



Institut
Sciences de la Fusion et
de l'Instrumentation en
Environnements Nucléaires
Aix*Marseille Université

AAP
2023

2023 PhD Student Research International Mobility (SRIM)

DEADLINE

Before November 20th for a mobility in 2023

1 General framework and objectives

Main Objective: the ISFIN PhD program aims at strengthening education through research, developing student disciplinary and interdisciplinary skills and knowledge, and internationalizing student education cursus.

To that aim the ISFIN PhD program opens a call for PhD student international mobility (from 6 weeks up to 3 months outside France). The philosophy of the call is to let you, PhD students, realize your own project as long as it remains within or around the thematic area of the institute.

Laureates will be provided with a budget suitable to realize their mobility, which can serve different purposes:

- Move to another laboratory to learn a new technique
- Move to another laboratory to work on your PhD subject or on a subject slightly different from the PhD topics (but somewhat related to)
- Start a collaboration with another PhD student, with a researcher,...
- Test an idea, an assumption in a laboratory equipped for
- Get the label “**Doctorat Européen**”¹. This label requires a 3-month mobility and other rules related to the PhD defense (reviewers, committee members, language)
- Any other good motivation...
- **Mobility within the CIVIS European Campus is strongly encouraged (see appendix)**

Secondary objective: grant proposals are common in present day research as well as in the industry. In order to help you developing soft skills, this call for mobility is formatted as an usual grant proposal, including a technical/scientific description of the project, motivation, scheduling, and budgeting, as well as a feedback report after the mobility.

2 Eligibility

- The student PhD research subject must be related to ISFIN research topics (see appendix)
- The PhD supervisor or co-supervisor must belong to a lab affiliated to ISFIN (see appendix)
- The PhD contract or PhD employer must allow the student mobility
- The PhD contract must not end within the mobility period
- The host institution can be located anywhere in the world but outside France
- The proposal must be completed (template filled, including the PhD supervisor(s) agreement, agreement of the host person)
- The mobility period must be in 2023

¹ Label “[Doctorat Européen](https://www.univ-amu.fr/fr/public/label-doctorat-europeen)”: <https://www.univ-amu.fr/fr/public/label-doctorat-europeen>

3 Evaluation

Evaluation will be made by a committee within ISFIN on the basis of the project submitted by the PhD student.

4 In practice

The ISFIN institute aims at allowing mobility for as many students as possible. In case the budget required to fund all positively evaluated proposals would be beyond the ISFIN's ceiling for this action, the ISFIN might contact the laboratories and the research teams to discuss possible cost sharing. Such cost sharing can also be proposed upfront in the proposal if dedicated funds are available, but this is not obligatory.

A scientific project must be co-constructed with the host institute and a mobility project in English must be submitted to the ISFIN institute. The project includes (see template):

- Background, motivation and objectives, scientific description
 - Risks management and contingency plan
 - Personal and academic impacts
 - Work plan
 - Ethical issues
 - Budget including justification for required resources and possibly complementary funding
- The project must receive the agreement of the PhD supervisor(s)
→ The project must receive the agreement of the the host institution

5 Timeline and submission process

The project must be sent to: isfin-direction@univ-amu.fr before November 20th 2022.

The results of the evaluation will be announced within six weeks after the submission deadline.

6 Appendix

6.1 CIVIS

CIVIS is a European University Alliance created under the European University Statute, and merging together 8 universities: l'université d'Aix-Marseille, l'université libre de Bruxelles, Universidad Autónoma de Madrid, Stockholm Universitet, National and Kapodistrian University of Athens, University of Bucharest, Sapienza Università de Roma, Eberhard Karls Universität Tübingen, Glasgow University, Salzburg University.

You are free to contact any laboratory belonging to the CIVIS alliance. Please note that ISFIN has pre-contacted the CMAM center at Universidad Autónoma de Madrid. CMAM is equipped with instrumentation enabling to irradiate matter with high-energetic ions and high-intensity lasers. The characteristics of the ion accelerator (up to 5 MV) and the femtosecond laser system (100 fs duration and 5 mJ per pulse, enabling to reach intensities higher than 100 TW/cm²) allow to induce in the matter extreme thermodynamic conditions. Additionally, CMAM has equipment for in-situ optical diagnostics (cameras and spectrometers) which can be used to monitor the irradiation process.

