For three months I undertook an industrial placement at Edinburgh Instruments between March 1st and May 31st 2016. Edinburgh Instruments is a spectroscopic and gas detection company who develop and manufacture instruments for scientific research and industrial markets. I worked as an R&D intern in the Photonics Division under project manager Dr Dirk Näther who gave me a variety of tasks throughout my time there.

The main project which I was tasked with was the design of a Laser-Induced Breakdown Spectroscopy (LIBS) accessory for one of the company’s existing products; the LP980 spectrometer. This project firstly involved researching the field of LIBS and identifying key points that the design would need to incorporate. Once the technique of LIBS was better understood, I proceeded to design the accessory, first by creating 2D sketches in a CAD drawing software package. A basic design was soon drafted, which was a simple prototype to test the LIBS measuring method externally from the LP980. The components of this were then ordered and assembled. In tandem to this, I was tasked with working with Brian Grice, one of the mechanical drawing staff contractors at the company to produce a 3D Solidworks model of a complete accessory prototype design to be used in the LP980. During this time, I also created my own 3D model of another similar design I had made using Onshape, a free online modelling tool recommended by Brian. By the end of the three months, the two models were complete, with the final drawings for the model produced by Brian having been sent out for quotation and manufacturing. Unfortunately, I did not have time to test the external setup that I had assembled as a working LP980 was not available when the assembly was complete.

As well as this, I also undertook other jobs during the LIBS project. These included smaller tasks such as making inventories, building products, testing and fixing mechanical components, designing a testing jig for an existing product, and updating and improving assembly procedures. These smaller jobs taught me a lot about how a development division works, as well as the various roles and relationships between development and production within the company.

My time at Edinburgh Instruments and the project I took part in has allowed me to see the various stages of developing a scientific instrument first hand. It was very interesting to be part of a working environment which is different from academia and I believe it has given me valuable experience that I can use in my future career. I am very appreciative of both the CM-DTC and Edinburgh Instruments for giving me this opportunity, and would highly recommend others to take part in an industrial placement.