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# MaMaSELF<sup>2</sup>

## MASTER IN MATERIALS SCIENCE

Master in Materials Science powERed by Large scale Facilities



### MASTER OF EXCELLENCE

**STUDY IN EUROPE  
AT HIGHLY RANKED UNIVERSITIES  
FRANCE - GERMANY - ITALY - POLAND**



## WHY STUDY MATERIALS SCIENCES ?

Strategic development of industrialized countries, including Energy considerations, requires the design of new materials with increasing complexity and performance specifications. Designing, processing and controlling such smart materials is a multidisciplinary field that requires highly qualified experts, capable of understanding, characterizing, processing and engineering these materials.

### BECOME SKILLED SCIENTISTS

The main objective of the Mamaself Master Course is to form skilled scientists & engineers in Materials science, offering a training program with the most advanced experimental techniques for the characterization of high-tech materials. During the Master, students will benefit and be part of the intense international collaboration among High level Universities, Large Scale Facilities and Industry in the framework of the Mamaself program. The two-year MaMaSELF Master's Course covers 120 ECTS credit points. Students obtain a double or multiple diploma from renowned universities in Europe.

### MAMASELF KEYFACTS

- 150 SCHOLARSHIPS FOR STUDENTS
- 6 EUROPEAN UNIVERSITIES
- 12 ASSOCIATED PARTNERS
- 100% LECTURES IN ENGLISH
- 5th ERASMUS MUNDUS LABEL OF EXCELLENCE
- 2 TO 3 DIPLOMA HANDED TO EACH STUDENT
- 6 TO 8 MONTHS INTERNSHIP
- 95% OF THE STUDENTS FIND A POSITION
- WITHIN THE 3 MONTHS FOLLOWING GRADUATION
- 51 COUNTRIES REPRESENTED



## CONTENT OF THE PROGRAM

### FRANCE

#### UNIVERSITY OF RENNES 1

Crystallography, structure and dynamics of materials, physics and chemistry of solids, simulation and modelling, metal & alloys, semiconductors, photonics, surface & nano-science, sensors, ceramics and glasses.

#### UNIVERSITY OF MONTPELLIER

Crystallography, X-ray, neutron, and electron microscopy structure analysis, Quantum mechanics, simulation and modelling, energy transfer & storage, catalysis, surface science, ceramics, metallurgy.

### GERMANY

#### TU MUNICH

Engineering physics bio-materials, polymers, theoretical physics, nuclear physics, neutron physics, reactor physics, photovoltaics, energy materials, scattering methods.

#### LMU

Mineralogy, crystallography, spectroscopy, geo- & biogenic materials, petrology, multi-ferroics, ionic/protonic conductors, shape memory alloys, crystal growth, photon and neutron scattering.

### ITALY

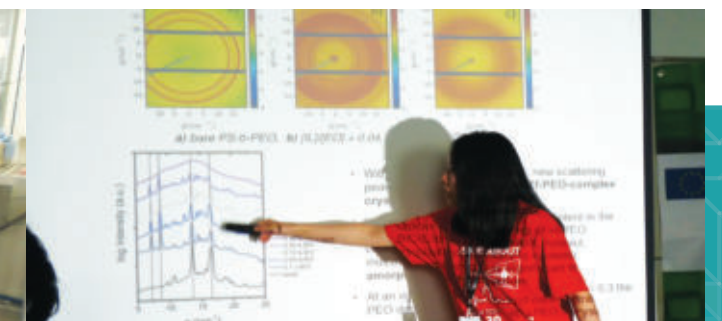
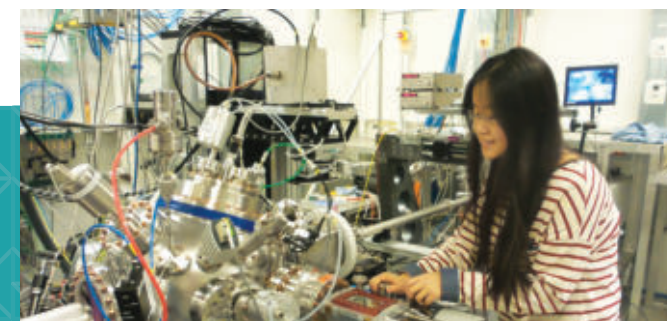
#### UNIVERSITY OF TURIN

Synthetic & solid state chemistry, quantum chemistry, solid state physics and applications (opto-electronics, devices), metallurgy, surface phenomena, polymers, materials for energy, machine learning.

### POLAND

#### ADAM MICKIEWICZ UNIVERSITY

Materials science, solar energy conversion, spintronics, quantum and nonlinear optics, metamaterials and magnonics, ultrafast spectroscopy.







