Functionalized Advanced Materials & Engineering+
Advanced Materials for Innovation and Sustainability

Advanced Materials

Is it really new ?

Is it only a Master Programme ?

Mobility schema, scholarships, registration fees, diplomas?

What are my choices?

Main differences between AMIS and FAME+ ?

Which are the main differences with SIM?

- EIT label in 2016
- First edition in 2017

AMIS programme is build around KIC Raw Materials partners
- 5 University partners
- 5 Industrial partners

- 3rd EMMAD Erasmus+ label in 2017
- First edition in 2018

FAME+ programme is build around 7 leading Universities in Material Science belonging to EMMI and is endorsed by:
- 8 Industrial partners
- 7 European RTOs
- 13 Academic partners

http://www.fame-master.eu/

European Institute of Innovation & Technology

Erasmus + Actions

Key Action 1: Mobility

Key Action 2: Cooperation

Key Action 3: Policy

Obtained diploma

AM in practice

Why AM

Erasmus+

www.amis-master.eitrawmaterials.eu

www.fame-master.eu/

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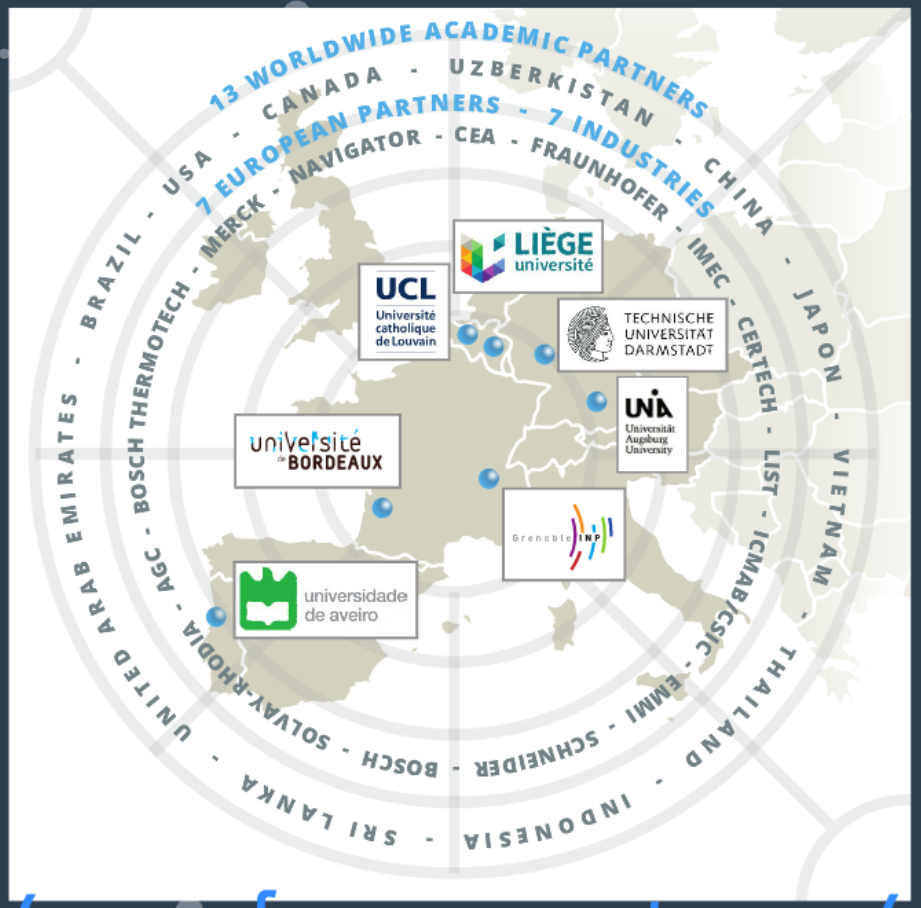

http://www.fame-master.eu/

Erasmus + Actions

The European Union's Erasmus+ programme is a funding scheme to support activities in the fields of Education, Training, Youth and Sport.

The Programme is made up of three so-called "Key Actions" and two additional actions.

