

A UROP perspective by Mia Jones

Summer 2022 (undertaken in the Department of Chemical Engineering)

Mia was a year 2 undergraduate at Imperial College London in 2021-2022: MEng Chemical Engineering, Department of Chemical Engineering

UROP title: Fabrication of water purification via nanofiltration using graphene oxide (GO)/ and metal organic framework (MOF) composite hollow fibre membranes for water purification.

My aim in doing a UROP was to better understand how research is conducted to see if I would like to pursue a PhD. Additionally, I wished to apply my chemical engineering knowledge in a professional setting and gain more lab experience to aid me with my projects in my 3rd and 4th year. Especially since all lab work was online in my 1st year due to Covid-19 regulations.

My personal tutor had mentioned his labs research briefly during a meeting. Since his work on water purification aligned with my interests in the environmental sector, I asked him whether I could work in his group over the summer. I then communicated with one of his postdoctoral researchers to arrange specific details.

In preparation for my UROP, I conducted some literature research by reading recent articles (usually published within the last 10 years) related to my research topic.

My regular tasks in the lab involved coating hollow fibre membranes with different materials (such as graphene oxide solutions of different concentrations and metal organic frameworks) and testing their dye rejection performance. The performance of a membrane is dictated both by the amount of water that is able to pass through the membrane in a given amount of time and the amount of dye particles that are rejected.

I enhanced multiple skills throughout my research experience, specifically better time management when planning my experiments, more confidence working in the lab, as well as communication skills by discussing my work with my supervisor and other lab members. I also feel more motivated now to start my 3rd year since I have been able to apply some of my knowledge in a real research setting.

Overall, my UROP has made me feel more confident entering the third year with regards to completing project and lab work and it has further solidified my desire to work in the environmental sector after graduation. It has also showed me that although I could see myself pursuing a PhD later on, I would first like to gain some experience working in industry after graduation.