CORK INSTITUTE OF TECHNOLOGY
INSTITIÚID TEICNEOLAÍOCHTA CHORCAÍ

Spinout Opportunity

Portable ELISA Reader

THE PROBLEM

Current commercially available ELISA (Enzyme-linked immunosorbent assay) plate readers consist of bulky monochromators, complex optics and moving parts in order to facilitate multiple tests. Thus, they are very expensive and cannot be easily moved from a centralised lab oratory due to their size.

Moreover, current ELISA devices read each well in a microplate sequentially resulting in long analysis times which does not permit real-time analysis.

SOLUTION

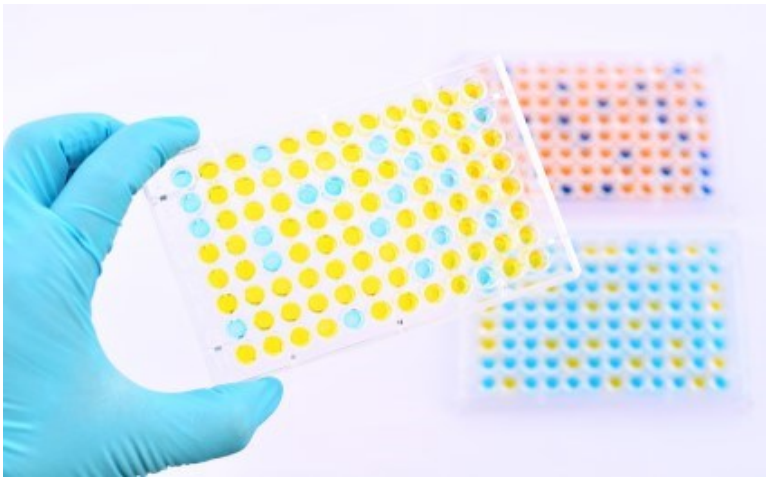
Researchers in CAPPA in CIT have developed a novel multimode and portable ELISA plate reader. The team have replaced the conventional parts of the reader (Light source, Light Detection Unit and Light Delivery and Collection System) with novel optical parts that don't require any moving parts and which are compact, as small as a matchbox, thanks to recent advances in photonic devices.

Due to these advantages, the size of the overall ELISA plate reader is shrunk to the size of a modern smartphone. Thus, these ELISA plate readers can be handheld, low-cost, light weight and contains no moving parts, thus making them robust for both Point of Care (POC) and industrial usage.

The team has also developed a method to read all 96 well-plates in real-time, thereby dramatically reducing the analysis time.

The CAPPA solution is low-cost, compact, low-power consuming, requires little maintenance, and operates in real-time.

DESCRIPTION



STAGE OF DEVELOPMENT

The CAPPA research group **(www.cappa.ie)** in CIT plan to have working prototypes in Q3 2020. The team will then benchmark test the new reader against existing ELISA plate readers using key performance parameters such as accuracy, reliability and speed.

The system is expected to reach a Technology Readiness Level (TRL) of 5 at the end of the current project and the team plan to further increase this level through follow on funding.

CIT is currently seeking business partners with the necessary contacts network, experience and skills to become involved in a Spin-out company focused on commercialising this technology.

For more information please contact:

Ronan Coleman

Tel: +353 (21) 4335571

Email: ronan.coleman@cit.ie

Mobile: +353 (87) 9547629

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