

PMA CoFeB film M(H) Loops

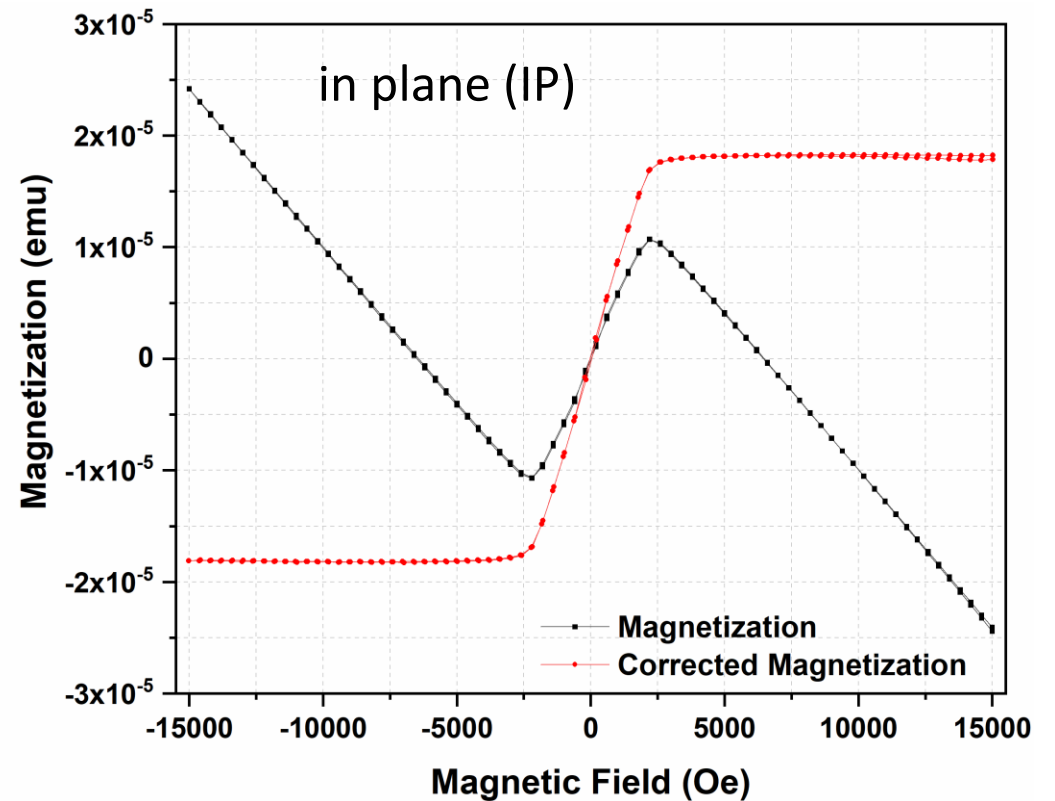
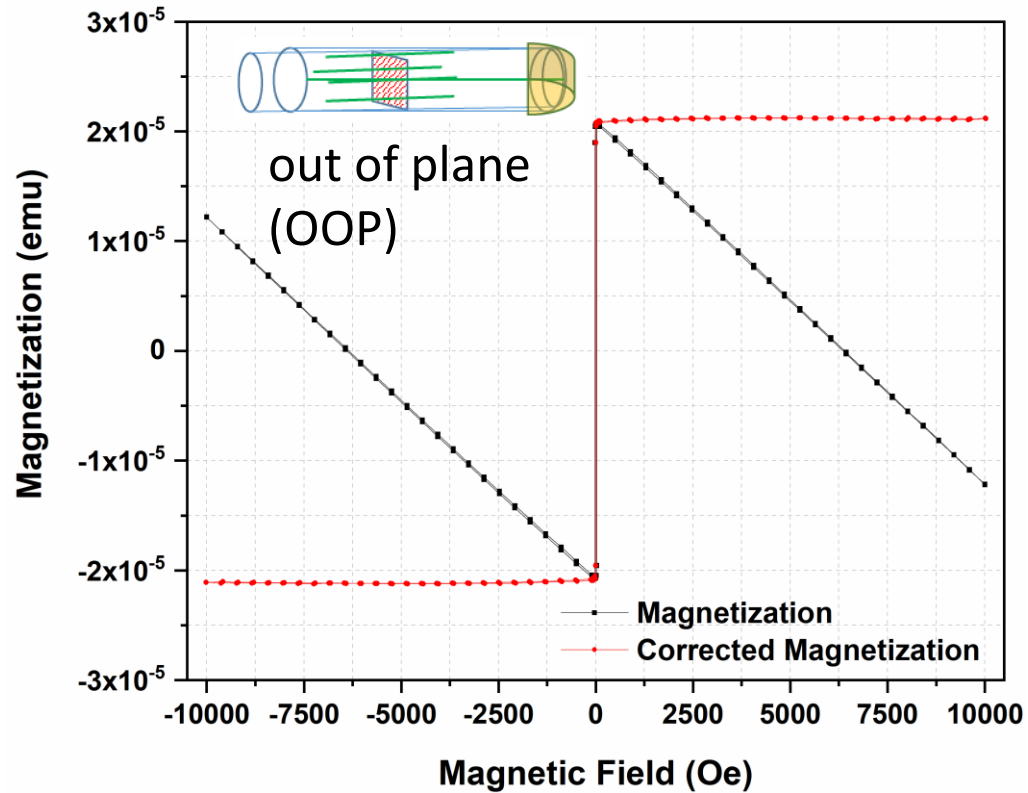
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- “PMA”: perpendicular magnetic anisotropy
- continuous film sample kept in MPMS-3 user kit in Spin Lab BRK 1157A
- sputter deposited film on Si/SiO₂[90]: Ta[]/CoFeB[1]/MgO[]/Ta[]
- CoFeB 1nm is nominal thickness, likely closer to 0.7nm
- sample size ~4x5mm
- mounted out-of-plane (easy axis for PMA) or in-plane (hard axis) in a straw

