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# Impact of MgO thickness on the perpendicular magnetic anisotropy of Mo/Co<sub>2</sub>FeAl/MgO/Mo multilayers with improved annealing stability

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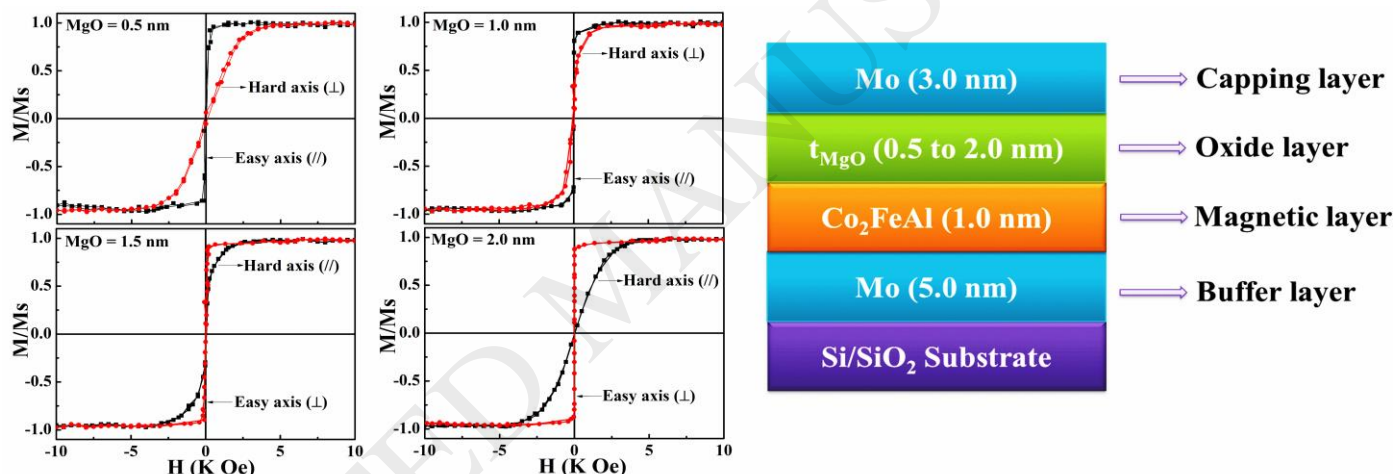
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## Graphical Abstract



## Highlights

- ❖ Robust PMA is demonstrated for thermally stable Mo/Co<sub>2</sub>FeAl(CFA)/MgO/Mo multilayer
- ❖ Thickness of CFA and MgO over-layer plays a main role in achieving the strong PMA
- ❖ Significant PMA energy of  $K_{\text{eff}} \approx 1.67 \times 10^6 \text{ erg/cm}^3$  is achieved for film annealed at 400°C
- ❖ Co and/or Fe – 3d<sub>z<sup>2</sup></sub> and O-2P<sub>z</sub> orbital hybridization at interface is the origin for PMA

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