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| **DIRECTORY OF SKILLS AND EXPERTISE**  **INNOVATION VOUCHERS INITIATIVE**  **Technological University of the Shannon: Midlands Midwest** | Enterprise Ireland | Conscia Talent |

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| [**https://sri-tus.eu/**](https://sri-tus.eu/) | The **Software Research Institute (SRI)** was established in 2006 with the goal to develop a leading edge research capability in TUS and to act as a catalyst to spur innovation through applied research collaboration with industrial partners. SRI conducts applied research in digital media communications and applications and network and infrastructure management.  [SRI hosts the **COMAND** technology gateway, a research initiative whose goal is to foster assist companies develop expertise and innovate in the digital media space.](http://sri.ait.ie/comand/) | | |
| **COMAND**  **Connected Media Applications – Development and Delivery**  [**https://comand.ie/**](https://comand.ie/) | The **COMAND (“Connected Media Applications – Development and Delivery”) Technology Gateway** focuses on the research and development of advanced interactive media technologies. Its key areas include AI & Machine Learning, Smart Manufacturing, Robotics, Augmenting User Interaction, End-to-End Applications, Intelligent Infrastructure, and Interoperability for the Internet of Things (IoT).  These technologies work together to create innovative and personalised real-time interactive applications across diverse commercial fields, including telecoms, gaming, TV, e-health, e-learning, e-tourism, e-retailing, entertainment, and digital marketing. The goal is to identify and advance key connected media technologies through research and transfer them to industry for maximum commercial impact.  **AI & Machine Learning**  Artificial intelligence and machine learning empower systems to learn from data, make intelligent decisions, and automate complex processes. These technologies optimise operations, uncover trends, and enable real-time, context-aware solutions across industries. From predictive analytics to personalised user experiences, AI and machine learning drive innovation, enhance efficiency, and support adaptive, scalable applications tailored to evolving demands.  **Smart Manufacturing**  Smart Manufacturing integrates AI, machine learning, and IoT to create efficient, automated, and adaptive production processes. Real-time data collection and analysis from connected devices facilitate predictive maintenance, resource optimisation, and improved decision-making. Seamless interoperability between sensors, robots, and infrastructure ensures fully integrated smart factories. By reducing costs, minimising errors, and increasing productivity, Smart Manufacturing is transforming traditional industries to meet modern production demands.  **Robotics**  Robotics is revolutionising automation by enabling industries to achieve greater precision, adaptability, and efficiency. Leveraging advanced AI and machine learning, robots perform complex tasks tailored to specific production needs while maintaining quality and scalability. With a focus on sustainability, modern robots are designed to minimise energy consumption and material waste. Robotics supports innovation and sustainability while advancing the transition to Industry 4.0.  **Augmenting User Interaction**  Augmented Reality (AR) and Virtual Reality (VR) enhance user interaction by delivering immersive experiences across fields such as health, education, tourism, manufacturing, and entertainment. AR overlays real-world environments with contextual information, while VR creates fully immersive digital environments, enhancing the sense of realism. Intelligent interaction powered by machine learning personalises and contextualises the user experience, improving engagement and usability.  **End-to-End Applications**  Modern applications span mobile and wearable devices, IoT elements, smart edge gateways, desktops, and cloud services. These applications integrate CI/CD pipelines, microservices, and serverless computing to ensure scalability and reliability. Vast amounts of data are processed using AI and machine learning to extract actionable insights and uncover new disruptive market opportunities, driving innovation and business value.  **Intelligent Infrastructure**  The rise of mobile computing, cloud services, and IoT has fundamentally changed how software is managed and operated. Modern infrastructure adapts dynamically to application needs, allocating resources based on bandwidth, latency, and context. Adaptive, context-aware security models address real-time threats, while machine learning predicts application behaviour and proactively allocates resources. These advancements ensure scalable, secure, and efficient systems for next-generation applications.  **COMAND** collaborates closely with industry partners ranging from start-ups to multinationals, offering expertise in research outputs, troubleshooting, architecture design, coding, evaluation, product design, and testing. Its highly skilled engineering teams deliver fast, cutting-edge solutions, tackling a wide range of project challenges each year. | | |
