Results of Competition: Innovation to Commercialisation of University Research (ICURe) Follow On Funding: FY20 Round 1 (9th Competition)

Competition Code: 2007_CRD_CO_ICURE_FY20_R1

Total available funding is £1 million

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

Participant organisation names	Project title	Proposed project costs	Proposed project grant
FIGURA ANALYTICS LIMITED	Figura Analytics	£210,014	£210,014
Manufacturing Technology Centre		£89,905	£89,905

Note: you can see all Innovate UK-funded projects here: https://www.gov.uk/government/publications/innovate-uk-funded-projects
Use the Competition Code given above to search for this competition's results

Project description - provided by applicants
Today at least two-thirds of the global population, over 4 billion people, live with severe water scarcity for at least one month every year, according to a major new analysis by the Twente Water Centre. Companies that heavily rely in water for their products or services are constantly encouraged to implement solutions that can address the reduction of water wastage whenever possible. This drives the development of new technologies that can offer such solutions. Our proposition here is to develop a low-cost technology that can be part of such solutions. Soft drinks can naturally get infected with a range of bacteria, moulds and yeast, some of them are harmful to human consumption. A well-established route to screening for bacteria is the use of microbiology testing which can take anything between 3-5 days to get results back. Such waiting times can carry significant delays in getting the product to the shelves. Also, current microbiology methods provide information to manufacturers late in the manufacturing process where not much can be done for that specific batch, but can be adjusted for future batches. Therefore, a contaminated batch will go straight to waste and valuable resources will be lost. Figura's approach will enable soft drink manufacturers to have a rapid quality control device that allows them to take corrective measures during a batch production of product. The technology allows for the drinks to reach shelves quicker and limits the amount of waste that occurs from the drinks industry as a result of contamination. The technology can work with dirty samples with no sample preparation required. It is non-destructive analysis platform that can measure contamination regardless of the solution turbidity -- currently not possible with optical techniques. The technology's small footprint would enable easy integration into current manufacturing workflows with minimal disruption. The business potential is significant -- In 2019 the drinks and juice markets estimated to be worth £16bn a year in the UK (statistica,2019). While the global food and drinks microbiology testing market totalled 1.14 bn tests in 2016, growing at approximately 5.0 percent annually (statistica. 2020). The innovation and project are timely. Figura's technology can strongly position itself to disrupt a well-established market, while also reducing the environmental load of water wastage in drinks production transportation reflected in carbon footprint.

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
Tagomics	Tagomics LTD	£299,213	£299,213

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Project description - provided by applicants
Cancer is a growing concern globally, with cases set to rise to 21.6M by 2030 (American Cancer Society) with a cost of $458B. Cancer cases in the UK alone are set to rise to 514,000 cases per year by 3035 and the cost of care is predicted to be £15.3B in 2021 alone (NHS). Cancer also has a significant economic expense of around £7.6B per year in the UK, with around 53% of patients seeing a fall in income by at least one income bracket (Pfizer). Despite clear evidence that early detection saves lives, there are still low compliance rates with screening tests (e.g. colonoscopy, mammogram, smear test etc) due to the invasiveness of these approaches. As a result, less invasive methods of detection have been much sought-after, and a number of simple blood-based tests have been successfully commercialised to address these challenges. However, the low sensitivity/specificity of these approaches makes early detection and identification of the location of the cancer, difficult. Chemical modifications to our DNA called 'methylation' control which of our genes are switched on or off. Identifying the location of DNA methylation marks and quantifying and their effects allows us to develop more effective detection tests. However, reading these modifications can be difficult and prohibitively expensive using existing technologies. Tagomics is a spin-out from the University of Birmingham, founded to ensure that our fundamental research reaches the clinic and that we deliver a tangible improvement in cancer diagnosis and treatment, as a result. Our novel platform technology captures the unmodified (switched-on) locations of the genome, allowing for specific and straightforward analysis of the changes that occur during disease. The sensitivity of our approach opens up the possibility of simple, accurate and early detection of cancer and the tissue from which it originated, from a simple non-invasive blood test. Routine screening and earlier detection of cancer will mean clinicians can make more informed treatment decisions sooner in the cancer development pathway. Ultimately, this will reduce the duration and cost of therapy, improve patient outcomes, increase survival rates and decrease the burden on our stretched healthcare system. Tagomics will apply its innovative technology to discover new markers of cancer and through the development of strategic partnerships, we will turn these disease markers into world-leading clinical tests capable of detecting and diagnosing cancer earlier, with the ultimate aim of detecting and assessing multiple cancers from the same single blood draw.

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Competition Code: 2007_CRD_CO_ICURE_FY20_R1

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Participant organisation names	Project title	Proposed project costs	Proposed project grant
HydRegen	HydRegen: a sustainable chemistry platform	£299,896	£299,896

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Project description - provided by applicants
We have developed sustainable technologies that address unmet needs in the chemicals sector through academic research at the University of Oxford. Chemicals companies are interested in our technologies because they remove the need for toxic reagents, minimise the production of carbon-based waste products and lower energy demands compared to existing manufacturing routes. Our biocatalyst systems can be operated in continuous flow, allowing sustainability at the same time as improving productivity, overall allowing cheaper, faster, cleaner and safer production of speciality chemicals (e.g. pharmaceutical, flavours and fragrances). During the project we will produce prototype catalysts, and distribute them to industry partners. Using their feedback we will carry out product development research towards launch of our first commercial product: a 'bio-flow column' that allows clean and safe reactions with exquisite precision. We will also demonstrate our catalyst systems at pilot scale for kg production of a fine chemical. This project will allow us to form a spinout company, and take our technologies from academic research to commercial product, and will ultimately play a part in cleaning up the chemicals sector.