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Changes in magnetic and electric anisotropy of Co₂FeAl Heusler alloy films due to oblique angle deposition ZEESHAN ALI, WEI ZHOU, JEFFREY BROCK, MAHMUD KHAN, KHALID EID, Miami University — We will present our studies of the structural, magnetic and transport properties of Co₂FeAl Heusler alloy films fabricated by magnetron sputtering-oblique angle deposition. Oblique angle deposition is when the substrate is not placed facing the source of atoms during growth, but is tilted at an angle. Increasing this tilt/glancing angle caused significant changes in the properties of the film making it more porous, where the films grow in isolated nano-pillars rather than being smooth and continuous. This in turn lead to significant changes in magnetic anisotropy, where the coercivity of the films increased dramatically from 30 Oe to 400 Oe, as the deposition angel was increased. The electrical resistivity of the films also increased steeply, especially for angles larger than 60.

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