|  | The **Software Research Institute (SRI),** including the **Connected Media Application Design and Delivery Gateway (COMAND),** provides cutting-edge facilities to support research and innovation. These include an Internet of Things (IoT) testbed, an OpenStack cloud with over 150 cores for high-performance computing, and advanced robotics and edge devices for smart manufacturing and logistics. Additionally, SRI’s Immersive Media Lab enables the design and validation of Augmented Reality (AR) and Virtual Reality (VR) prototypes, driving advancements in interactive and media technologies. | | |

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| **Applied Polymer Technologies (APT)**  A close-up of a logo  Description automatically generated |  | | Mr Kenny O’Brien  (APT Centre Manager)  Mr Alan Murphy  (Analyitical Testing & Investigation)  Mr Gavin Keane  (3D Design and prototyping)  Mr Steven Rowe  (Polymer Processing) | 090 6483003  090 6483003  090 6483003  090 6483003 | [Kenny.obrien@tus.ie](mailto:Kenny.obrien@tus.ie)  [Alanj.murphy@tus.ie](mailto:Alanj.murphy@tus.ie)  [gavin.keane@tus.ie](mailto:gavin.keane@tus.ie)  [steven.rowe@tus.ie](mailto:steven.rowe@tus.ie) |
|  | **Specific services offered** | | | | |
| **APT**  **Applied Polymer Technologies Ireland**  **Your Industry Partner Since 2013**  <https://prism.tus.ie/apt-gateway/> | **APT Overview**  Since 2013, Applied Polymer Technologies (APT) has successfully completed over 1000 projects totalling more than €5.5million in value. This achievement underscores the significant benefits companies gain from APT’s extensive knowledge base, cutting-edge equipment and with over 100 years’ experience in industry.  **Strategic Research Goals**  APT plays a crucial role in supporting TUS’s strategic goal of developing nationally and internationally recognized centres within PRISM. By maintaining a close alignment yet operating independently, we ensure our services remain relevant to the evolving needs of the polymer and plastics industry. Our continued strong engagement with industry stakeholders is vital for our strategic development. | | | | |
| **APT**  **Applied Polymer Technologies Ireland**  **Your Industry Partner Since 2013**  <https://prism.tus.ie/apt-gateway/> | **APT (Applied Polymer Technologies)** is providing world class solutions for SME’s and Multinational companies throughout the product life cycle from product design through production scale-up and characterisation of final products. APT is housed in a state-of-the-art facility on the TUS Athlone Campus which showcases its facilities from pilot scale-up to industry scale processing equipment. APT is recognised by its 3 sectors: Analytical Testing & Investigation, 3D Design & Prototyping and Polymer Processing  **Why choose Applied Polymer Technologies (APT)**  **1**. **Expertise:** Access to key experts and facilities in the field of polymer science and engineering, with over 100 years of experience in Industry.  **2.** **APT's Sectors:**   * Polymer Processing * Testing & Investigation * Product Design & Prototyping.   **3.** **Funding Support:** Secure Financial assistance to fuel your projects.  **4.** **Innovation Vouchers:** To explore new opportunities. Develop new products, processes, or services, and up to four vouchers for SMEs available.  **5.** **Innovation Feasibility:** An Innovation Partnership Feasibility Study is a small, short-term study designed to enable the Principal Investigator (PI) to develop a proposal for a full Innovation Partnership Application. Maximum funding for an Innovation Partnership Feasibility study provides 100% grant to a limit of €9,000.  **6.** **Innovation Partnership:** Access our expertise and collaborate on tailored research solutions to meet your business needs. A full innovation partnership, where up to 80% funding can be sought. Maximum Enterprise Ireland funding of €200,000 and further funding can be made available in a case-by-case basis.  **7.** **Flexible Options:** Tailored programs to suit your company's needs.  **8.** **Streamlined Process:** Simplified application and fast-track approval. | | | | |
