



EDMS NO.  
**1768012**

REV.  
**1.0**

VALIDITY  
**VALID**

**REFERENCE : NOT REQUIRED**

## HL-LHC Resources request

**Date:** 2017-03-13

**Project/Activity:** WP5

**Title Position/Task:** Mechanical Measurements Laboratory Engineer

### **Description Project:**

The Mechanical and Materials Engineering Group (MME) of the Engineering department (EN) is in charge of engineering support combining mechanical design, production facilities and material sciences, for the maintenance of CERN facilities and the manufacturing of prototypes as required for CERN projects.

The Laboratory of Mechanical Measurements, part of the Engineering Design and Measurements section (EN-MME-EDM), is composed of 10 persons. It is specialized in measurements of mechanical stresses and strains, of displacements, pressures and vibrations applicable to a wide range of components and devices for present and future high energy physics projects. The measurements are carried out in a large variety of environments, including cryogenic temperatures, high radiation environment and high magnetic fields.

The laboratory develops and performs these measurements on superconducting magnets, detectors of LHC experiments and prototypes for future upgrades, including high field accelerator magnets and accelerating structures.

### **Task:**

The candidate will be involved in the thermo-physical characterization of composite materials developed for high energy beam intercepting devices. The characterization is composed by the measurements of thermal diffusivity, specific heat, density, thermal expansion and thermal conductivity from room temperature up to 2000°C. Best materials will be tested in front of intense proton beams. The candidate will participate to the meetings and reports regularly on the progress of his (her) research. The main results will be summarized in several reports for each activity and inside a final report to the intention of the project management.

**Profile:** Mechanical engineering diploma or equivalent

### **Experience:**

The selected candidate has experience with mechanical measurements technics.

Ideally, he (she) has some knowledge of cryogenics, high radiation environment and high magnetic fields.

Good organization and communication skills.

**Requester:** EN-MME

**Proposal:** December 2017