Key Action 1: Mobility

Key Action 2: Cooperation

Key Action 3: Policy

The Erasmus+ is an integral part of **Horizon 2020**, the EU's Framework Programme for Research and Innovation.

https://eacea.ec.europa.eu/erasmus-plus_en

EMJMD

- EMJMDs **aim to**:

- **Foster excellence**, innovation, and internationalisation in HEIs
- **Boost the attractiveness** of the European Higher Education Area (EHEA) and support the EU's external action in the field of higher education
- **Improve the level of competences and skills** of Master graduates and their employability

- Two student populations :
  - **Programme** country students (EU countries)
  - **Partner** country students (Non EU countries)
- Minimum of 75% grants must be allocated to Partner Countries students

Erasmus+

AMIS MASTER

Advanced Materials for Innovation and Sustainability

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https://amis-master.eitrawmaterials.eu/

Knowledge & Innovation Communities (KICs)

- Develop innovative products and services;
- Start new companies;
- Train a new generation of entrepreneurs.

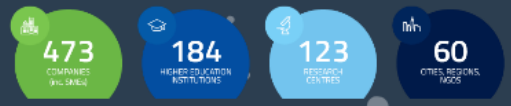
The EIT's KICs :

2010
- Climate-KIC: addressing climate change challenges;
- EIT Digital: generating world-class ICT;
- KIC InnoEnergy: tackling sustainable energy

2015
- EIT Health: addressing healthy living & active ageing
- EIT Raw Materials: addressing sustainable exploration, extraction, processing, recycling and substitutions.

European Institute of Innovation & Technology

We bring together leading universities, **research labs and companies** to form dynamic pan-European partnerships.



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https://eit.europa.eu/

KIC Raw Materials

The educational programmes will educate "T-shaped" professionals with an understanding of the full raw materials value chain and with a mind-set for innovation, and entrepreneurship focusing on sustainability.

Master AMIS: 1 out of 5 Masters supported

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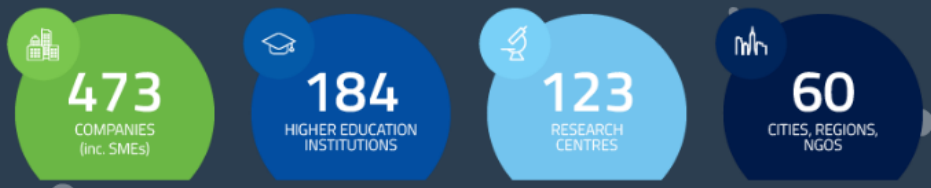

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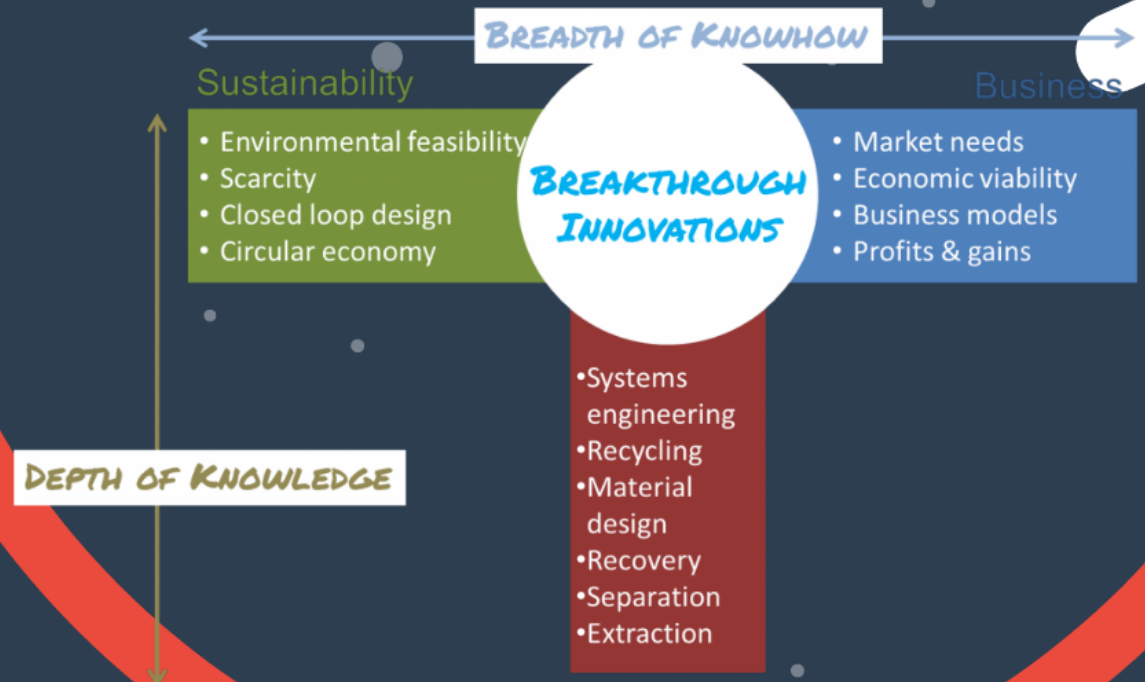

