

Abstract Submitted
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Open Loop Structure Low Cost Integrated Differential Inductive Micro Magnetic Volumetric Bio-Sensors MOHAMMAD KHODADADI, LONG CHANG, DIMITRI LITVINOV, None — This investigation proposes a study, model, simulate and experiment innovative very low cost Magnetic induction biosensor for point of care diagnostics. The biosensor consists of 2 “semi-loops” in a micro fluidic channel, one as a sensor and one as a reference, the design takes advantage of microfabrication processes to produce more precise structures to improve sensitivity. Besides the attractively low cost, this biosensor has many advantages. Since the detector is basically a shaped wire, it is inherently robust and reliable. Typical errors in fabricating the wires will not affect its performance and it is sensing volumetric, unlike GMR-based sensors used in biosensor systems that boast single particle detection. Due to small dimensions the sensors do not need to be calibrated. This sensor also has a large range of detection since its sensitivity is proportional to the excitation frequency. Being able to sense Magnetic nano particles in the volume is an advantage in term of trapping MNPs and sensitivity and functionality. Basically, this new brilliant design, fill the gap between the fabricated sensors and hand wounded sensors.

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None

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