

# Innovate UK

**Results of Competition:** Technology Inspired Innovation Feasibility Studies 2015 - Advanced  
**Competition Code:** 1505\_FS\_ADVM\_TII

**Total available funding for this competition was £2.7M from Innovate UK (over all strands)**

**Note: These proposals have succeeded in the assessment stage of this competition. All are subject to grant offer and conditions being met.**

<b>Participant organisation names</b>	<b>Project title</b>	<b>Proposed project costs</b>	<b>Proposed project grant</b>
Cambridge Nanolitic Ltd University of Sheffield	Multifunctional nanoceramic surfacing for Titanium implants	£97,577	£77,067
<b>Project description - provided by applicants</b>			
Awaiting Public ProjProject "Multifunctional nanoceramic surfacing for titanium implants" aims to explore the technical feasibility of a novel nanoceramic surfacing for titanium implants developed by Cambridge Nanolitic (CNL) to enhance their biocompatibility and osseointegration. Cambridge Nanolitic believe that Ti implants with nanoceramic surface effectively combine the best features of metal implants such as high mechanical strength and formability with high biocompatibility, corrosion resistance and aesthetics of ceramics.ect Summary			

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European Thermodynamics Ltd The Manufacturing Technology Centre Ltd	HunTER High efficiency Thermo ElectRic Cooling	£149,667	£113,215
<b>Project description - provided by applicants</b>			
<p>The potential market for Thermo-Electric technology is 56 billion, with 26bn for transportation cooling alone. Current commercial Thermo-Electrics for cooling applications are typically based on Bismuth Telluride (Bi<sub>2</sub>Te<sub>3</sub>) where the Figure of Merit, ZT peak is 1.0 @ 80°C and average ZT over Thermo-Electric Cooling (TEC) operating temperature of 0.8, limiting the maximum heat flow (Q<sub>max</sub>) to 52.2W, the maximum temperature difference (T<sub>max</sub>) to 74°C and the Coefficient of Performance (CoP) of 1.46 for a typical TEC module. HUNTER will develop advanced materials solutions based on Phonon scattering through grain boundary engineering; Engineering of antisites and Metal-semiconductor interface for electron filtering to create n- and p-type Thermo-Electric BiTe alloys with average ZT1 across the effective operating temperature range. By achieving this performance, we will be able to increase TEC module efficiency so that Q<sub>max</sub> &gt; 57.3W, T<sub>max</sub> &gt; 78°C and CoP 1.94, this is beyond anything achieved previously. By achieving this we will create global USPs for TEC modules with particular application for automotive zonal cooling applications. Project Summary</p>			

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<b>Glass Technology Services Ltd</b> University of Leeds	Bi-Yb Phospho-Tellurite fibre laser for cancer detection (BYPT-laser)	£149,440	£116,443
<b>Project description - provided by applicants</b>			
This project will develop and demonstrate a low cost tuneable fibre-laser Phospho-Tellurite fibre laser (BTPT-laser) operating across the 1000-1500nm bandwidth which will give endoscopic surgeons to unambiguously detect the precancerous and cancerous tissue by producing images and chemical maps differentiating between cancerous and the healthy tissue, but also determine the shape and size of the cancer/precancerous region for resection. At present this capability is not available anywhere in the world.ublic Project Summary			

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Intrinsiq Materials Ltd Queen Mary University of London	AMMETEX - Advanced Materials and Metamaterials for MetaTextiles	£148,095	£116,933
<b>Project description - provided by applicants</b>			
<p>The AMMETEX project will investigate the feasibility of 'MetaTextiles' - prototyping electromagneticmetamaterials including meta-textiles and meta-surfaces from a textile design-based perspective, using lowcost high performance print technologies and their associated nano scale printing inks. The aim is to exploreprint techniques to achieve periodic textile surfaces that can be considered continuous and effective at specificfrequency bands. We will develop a practice-based method for'MetaTextiles', supporting experimental textiledesign approaches and novel materials and ink formulations versus normal approaches used in electronic andelectrical engineering.. The project will identify a feasible design and manufacturing solution and carry out asimple proof of concept demonstrator to show the potential for applying MetaTextiles to high-speed mm-wavecommunication links.Finance Summary Table ' How to complete this sectionPlease complete the information requested in the following table in accordance with the following notes.Please ensure that the information provided is consistent with the applicable funding levels and eligible costs for yourg Public Project Summary</p>			

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<b>Locate Therapeutics Ltd</b> University of Nottingham	Preclinical Proof of Concept for a Cell Therapy Delivery Matrix	£149,768	£104,786
<b>Project description - provided by applicants</b>			
Emerging cell therapies have vast potential in the treatment of currently incurable diseases; the potential market for cell-based therapies being over 100 million patients in the US alone. Some of the main targets include heart disease, diabetes, neurodegenerative diseases, musculoskeletal disorders, spinal cord injury, stroke, autoimmune diseases and trauma. A current barrier to success is inefficient clinical administration of these therapies to the patient. This is due to underdeveloped methods for presenting the cells that results in the majority of them dying or migrating away soon after injection. This project aims to redress this issue by creating purpose-built delivery vehicles that provide protective environments and solidify upon injection; thus improving the survival, localisation, and clinical effectiveness of cell therapy. In this programme of work, we will demonstrate these concepts within clinically-relevant preclinical models. Finance Summary Table ' How to complete this section summary			

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Scitech Adhesive Systems Ltd Parkside Flexibles (Europe) Ltd Bangor University	Synergetic Anti-Bacterial Coating Solutions (sab-Coat)	£134,008	£100,947
<b>Project description - provided by applicants</b>			
<p>Awaiting PSAB-Pack: Synergetic AntiBacterial COATings solutions to improve safety and shelf life of chicken meatproducts. The aim of the project is the development of new antimicrobial coatings for new packaging solutionsthat will increase quality, shelf life and safety of chicken meat and chicken meat products. The coating solution will have multiple activity against a wide microbial spectrum, even at low temperatures astypical for the fresh meat sector. Within this project, these innovative materials will be designed for the usage in MAP trays, soaker pads or sealing foils in contact with poultry products. Project is expected to have an impact on food poisoning in the UK, which represents a major challenge to the food industry with around 1 million people per year suffering foodborne illness at a cost to the UK economy of over £1.5 bn per annum. Poultry contaminated with Campylobacter, a pathogenic bacteria, is the major single cause of food poisoning in the UK, with a financial burden estimated to be £583 million.ublic Project Summary</p>			

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