

AMBER RESEARCHERS AWARDED €300,000 IN FUNDING TO GROW POTENTIAL SPIN OUT COMPANIES

Prof. Valeria Nicolosi and Prof. Fergal O'Brien have been awarded €150,000 each in funding through the ERC's Proof of Concept grant

Dublin, Thursday 5th February 2015: Two AMBER (the Science Foundation Ireland (SFI) funded materials science centre, hosted in Trinity College Dublin) researchers have been announced as recipients of its "Proof of Concept" grant, from the European Research Council (ERC). This funding will provide Prof. Valeria Nicolosi and Prof. Fergal O'Brien with €150,000 in funding each over 18 months to help them bridge the gap between their existing frontier research and its commercial applications. 260 applicants from across Europe applied for the first round of funding through the ERC "Proof of Concept" grant, which Prof. Nicolosi and Prof. O'Brien were both awarded.

Prof. Nicolosi has won top-up funding for her project entitled 'Ink-Jet printed supercapacitors based on 2D nanomaterials'. This is the third grant that Prof. Nicolosi has received from the ERC to date. Prof. Nicolosi's nanotechnology project will hone in on enabling new 2D-based nanomaterials to one day potentially pioneer ultra-thin, flexible supercapacitors manufacturing for the aerospace and automotive industry. Prof. O'Brien's funding will help to establish the innovation potential of his original idea for which he already received €2 million in ERC funding in 2009. His project, entitled 'miRNA-activated Scaffold Technologies for Cartilage Regeneration', is focused on developing an advanced therapeutic for cartilage repair. Damage to the cartilage on joints can result in osteoarthritis which affects millions of people worldwide.

Prof. Valeria Nicolosi, Professor at the School of Physics and the School of Chemistry, Trinity College Dublin and Principal Investigator at AMBER, said *"At the moment there is huge societal need to move towards sustainable and renewable energy resources. As a result, we are seeing an increase in renewable energy production from sun and wind, as well as the development of electric vehicles or hybrid electric vehicles. Energy storage systems like batteries and super capacitors are starting to play a larger part in our lives. Unfortunately, accidents can occur due to the high corrosion, toxicity and flammability of the electrolytes used, coupled with the high instability of lithium under normal conditions. We expect the development of high performing, ultra-thin, ultra-light, non-hazardous and chemically stable energy storage devices will have huge societal and economic impact in all these sectors.*

"The aim of this project is to determine the economic and technical feasibility of using readily scalable technologies for the development of inexpensive and high performance ultra-thin, flexible films of two dimensional nanosheets for supercapacitors manufacturing for the aerospace and automotive industry. Through this funding, our hope is to be able to license this technology or to open a spin-out very soon. We are exploring both possibilities at present, as a direct result of the ERC funding."

Prof. Fergal O'Brien, Deputy Director of AMBER and Deputy Director of Research and Head of Tissue Engineering Research Group in the Royal College of Surgeons, said, *"I am delighted to be awarded the "Proof of Concept" grant. This project is focused on developing an advanced therapeutic for cartilage repair. We proposed to combine a biomaterial from my lab designed specifically to support cartilage cells with a form of gene therapy, called micro-ribonucleic acids (microRNA), which can enhance the genes associated with healthy tissue, while blocking the ones associated with disease.*

"Adult articular cartilage has a limited capacity for repair so when damaged it can lead to joint degeneration and ultimately osteoarthritis. The idea of using miRNAs as therapeutics is extremely appealing as we can potentially switch on the genes associated with cartilage repair while switching off those associated with degeneration. Depending on the further results of this project we hope to bring this to market with industry partners."

Prof. Stefano Sanvito, Acting Director of AMBER, commented on the announcement, saying *"Since its launch, AMBER has grown significantly, this European funding will allow us to bring these projects to the next level, from fundamental to more applied horizons. I'd like to congratulate Professor Nicolosi and Professor O'Brien on successfully securing ERC awards. The awards demonstrates both the excellence and also the quality of the research team that has been built in AMBER."*

EU Commissioner for Research, Innovation and Science Carlos Moedas said: *"Europe has plenty of world-class research, but not enough of it reaches the marketable product stage as commercialised, pioneering goods and services. The Proof of Concept grants will enable some of our top research to compete with the best innovations out there. This will help improve our ability to bring innovations to market, boost competitiveness and create the jobs and growth needed in Europe."*

The purpose of the "Proof of Concept" grant is to assist researchers, who have already been awarded an ERC grant, with costs relating to activities such as establishing intellectual property rights, investigating commercial and business opportunities (e.g. setting up a start-up) or technical validation (e.g. carrying out clinical tests).

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