CoFeB M-H Loops---Raw Data

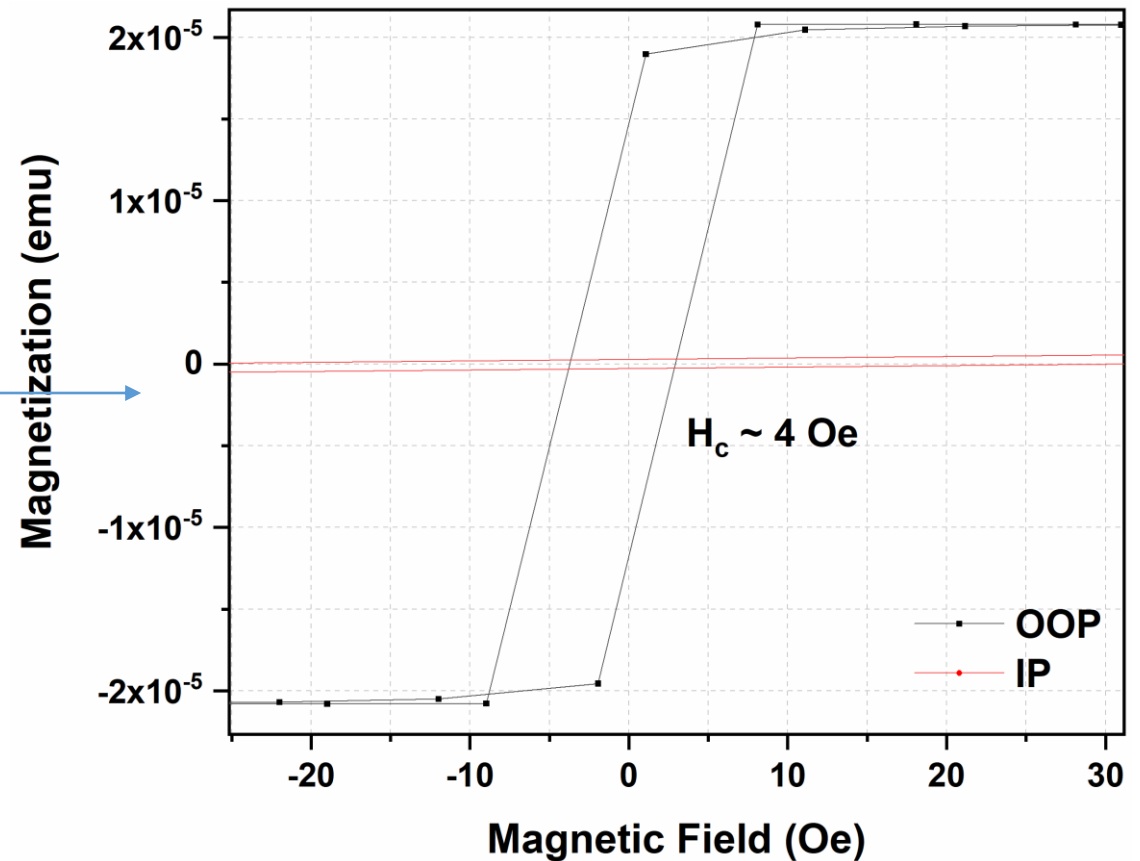
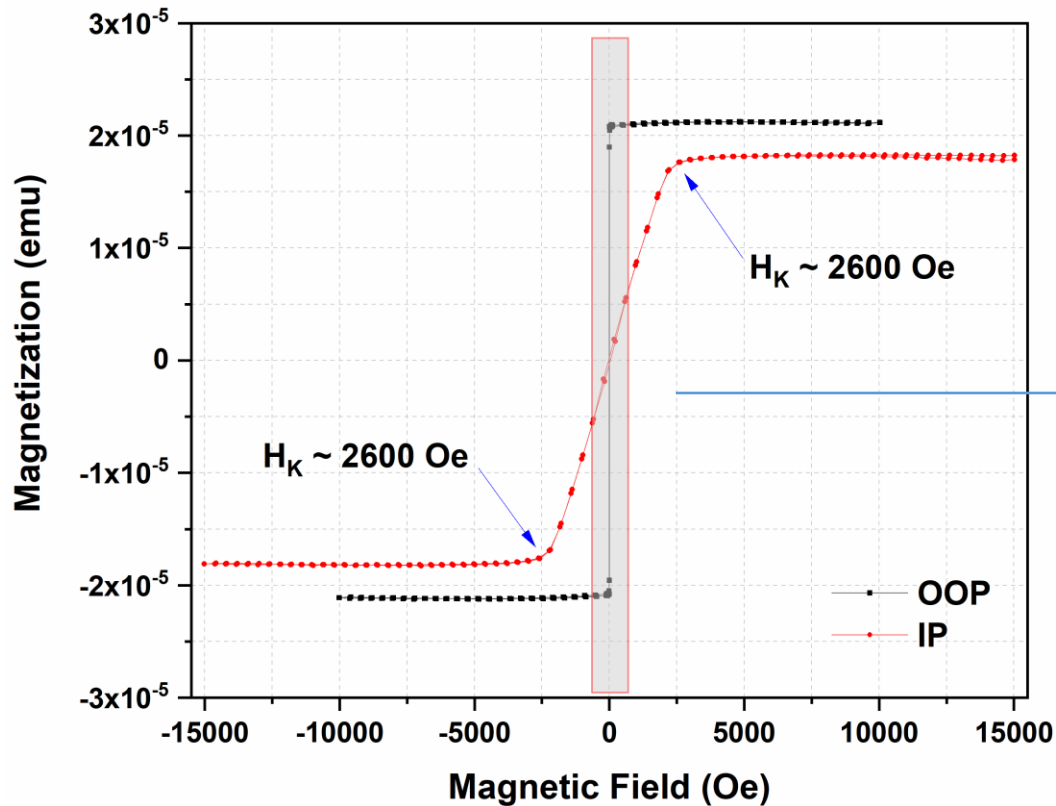
- Standard CoFeB PMA sample on Si substrate, using straw as the sample holder



- Confirm that the CoFeB sample is indeed PMA.

CoFeB M-H Loops---Comparison

- Standard CoFeB PMA sample on Si substrate, using straw as the sample holder



- higher apparent M_{sat} in OOP due to sample geometry (detection coil filling factor for IP vs. OOP), see MPMS training
- $H_c < 10$ Oe, and $H_k \sim 2600$ Oe.