



Politecnico
di Torino

THESIS PROPOSAL

(MASTER'S DEGREE – LAUREA MAGISTRALE)

EXPERIMENTAL CHARACTERIZATION AND MODELING OF INTERLOCKED STATOR CORES AT CRYOGENIC TEMPERATURES

Tutors: prof. S. Vaschetto (silvio.vaschetto@polito.it)

Keywords: Experimental measurements, electric machine stator core, soft-magnetic materials, cryogenic temperatures.

Description

The thesis consists of the experimental characterization at cryogenic temperatures of interlocked stator cores for electrical machines. The tests will be performed submerging the stator samples in liquid nitrogen baths. The magnetizing characteristics and power losses at different supply frequencies will be measured to evaluate the impact of the interlocks on the core performance at low operating temperatures. Within the thesis activity a FEM model of the interlocked region of the stator core will also be developed using a professional 3D FEM software; the developed model will be calibrated with the conducted measurements.

Basic knowledge of Matlab is welcome for the data post elaboration. The skills required for the use of the professional FEM software will be acquired within the thesis activity.

The expected timeframe for this thesis is **6 months**.

For further details and information, please contact by e-mail Silvio Vaschetto.

