



## SPECIAL EU PROGRAMMES BODY

# Project Case Study: North West Centre for Advanced Manufacturing (NWCAM)

### THEME:

Research and Innovation

### FUNDING (ERDF+MATCH):

€8,518,406.33

### MATCH FUNDERS:

Department of Jobs, Enterprise and Innovation, Department for the Economy and the University of Glasgow

### LEAD PARTNER:

Catalyst

### PROJECT PARTNERS:

University of Glasgow; Ulster University; Sligo Institute of Technology; Letterkenny Institute of Technology; LPE; Armstrong Medical; Denroy Plastics; Axial 3D; Leckey; Nuprint; Causeway Sensors; Abbott and GSK; and Clyde Biosciences.

### PROJECT CONTACT:

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**Start Date:** 01/04/2017

**End Date:** 31/05/2022



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As part of the exciting activities in NWCAM, the training and development of the next generation of researchers and innovators is core to the success of its 16 projects. Meet two of its researchers from Ulster University.



Pictured above, Faisal Manzoor is a PhD researcher at Ulster University. He graduated from the University of the Punjab, Pakistan with a Bachelors and Masters degree in Materials Science and Engineering. Faisal has served as a Lecturer in an Interdisciplinary Research Centre in Biomedical Materials focusing on the transformation of cuttlefish bone into bone scaffolds through hydrothermal treatment. At Ulster University, Faisal is working on the development of novel, bioactive, and easy to manufacture bioactive polymeric cranial implants using 3D printing. Currently in medical practice metal cranial implants are being used in patients following road accidents, tumor surgeries or sports injuries. However, they have various disadvantages such as they are heavy, and can become hot in summer and cold in winter. A second surgery is often needed to remove the metal implant after a few years due to corrosion and the metal material can block all radiations, such as x-ray or an MRI scan. Polymeric implants, however, are lightweight, do not interfere with radiations, mechanical properties are closer to the human bone and they are mostly thermally insulator".

Pictured below, Khalid Saeed has a strong affiliation with academia from an early stage of his career. After completing his bachelor's degree in Pakistan, he completed a Master's degree in Saudi Arabia. Khalid is now working towards his PhD at Ulster University and his goal of becoming a successful researcher. Based at Ulster University, Khalid's PhD is looking at the development of novel materials and techniques for Additive Manufacturing (AM). AM can make parts that are obsolete and are not available in the market by using reverse engineering within hours. Wastage of material has been reduced tremendously by employing 3D printing as compared to conventional techniques. Khalid is developing new materials to be used in 3D printing using fused deposition modelling technique to enhance properties in the printing direction.