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## ERASMUS MUNDUS PROGRAM

The Master Mamaself course has been built in the framework of the Erasmus Mundus European program of excellence. The European Erasmus Mundus program stands for the promotion of the European Union as a centre of excellence in the field of higher education. It strongly supports high quality Master courses to enhance visibility and attractiveness of European higher education all around the world. Master Mamaself benefits from the support of EACEA and of the Erasmus Mundus label of excellence since 2007.

[https://eacea.ec.europa.eu/erasmusplus/library/scholarships-catalogue\\_en](https://eacea.ec.europa.eu/erasmusplus/library/scholarships-catalogue_en)

## SCHOLARSHIPS

For each academic year the consortium selects a limited number of Non-EU and EU students, who will receive a grant up to

- 33600€ for the 2 years of the program (EU and NON-EU students)

Selected students can participate in the Master's course without EM grant or apply for other grants (for more information see website). Pay attention to the deadline for Mamaself scholarship applications !

## TUITION FEES

- 6000 € per year for Non-EU students (Partner countries students)
- 3000 € per year for EU students (Program countries students)
- Health and liability insurance, accommodation insurance, language courses, integration week, summerschool... are included in the tuition fees.



## LANGUAGE POLICY

### ALL LECTURES IN ENGLISH

- Instruction language is English for all lectures and any other communication.
- We offer level-adapted language courses of about 40 hours in French, German, Italian and Polish language at the respective consortium sites.

The Mamaself Consortium includes 6 primary European Universities in the field of Materials sciences, Physics, Chemistry. These renowned universities are situated in culturally rich cities in Europe. They stand for global knowledge, exchange, shaping the future with talent, excellence and responsibility.

## STUDY AT PRESTIGIOUS UNIVERSITIES IN EUROPE



### FRANCE

#### UNIVERSITY OF RENNES 1

University of Rennes 1, coordinating institution of the program, hosts 30000 students and covers most of the scientific disciplines. 17 of them appear in the top 500 world universities, chemistry and physics being 201-300 in the AWRU Shanghai ranking. Rennes is among the top French universities, internationally recognised in terms of its attractiveness, the quality of training and student life, as well as professional integration. Coordinator : Pr Philippe RABILLER



#### UNIVERSITY OF MONTPELLIER

Established in the 12th century, the University of Montpellier is a multidisciplinary university with a particular focus on sciences and technological research, renowned and internationally well ranked in particular in chemistry and physics. Montpellier is ideally located in the South of France. Coordinator : Pr Werner PAULUS



### MUNICH, GERMANY

#### LUDWIG MAXIMILIANS UNIVERSITÄT

In the "World University Ranking 2021" LMU is once again rated as the best university in Germany. As one of Europe's leading research universities, LMU sets out to inspire students with enthusiasm for science and scholarship, and the critical thinking they demand. Coordinator : Pr Elena STURM



#### TECHNISCHE UNIVERSITÄT MUNICH

TUM is ranked as one of the best universities in Europe. As a leading entrepreneurial university, it inspires and develops talents in all their diversity to become responsible, broad-minded individuals and empower them to shape the progress of innovation with the highest scientific standards and technological expertise. Coordinator : Pr Peter MÜLLER BUSCHBAUM



### ITALY

#### UNIVERSITY OF TURIN

University of Turin is ranked among the first 15 Italian universities and among the best 500 universities worldwide. The MaMaSELF program in Turin is hosted within the Chemistry Department, in a dynamic environment enriched by internationally recognized excellences in the field of materials science, catalysis and environmental chemistry, as proven by two recently awarded ERC grants. Coordinator: Pr Silvia BORDIGA



### POLAND

#### ADAM MICKIEWICZ UNIVERSITY

Adam Mickiewicz University, Poznań is a research university, one of the best academic centres in Poland. The cornerstones of its reputation are a time-honoured tradition, outstanding scientific achievements of its academic staff, students and graduates and an attractive curriculum. AMU is a member of the European consortium of universities EPICUR. Coordinator : Pr Jacek KUBICKI



# A 2 YEAR MASTER WITH MOBILITIES IN EUROPE



## MAMASELF EVENTS

3 main events will punctuate the program during the 2 years and will allow the students to meet and interact with other cohorts, alumni and professor.

### WELCOME WEEK

At the start of the program an intense integration week is organised for all Master 1: cultural visits, sport activities, scientific presentations, meeting with professors, registration... This is the occasion to discover and meet : build your network !

### SUMMER SCHOOL

A 2 weeks summer school is organized for all Mamaself students in the beginning of the second year at University of Montpellier. Objective of the summer school is to obtain a wide background in exploring materials using neutron, synchrotron and free electron laser radiation. An exam (7 ECTS) is scheduled at the end of the summer school

### STATUS MEETING

The Mamaself status meeting is organized in Switzerland during the 4th semester and brings together all second-year Mamaself students and representatives of Partner Institutions. During the status meeting the students will present the preliminary results of their Master-thesis work. Additionally, scientific topics will be presented by specialists from research centres and universities.

