

Fabrication and characterization of composite antiferromagnetic materials for ultimate spintronics devices

Contact: Vincent BALTZ DSM/INAC/SPINTEC vincent.baltz@cea.fr 0438780324

PhD may follow: Yes

Summary :

Most spintronics devices like for example read-heads, magnetic random access memories and radiofrequency components use exchange bias interactions between a ferromagnet and an antiferromagnet. Part of our activities relies in the fundamental understanding of these interactions in order to further optimize and control the exchange bias properties and their distributions for integration in nanodevices. This mostly experimental internship will be pursued in this context and will consist in the fabrication and fine characterizations of new composite antiferromagnetic materials. The student can count on numerous facilities at the laboratory for samples fabrication and characterizations. This internship may be followed by a PhD thesis with possible industrial funding.

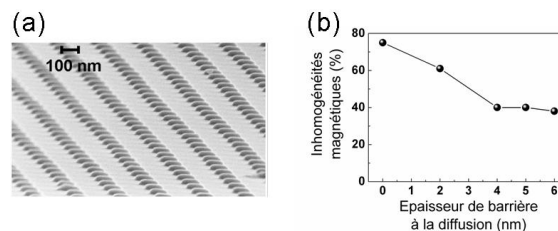


Fig. 1 : Ensemble de plots nanométriques ferromagnétique / antiferromagnétique obtenus après nanofabrication en salle blanche : images de microscopie électronique à balayage en incidence oblique. (b) Amélioration de l'homogénéité magnétique de l'interface par ajout d'une double barrière à la diffusion d'épaisseur variable [3].