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Effects of Seed Layers on Ferromagnetic Resonance Linewidths of $Fe_{65}Co_{35}$ Thin Films LEI LU, KE SUN, MINGZHONG WU, JARED YOUNG, CHRISTOPH MATHIEU, MATTHEW HADLEY, COLORADO STATE UNIVERSITY TEAM, UNIVERSITY OF ELECTRONIC SCIENCE AND TECHNOLOGY OF CHINA COLLABORATION, SEAGATE TECHNOLOGY COLLABORATION
— Because of their high saturation magnetization and low coercivity, FeCo thin films have promising applications in both magnetic recording heads and sensors. In light of the applications in recording heads, there is a critical need for the understanding of high-frequency magnetic losses in FeCo thin films. This need is critical because the losses in these films can substantially affect the dynamics of magnetization reversal. This presentation reports for the first time the effect of seed layers on the ferromagnetic resonance (FMR) linewidth of $Fe_{65}Co_{35}$ thin films. Six 100 nm-thick films were prepared under the exact same conditions but on different types of seed layers. The FMR measurements were conducted over 8.5-17.5 GHz. The measurements show that the type of seed layer strongly affects both the level and frequency dependence of the FMR linewidth of the films. The results demonstrate the feasibility of the tuning of microwave losses in FeCo films through the use of different seed layers.

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