Magneto-optics describes the influence of magnetic fields or of a spontaneous magnetization on the emission or propagation of light in matter. This presentation will cover the basics of magneto-optics at visible frequencies and its application for domain imaging and magnetometry. For magneto-optics at shorter, X-ray frequencies we refer to the presentation of Jan Lüning.

**Lecture topics:**

1. Magneto-optical effects
   a. Physical basics
   a. Faraday effect
   b. Kerr effect
   c. Voigt effect
d. Gradient effect
2. Application of magneto-optical effects
   a. Domain imaging
   b. Magnetometry
3. Recent developments of magnetic domain imaging by wide-field magneto-optical microscopy
   a. Selective sensitivity
   b. Depth sensitive domain imaging
c. Time-resolved domain imaging
d. Deconvolution techniques for lateral resolution enhancement
e. Vector magnetometry and quantitative Kerr microscopy
f. Magneto-optic indicator films (MOIF)

**Recommended reading:**

