others, was my final year. It felt so good to be able to use all the information we had learned and design a process from scratch. It was this variety and prestige that made my UG experience so fantastic.

Career

Since graduating I have worked in Austria as a ski instructor. I was then able to come back to start my PhD and would not have had it any other way.

Doing this gave me the time and space to think and make the next step in my career as confidently as I could. It also helped me gain a better perspective on how my research will fit into and affect the world around us, most importantly the environment.

The research I am conducting is working towards better control of processes using mathematical modelling and digital twins. Better controlled processes are innately better for the environment due to their ability to reduce waste whilst maximizing their yield.

My advice: Envisage the world you want to live in, find the path to make it happen and then work hard to see it happen.

This way you will always be motivated, focused and satisfied in the work you do.

Loughborough University offers undergraduate degrees in

Chemical Engineering

All Loughborough's undergraduate degrees offer the opportunity to take a placement year.