

Pharmaceuticals

Food Technology

Medical Devices

Sensors & Systems

Wide Field Fluorescence Imaging System



Irish MedTech Awards 2018 Category Finalist

CAPPA and Hooke Bio have been shortlisted as one of three finalists in the category **Academic Contribution to MedTech** for the Irish MedTech Awards 2018. Hooke Bio is an emerging biotech company focused on the development of high throughput and high content testing platforms for faster and more effective drug screening. The nominated project is developing a wide field fluorescence imaging system.

The Problem: Need for Microfluidic Screening

There is an important unmet need for new medicines that can be mediated by the use of ultra-high-throughput microfluidic screening. In drug discovery, pharmaceutical companies screen thousands of possible drug candidates against disease models. However some 95% of new drugs fail during development, with many failures attributed to efficacy and safety issues as the industry currently does not have the capacity to screen every possible drug candidate, concentration or vary the drug efficacy safety tests due to sheer numbers. **High-throughput screening is required to screen vast numbers of drugs** and drug combinations, as their effects on cells are difficult to predict. As a result, the testing of such drugs becomes an engineering issue.

The Hooke Bio Solution

Hooke Bio has developed a platform that runs screening tests 20 times faster and at a quarter of the cost of current commercial systems. The Enigma Platform integrates dispensing, incubation and measurement on one platform without the need for robotics. In addition to being faster and cheaper, it can also undertake 3D cell culture. This means pharmaceutical companies can test new drugs against more physiologically relevant cell disease models.


www.hookebio.com

Hooke Bio is a microfluidics company operating in the preclinical drug discovery and personalised medicine. It draws its strength from the close co-operation it has between its biologists and engineers. Hooke Bio has patented microfluidics technologies that allow their screening platform to work with volumes of liquid 10 to 100 times less than current liquid handling systems. This approach requires very high throughput automated testing at small volumes with relevant, translatable disease models. Their primary focus is on drug combinations.

CAPPA has assisted Hooke Bio with:

- **Developing the photonics**
- **Imaging and image analysis elements**
- **Improving the system from a single line test unit to an 8\16 line unit**
- **Designing and prototyping a bespoke imaging system**
- **Integration with a tailor made software solution**



"I would happily recommend CAPPA because of their high levels of expertise. CAPPA are very flexible and willing to engage with industry. I wouldn't even know where to look for the service in the country and probably in Europe"

– Mark Lyons, CEO

Benefit for Patients

- **Personalised combination screening could become a reality and would remove the element of uncertainty that surrounds chemotherapy**
- **Employing combination screening and drug repurposing could be used to treat a wide range of diseases such as cancer and heart disease**

Benefit for Healthcare System

- **Integration of dispensing, incubation and measurement on one platform without the need for robotics**
- **Ability to test new drugs against more physiologically relevant cell disease models**
- **Unlimited drug screening at the early crucial drug discovery phases**

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