

Sesión Informativa Horizonte Europa

Acciones Marie Skłodowska-Curie: Convocatoria PF 2025 Proyectos Posdoctorales. Aspectos prácticos

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Marie Skłodowska Curie postdoctoral researcher

IMDEA Materials Institute

June 2025

Who was I?

❖ B.Sc. (2008–2012)

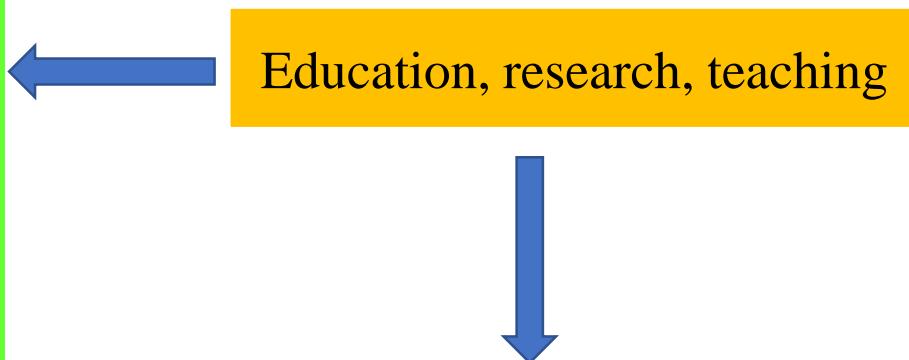
Isfahan University of Technology, Isfahan, Iran

❖ M.Sc. (2012–2014)

University of Tehran, Tehran, Iran

❖ Ph.D. (2015-2020)

University of Tehran, Tehran, Iran



✓ Visiting Ph.D. student (July 2018-January 2019)

Magnesium Technology Innovation Center, Seoul National University (SNU), **South Korea**

✓ Visiting researcher (July 2018-January 2019)

Osnabrück University of Applied Sciences, Osnabrück, **Germany**.

✓ Research associate (17/09/2020- ...)

Formability lab, University of Tehran, **Iran**



Who was I?

Education, research, teaching

- ✓ **Collaboration with B.Sc. and M.Sc. lab-mates as a senior researcher, and guiding them through their projects**
- ✓ **Mentoring 1 B.Sc. and 4 M.Sc. students in their projects on the mechanical properties and corrosion behavior of Mg alloys**

- ✓ **Cooperation with other research groups in:**
 - Sharif University of Technology, Malayer University, Hamedan University of Technology (**all in Iran**)
 - Eotvos Lorand University, Prof. Jeno Gubicza (**Hungary**)
 - Charles University (**Czech Republic**)
 - Osnabruck University of Applied Sciences (**Germany**)
 - Taiyuan University of Technology, (**China**)

- ✓ **Teaching several courses in university**
- ✓ **Reviewer in Journals**

Number of publications on 2021 (before first apply for the action):

About 10 papers

Do not compare yourself with others

Path to MACS

✓ Sending email to professors for a postdoc position



My current professor in IMDEA



- Experienced and well known in the field
- Supervised some of my friends
- Supervised Marie Curie fellows

Start to write a proposal, about June 2021



Idea, Goal, Experience, Facilities

- Idea: Multi disciplinary, Novel, Necessary
- Goal: Solve a problem, move forward both **researcher** and institute
- Experience: Research, Managing researchers, International,
- Facilities: People, High tech instruments, Space, Institutional parts (HR, technicians)

Path to MACS

- ✓ Three or Four meetings to define and understand the subject and its necessity to be worked on and make a plan to prepare the proposal
- ✓ Start to write an initial draft (June 2021, about 1 month)
- ✓ Checking with supervisor and a PI
- ✓ Continue to complete the proposal (about 1 month)
- ✓ Checking with supervisor (back and force)
- ✓ Checking with responsible HR in the institute
- ✓ Finalize
- ✓ Submission (September)

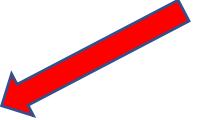
Important

- *Supervisor and HR should be experienced, professional and patient*
- *If there is any previously prepared proposal in the institute, it will help to speed up the process*
- *If there is any successful candidate it will help*

Path to MACS

✓ First try in 2021: Score 82 %

Weakness



Criterion 1 - Excellence

The proposal does not describe in sufficient detail training in biology

Criterion 2 - Impact

The contribution of the measures to shape and develop management skills is not sufficiently documented.

