



**Lab on a Blu Ray: magnetic nanotechnology enables smart diagnostics**

We present a novel diagnostics technology for the early detection of various diseases from a single drop of blood. By combining magnetic nanoparticles physics and Blu-Ray optics, highly sensitive bio-markers quantification is obtained within a compact detection module. State-of-the-art centrifugal microfluidics technology implemented over a plastic cartridge enables high accuracy and a very short sample-to-answer-time.

The system has been demonstrated both for detection of several protein biomarkers for inflammation, diabetes type II, Dengue fever and for bacteria quantification in urine via molecular amplification.

Thanks to the simplicity, low cost and full cloud connectivity, the device is well suited as well for developing world settings. The technology is now being commercialized by the startup company Blusense Diagnostics, which currently holds operations in Denmark and in Taiwan, in close connection with Blu-Ray manufacturing lines.