| **APT**  **Applied Polymer Technologies Ireland**  **Your Industry Partner Since 2013** | For more information about our facilities and the work we do at APT, please visit our website Website: <https://prism.tus.ie/apt-gateway/>  If you would like to connect with us directly, feel free to reach out through our contact page Contact Us: [https://prism.tus.ie/contact-us/](https://041-studio93.trakqit.com/?u=https:%2F%2Fprism.tus.ie%2Fcontact-us%2F&e=2c4f9126cb080254aed471ceeb9e6490) | | | | |

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| **Health and Wellbeing Bioscience Research Institute (LIFE RI)** |  | **Dr Margaret Brennan Fournet**  **Dr Marija Mojicevic**  **Dr Tim Yeomans**  **Dr Lena Madden** |  | [margaret.brennanfournet@tus.ie](mailto:margaret.brennanfournet@tus.ie)  [Marija.Mojicevic@tus.ie](mailto:Marija.Mojicevic@tus.ie)  [Tim.Yeomans@mtu.ie](mailto:Tim.Yeomans@mtu.ie)  [Lena.Madden@tus.ie](mailto:Lena.Madden@tus.ie) |
| Circular Agriculture and Biotechnology group CIRCAB  Sport and exercise promotion for optimal health and wellbeing (SHE)  <https://sheresearch.ie/>  National Bioeconomy Campus: circularity for meat, agri-food and biomass  Sustainable Technologies for Food Packaging | LIFE Research Institute (RI) delivers innovative research solutions in bioscience, biotechnology, and sports science, propelling sustainable progress in human and environmental health, performance and wellbeing. Established in 2023, LIFE RI acts as a campus-wide conduit, building the reputation of TUS for excellence in bioscience research and technology, to support regional and national enterprise and enhance our regional and national innovation ecosystem. Working in tandem with nature, with expert understanding and talent in harnessing relationships between the micro structure of biomaterials and their macroscopic functions to deliver key solutions enabling performance enhancement to meet our health and environmental challenges. These multidisciplinary activities encompass strategically important areas of microbiology, fermentation, bioprocessing, biorefining, toxicology, parasitology, analytical chemistry, cell and molecular biology, bioinformatics, immunology, sports and exercise science, nutrition, health systems and other wider ranging disciplines. Examples of LIFE RI activities include:  Circular Agriculture and Biotechnology group CIRCAB Specialising on the transition of existing linear businesses into a circular process, bringing them to potential zero-waste path. The research and innovation include valorisation of manufacturing by-products, bio-energy, fertilisers and bioactive studies. Patterns of biomaterials degradation and analysis of by-products.  All processed are developed and delivered for industry members from lab-scale through to pilot scale of 250L to Demonstration level – up to 1000L.  All fertilisers, augmenters and soil management practices are tested in growth chambers and open fields to the highest level of European standards.  Pilot-scale circular biotechnology suite comprising of: 250L chemical reactor, 250L pressurised reactor; alpha Laval 3-phase centrifuge, SANI membrane system, High pressure nanofiltration system, closed-loop photobioreactors – 2 x250L and 2x-25L; 2x300L anaerobic digestors, auxiliary integrated items. microbiology suite; nanodrop  Sport and exercise promotion for optimal health and wellbeing (SHE). The SHE Research Centre is at the forefront of addressing the gender data gap in sport, health, and exercise science. Focusing on society’s least active members, particularly girls and women, the Centre develops evidence-based strategies to enhance physical activity, improve health outcomes, and optimise athletic performance. Analysing the sex-specific experiences of female athletes to improve health and performance, creating an innovative hydrogel for bioactive nutrient delivery with a focus on polyphenols, and assessing the impact of lifestyle interventions on childhood cancer survivors are examples of current RD&I. The SHE Research Centre is available for engaging with clients developing technologies and products for healthier and more inclusive future  National Bioeconomy Campus to bolster circularity for meat, agri-food and biomass sectors. Located at a peatlands site (Mount Lucas), facilities and being developed for upscaling bioprocessing of complete bioresources, such as all left-over meat parts, to pilot level is being developed using best-practice methodologies to achieve processing circularity. Barriers, including the competitiveness of bio-based products and weak primary producer value chains, are being addressed to enable the transition to circular and sustainable models. One key avenue is the BioWetlands in-action project which provides a visual archetype of the ‘bioeconomy’. Aquatic plants have higher