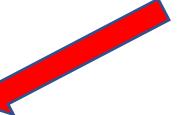
Criterion 3 - implementation

- The Gantt Chart poorly describes the timeline of the proposal. The work plan is not convincing.
- The milestones are unclear , e.g. M1 is insufficiently detailed and justified.
- The objectively quantified parameters to measure how deliverables will be reached are not sufficiently demonstrated and they are not credible.
- The number of person-months and the allocation of resources planned and requested for the proposal are insufficiently justified.

Path to MACS

✓ Second try in 2022: Score 87.6 %,
Reserved, rejected

Weakness



Criterion 1 - Excellence

- The quantification of the objective of the proposal regarding the advantages of the proposed new generation of materials is not completely clear.
- An aspect of the methodology related to the alloy synthesis process to achieve the target composition of Mg is not described with a sufficient detail in the proposal.

Criterion 2 - Impact

The significance of the contribution of the proposal to the expected outcomes is not fully presented.

Criterion 3 - implementation

- The Gantt chart has some inconsistencies regarding the timing of the secondment.
- The work packages timing does not consider overlap between some complementary tasks adequately.

Path to MACS

- ✓ Third try in 2023: The reserved proposal in 2022, accepted now

- ✓ Meeting with supervisor to make a plan to start the project
- ✓ Managing things with HR (signing a contract, getting invitation letter)
- ✓ Applying for Visa
- ✓ Booking home
- ✓ Booking a flight
- ✓ Starting the project on 1 February 2024

What is MACS

Novel Magnesium alloy for bone tissue engineering manufactured by selective laser melting

Postdoctoral project
Horizon Europe Marie Skłodowska-Curie 2022

Researcher:
Dr. Mahdi Sabbaghian

Supervisor:
Prof. Javier Llorca

Mahdi.sabbaghian@imdea.org

msabbaghians@ut.ac.ir

with cooperation of:
Dr. Monica Echeverry-Rendon

What is MACS

- ❖ It is about development of a new Magnesium alloy to be used as biodegradable implant inside the human body

It is important, because:

- The fabrication method is selective laser melting which is not common, but it is very new, applicable and essential
- The alloy will be biodegradable and biocompatible
- There will be a surface coating to help better function
- It is possible to customize the implant for male and female
- It is multidisciplinary
- There are several new experience and knowledge for the researcher
- There are several benefits for the host institute

What is MACS

Table 2.2b: Dissemination measures

| Action (tools and channels) / Objective | Target stakeholders | Timeline & KPIs |
|---|--------------------------------------|--|
| Publication in international high-impact peer-reviewed journals (Biomaterials, Biofabrication, Acta Biomaterialia, etc.) / Raise interest of potential users, spread knowledge and get feedback | Researchers in academia and industry | Month 12 onwards <i>3 papers</i> |
| Articles in trade journals such as Additive Manufacturing, Metal Powder Report / Raise interest of potential users and get feedback | Industry | Month 18 onwards <i>1 article</i> |
| Attendance to international conferences (World Biomaterials Congress, Conference of the European Society for Biomaterials, International Symposium on Biodegradable Metals for Biomedical Applications) / Raise interest of users, spread knowledge, and get feedback | Researchers in academia and industry | Month 10 onwards <i>2 conferences attended</i> |
| Presentation of the project results to companies and the host group / IMDEA interacts with Presentation of the project results to companies (Meotec, Breca, Regemat3D) and hospitals (Hospital La Paz, Hospital Gregorio Marañón) | Industry | Month 12 onwards <i>2 presentations delivered</i> |

What is MACS

Is there any secondment: YES, 5 months

Where: Poland

Why: To perform a part of project (powder atomization and SLM which are not available in IMDEA)

How find the host group: Previous cooperation with IMDEA

What is important: Instruments, People, Planning, Experience in secondment for a Marie Curie project

What is Important for a MSCA fellow?

- ✓ **Know your plan for the future**
- ✓ **Be aware about your talents and experiences**
- ✓ **Know your coordinates: do not be shy, but do not be too self confident**
- ✓ **Have sufficient study**
- ✓ **Be keen to learn**
- ✓ **Be patient**
- ✓ **Have idea about the problems and the ways to solve them**
- ✓ **Do not hesitate to talk with your supervisor about the project and its problems**

Thank you for your attention

