

# Early Stage Researcher (ESR) position at the Department of Physics of the University of Pisa

Employer: University of Pisa (Italy)

Job location: Department of Physics, Largo B. Pontecorvo 3, 56127 Pisa, Italy (with international travels / secondments).

Full time, Employment contract of a limited/fixed duration of thirty-six (36) months.

## General Information:

Applications are invited for an Early Stage Researcher (ESR) position intended to lead to a PhD degree in Physics at the University of Pisa (Italy). The ESR position is available as part of the Marie Skłodowska-Curie Innovative Training Network (ITN) "INTENSE" (Grant Agreement Number: 858199, website: <http://itnintense.df.unipi.it/>). The INTENSE programme is focused on experimental particle physics, particle accelerators and particle detectors including e.g. neutrino, flavor, dark matter, or BSM (Beyond the Standard Model) searches.

The salary consists of a monthly Living Allowance; in addition, researchers recruited within an ITN programme are entitled to receive a monthly Mobility Allowance and, if applicable, a Family Allowance depending on the marital status. The family status of a researcher will be determined at the date of her/his (first) recruitment in the action and will not evolve during the action lifetime. **The net salary will be determined after subtracting all compulsory (employer and employee) deductions and withholdings from the gross amounts in line with national legislation.**

## Functions:

The objective is to build and commission the muon-to-electron-conversion (Mu2e) experiment at the Fermilab Muon Campus, develop the detectors calibration procedures, perform background studies, take leading roles in data taking and analysis and search for the Charged Lepton Flavor Violating neutrino-less muon-to-electron coherent conversion signal in Mu2e data.

The selected candidate will be recruited by the University of Pisa under an employment contract of a limited/fixed duration of thirty-six (36) months and will be based at the Department of Physics, Largo B. Pontecorvo 3, 56127, Pisa.

During her/his appointment, the selected candidate is expected to travel at the international level, under secondments for a total duration of up to 30% of her/his contract, to another European beneficiary and/or to partner organizations of the INTENSE programme.

Additionally, the selected candidate is expected to participate actively, as needed, in the INTENSE activities, workshops, schools as well as conferences, career development and networking activities. The ESRs will also be involved in outreach activities.

## Eligibility criteria (EU requirements):

The ITN INTENSE complies with an equal opportunity and gender balance policy.

Eligible candidates may be of any nationality. At the date of recruitment (the first day of the employment of the researcher for the purposes of the action), the selected candidate must:

- be an 'Early Stage Researchers' (i.e. be in the first four years – full time equivalent research experience - of her/his research career and have not been awarded a doctoral degree).
- not have resided or carried out their main activity (work, studies, etc.) in Italy for more than 12 months in the 3 years immediately before the recruitment date. Compulsory national service, short stays such as holidays, and time spent as part of a procedure for obtaining refugee status under the Geneva Convention (1951 Refugee Convention and the 1967 Protocol) are not taken into account.

### Required Qualifications and Skills:

- Master's degree, or equivalent degree, in Physics.
- High level and proven of accomplishment with excellent background in particle physics and in physics of fundamental interactions.
- Strong knowledge and demonstrated hands-on experience in particle and radiation detectors development, commissioning and operation; development and optimization of calibration algorithms and procedures; development of Monte Carlo simulations; data analysis and advanced statistical methods for data analysis; C/C++ programming.
- Good knowledge of FPGAs and microcontrollers, firmware, algorithms and software, embedded systems with Linux/Windows embedded environment and C/C++ programming, control and DAQ systems, performance simulations, experimental characterization, troubleshooting and qualification would be an advantage.
- Ability to produce scientific/technical reports.
- High motivation to learning and developing new technologies and creativity in applying them to relevant applications; collaborating on projects with external partners; research and innovation processes.

### Required Behavioral competencies:

- Communicating effectively: Ability to speak and write clearly and effectively in English; expressing opinions, ideas and suggestions with conviction and in a logical/structured manner; keeping to the point; listening actively to others; ensuring that information, procedures and workflow are appropriately documented and communicated.
- Achieving results: planning and implementing tasks with a structured and organized approach; setting and reviewing priorities keeping in mind the expected results; Contributing actively to delivering results in an efficient and effective manner.
- Strong interpersonal skills and capability to work both in a team and independently.
- Independent/critical thinking as well as persistence in front of setbacks and self-discipline are important qualities taken into consideration.

### Required Language skills:

- Excellent oral and written communication skills in English (C1 level expected); basic knowledge of Italian would be an advantage.

### How to Apply:

ALL applications (Curriculum Vitae, Transcript of Studies translated into English, Statement of Motivation (maximum two pages), List of Publications and at least 2 Recommendation Letters) **must be readable, complete, submitted electronically and exclusively in English using the provided links. The Letters of Recommendation must be uploaded exclusively by the Referees. Incomplete applications will not be considered.**

Each applicant should also send a confirmation email to the INTENSE Principal Investigator Simone Donati (University of Pisa), [simone.donati@unipi.it](mailto:simone.donati@unipi.it).

The subject of the email should explicitly contain the text "Application for one ESR position at the University of Pisa as part of INTENSE H2020-MSCA-ITN-2019".

Every applicant for this position agrees that her/his personal data and details can be shared with the beneficiaries and partners of the INTENSE programme (GA 858199) via conventional electronic communication protocols. Without this statement/consent, we will not be able to forward her/his personal data for further consideration purposes of her/his job application.

This vacancy will be filled as soon as possible, and applications should reach us no later than January 31, 2021.

**Additional Information:**

The recruitment is taking all necessary measures to implement the principles set out in the Commission Recommendation 2005/251/EC of 11 March 2005 on the European Charter for Researchers and the Code of Conduct for the Recruitment of Researchers (OJ L 75, 22.3.2005, p.67), of which all candidates are encouraged to be aware.

INTENSE is open to researchers regardless of sex, sexual orientation, gender identity, race, color, language, religion, political or other opinion, national or social origin, property, birth or other status. Female candidates, candidates from minority groups, refugee candidates, and other potentially discriminated persons are explicitly encouraged to apply.

For more information, please contact the INTENSE Principal Investigator  
Simone Donati (University of Pisa)  
email: [simone.donati@unipi.it](mailto:simone.donati@unipi.it)