

ELECTRICAL MEASUREMENTS AND INSTRUMENTATION LABORATORY

RESEARCH TOPICS

Development of sensitive measurement techniques for electrical, magnetic and thermal characterization of materials used in electrical engineering

“conducting” materials

Superconductors
Thermoelectrics
Magnetoresistive materials
...

“insulating” materials

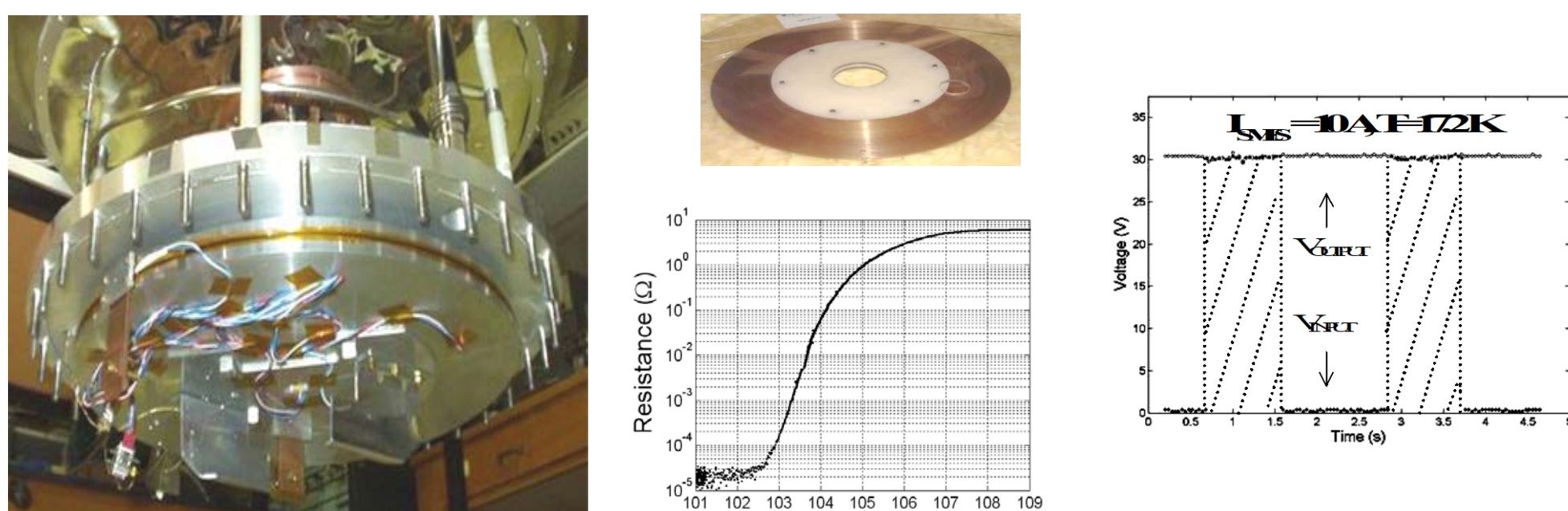
Insulating polymers
Functional ceramics
Textiles
...

These research activities are closely related to the development of electrical engineering applications.

