

Magneto-optical spectroscopy applied to organic/inorganic heterostructures

M. Fronk, B. Bräuer, P. Robaschik, A. Sharma, D.R.T. Zahn, [G. Salvan](mailto:G.Salvan)

Semiconductor Physics, Chemnitz University of Technology, Chemnitz, Germany,
salvan@physik.tu-chemnitz.de

The interaction of light with magnetized matter allows to study various material properties. The measurement of the polarization state of an electromagnetic wave induced by the interaction with a magnetized sample is one of the many possibilities used experimentally. Among the multitude of magneto-optical effects, the magneto-optical Kerr effect (MOKE) is often exploited for characterizing opaque samples, since it is related to the change in the polarization state of light occurring upon reflection on a magnetized sample. Spectroscopic MOKE measurements on thin films or layer stacks provide access to the intrinsic magneto-optical properties of the component materials and to the related structural and electronic properties. MOKE spectroscopy was already shown, for example, to be a sensitive tool for the characterization of molecular orientation in organic layers [1,2] as well as for the characterization interface effects occurring in organic/inorganic heterostructures [3,4].

[1] M. Fronk, B. Bräuer, J. Kortus, O.G. Schmidt, D.R.T. Zahn, and G. Salvan, *Phys. Rev. B*, 79 (2009) 235305.

[2] B. Bräuer, M. Fronk, D. Lehmann, D. R. T. Zahn, G. Salvan, *J. Phys. Chem. B* 113 (2009) 14957

[3] P. Robaschik, M. Fronk, M. Toader, S. Klyatskaya, F. Ganss, P.F. Siles, O.G. Schmidt, M. Albrecht, M. Hietschold, M. Ruben, D.R.T. Zahn, G. Salvan, *Journal of Materials Chemistry C* 3 (2015) 8039-8049

[4] A. Sharma, P. Matthes, I. Soldatov, S. S. P. K. Arekapudi, B. Böhm, M. Lindner, O. Selyshchev, N. T. N. Ha, M. Mehring, C. Tegenkamp, S. Schulz, D. RT Zahn, Y. Paltiel, O. Hellwig, G. Salvan, *J. Mater. Chem. C* 8 (2020) 11822-11829