CENTRE FOR DIGITAL LIFE NORWAY

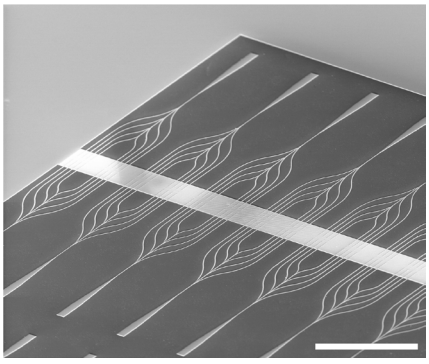
Lab-on-a-Chip

– Fast and Cheap On-Site Disease Diagnosis

Early detection of diseases dramatically increases the chance for successful treatment. With immediate access to a micro laboratory, physicians can make accurate diagnoses much faster than if they have to send patient samples to a laboratory for analyses.

Our lab-on-a-chip (LOC) is a table top sized label-free biophotonic platform that will perform highly sensitive and selective quantitative analyses of biomarkers from patient blood or urine samples. The platform enables numerous biomedical applications including diagnosis or monitoring of infectious and inflammatory diseases and cancer, on site at the doctor's office.

Our LOC is based on a unique technology using microfluidic channels and nano-sized sensors that are surface functionalized to attach different biomarkers specific for the diseases in question. The design of the sensor platform, with its multiple channels on a single chip, enables multiplexed analysis of several substances at the same time within tens of minutes. The goal is to create a cheap and disposable lab-on-a-chip that may be used in doctor's offices worldwide, in both industrialized and developing countries. A proof-of-principle prototype is currently under development using three biomarkers with required limit-of-detection (from 5 µg/ml to 5 ng/ml) for the measurements to be physiologically relevant.



Value proposition
Fast on-site analysis of multiple biomarkers with small volumes of blood, plasma or urine using our LOC table top diagnostics platform.

Opportunities for collaboration

We welcome collarboration with both academia and industry on interesting biomarkers to analyze using our platform.

Scientific fields and technology
This groundbreaking project combines expertise from medicine, bioengineering, micro-/nanofluids and nanophotonics.

Resources and partners

- The project has been granted € 2.3 Million from RCN for 2016-2020 and is part of the Centre for Digital Life Norway.
- Total budget € 3.5 Million
- Collaboration with SINTEF Digital
- IPR is handled by NTNU Technology Transfer

Contact information

Astrid Aksnes
Principal Investigator, NTNU
astrid.aksnes@ntnu.no

Tonje S. Steigedal
NTNU Technology Transfer
tonje.s.steigedal@ntnu.no

Alexandra Patriksson
Centre for Digital Life Norway
alexandra.patriksson@medisin.uio.no

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SINTEF
NTNU Norwegian University of Science and Technology