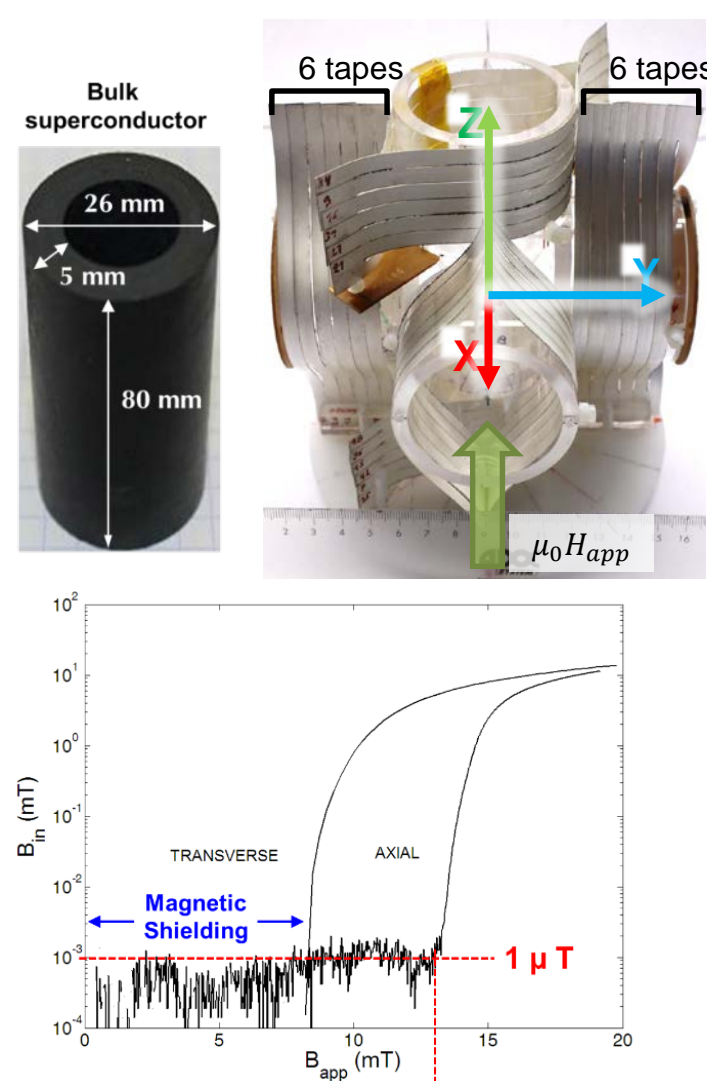
SUPERCONDUCTORS and other “functional” ceramics used in ELECTRICAL ENGINEERING

Some examples...

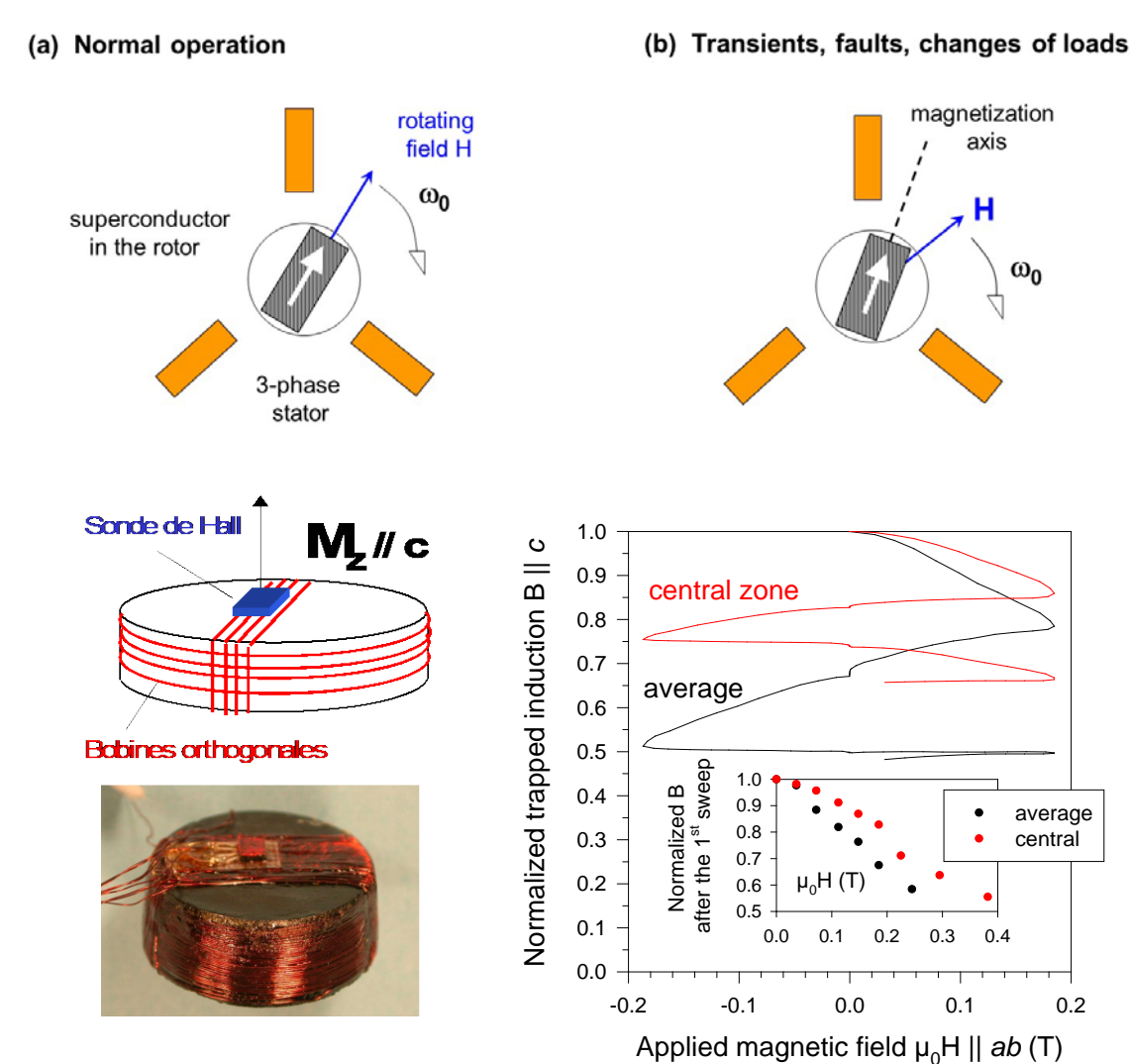
Electrical resistance and critical current of a 350-m long coil [BSCCO/Ag]



