

## EXCHANGE COUPLING IN WEDGED Fe/Ti/Fe TRILAYERS

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Fe/Ti/Fe trilayers with wedge-shaped Ti interlayer were prepared using UHV magnetron sputtering. The planar growth and interface alloying of the Fe and Ti layers was confirmed in-situ by X-ray photoelectron spectroscopy. Furthermore, structural and magnetisation studies revealed spontaneous formation of an quasi-amorphous Fe-Ti alloy layer at the interfaces during the deposition process. The hysteresis measurements showed that the Fe layers are weakly ferromagnetically (FM) coupled for  $\sim 3.5 \text{ nm} > d_{\text{Ti}} > \sim 2 \text{ nm}$ . The above behaviour was also revealed by systematical domains observation during the magnetisation reversal process in a magnetic field equal to  $H_c$ . Above  $d_{\text{Ti}} > 3.5 \text{ nm}$  a progressive transition to large independent domains takes place. The rapid decrease of the interlayer exchange coupling could be explained by its strong damping due to formation of a non-magnetic quasi-amorphous Ti-Fe alloy layer at the interfaces.