

IOP Research Student Conference Fund Report – Rosie Jarrald

I am currently a final year PhD student at the University of Sheffield supervised by Dr Sarah Staniland. My PhD focuses on using peptides and proteins to control the synthesis and growth of magnetic nanoparticles, using interferometric lithography to generate patterned surfaces and finally combing these two aspects for the potential future use in data storage.

Being awarded an IOP Research Student Conference Bursary from the Magnetism group enabled me to attend the 256th ACS national meeting in Boston and give a 20-minute presentation on my ongoing PhD work. The theme of this year's meeting was Nanoscience, Nanotechnology & Beyond which fitted very closely to my own research interests. The ACS national meetings are one of the largest chemistry conferences with over 12000 attendees. At times there was more than 100 different sessions running in parallel, which made it difficult to decide which sessions to attend however being able to experience a wide range and such a large volume of chemistry was very exciting!

On the fourth day of the conference I had the opportunity present my work by giving a talk in the Inorganic Nanoscience session. My talk was entitled 'Production of magnetic nanoparticle arrays on surfaces from solution using top-down patterning and bottom-up biotemplating for future nanodevices' which discussed the research carried out during my PhD. I think that the talk was well received, I was asked several questions at the end of my talk and other researchers spoke to me about my work during breaks in the session. This was my first experience of giving a talk outside of my department and allowed me to practice my presentation skills further and helped to improve my confidence for future talks.

Throughout the conference I mainly attended sessions in the colloid and inorganic divisions that focused on nanomaterials and nanoscience. I listened to talks on a wide range of topics presented by researchers at various stages in their career, from other PhD students all the way up to Nobel prize winners. This year the opening lecture of the conference was given by Leroy Hood where he spoke about how 21st century medicine will transform healthcare and the opportunities available for nanoscience and chemistry within this. I found this lecture very interesting and it gave a lot of insight into how much potential there still is in this area. The ACS has a lecture series that runs at national meetings called the Kavli lectures and this year Jill Millstone spoke about metal-ligand interaction chemistry in nanoparticle synthesis and performance and Harry Atwater presented his research that involves using light as a fuel, both of which were excellent talks. Another highlight was getting to see Nobel laureate Fraser Stoddart give a talk about his research throughout his career which was very inspiring!

Some of the events I enjoyed the most as part of the 256th National Meeting were the poster sessions. Each division of ACS held at least one poster session during the conference and this gave me the opportunity to meet and talk to other students, researchers and principal investigators in a relatively informal setting. I found talking to other PhD students very valuable as it gave an insight into what academia in the USA is like and the working environment in different labs. There was also the Sci-Mix event which is where posters from each division of the ACS were selected to present a poster creating a large multi-disciplinary event.

I would like to thank the IOP Magnetism group for awarding me a research student conference bursary as without this I would not have been able to attend and present my research at the 256th ACS National meeting.