

Marie Curie Initial Training Network Fellowships
One opening for:
Fondazione per Adroterapia Oncologica (TERA)
Prof. Ugo Amaldi, President

Number of open positions: 1 Early-Stage Researcher (ESR)

Educational Background: Master Degree in Physics, Electronics or Informatics

Start and duration of the contract: July 2011, Three Years

Place of work: Our laboratories at CERN-Geneva (Switzerland)

General description: Use of Full Programmable Gate Arrays for Data Retrieval and Compacting.

DESCRIPTION OF THE ACTIVITY:

The ESR at TERA will be working on the following hardware and software developments:

- Development of signal interfaces for scintillators and RPC based in-beam TOF PET scanners and light charged particle range radiography detectors;
- Development of the intermediate tools linking the instrument data to the image reconstruction and analysis, with suitable data reduction and compacting to ensure a fast, real-time handling of the information (link usually referred to as "firmware");
- Dedicated hardware electronics remotely programmable to serve the purposes indicated;

The work will be integrated to the activity of the CERN-based Advanced Quality Assurance (AQUA) group, in its laboratories hosted by the European Organization for Nuclear Research (CERN) in Geneva, Switzerland. The ESR will largely profit from the experience of the AQUA staff in developing medical diagnostics instrumentation, in close contact with the Italian Center for Oncological Therapy (CNAO) in Pavia. He/she will attend several dedicated courses on hardware and firmware, regularly organized at CERN, as well as other courses organized by partners in the ENTREVISION framework. The group will encourage and help the ESR to prepare a PhD on the subject covered by the project at one of the associated Universities.

Open to scholars with a Master degree in Physics, Electronics or Informatics, preference will be given to candidates having some previous experience on the main topics of the position, hardware and firmware development for real-time data handling and presentation for medical imaging.

TERA is a non-profit institution created in 1992 and directed by Prof. U. Amaldi, recognised as a moral entity by the Italian Ministry of Health in 1994. Its primary objective is the development, in Italy as well as abroad, of the radiotherapy techniques based on the use of hadron particles and, more generally, of the applications of physics and informatics to medicine and biology.

AQUA is a section of activity within TERA, led by Prof. Fabio Sauli, aiming at developing medical diagnostics systems using innovative technologies based on the advanced detectors in use for High Energy Physics experiments. The group is associated as partner to ENVISION, the European Novel Imaging Systems for Ion therapy project (ENVISION).

ESR:

Early-stage researchers are, at the time of selection, in the first four years (full-time

equivalent) of their research careers. This is measured from the date when they obtained the degree which formally entitles them to embark on a doctorate, either in the country in which the degree was obtained or in the country in which the research training is provided, irrespective of whether or not a doctorate was envisaged.

MOBILITY CONDITION:

At the time of selection, researchers must not have resided or carried out their main activity in the country of their host organisation for more than 12 months in the 3 years immediately prior to their recruitment.

For more information:

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