



Contribution ID: 105

Type: Oral

Magnetic properties of RF-sputtered Co₇₁Pd₂₉ Film on Underlayers

Thursday, May 25, 2017 3:45 PM (15 minutes)

RF-sputtered Co₇₁Pd₂₉ film with the thickness of 117 nm was deposited on glass and on Al, Co, Cr and Ni under-layers. Magnetic and electrical properties were measured by VSM and 4-point probe techniques. All prepared Co-Pd film showed ferromagnetic phase at room temperature. The Magnetic anisotropy of all films excluding on Ni under-layer tended to normal to film plane. The parallel magnetic squareness of 0.33, 0.26, 0.27, 0.34 and 0.4 was found in the film on Al, Co, Cr and Ni under-layers and on glass, respectively. The highest perpendicular magnetic squareness of about 0.52 was observed on the Co-Pd film on Cr under-layer whereas the lowest magnetic squareness of about 0.18 was found in the film on Co under-layer. The electrical resistance of about 30, 20, 13, 45 and 35 Ω was found in the film on Al, Co, Cr and Ni under-layers and on glass, respectively. The results indicated that magnetic squareness tended to enhance whereas electrical resistance was decreased by under-layer insertion.

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Session Classification: A16: Magnetic and Semiconductor

Track Classification: Magnetic and Semiconductor Physics