In addition, other activities are involving the usage of nuclear instrumentation for analysis and modification of materials. As an example, an ongoing project is dealing with the manufacturing of prototype novel gratings for X-ray optics, based on ion irradiation of synthetic diamond (as a unique material in terms of radiation hardness and thermal conductivity). This is a project which is fully defined and in which a 3-month student mobility would fit perfectly, allowing the student to perform irradiation experiments, become familiar with the experimental design and modelling.

Contact at CMAM:

1. Mario García (scientist at CMAM) mario.garcialechuga@uam.es
2. Gastón García (CMAM director) gaston.garcia@uam.es

More information about CIVIS: <https://civis.eu/fr>

6.2 ISFIN research topics

- Edge plasma physics and plasma wall interactions
- Physics of confinement in magnetized plasmas
- Nuclear instrumentation and detection: sensors/detectors, hardened electronics
- Materials and Structures: characterization and modeling
- Thermal diagnostics and Characterization of thermodynamics properties
- Human and Social Sciences in relation with nuclear energy

6.3 ISFIN laboratories

ISFIN members belong to one of these laboratories:

- PIIM
- IM2NP
- LMA
- IUSTI
- M2P2
- I2M
- CPT
- MESOPOLHIS
- DICE
- FRESNEL

→ Form to be sent before November 20th to: isfin-direction@univ-amu.fr

▪ **Mobility project title:**

▪ **Principal investigator:**

First name:

Last name:

Ph.:

E-Mail:

Doctoral School:

Specialization:

PhD start date:

**PhD funding (Doctoral School, ANR,
contract...):**

▪ **PhD topic:**

▪ **Home laboratory involved in the supervision or co-supervision of the PhD thesis:**

PIIM

IUSTI

CPT

FRESNEL

IM2NP

M2P2

MESOPOLHIS

LMA

I2M

DICE

▪ **If appropriate, partner involved in the supervision or co-supervision of the PhD thesis:**

CEA IRESNE

ITER org

EDF

CEA IRFM

IRSN

Other (to be precised):

▪ **PhD supervisors and co-supervisors:**

PhD supervisor name, laboratory,
institution:

PhD co-supervisor name, laboratory,
institution:

▪ **PhD supervisors or co-supervisors detailed opinion (max 10 lines):**

PhD supervisor signature

PhD co-supervisor signature

→ Form to be sent before November 20th to: isfin-direction@univ-amu.fr

▪ **Collaborative context:**

Collaboration between the host laboratory and the home laboratory already exists:

- No
 Yes (please, specify):

▪ **Mobility period envisaged:**

▪ **Host laboratory contacty person:**

First name, surname:

E-Mail:

Position:

Laboratory:

University/institution:

Country:

Adress:

▪ **Host laboratory contacty person detailed opinion (max 10 lines):**

Signature of the contact person:

→ Form to be sent before November 20th to: isfin-direction@univ-amu.fr

▪ **Scientific project:**

The project must be ~4 - 8 pages long (font size 12)

Summary of the mobility project: ½ page

Give a brief summary of the mobility project.

Background, motivation and objectives, scientific description of the project: 2 pages

Present the context of the mobility (scientific with a brief state of the art and collaborative), your motivation and objectives. In relation to your objectives, present the reasons to move into the chosen host team.

Risks management and contingency plan: ~ ½ page

Outline possible risks (unexpected events that could prevent the realization of the project) and detail risk mitigation (backup solutions...).

Personal and academic impact: ~ ½ page

How will this mobility impact your PhD research work, your knowledge in science, your personal development? How this mobility will impact science?

Planning/timeline (possibly including a Gantt diagram): ~ ½ page

Present the expected timeline of your work during your mobility.

Ethical issues (if relevant): ~ ½ page

If any, please specify any possible ethical issues related to your project.

Budget including justification for required funding, complementary funding if relevant: ~ ½ page

ISFIN is funding travel related costs (flight, train, accommodation, meals). Meals costs should be evaluated on a basis of 30€ a day. Please contact the ISFIN for any question regarding budget.

Signature and commitments

I hereby agree to comply with ISFIN and AMIDEX publication rules for any publication related to this mobility project if granted. I agree to provide a report on the work carried out during the mobility (one month after the end of the mobility period, about 4 pages).

Name and signature: