

## Sesión Informativa Horizonte Europa

### Acciones Marie Skłodowska-Curie: Convocatoria PF 2025

### Proyectos Posdoctorales. Aspectos prácticos

**Mahdi Sabbaghian**

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

Education, research, teaching

## ✓ 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



Start to write a proposal, about June 2021



Idea, Goal, Experience, Facilities

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

- 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

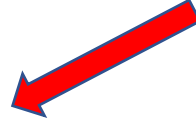
- *Supervisor and HR should be experienced, professional and patient*
- *If there is any previously prepared proposal in the institute, it will help to speed up the process*
- *If there is any successful candidate it will help*

# 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

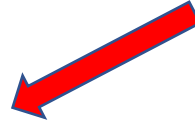
- The Gantt Chart poorly describes the timeline of the proposal. The work plan is not convincing.
- The milestones are unclear , e.g. M1 is insufficiently detailed and justified.
- The objectively quantified parameters to measure how deliverables will be reached are not sufficiently demonstrated and 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](mailto:Mahdi.sabbaghian@imdea.org)

[msabbaghians@ut.ac.ir](mailto: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) / <i>Objective</i>  | Target stakeholders                  | Timeline & <i>KPIs</i>                               |
|---|--------------------------------------|--|
| 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<br><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<br><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<br><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<br><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**

