

# MASTER

## Functional Advanced Materials Engineering with Artificial Intelligence for Sustainability (FAMEAIS)



### Program factsheet

#### ACADEMIC COOPERATION

##### Consortium of 7 universities:

- › **Belgium:** Université de Liège, Université Catholique de Louvain
- › **France:** Institut National Polytechnique de Grenoble (coordinator), University of Bordeaux
- › **Germany:** Technische Universität Darmstadt, Universität Augsburg
- › **Portugal:** Universidade de Aveiro
- › **Associated partners:**
  - › **Industry:** Schneider Electric Industries SAS; SOLVAY; Robert BOSCH GmbH; MERCK, etc.
  - › **Research & Technology Organizations:** EMMI; CEA; Fraunhofer, etc.
  - › **Worldwide Associated Universities:** University of Waterloo (Canada); Okayama University (Japan); Virginia Tech University (USA); University of Sao Paulo (Brazil); VNU Hanoi University of Science (Vietnam), etc.

#### LEVEL

Double Master degree in "Material Science" awarded by the two consortium universities where the student has studied.

### Program outline

The FAMEAIS Master is a two-year Master of Science Program in Advanced Functional Materials. It is taught in English (100%) at seven universities, leaders in the field.

This program provides high-level academic and research-oriented education on the synthesis, characterization and processing of all classes of materials with emphasis on "Advanced Hybrid Materials and Ceramics by Design" in Bordeaux.

The program helps students develop a creative thinking mindset and leadership skills, along with a keen awareness of social and industrial needs, thanks to innovative learning practices that include extensive, collaborative projects.

#### PROGRAM DURATION

2 years (120 ECTS).

#### LANGUAGE REQUIREMENTS

All courses are taught in English. Applicants must attach an official language test report to their application.

- › IELTS (Academic IELTS only): overall Band Score: 6.5 / writing Band Score: 5.5
- › TOEFL (IBT = Internet Based Test, PBT = Paper Based Test): total score: 92 (IBT), 580 (PBT) / writing score: 22 (IBT), 4.0 (PBT)

These minimum requirements are very strict. If the applicant score does not fulfill the minimum requirements, he/she is not eligible to apply and the application cannot be processed.

#### ADMISSION REQUIREMENTS

**Candidates must have:** Bachelor degree in material science or in physics / physical chemistry / chemistry / engineering with a speciality in the field of materials.

#### TUITION FEES

##### Annual fees:

- › Erasmus Mundus scholarship holders and self-funded students:
- › 9,000€/yr for third-country students,
- › 4,000€/yr for European students.

FAMEAIS tuition fees are covered by the Erasmus Mundus grant. Self-funded students should apply for other grant schemes (see below).

Students from partner universities benefit from a fee-waiver and pay only local tuition fees defined by their home university.

##### Grants:

- › Erasmus Mundus scholarships
- › Mobility grants from partners
- › Mobility grants from applicant countries (e.g. CONACYT in Mexico)
- › Mobility grants from bilateral agreements (e.g. Indian-French Raman-Charpak Fellowships)

##### Bordeaux / Darmstadt track:

- › Bordeaux mobility grants
- › International Master IdEx grants (Bordeaux students following M1 in Darmstadt / international students following Bordeaux / Darmstadt track)
- › Eiffel grants (international students already enrolled in Darmstadt for M1, covering 2nd yr in Bordeaux)
- › DAAD grants (Bordeaux students covering 1st yr in Darmstadt)
- › Aqumob grants ([www.aquimob.fr](http://www.aquimob.fr))

European mobility is mandatory during the two-year Master program thus taking advantage of the complementary skills of the universities in the network.

In the last decade, more than 200 students have graduated from the FAMEAIS Master.



With the support of the Erasmus+ Programme of the European Union

## Program structure

The FAMEAIS program consists of four semesters (30 ECTS each) including a Master thesis in a European research laboratory.

- › The first two semesters establish a firm background in Chemistry and Physics of Materials. Professional skills are developed through the FAMEAIS/e project.
- › The third semester is dedicated to a specialization provided by one of the partner universities as world-leading expert. It is composed of mandatory and optional courses. For students studying in Bordeaux, the specialization is "Advanced Hybrid Materials and Ceramics by Design".
- › The last semester is dedicated to the Master thesis, prepared in the academic or industrial research laboratories of the FAMEAIS network.

## Feedback

*The EQAB considers FAME+\* an excellent initiative for [students] who are interested in interdisciplinary materials science and engineering[...].*

*EQAB [is] convinced that the FAME+ program is well structured and organized. The FAME+ student community is rather international and has developed perceptible group dynamics, noticeably promoted by the annual FAME+ summer schools [...].*

*The EQAB was impressed by the wide variety of interdisciplinary research subjects presented at the workshop[s]. It considered some of the presented work excellent or even outstanding, and often at the frontier of the science and technology of functional materials and devices. The EQAB takes this as label of high quality and merit of the program.*

Excerpts from External Quality Assessment Board (EQAB) report  
\*previous name of the FAMEAIS Master program

## → And after?

After completion of this Master, students are encouraged to apply for PhD programs in Europe.

Graduates may also start working as scientists or R&D engineers within the industrial sector.

More than 70% of the FAMEAIS Master graduates from Bordeaux have successfully pursued their studies with a PhD opportunity. These PhDs have been carried out in Bordeaux (~33%), in France (~50%) and in Europe (~87%).

## Strengths



High-level academic and research-oriented education about the synthesis, characterization and processing of all classes of materials including:

- › Chemistry and Physics of Materials during the first year.
- › Specialization in one of the seven programs offered by the partner universities.



Improved integration capacity into either academic or industrial R&D teams.



Enhanced employability thanks to innovative learning practices that help students develop a creative thinking mindset and leadership skills, along with awareness of social and industrial needs.



Strengthening of an international culture, including fluency in English, mobility as well as experience of the languages and culture of the countries visited.

## Contact

### General information on the FAMEAIS program:

- › Master FAMEAIS coordination:  
master.fame@grenoble-inp.fr

### Information on the Bordeaux / Darmstadt track:

- › Dr. Michael Josse:  
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- › Florina Camarasu:  
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[www.fame-master.eu](http://www.fame-master.eu) / [www.emmi-materials.eu](http://www.emmi-materials.eu)

## How to apply?

Online application: [www.fame-master.eu](http://www.fame-master.eu)

Deadlines:

- › Erasmus Mundus scholarship: 1st recruitment wave in mid-January.
- › Self-funded students, students applying for external grants (IdEx, Eiffel, DAAD, Aquimob...): 2nd recruitment wave in mid-April.

[www.u-bordeaux.com](http://www.u-bordeaux.com)



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