Master AMIS: 1 out of 5 Masters supported

Functionalized **Advanced Materials** & Engineering+ **Advanced Materials** for Innovation and Sustainability

What is AM offering

- Solid **Material science** background with a special attention to advanced materials
- All classes are in **English**
- **One year mobility** between partners which will define your specialization
- **Joint projects** between students
- **International** & interdisciplinary dimension of modern Materials Science
- Creation of an international **network** (academic and industrial)

AMIS

Mobility between partners

Entrepreneurship skills

Summer camp, SLUSH

EIT events Joint projects, Live classrooms

Internship in industrial EIT partners

Added value student activities grants (AVSA grants) for all students

FAME+ MASTER

Mobility between partners

More chemisty courses

Seminars and essays on practices in industry

E-Learning Courses

Erasmus Mundus Alumni events

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Joint FAME/e project joint project

Obtained diploma

Two Diplomas :

1. **Phelma engineering** diploma
2. **Master of Sience** from the University where you spend your 3A.

+ a diploma supplement associated with the corresponding Label

The purpose of the supplement is to provide sufficient independent data to improve the international 'transparency' and fair academic and professional recognition of qualifications (diplomas, degrees, certificates, etc.). It is designed to provide a description of the nature, level, context, content and status of the studies that were pursued and successfully completed by the individual named on the original qualification to which this supplement is appended. It should be free from any value judgements, equivalence statements or suggestions about recognition.

AM in practice

15 places available for both FAME+ and AMIS

***Selection criteria** based on:*

1. Motivation and

2. Student performance

Interview with the AM responsibles

Take contact:

eirini.sarigiannidou@grenoble-inp.fr
contact@amis-master.eu
fame-master@grenoble-inp.fr

Why AM

- Two diplomas
- Creation of an international network (academic and industrial)
- Multicultural environment
- Joint project
- Mobility and special events

Visit our website :

amis-master.eitrawmaterials.eu

www.fame-master.eu

Contact us !!

materials.eu www.fame-maste

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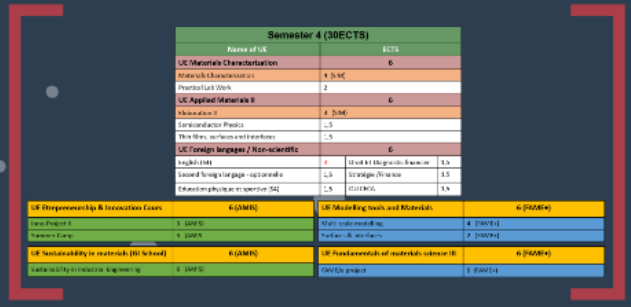


Semester 3 (30ECTS)			
Name of UE	**ECTS**		
UE Fundamentals of materials science I	**6**		
Elaboration (Part I)	4 (SIM)		
Functional materials physics	2		
UE Applied Materials I	**6**		
Phase transformations	2 (SIM)		
Solid state chemistry	2		
Introduction to functional polymers	2		
Physique du Solide	0		
UE Modelling tools and Materials	**6**		
Numerical methods	4,5 (SIM)		
Materials families	1,5 (SIM)		
UE Foreign langages / Non-scientific	**6**		
English (S3)	3	Rex	0
Second foreign langage - optionnelle	1,5	Stratégie + Marketing OU CECA	1+1
Education physique et sportive (S3)	1	Business Marketing	1
UE Fundamentals of materials science II	**6**		
Microstructures and properties	1,5 (SIM)		
Cristallography	1,5		
Polymers	3 (FAME+)		
FAME/e project	0 (FAME+)		
Inno-Project I	3 (AMIS)		

Semester 4 (30ECTS)			
Name of UE	**ECTS**		
UE Materials Characterization	**6**		
Materials Characterization	4 (SIM)		
Practical Lab Work	2		
UE Applied Materials II	**6**		
Eloboration II	3 (SIM)		
Semiconductor Physics	1,5		
Thin films, surfaces and interfaces	1,5		
UE Foreign langages / Non-scientific	**6**		
English (S4)	3	Droit ET Diagnostic financier	1,5
Second foreign langage - optionnelle	1,5	Stratégie /Finance	1,5
Education physique et sportive (S4)	1,5	OU CECA	1,5

UE Etrepreneurship & Innovation Cours	**6 (AMIS)**
Inno-Project II	3 (AMIS)
Summer Camp	3 (AMIS

UE Sustainability in materials (GI School)	**6 (AMIS)**
Sustainability in Industrial Engineering	6 (AMIS)

UE Modelling tools and Materials	**6 (FAME+)**
Multi scale modelling	4 (FAME+)
Surfaces & interfaces	2 (FAME+)

UE Fundamentals of materials science III	**6 (FAME+)**
FAME/e project	6 (FAME+)

AMIS MASTER

Mobility between partners

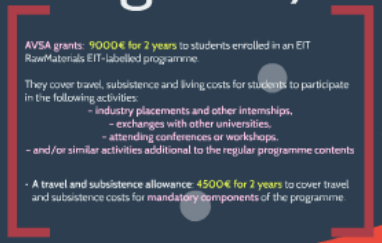
Entrepreneurship skills

Summer camp, SLUSH

EIT events Joint projects, Live classrooms

Internship in industrial EIT partners

Added value student activities grants (AVSA grants) for all students



BREADTH OF KNOWLEDGE

sustainability

business

EIT Overarching Learning Outcomes (OLOs) 30ECTS

Highly integrated, innovative

- Inno-Project I and II
- Joint summer camp
- Inno-Mission Internship
- E-learning

Breakthrough Innovation

Robust entrepreneurship education

- Management
- Entrepreneurship
- Integrated courses
- Market analysis

DEPHT OF KNOWLEDGE

Year 1

Semester 1 & 2

General Curriculum in Materials Science (60 ECTS)

Grenoble INP | Aalto University | Technische Universität Darmstadt

Year 2

Semester 3

Specialization in one of the following universities (30 ECTS)

GRENOBLE	AALTO	DARMSTADT
Technische Universität Darmstadt	Technische Universität Darmstadt	Aalto University
Aalto University	Université de Liège	Université de Liège
Université de Liège	université de Bordeaux	université de Bordeaux
	Grenoble INP	Grenoble INP

Darmstadt: Functional Ceramics: Processing, Characterization and Properties

Aalto: Nanomaterials and interfaces: Advanced Characterization and Modeling

Liège: Nanomaterials and Modeling

Bordeaux: Advanced Hybrid Materials: Composites and ceramics by Design

Grenoble: Materials Interfaces: Surfaces, Films & Coatings

Semester 4

Master Thesis (30 ECTS)

(6 months inside a laboratories of the KIC RM Network or in related industries)

AMIS MASTER

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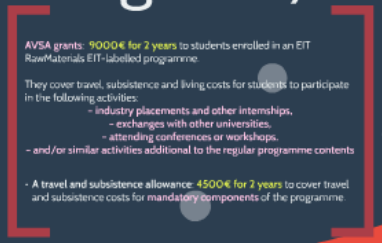

Name of the course	ECTS	YEAR OF STUDY	REMARKS
Local Innovation, Entrepreneurship and Business courses	5/5/6	M1 (first year of master-programme)	Aalto/GINP/TUD curriculum
Local Innovation & Entrepreneurship integrated courses	10/6/3	M1	Aalto/GINP/TUD curriculum
Joint collaborative course: INNO-Project I and II	I: 6 II: 3	M1 M2	M1: Aalto/GINP/TUD M2: Aalto/GINP/TUD/UB/UL curriculum
Joint collaborative course: Summer Camp Camp : Aalto Camp	3	Between M1 and M2	Compulsory for all programme students, 7 days
Inno-Mission Internship	7-9	End of M1	Compulsory for all programme students, min 3 months
TOTAL minimum of Innovation & Entrepreneurship courses	30		

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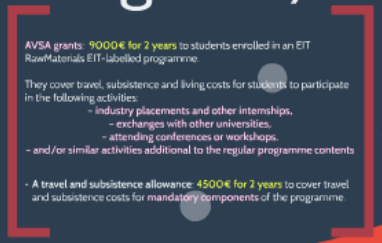

VSA grants) to

AVSA grants: **9000€ for 2 years** to students enrolled in an EIT RawMaterials EIT-labelled programme.

They cover travel, subsistence and living costs for students to participate in the following activities:

– industry placements and other internships,
– exchanges with other universities,
– attending conferences or workshops,
– and/or similar activities additional to the regular programme contents

- **A travel and subsistence allowance**: **4500€ for 2 years** to cover travel and subsistence costs for **mandatory components** of the programme.

