# Sample Project: Development of advanced gas micro-pattern particle detectors and related instrumentation.

| Code | PH1100 |
|------|--------|
| Programme | FCT |
| Department | PH |
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## Title

Development of advanced gas micro-pattern particle detectors and related instrumentation.

## Description

The trainee will work in a multidisciplinary team of physicists, engineers

and technicians to gain experience in the field of radiation detectors using

gas as a detecting medium.

One of the activities of the PH-DT-DD CERN Detector Technology Section is

development and applications of Micro Pattern Gas Detector technologies as

Gas Electron Multiplier (GEM) and micromegas - detection techniques gaining

growing interest in the detector community and in particular in the LHC

experiments.

This comprises study of basic physical properties, detector design,

optimization and prototype construction, readout electronics integration and

MPGD dedicated laboratory instruments development. Application of this

technology in other fields as X-ray imaging, UV light, neutrons detection

are part of the in progress research lines.

The trainee, as a team member, would participate to the group activities. He

will be directly involved on the developments of very specific MPGD

instrumentations, required to support the strong R&D needed to properly

design the new generation of detectors for future applications and

experiments. In particular, he will take part of the ongoing activities,

carried together with different international institutes, focused on

development, integration and test of different Front End Readout chips for

MPGD (that will support the spread of the technology in different fields of

application).

For more information please consult GDD (http://gdd.web.cern.ch/GDD/),

PH-DT-DD (https://ph-dep-dt.web.cern.ch/detector-development), RD51

(http://rd51-public.web.cern.ch/rd51-public/) web pages.

## Skills

## Disciplines

Experimental Applied Physics