

**Lab-on-a-Chip devices:
At the Intersection of Chemistry, Physics, Biology and Engineering**

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Research within the field of lab-on-a-chip technology is truly cross-disciplinary, as the devices used exploit interesting physical phenomena on small length scales (micro to nanometer) while being geared towards applications in chemistry, biochemistry and the biomedical area. Additionally, manipulation of liquids confined in tiny conduits as well as integration of many different functionalities requires excellent engineering capabilities.

At DTU Nanotech, we have been tackling several of these challenges over the last years. While a lot of effort has gone into generating platforms it is now time to focus more on applications. I will give examples of research related to such topics as integrated waveguides, fluidic manipulation and monitoring, as well as efforts in understanding protein interactions with the help of microfluidics and synchrotron radiation, and developing smart diagnostics tools for diseases such as Alzheimer's and HIV infections.