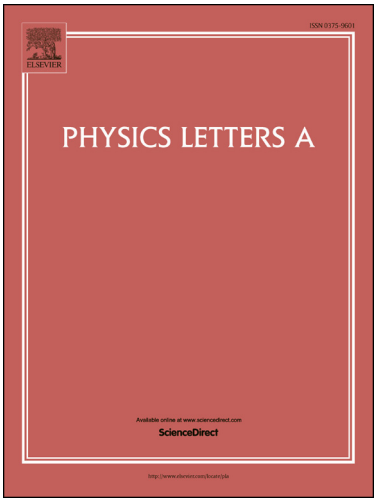
Accepted Manuscript



Exchange bias study of sub-100 nm-diameter CoFeB/IrMn antidot and nanodot arrays fabricated by nanosphere lithography

X. Li, C.W. Leung, C.-C. Chiu, K.-W. Lin, Mansun Chan et al.

PII: S0375-9601(16)32230-7
DOI: http://dx.doi.org/10.1016/j.physleta.2017.06.010
Reference: PLA 24557

To appear in: *Physics Letters A*

Received date: 29 December 2016
Revised date: 16 May 2017
Accepted date: 5 June 2017

Please cite this article in press as: X. Li et al., Exchange bias study of sub-100 nm-diameter CoFeB/IrMn antidot and nanodot arrays fabricated by nanosphere lithography, *Phys. Lett. A* (2017), http://dx.doi.org/10.1016/j.physleta.2017.06.010

Highlights

- The magnetic properties of amorphous-CoFeB/IrMn nanostructures were investigated.
- Nanosphere lithography was used to pattern sub-100-nm diameter nanodot and nanohole.
- The exchange bias follow similar 1/t thickness dependence as crystalline films.
- Low-temperature field annealing increases the IrMn crystallinity and exchange bias.
- High-temperature field annealing promotes diffusion and reduces exchange bias