



Fluorescence-Based Small Mole-cule Immunoassays and Reader Platforms



VTT Technical Research Centre of Finland

BACKGROUND and BASICS

Present Point-of-Care diagnostics equipment is bulky, expensive, and often tied to proprietary test vehicles and formats. To increase acceptance in markets, such as

- Rapid medication monitoring
- Emergency care
- Road-side drug tests

future instruments must address the so-far unfulfilled market needs of

- Rapid, specific, reliable diagnostics methods
- Small, robust, low power readers
- Flexibility with respect to test vehicles.

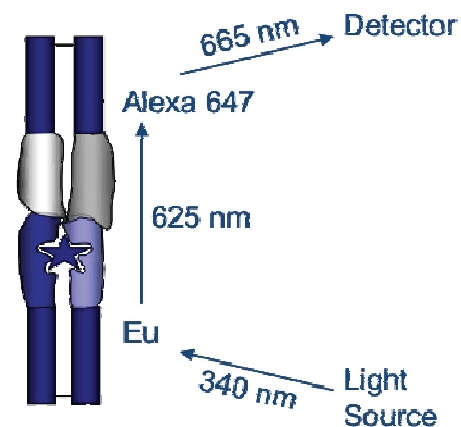
As one of the largest R&D contractors in the development of on-line optical analysers in the world, VTT has addressed these issues and offers now superior diagnostic test platforms for companies interested in commercializing them.



CONCEPT and SOLUTION

VTT developed a hand-held device for systematic flow channel analysis for quantitative and qualitative evaluation of various fluorescent label and gold particle test strips, which allows for realtime analysis of reaction kinetics and wireless data transfer.

To improve reliability and speed of the analysis particularly of small sample volumes, VTT developed a novel method which utilises recombinant antibody technology. This fluorescence resonance energy transfer (FRET) based homogeneous noncompetitive immunoassay can be applied to any kind of analytes. A novel small tabletop reader delivers test results of an array of eight samples in just 30 seconds.

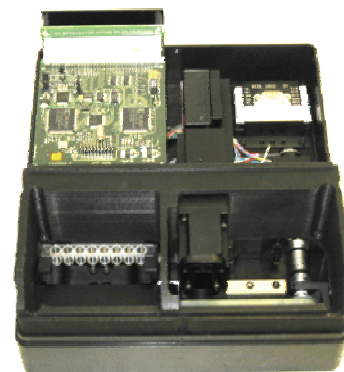


STATUS and OUTLOOK

Prototypes and low volume shipments of flow channel and TR-FRET readers are available through VTT.

For technology transfer to interested parties, the Research Centre offers licensing and assists with its contractor network for OEM manufacturing.

With over 50 experts in optical engineering and measurement technologies, process analysis and modelling, optoelectronics, machine vision, image analysis, and high precision optomechanics, the Research Centre's Optical Sensors and Instruments unit offers also customization and adaptation to specific applications.



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