Magnetic shielding



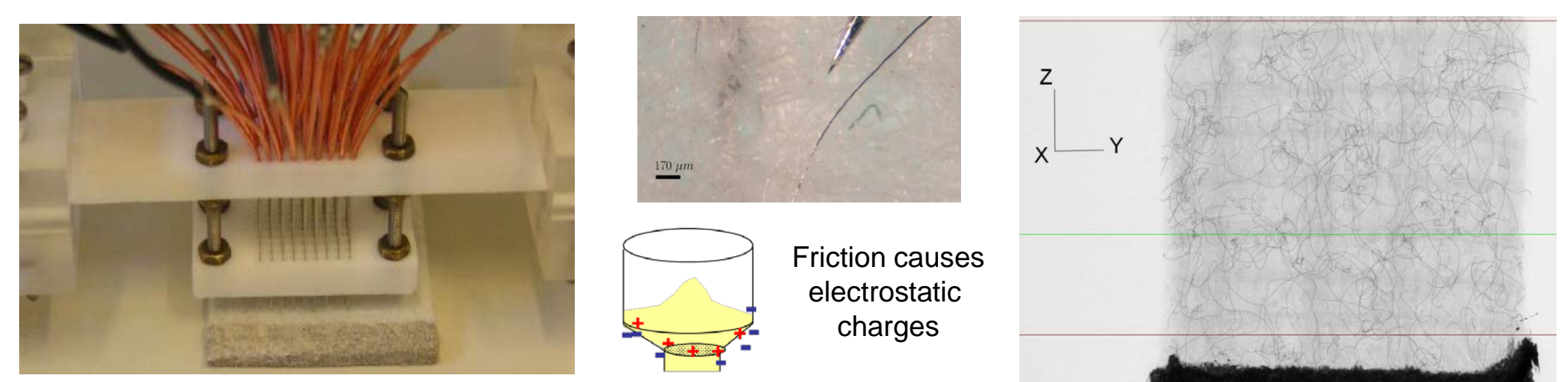
“Crossed magnetic fields”



