## 9th MEFT workshop



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## **Optimization of the Passivation Layer**

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Nowadays, Biomedical Research and Medicine Clinics are relying substantially more on Lab-on-Chips to overcome daily tasks, such as clinical tests, mixing and separating substances, drug delivery, and so on. Magnetic Flow Cytometry is gaining relevance in these fields and the investigation of this type of cytometry is increasing exponentially in the last few years, including in INESC MN. In this work, we look forward to exploring the dimension's limitations of the Spin-valve sensors that constitute the Lab-on-Chip for Magnetic Flow Cytometry applications with the goal to increase the output signal of the sensor. More concretely, we aim to reduce the Passivation Layer of the nanodevice and test its durability in different environmental conditions. Further in this paper, we present a simulation showing that by reducing the Passivation Layer from 3000 Å to 500 Å the output signal increases almost 10%.

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