From the beginning of April to the end of June, I took a break from my PhD to work for Chromacity Ltd., a spin-out company from Herriot Watt University’s laser department. Their founders began building the company in late 2012, and started selling devices in 2014. They recently secured a $500K seed round of investment from three Scottish investment groups. I was taken on as an intern, partially-funded by Scottish Enterprise, to help develop two areas of the company.

What Chromacity do is design, build, and sell ultrafast laser products that deliver high average power for low cost, with the intention being to take away the technological complications that arise in current laser setups for the working imaging scientist. This is a field in which I have practically zero experience, so learning on the job was a must. I found it exciting, and would highly recommend following a similar path.

My tasks: firstly, I had the responsibility of building up the customer base, from which initial conversations could be started. The leads are primarily scientists, working in either academia or industry, with the outliers coming from the public sector. They were researched from the BBSRC and EPSRC grant archives, thus giving an indication of which research groups had funding available. This was an interesting role as it showed one how acquisition is done in universities, and developed communication skills with those who took the lead in making sure research groups and otherwise have the technology needed.

Secondly, I had the responsibility of doing some market research for the company, which is essential when everyone else in the company is too busy building and testing lasers, or managing internal and manufacturing regulations. Their core technology can be used to deliver near-IR femtosecond laser light through an objective lens, the wavelength of which is able to penetrate many biological substances, focusing them to a point in which the two photons arriving simultaneously combine to give light that is half the wavelength,
corresponding to double the energy. Thus, the image that is produced is of a wavelength that can penetrate out of the material, and is tuned to be in the optical range. I corresponded with a large number of scientists on whether this technology was relevant in their field, and if it was, what it was they wanted out of it, as Chromacity’s objective was not to just simply sell lasers to users, but develop the technology that is actually needed in order to image the types of systems that need novel techniques; imaging cancerous cells in situ for example can contain a vast amount of information on the dynamics. Progress in how two-photon microscopy is used in SONICC (second-order nonlinear imaging in chiral crystals) microscopy was developed, finding a market in which fully-integrated devices are the only current option, coming with a huge price tag. A trip to Leeds was setup, resulting in strong communications with one of their research groups and the possibility of the sponsoring of a conference in autumn.

It was a thoroughly enjoyable place to work, with people who were enthusiastic in what they did. I won’t hesitate in getting back in touch with them towards the end of my PhD.