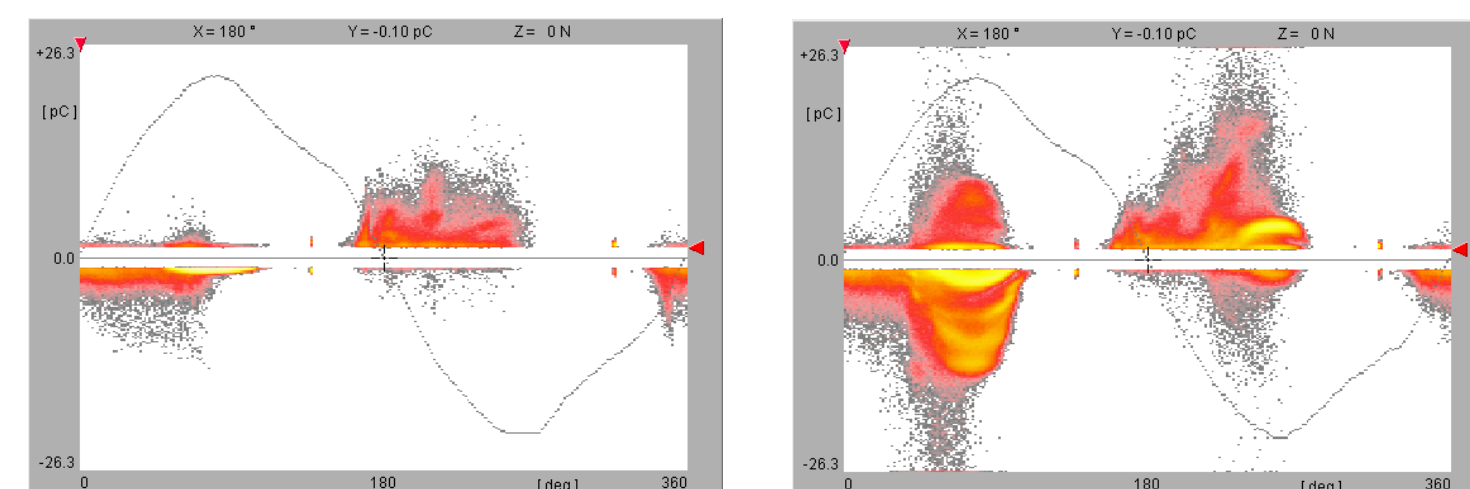
ELECTRICAL INSULATORS and other weakly conducting materials (textiles, polymers, ceramics, etc.)

Some examples...

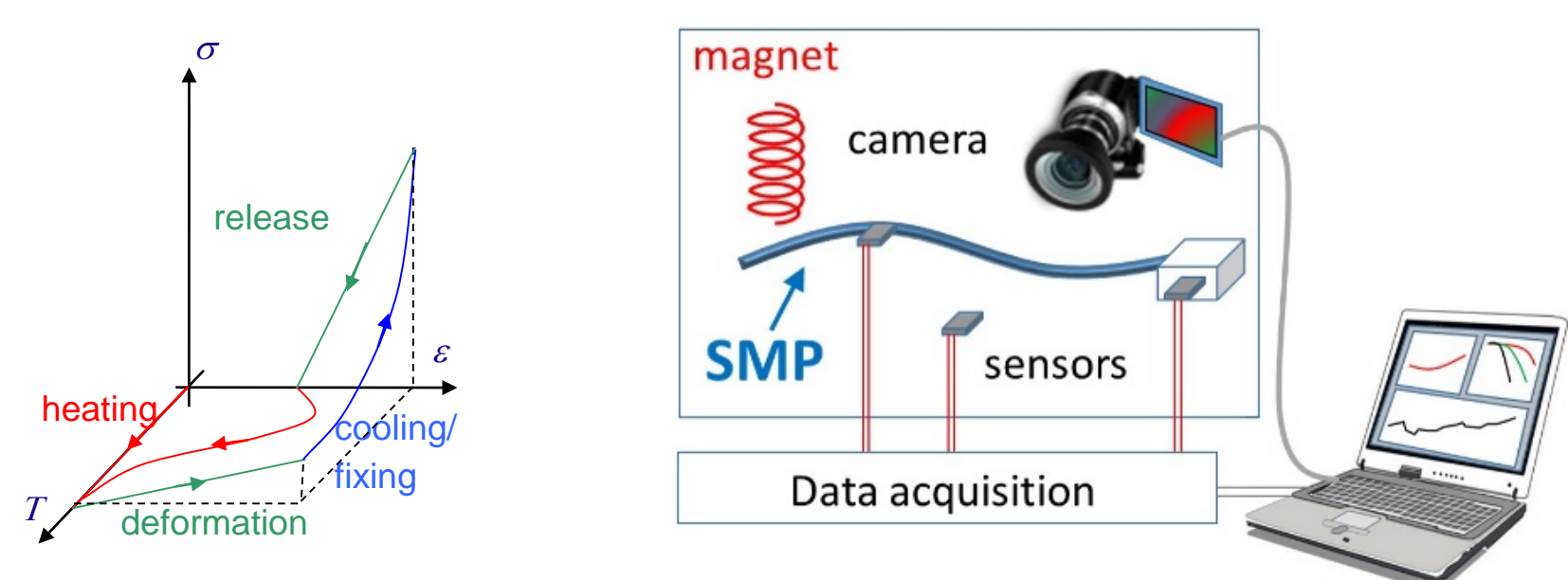
Microprobe for measuring conducting textiles used as filters



