

## **Advanced technologies for measurements of energy material properties**

P. Lachkar<sup>1,\*</sup>

<sup>1/</sup> CNRS Institut Néel, 25 avenue des martyrs, BP 166 38042 GRENOBLE CEDEX 9,  
Tél : +33476881234, Email : [pierre.lachkar@neel.cnrs.fr](mailto:pierre.lachkar@neel.cnrs.fr)

Axis of communication: instrumentation and measurements

Recently, the PPMS is revealed as a performing system allowing numerous measurements of energy material properties such as magneto-resistance, specific heat capacity, electronic transport versus temperature and/or magnetic field under given vacuum.

Mainly, this equipment allows Seebeck coefficient, electrical conductivity as well as heat conductivity requested for thermo-electricity investigations. Specific heat capacity measurements versus temperature under magnetic field can be performed as well.

In addition, Hall effect measurements can be carried out. During my talk, adequate preparations including electrical connections will be explained and optimized methods for improved measurements will be debated. An available solution for labs to overcome difficulties with liquid helium supply will be presented.

All these available datas will be discussed in terms of energy material efficiency.

Keywords: Energy material, specific heat capacity measurements, electronic transport, PPMS, magnetic field, liquid Helium.