

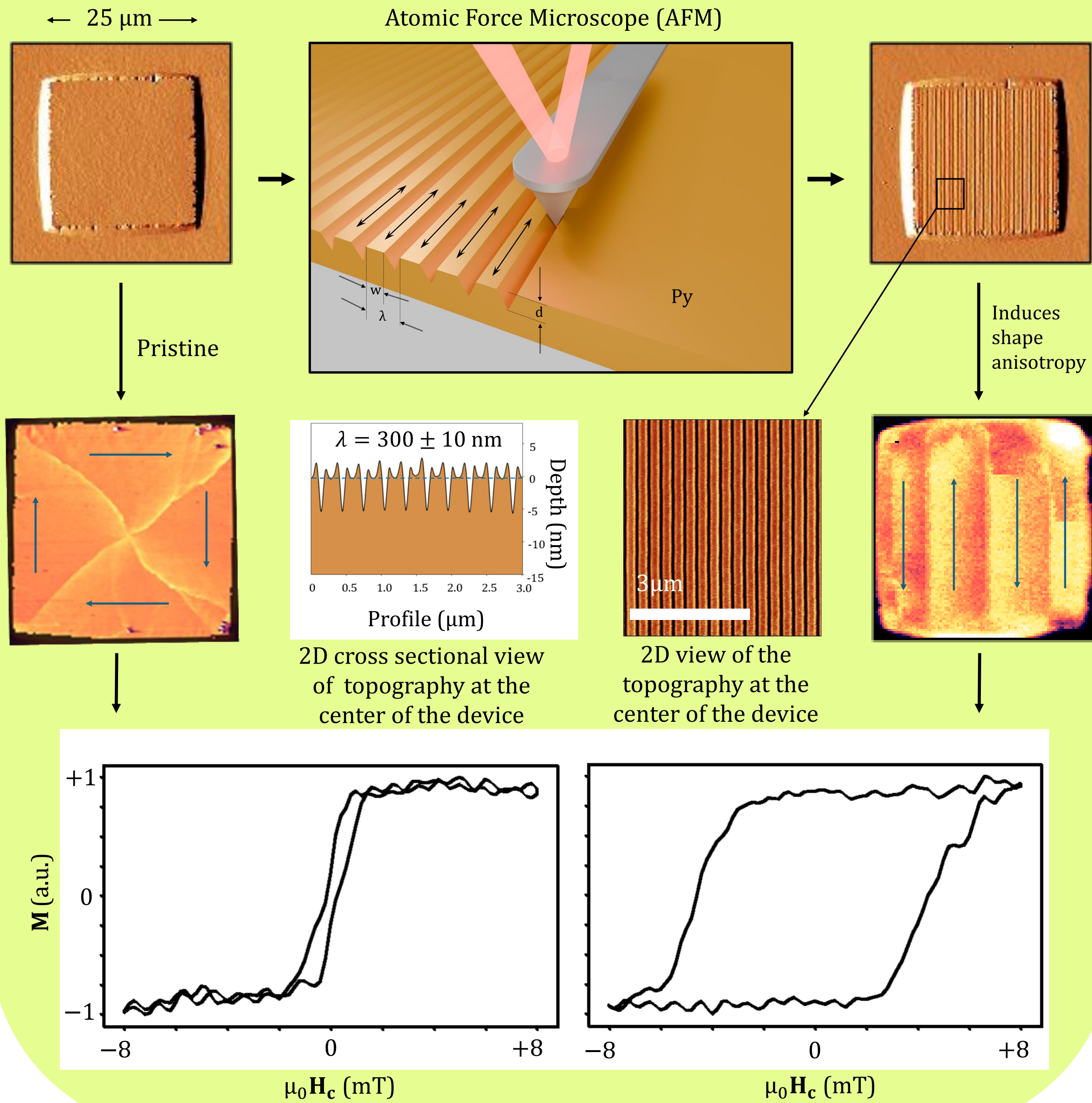
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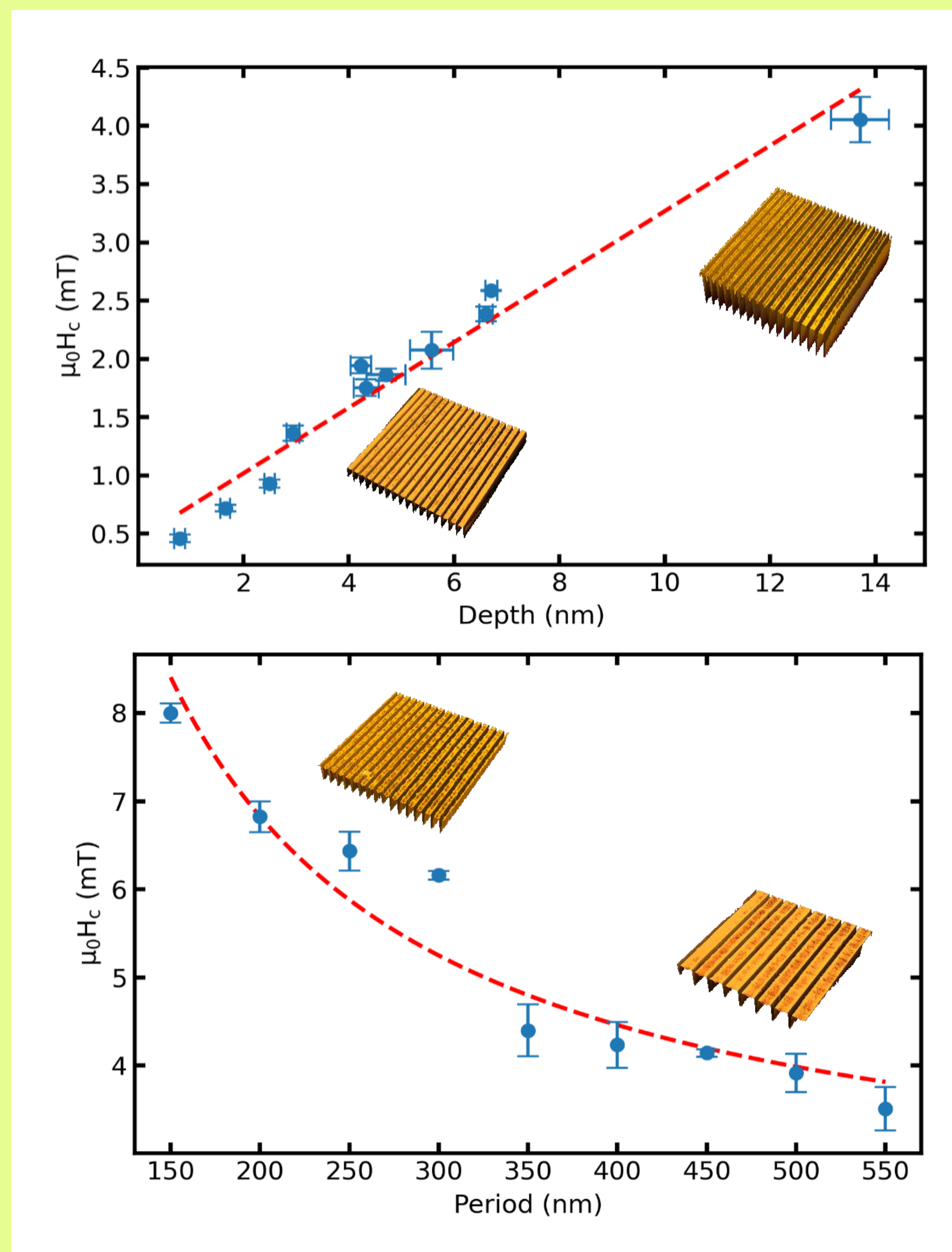
A novel surface-based technique to engineer and direct magnetic anisotropy—enabling precise control over magnetic behavior for next-generation spintronic and memory devices

Introduction

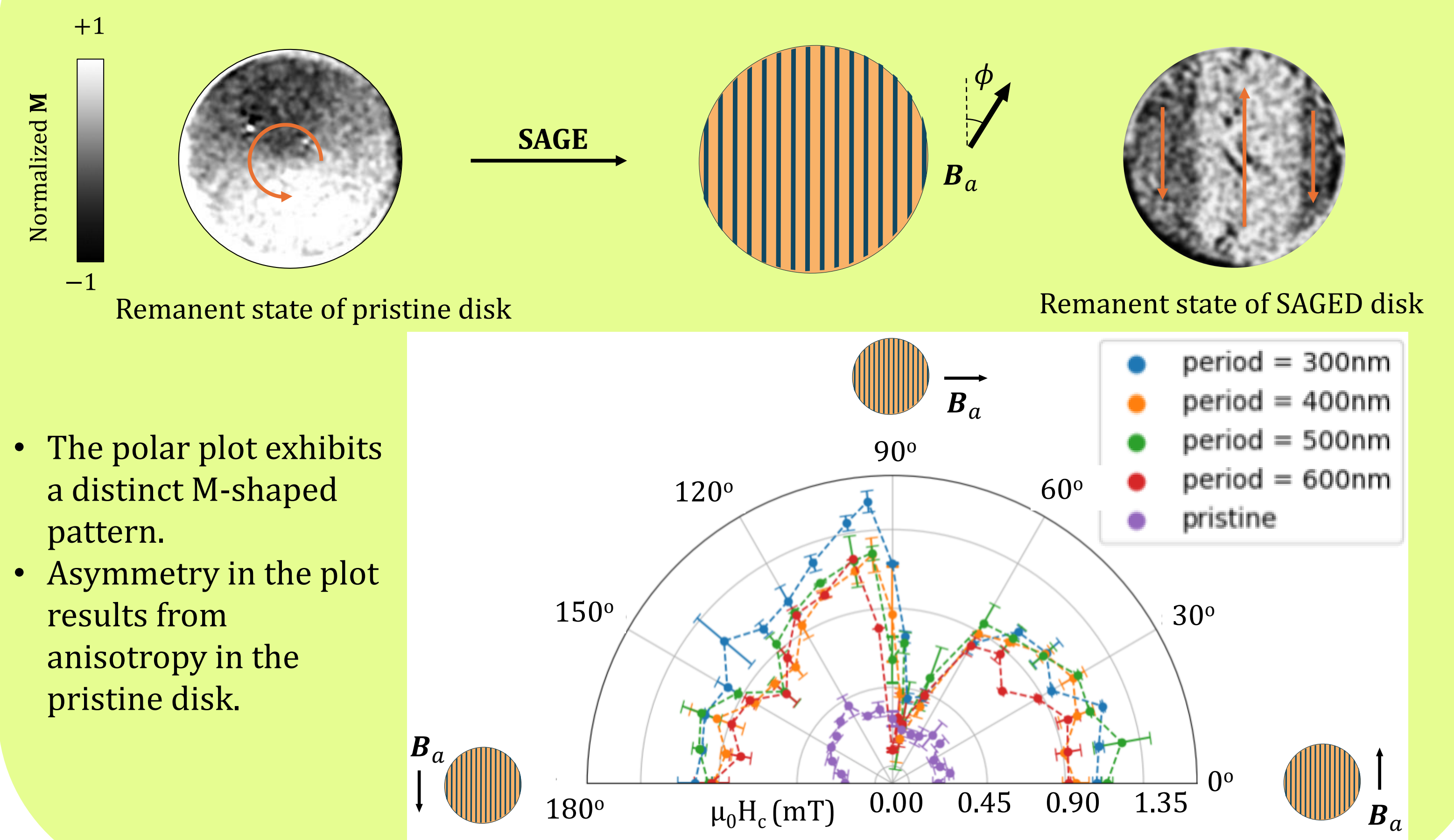
- Atomic Force Microscope (AFM) is employed to induce uniform and homogenous corrugations.
- These corrugations induce shape anisotropy into the thin magnetic film.



Tuning Anisotropy

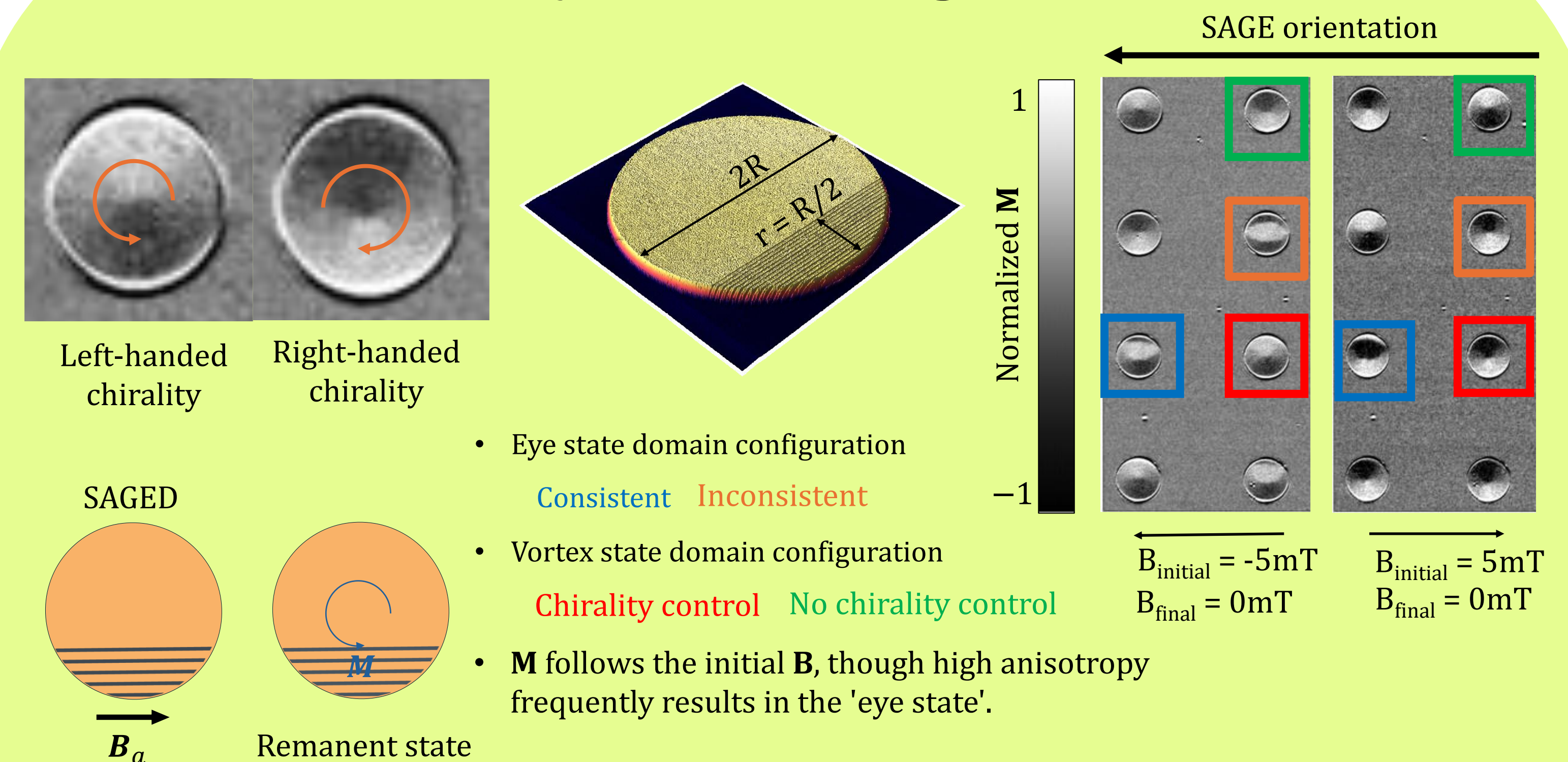


Field Angular Dependence

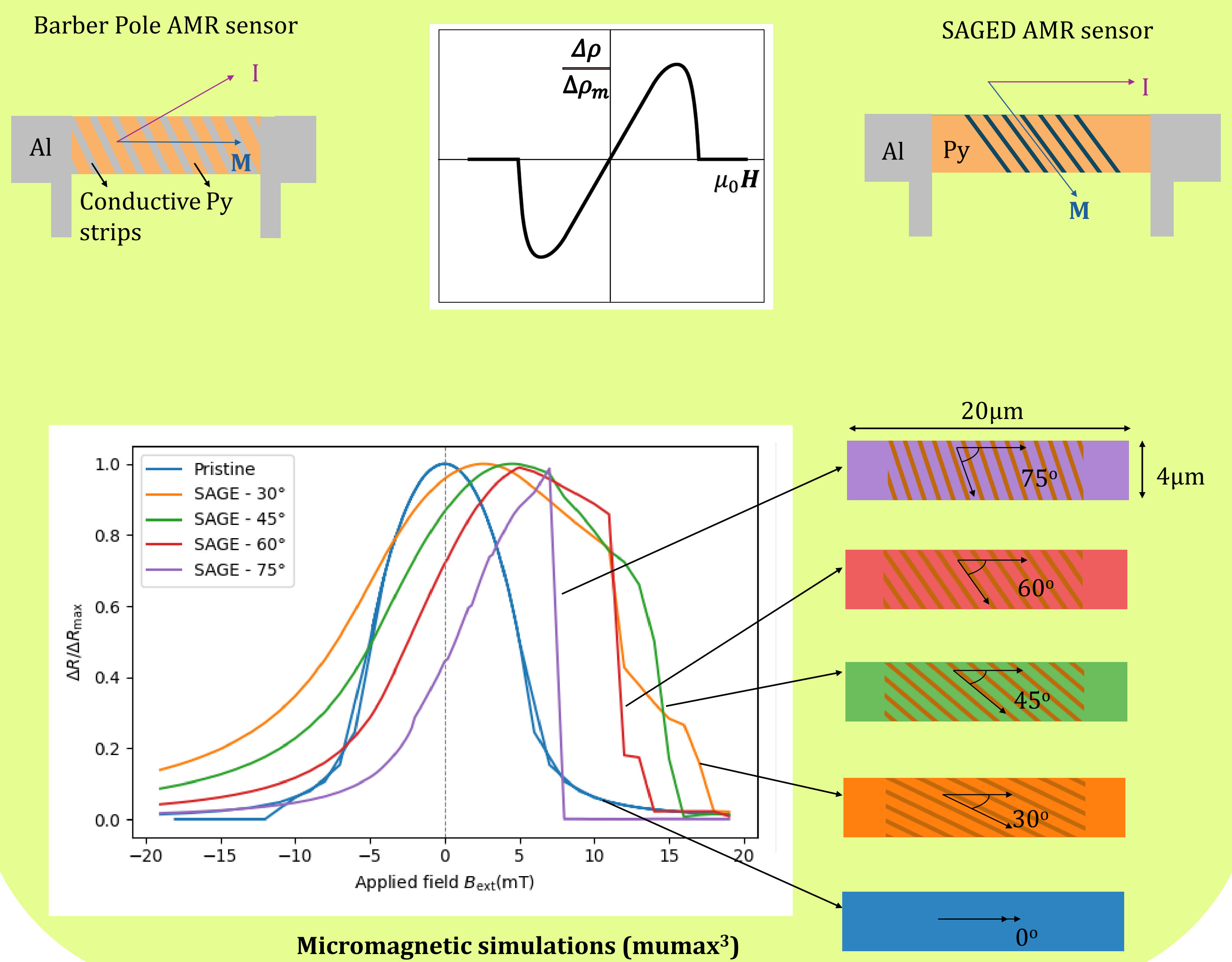


- The polar plot exhibits a distinct M-shaped pattern.
- Asymmetry in the plot results from anisotropy in the pristine disk.

Chirality Control of Magnetic Vortex



SAGED - AMR Sensor



Conclusions:

- This study confirms that SAGE is a straightforward approach to generate shape anisotropy via surface corrugations.
- This proposed approach is complete and suitable for immediate application in diverse fields like sensors, memory devices, and MR devices.