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

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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

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