

Ma 12 - Magneto-optical Kerr effect and magnetic anisotropy

Physics:

- Polarized light
- Magneto-optic Kerr Effect
- Magnetization
- Ferromagnetism
- Magnetic hysteresis
- Magnetic anisotropy
- Magnetic domains
- Magnetic domain walls

Technical:

- Optics alignment
- Polarizer
- He-Ne Laser
- Photodiode
- Electromagnet
- MOKE microscope
- A/D converter, D/A converter
- Thin-film sample

Data analysis:

- Magnetic field calibration
- Determination of easy/hard axis directions from hysteresis loop
- Determination of anisotropy constant from hysteresis loop
- Determination of longitudinal Kerr rotation from intensity contrast
- Angle-of incidence dependence of Kerr rotation
- Evolvement of magnetic domains
- Relation between magnetic-domain pattern and hysteresis loop