

Abstract Submitted
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Oscillatory Curie Temperature of Fe/ Cu-wedge/ Fe/ Cu(111) nanodots.¹ NOPPI WIDJAJA, Univ of Tennessee and ORNL, W.C. LIN, National Taiwan University, K. FUCHIGAMI, Univ of Tennessee, ORNL and IHI, M.A. TORIJA, Univ of Tennessee, M.-T. LIN, National Taiwan University, E.W. PLUMMER, Univ of Tennessee and ORNL, J. SHEN, ORNL and Univ of Tennessee — The interactions between two layers of Fe nanodots were studied as a function of the thickness of a Cu spacer layer. The bottom Fe-dot layer was grown on a Cu(111) substrate cleaned *in situ* by cycles of Ne-ion sputtering and annealing, employing a inert gas buffer layer assisted growth (BLAG) technique. Subsequently, a wedge-shaped Cu spacer layer was evaporated to cap the Fe-dots, followed by the growth of the top Fe-dot layer using the same BLAG method. Wedge-shaped samples are crucial for this study because the effects we are looking for are often subtle and would have been obscured by fluctuations in preparation conditions if we had to prepare a separate sample for each thickness. In-situ magneto-optical Kerr effect (MOKE) measurements were utilized to determine the local Curie temperature (T_C) at various positions on the wedged samples, and regular oscillations in T_C as a function of the spacer layer thickness were observed.

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