

Widening Country Success Story

“The key to success lies in proposing a groundbreaking idea with a high risk/ high gain profile.”

Name of the fellow: Hadi Mirzajani
Country of the host: Türkiye
Project Acronym: HAMP
Project start and end date: 16.06.2022 – 15.06.2024
Type of MSCA, Horizon 2020: Postdoctoral Fellowships



What is your project about and why is the topic important for science advancement?

I developed the first wearable patch system for out-of-hospital monitoring of heart attacks. This device integrates a microneedle system for biomarker measurement with a wireless communication system for transmitting data to nearby hospitals. For the first time, a microneedle biosensor with complete system integration has been developed for cardiac biomarker monitoring in interstitial fluid. The technological advancements achieved through this project have the potential to transcend cardiac care and be adapted to other biomedical fields, enabling rapid and out-of-hospital diagnosis of various diseases.

Why is your project important for society?

Cardiovascular disease (CVD) affects over 60 million people annually in the EU, causing 1.8 million deaths, with heart attacks and strokes as leading causes. Timely intervention is essential to save lives, reduce healthcare costs, and improve quality of life. The device I

developed addresses this urgent need by enabling rapid, out-of-hospital monitoring and early diagnosis of heart attacks, significantly reducing the financial burden on healthcare providers and patients while enhancing patient outcomes.

What communication and public engagement measures have you foreseen?

As an MSCA ambassador, a major part of my activities involved disseminating project results to both the general public and scientific communities, including engineers, scientists, and medical professionals. I implemented a multi-phased programme that included participating in science fairs for high school students, presenting at dedicated conferences and workshops, and organising meetings with medical doctors and healthcare providers. These efforts ensured the effective dissemination of the project's findings and explored its integration into current medical practices.

Why did you choose a widening country as a host?

Koç University offers a unique environment for research and innovation, making it a leader in Türkiye as the recipient of the highest number of ERC grants. Its enriched research infrastructure is a valuable asset for successfully implementing high-impact research projects. Facilities such as the N2STAR cleanroom for device fabrication and characterisation, the Experimental Animals Research Center for conducting in vivo experiments, the School of Medicine, and the Translational Research Center collectively provide an unparalleled environment for translational research, aligning perfectly with the goals of projects like mine.

How did you find your host organisation?

I had friends already working on fascinating projects at Koç University, and their feedback on the university's high-impact research potential greatly influenced my decision to join.

What kind of support did you get?

I independently wrote the Excellence section of the project, ensuring it fully reflected my research vision and objectives. For the Impact section, I benefited from valuable tips and guidelines that significantly helped in compiling a comprehensive and compelling narrative. Additionally, I received support from the Koç University Sponsored Research Office regarding the available infrastructure in various research centers relevant to my project. This support was crucial in arranging the necessary training on specific instruments critical for the successful implementation of my project.

What tips can you give other researchers who would like to apply for MSCA?

The key to success lies in proposing a groundbreaking idea with a high risk/ high gain profile. The Excellence section serves as the heart of the project, showcasing the novelty and impact of your research. For the Implementation section, it is instrumental to have your research expertise tightly integrated with the planned training at the host institution, ensuring the project's successful implementation. Additionally, a well-structured Dissemination Plan is vital, including specific conferences or workshops with estimated attendance numbers to effectively present your work and maximise its visibility.

More information on the project:



The Marie Skłodowska-Curie Actions (MSCA) support researchers at all stage of their career across all disciplines. The MSCA also support cooperation between industry and academia and provide innovative trainings and career developments.

The MSCA Postdoctoral Fellowships (PF) enable talented researchers to work on project in Europe and beyond. They aim at enhancing the innovative potential of postdoctoral researchers through advanced trainings, international and intersectoral mobility.

The MSCA-NET project is the MSCA NCP project to facilitate the transnational cooperation to achieve a consistent and harmonised level of NCP support. The scientific community can also profit from our project to support their MSCA application.

