

Queen's Doctoral Training Programme on **Secure Connected Intelligent Design and Manufacturing**

Title: DTP: High quality, low cost, sustainable, manufactured timber composite buildings	
<p>This project is part of the Queen's Doctoral Training Programme in Secure Connected Intelligent Design and Manufacturing. Many of today's industrial approaches require transformative changes to ensure long term societal, economic and environmental resilience and sustainability. PhD projects in this programme explore the potential of emerging digital technologies, such as artificial intelligence, robotics, and the Internet of Things, to transform the way we design, manufacture and operate products and services.</p> <p>Project description: Novel timber composites and cross-laminated timber offer potential for sustainable buildings. To date such buildings are largely constructed and fitted out on-site as opposed to taking a manufacturing approach and are more expensive. However, inherent engineering properties of the materials and production methods are not currently utilised to increase efficiency and cost saving. Most notably this is during the manufacturing and transportation stage.</p> <p>Aims and Objectives: The project will deliver a design and manufacturing process for timber composite buildings that are: <ul style="list-style-type: none"> -buildings designed for manufacture at low cost and high quality -produced from sustainable timber composites optimised for advanced manufacturing -utilise digital design skills coupled with specific factory knowledge to deliver on cost and efficiency </p>	
Key skills required for the post: Mechanical/Civil/Materials/Manufacturing background. Strong IT skills for simulation work, experience of laboratory testing valuable.	
Key transferable skills that will be developed during the PhD: The programme offers a bespoke research and training programme that aims to develop students into cross-disciplinary, industry-conscious thinkers and leaders who will influence the roadmaps of future advanced manufacturing technologies and their applications. They will have a balanced understanding of ICT (security, communications and data analytics) in the context of their application to Advanced Manufacturing and High Value Design.	
Lead supervisor:	Dr Daniel McPolin
Other supervisor(s):	Prof Adrian Murphy Dr Sree Nanukuttan
Guaranteed stipend:	This is a 3.5 year funded Queen's DfE DTPs studentship with Training Grant, to commence on 1 October 2020 (N.B. stipend for 20/21 is not yet known, but is likely to exceed £15,000). The studentship covers fees and maintenance and is available for UK residents (see full eligibility criteria - nationality, residency, and academic qualification at: http://go.qub.ac.uk/dfeterms). When applying using the Queen's portal please ensure you include "DTP:" along with the project title.
Conditional top-up available:	Add amount and condition if available from another source – there is no central funding available for this.

Queens University Belfast is a diverse and international institution which is strongly committed to equality and diversity, and to selection on merit. Currently women are under-represented in research positions in the School and accordingly applications from women are particularly welcome.