Mobility between partners

FAME MASTER

More chemisty courses

Seminars and essays on practices in industry

E-Learning Courses

Erasmus Mundus Alumni events

Internship in research laboratory and/ or related industry

FAME/e project :
The FAME-project contains three scientific and technical modules, and two "soft" modules, running over the two semesters of M1. The students are in groups of three to four, remotely supervised by a tutor from one of the seven partner Universities.

Joint FAME/e project joint project


YEAR 1
General Curriculum in Materials Science (60 ECTS)
Grenoble INP
TECHNISCHE UNIVERSITÄT DARMSTADT
YEAR 2
Specialization in one of the following universities (30 ECTS)
Master Thesis (30 ECTS)
(6 months in a research laboratory or in related industry)
Functional Ceramics: Processing, Characterization and Properties
Materials Interfaces: Surfaces, Composites and Coatings
Nano-Materials and Hybrids
Nano-Materials and Modelling
Engineering of Materials and Nano-Structures
Advanced Hybrid Materials and Ceramics by design
Materials for Micro and Nano Technologies

Mobility between partners

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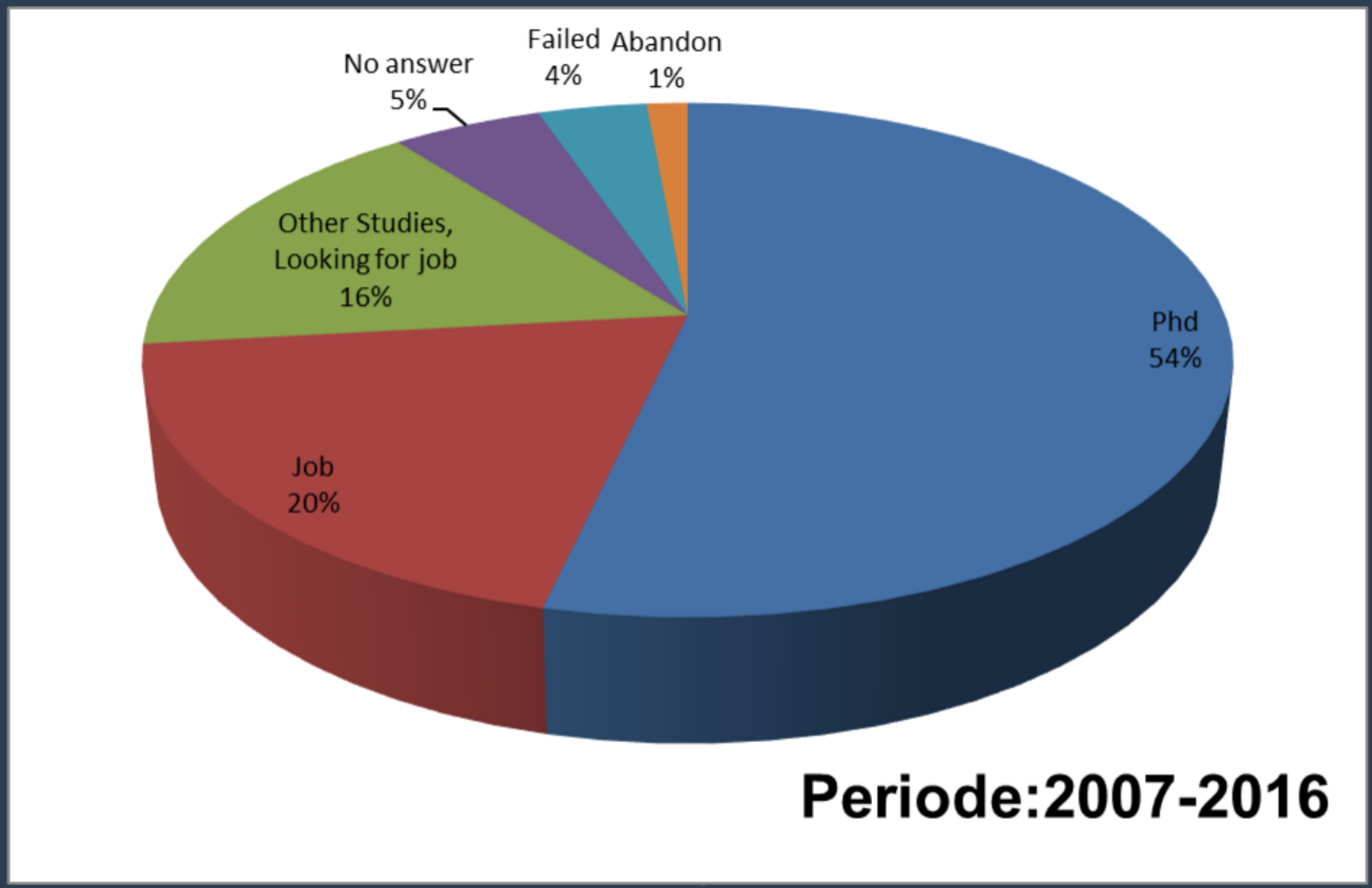
No answer
5%
Failed
4%
Abandon
1%
Other Studies,
Looking for job
16%
Phd
54%
Job
20%
Periode:2007-2016