Measurement of partial discharge (PD) patterns

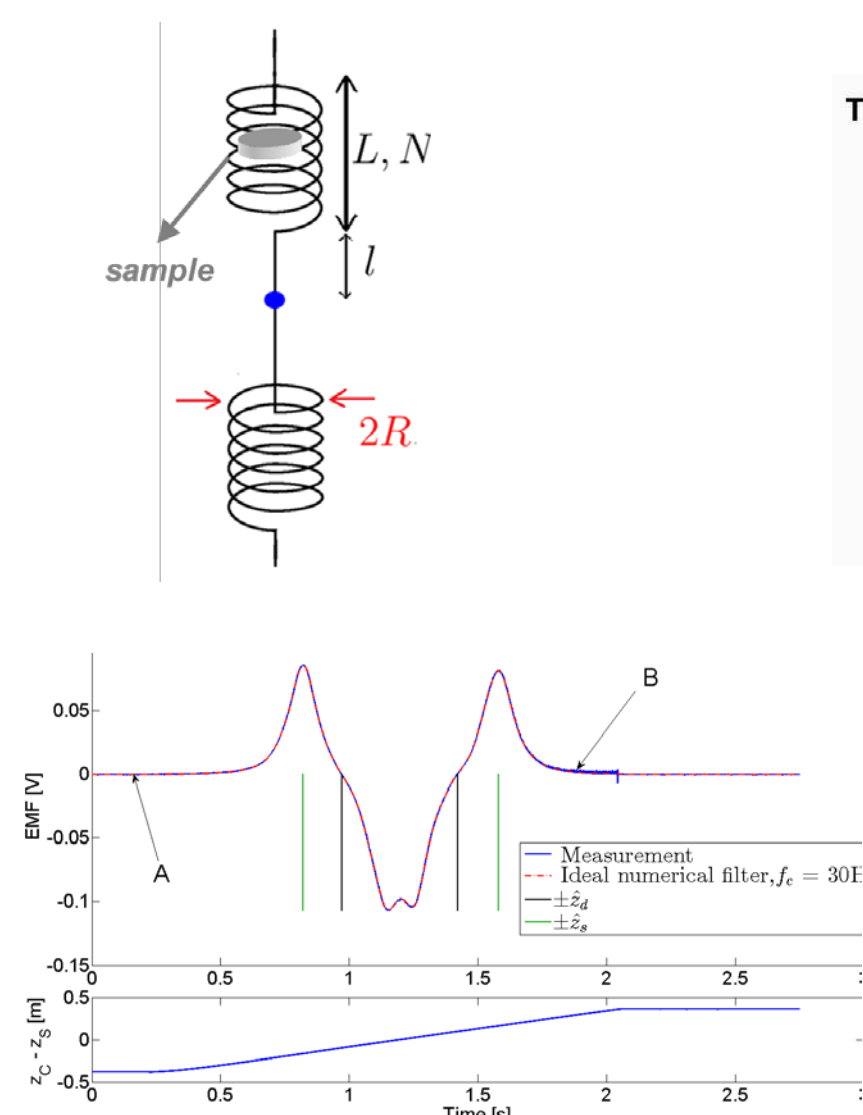
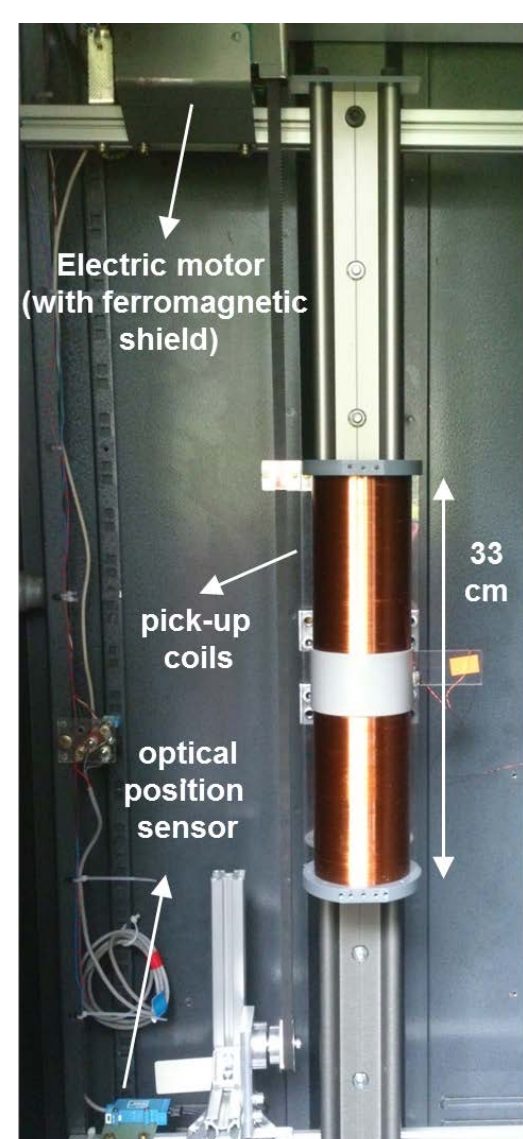