## MOBILITIES

The two year Mamaself program is split in 4 semesters :

### Semester 1 + 2

The first year is entirely enrolled at one out of the universities

### Semester 3

The semester 3 is a study semester at a different university.

### Semester 4

The semester 4 is dedicated to the Master thesis and can be carried out at any university or Large scale facility or at partner institutions.

3 main events will punctuate the program during the 2 years and will allow the students to meet and interact with other cohorts, alumni and professor.

The Mamaself program is supported by internationally recognised universities and research centers. The Master thesis during the 4th semester can be conducted partially/entirely at consortium universities or at associated partners outside Europe or at Large Scale Facilities.

## PARTNERS INSTITUTIONS

### ASSOCIATED PARTNER INSTITUTIONS

Partner institutions can be academic institutions as well as research centers. They are situated in Switzerland (PSI, Zurich), Finland (University of Helsinki), France (ESRF and Synchrotron Soleil), Japan (Kyoto University, Tokyo Institute of Technology), India (IIT Madras), USA (ChemMatCARS and Oak Ridge), Spain (ALBA synchrotron and IMDEA), Brazil (University of Sao Paulo).



### LARGE SCALE FACILITIES

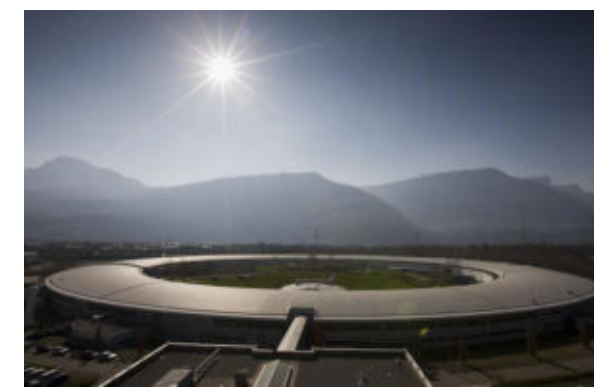
Most of the worldwide leading Large Scale Facilities strongly support the program. They take part as invited experts and also contribute to the Mamaself summer school and Master thesis : ILL and ESRF (Grenoble, F), Synchrotron Soleil (Saclay, F), FRM-II (Munich, D), DESY (Hamburg, D), XFEL (Hamburg, D), PSI (Villigen, CH), Elettra (Trieste, I), Alba (Barcelona, E), Solaris (PL), Diamond (GB), Sesame synchrotron (JOR), European Spallation Source (Lund, SE), Oak Ridge and ChemMatCARS (USA).

## MASTER'S BENEFITS

The partnership with Non-European institutions and Large Scale Facilities offers the chance to gather professors and experts specialized in different disciplines, offering a wide range of opportunities for students.

After completion of the program the student will demonstrate solid knowledge and skills allowing him/ her to solve problems related to materials and their technological applications or process.

- Multidisciplinarity : Physics, Chemistry, Materials science, Modelisationa
- Close contact with industrial and academic research
- Work with high level research groups
- International Master & network : professors, researchers, students...
- Internships, Master thesis proposals
- Open vision of innovation in Materials science
- Enhanced communication in english

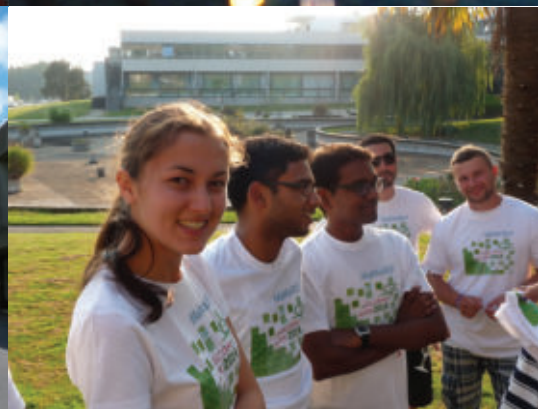


# APPLY !!





# MaMaSELF<sup>2</sup>



## ADMISSION CRITERIA

Students must have a Bachelor (180 ECTS or equivalent) in Materials Science or related disciplines (chemistry, physics, geoscience, ...) and good English competencies, e.g. TOEFL 230 CBT, PBT 550, IBT 80, IELTS 6.5 or equivalent.

## APPLICATION

Mamaself application is fully online. Electronic submission on : <http://application.mamaself.eu>

Application deadlines for scholarships Partner countries students (Non-EU students), Program countries students (EU and Non-EU students) and Self-funded students : please refer to the website [www.mamaself.eu](http://www.mamaself.eu).

## CONTACT

Program manager : [christiane.cloarec@univ-rennes1.fr](mailto:christiane.cloarec@univ-rennes1.fr)



# APPLY !!



# [www.mamaself.eu](http://www.mamaself.eu)