



# Development and implementation of amorphous-carbon thin film coatings in accelerators vacuum chambers

Code	TE7546
Programme	FCT
Department	TE
Responsible	31616 - Mr. Paolo Chiggiato

## Title

Development and implementation of amorphous-carbon thin film coatings in accelerators vacuum chambers

## Description

In the framework of the LHC Injector Upgrade (LIU) and High Luminosity LHC (HL-LHC) projects you will be part of:

the Technology department (TE) that provides the technologies specific to existing particle accelerators and future projects

the Vacuum Surface and Coatings group (TE-VSC), responsible of the design, construction, operation and upgrade of ultra high vacuum systems for accelerators and detectors

the Surface Coatings and Chemistry (TE-VSC-SCC) section in charge of the thin films coating production and development, surface and chemical analyses for CERN accelerators

You will contribute to the development and implementation of amorphous carbon thin film coatings in accelerators as the Super Proton Synchrotron (SPS). The coating performed by Physical Vapour Deposition (PVD) is designed to reduce the secondary electron yield of the inner surface of the vacuum chambers, where the particle beam circulates, and to cure in such a way the electron cloud phenomenon. You will take an active role in the team, which develops, prepares and implements the coating process, partly in laboratories on surface and partly in the accelerators in underground areas.

The technical training and supervision will be ensured on the job by the physicists and technical engineers of the team.

## Skills

Material Science: Surface analysis, Thin solid films, Vacuum materials <p>

Master Degree in Physics or Material Science

Knowledge and practical experience in the following fields would be an advantage:

- ultra high vacuum technology concepts, assembly and operation
- thin film coatings by PVD

-electron spectroscopy for surface analysis

## Disciplines

Material Science

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