Measurement of smart composites used as shaped memory polymers

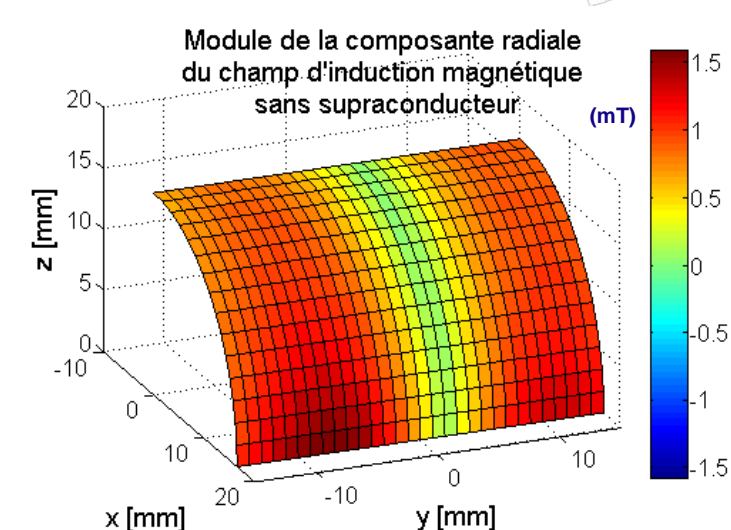
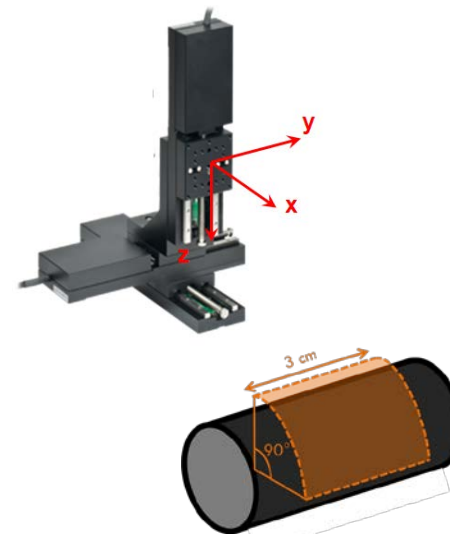
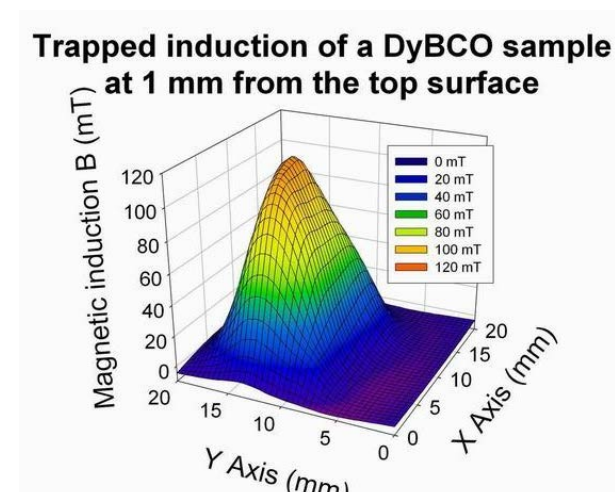


DESIGN AND IMPLEMENTATION OF SENSITIVE MEASUREMENT SYSTEMS

Magnetometer for large samples



3D Mapping with a miniature Hall probe



Magneto-Optical measurement system

