

## **Terahertz and infrared magneto-ellipsometer**

Premysl Marsik<sup>1</sup>, Laurent Bugnon<sup>1</sup>, Andrei A. Sirenko<sup>2</sup>, Christian Bernhard<sup>1</sup>

<sup>1</sup> Department of Physics, University of Fribourg, Switzerland

<sup>2</sup> Department of Physics, New Jersey Institute of Technology, Newark, New Jersey 07102, USA

We will present a new magneto-ellipsometric instrument built at the Physics Department, University of Fribourg. It is based on combination of time-domain terahertz and Fourier-transform infrared spectrometers, equipped with He-flow cryostat and split-coil 7 Tesla magnet.

Apart from standard transmission geometry, the instrument is designed for reflection ellipsometry measurements at angles of incidence  $75^\circ$  and  $80^\circ$ , with field parallel or perpendicular to the sample surface. The operation can be switched between the THz and IR branch in-situ, and both beam paths are in vacuum.

With this instrument, we aim at studies of magneto-optical response of strain engineered thin/ultrathin films of strongly correlated oxides.