Sample Project: CO2 cooling machines for laboratory application

Code	PH4168
Programme	FCT
Department	PH
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Title

CO2 cooling machines for laboratory application

Description

Evaporative CO2 is gaining more and more interest as a cooling fluid in several applications due to its low Global Warming Potentia its low cost, its high availability, and its excellent thermo-physical properties. CO2 is also the preferred choice for the thermal management of the next generation of particle tracking detectors. The Detector Technologies group of the Physics Department (PH-DT) has developed an innovative compact CO2 unit for laboratory tests. Few prototypes in three different versions have been in-house designed and produced until now: the unit has now completed its R&D phaseand is ready for its transfer towards an industrial partner. This will require a final step of simplification based on a thorough analysis of the possible user requirements and an evaluation of the production costs.

Within this group we offer an opportunity to a young, highly motivated mechanical and/or electrical engineer to play the very formativ role of the technical contact between the R&D and the production world, developing multiple engineering competences: heat transfer, mechanical design, electrical circuits, PLC-based control hardware and engineering for production.The Trainee will be part of a very motivated team and will be supervised by experienced engineers. He will first collect in a final simplified design the experience gained in use with the generations of prototypes produced; then he will act as contact person between the experts at CERN and the external production site.

Skills

Disciplines

Electrical Engineering, Mechanical Engineering