

In the frame of our ELECSPIN ANR project [1], we have an open position for a 12 months post-doc position. ELECSPIN project aims at developing spintronics devices based on manipulating magnetic properties by an electric field in oxides/ferromagnetic metal structures. The goal is to develop electric field assisted spin-transfer torque magnetic random access memories (STT-MRAM) that would be less power consuming.

The objectives of the post-doc will be:

- to fabricate nm-size magnetic tunnel junctions based on CoFeB/MgO, using clean room facilities (UV lithography, ion beam etching, reactive etching, evaporation of top electrodes) with various resistance area junctions and effective anisotropies
- to perform the magnetic (magneto-optic Kerr effect microscopes, vibrating sample magnetometer...) characterizations of the full sheet wafers and magnetotransport measurements of the magnetic tunnel junctions (dedicated setups for screening of the working devices and full characterization of STT switching current)
- to quantify and optimize the electrical assistance in STT writing by changing material parameters (barrier thickness, ferromagnetic electrode thickness composition, quality of interfaces...)

The post-doc will be part of a small team with strong interactions with team members and with other lab members.

Required qualification is a PhD degree in physics, materials or nanosciences/nanotechnologies. The candidate should have experience in nanofabrication, magnetism and/or in magnetotransport.

Applicants should send a CV, a letter of motivation, a brief description of scientific achievements including publications, and contact information for two references.

[1] ELECSPIN project

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