

Department of Chemistry Materials and Chemical Engineering “G. Natta”

April 15, 2019 – 12PM (noon) -1PM

Room Giulio Natta, Building number 6, Campus Leonardo

SEMINAR

Title: Applying novel design and non-invasive investigations to advance the fields of tissue engineering and optics.



Dr. Michael Monaghan
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Despite advances in pharmacological and cell therapies, myocardial infarction (MI) remains among the main causes of death in western countries. The use of electroconductive scaffolds and electrical stimulation have been shown to play a crucial role in differentiation of progenitor stem cell sources into cardiomyocytes and in the maturation of cardiac engineered organoids. To this end, our group has achieved the fabrication and optimization of 3D scaffolds based on a number of electroconductive polymers and fabrication through techniques such as freeze-drying and melt electro writing (MEW). This talk will present our results and progress to date in this emerging field and showcase advanced imaging tools in our group towards metabolic profiling in disease and cell differentiation.

Michael Monaghan (www.monaghanlab.com) is an Assistant Professor in Biomedical Engineering in the Department of Mechanical and Manufacturing Engineering and Trinity Centre for Bioengineering, Trinity College Dublin. Prior to this appointment he was a Postdoctoral Researcher in the Research Institute for Women's Health in Eberhard Karls University Tübingen, Germany, following a Marie Curie Postdoctoral Fellowship in the Fraunhofer Institute for Interfacial Engineering and Biotechnology in Stuttgart Germany. His group focus on the reprogramming of stem cells towards cardiomyogenic lineages using modifiers of epigenetics and recapitulation of the cardiac environment in vitro using smart biomaterials, bioreactors and cardiomyogenic extracellular matrices. His lab is also focused on the use of non-invasive microscopy to evaluate extracellular matrix and cell metabolic dynamics (metabolimaging).