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Grenoble INP phelma

SIM
Science et Ingénierie des Matériaux

3 semestres matériaux + stages matériaux : 3x24 + 30 credits ECTS scientifiques

- Cours en français ou anglais
- Pédagogie par projets, TP (36/72 ECTS)
- Filière Généraliste

- Métallurgie, Mécanique des Matériaux

Cours en commun (S3 hors TP, 30% S4)

Advanced Materials

FAME (Functionnal Materials)
AMIS (Innovation & Sustainability)

3 semestres matériaux + stages matériaux : 3x24 + 30 credits ECTS scientifiques

- Cours 100 % en anglais
- Promo internationale, label international
- 3A à l'étranger
- Matériaux fonctionnelles, matériaux pour substitution
- Double diplôme

Why AM

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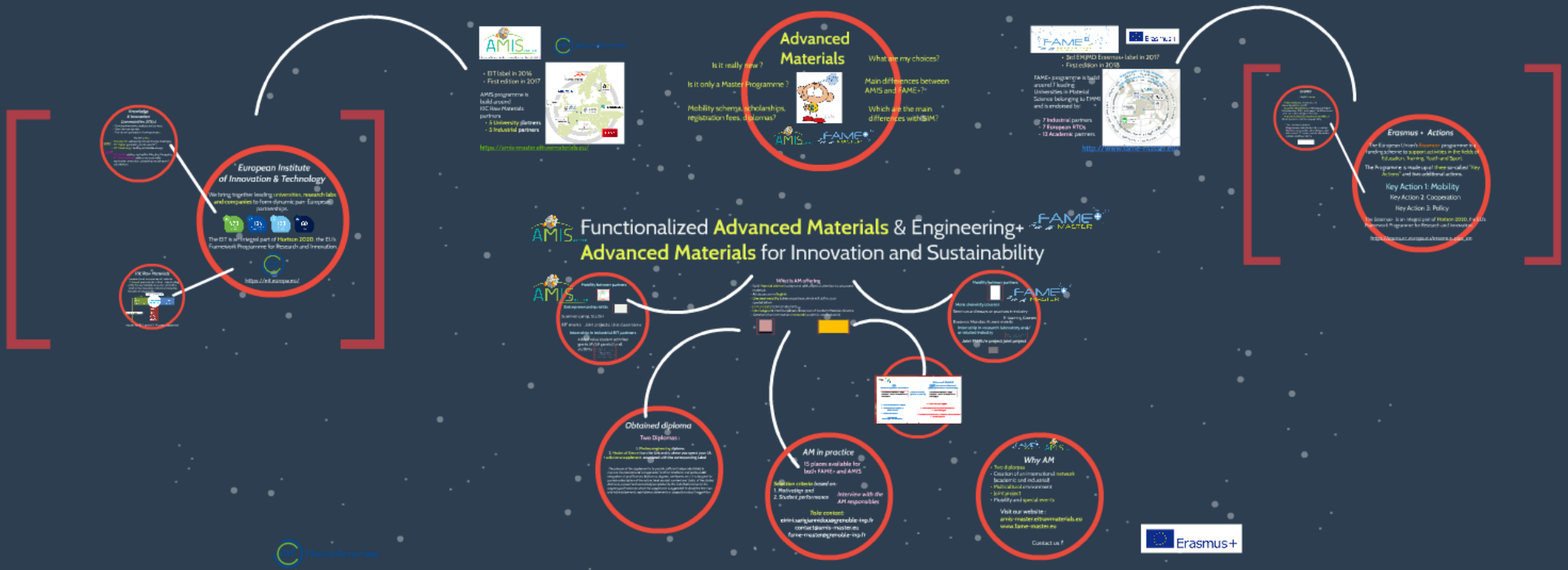

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