MAYNOOTH UNIVERSITY COMMERCIALISATION
CREATING HIGH POTENTIAL START-UPS AND VALUE FOR INDUSTRY PARTNERS

AREAS OF EXPERTISE
BIO SCIENCES; CHEMISTRY; COMPUTER SCIENCE; ENGINEERING; ICT; PSYCHOLOGY; ANTHROPOLOGY; PRODUCT DESIGN; ARTS & HUMANITIES; BUSINESS; DESIGN THINKING; LANGUAGES; PHYSICS; MATHEMATICS.

EMERGING OPPORTUNITIES
1. Pathogen Responsive Biosensors
2. Crohn’s Disease Diagnostic
3. Microbiome Discovery
4. Quantitative Fluorescently Labeled Protein Assay Detector
5. Novel Biomarkers for Head and Neck Squamous Cell Carcinomas
6. Improving Base Station Amplifier Performance
7. Chitinase Inhibitor Therapies for Inflammatory Bowel Disease
8. Brain Energy Technologies
9. Biomarker Sensors
10. Geophysical Mapping
11. Unidoodle

RECENT INDUSTRY COLLABORATIONS

OUR SPINOUTS

DEVELOPMENT STAGES of Emerging Opportunities

IDEA TECHNOLOGY ASSESSMENT / IP PROTECTION PROTOTYPE DEVELOPMENT COMMERCIALISATION

STAGE 1 STAGE 2 STAGE 3 STAGE 4 STAGE 5 STAGE 6

Funding support for the Commercialisation Office is provided by
rapid changes in phase causes bandwidth expansion (BER). MU researchers have modified a signal phase in the amplifiers non-linear region at lower amplitudes to create a more gradual rate of change of phase. The bandwidth reduction that occurs due to phase modification reduces the requirements for frequency-flat high-precision components in the dual path transmitter required for outphasing. reducing the requirement for dynamic range of the amplifier has the potential to allow for a reduction in the manufacturing tolerances required for an implemented system. For example in an outphasing amplifier, the requirement to balance each path of the amplification stage exactly can be reduced, leaving a more flexible design which could allow a wider bandwidth or more frequency flexible amplifier to be designed.

Development stage 3: Prototype [bench demonstrator]

We have developed small molecules with strong anti-inflammatory effects in cell based models, with potential for treating iBd. We propose to further define their therapeutic potential by evaluating their efficacies in preclinical models of inflammatory bowel disease and in ex vivo clinical samples.

Development stage 4: Development

We have developed novel biosensors to selectively monitor neurochemicals in the living brain on a timescale from milliseconds to days. The sensors are used to understand the complex functioning of the brain in terms of behaviour and disease. One of the major hurdles to the discovery of new medicines to treat psychiatric and neurological disorders is the paucity of suitable animal models capable of predicting clinical benefit. This is particularly true of disorders associated with cognitive disturbance such as schizophrenia and Alzheimer’s disease. The sensor monitoring concept provides a solution to this deficit in pre-clinical drug discovery in that it enables the recording of continuous signals, in freely-moving behaving animals, of the haemodynamic and metabolic consequences of neuronal activation that form the basis of functional brain magnetic resonance imaging in man. The work also has significant potential clinical applications.

Development stage 5: Commercialisation

We have assessed the levels of expression of Pellino3 protein in colonic biopsy samples from healthy, Cd and UC patients. The data demonstrates that the levels of Pellino3 protein are strongly reduced in colonic tissue from Cd subjects relative to control or UC subjects. These data suggest that the protein expression levels of Pellino3 may be a strong diagnostic indicator of subjects with Crohn’s disease and we propose a Pellino3-based test as a diagnostic.

Development stage 2: Technology Assessment/IP Protection

The Centre for Ocean Energy Research (COER) at Maynooth University has core strengths in mathematical modelling, control systems, prognostics and optimization – all focused on ocean energy research. The Centre collaborates with several major players in ocean energy and makes available modelling and control technology to these partners under licence.