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Investigation of the effects of the metal-insulator transition of Vanadium sesquioxide onto a proximity coupled ferromagnetic thin film ANDREA FANTINI, BENJAMIN MADON, AAKASH PUSHP, PENG FA, JAE-WOO JEONG, YARI FERRANTE, SIMONE ALTENDORF, TIMOTHY PHUNG, STUART PARKIN, IBM Almaden Research Center — Vanadium sesquioxide (V2O3) is a classic material exhibiting a metal-insulator transition. It is a paramagnetic metal at room temperature and it becomes an antiferromagnetic insulator when cooled below 160 K, in bulk. We grow atomically smooth thin films of V2O3 (typical thickness 40 nm) by molecular beam epitaxy and cover it with an *in situ* sputtered ultra-thin ferromagnetic (FM) layer (typical thickness 2 nm). We measure the ferromagnetic resonance (FMR) response of the FM layer as a function of temperature across the metal-insulator phase transition of V2O3. We show how the dramatic phase change of V2O3 affects the dynamic magnetic properties of the FM layer.

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