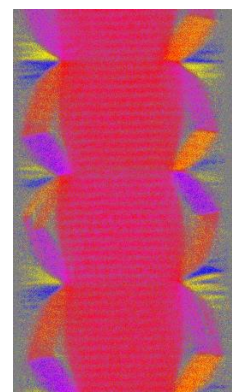


## Advanced magneto-optical microscopy of magnetic materials: Magnetolectric sensors, spin-waves and beyond

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Recent developments of the observation of magnetic domains and domain walls by wide-field optical microscopy based on the magneto-optical effects are reviewed. Using various examples, fundamental concepts and advances in methodology are discussed that allow for imaging of magnetic domains on various length scales as well as on various time scales. Visualization of magnetization dynamics down to picosecond temporal resolution for the imaging of spin-waves and in combination with magneto-optical multi-effect domain imaging techniques for obtaining magnetic vector information are shown.



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