DES BRENNAN

Industrial Sponsor
Tata Steel Colors
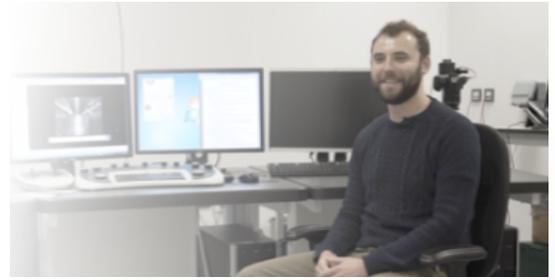
Des studied a Physics BSc at Cardiff University and during his studies witnessed his fellow students experience industrial placements during their undergraduate studies. Des wanted a similar experience for his postgraduate degree and was attracted to the COATED CDT Engineering Doctorate scheme at Swansea University due to the excellent links with industry, in addition to the CDT's training modules that he felt would prepare him for a leading technical role in industry. Des successfully applied and secured a place in the CDT with a view to applying his pure science background to real world issues to enhance his future employability.

Des' project, sponsored by Tata Steel Colors, investigates the 'up-scaling of concepts from lab to market place' and has provided him with the opportunity to apply his Physics background to an industry process to improve productivity. This has involved the modelling and experimental testing of near infra red curing technologies for rapid functional coating production for the construction sector. Not only this, Des has applied this industrial technique to new Photovoltaic functional coatings being developed at Swansea in order to help reduce their potential manufacturing time from 30 minutes to a matter of seconds.

The CDT has afforded Des with numerous academic and industrial experiences that he may not have obtained outside of the CDT. He spent much time at Tata Steel in the Netherlands to experience and investigate the curing properties of their industrial near infra red curing furnaces. His research has been presented at Materials 2016, an International conference in Dubai, as well as ACME 23rd Conference in Computational Mechanics 2015 in Swansea. As a result he was invited to write a paper on 'Mathematical framework for predicting the thermal behaviour of spectrally selective coatings within an industrial near-infrared furnace' in a special edition of the European Journal of Computational Mechanics.