photosynthetic efficiencies than land-based biomass production. Performing as a circular peatland with integrated feeding and nutrition aquaculture, the Mount Lucas site showcases how environmentally friendly practices can operate, producing new feeds and food ingredients from cultivated duckweed and macroalgae, using agri-food waste streams. This integrated-multitrophic aquaculture/aquatech (IMTA) site also facilitates renewable living organisms, such as perch and rainbow trout, which can be used to produce food and energy Mount Lucas Bioeconomy campus provides a means to bridge the gap between early-stage demonstration, and market implementation, leading to full industrial adoption  Sustainable Technologies for Food Packaging Using expanded suites of new mechano-green-chemistries, exploiting untapped biopolymer structure–property relationships, along with dedicated economic/environmental assessments, the potential for implementation of dynamic closed-loop circularity and new product design delivering simultaneous performance and sustainability is being developed. Addressing key challenges including:   * Providing access to new circular, sustainable packaging capable of meeting industrial requirements (durability, mechanical performance, aesthetics, moisture and gas barrier properties, biodegradability) circular life cycles). * Building viable economic models encompassing circularity-by-design and sustainable circular end-of-life routes enabling industry uptake, where resources are not lost and economic value of the materials is maintained in a circular value chain * Identifying specific sustainable food packaging prototypes with high commercial potential and defined routes to producing and manufacturing at a large scale, with LCA results and economic viability.   There new circular plastics products and prototypes provide routes to the circular plastics economy with low-carbon, industrial-grade plastic packaging with circular lifecycles is being developed as a direct alternative to current polluting petroleum-based plastics. | | | |
| Centre for Applied Bioscience Research (CABR) [www.cabr.ie](http://www.cabr.ie)  Contact:  Dr Tim Yeomans (Centre Manager); [tim.yeomans@mtu.ie](mailto:tim.yeomans@mtu.ie)  Dr Sushanta Saha (Senior Business development Scientist); sushanta.saha@tus.ie  Dr Martin Hayes (Senior Business development Scientist); [martin.hayes@tus.ie](mailto:martin.hayes@tus.ie) | The Centre for Applied Bioscience Research is a commercially focused, state of the art, Research Centre and Technology Gateway. It is a collaboration between the Technological University of the Shannon: Midlands Midwest and Munster Technological University. CABR brings together a multidisciplinary team of researchers with commercial specialists so as to provide a centre of excellence in applied research, capable of exploiting opportunities in science and technology to the benefit of the Regional and National economy. The CABR Technology Gateway is co-funded by the Government of Ireland and the European Union through the ERDF Southern, Eastern & Midland Regional Programme 2021-27.  CABR has developed significant expertise in bioresources – detection, identification, characterisation and valorisation – and collaborates with industry and other research centres in order to deliver this expertise in applied settings. This bioresource innovation supports a circular bioeconomy through screening, processing/extraction, purification, characterisation and application support. CABR has analytical, microbial, biotechnology, cell biology and food innovation expertise, supported by a significant dedicated laboratory and state of the art equipment. CABR works with a range of industry sectors including: **Agriculture, Bioeconomy, Biotechnology, Cosmetics, Nutraceuticals, Bio/Pharma, Environmental, Food and Drink, Marine and Health.**  The Centre’s expertise is divided into 5 Technology Themes:   1. **Bioeconomy and Bioresource Solutions**​  * Helping companies deliver a circular bioeconomy through biomass screening, processing/extraction, purification, characterisation and application support. ​   **2. Analytical and Research Service Solutions**​   * State of the art analytical instrumentation for the Cosmetics, Biotechnology, Environmental, Nutraceutical and Bio/Pharma sectors​   **3. Microbial Biotechnology Solutions**​   * Bacterial, fungal and microalgal innovation for Cosmetics, Biotechnology, Environmental, Nutraceutical and Bio/Pharma sectors​   **4. Cell Biology Solutions**​   * Mammalian cell culture for Cosmetics, Healthcare, Nutraceutical, Bio/Pharma & Biotechnology sectors​   **5. Food Innovation Solutions**​   * Laboratory testing and expertise to support the Food & Drink sector | | | |