

## Widening Country Success Story

“Do not give up until you succeed!”

**Name of the fellow:** Alexandros El Sachat  
**Country of the host:** Greece  
**Project Acronym:** THERMIC  
**Project start and end date:** 1.11.2021 – 31.10.2023  
**Type of MSCA, Horizon 2020:** Individual Fellowship

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

Energy transport phenomena such as thermoelectricity and heat flow are fundamental issues of basic research as well as a key scientific problem with many technological applications. In my project I studied nanoscale energy dissipation and transport phenomena in low-dimensional materials and devices, which was crucial for the design of novel nanoscale electronic devices. Specifically, I developed devices based on new 2D semiconductors using state-of-the-art nanofabrication methods, exploring their thermal and thermoelectric performance and their potential for integration in future three-dimensional heterogeneous electronics.

### Why is your project important for society?

The project sets the foundation for future ICT and energy conversion innovations depending on thermal management, including cooling/heating and thermoelectricity, in accordance with priorities defined in the Horizon 2020 Work Programmes. Understanding of local energy transport phenomena at the nanoscale can offer innovative solutions to address technological issues in different research areas ranging from nanoelectronics, optoelectronic devices,



thermal barriers, telecommunication and signal processing. Hopefully, the results of this project will contribute to advance power electronics and sustainable energy technologies.

### Why did you choose a widening country as a host?

One of the main reasons that I have chosen Greece as the place to pursue my proposed research project is the well-equipped nanofabrication facilities established at the Institute of Nanoscience and Nanotechnology. Moreover, I was born and raised in Greece but I spent many years studying and working abroad, and therefore I felt the need to return to Greece and continue conducting my research.

### How did you find your host organisation?

I looked for research groups' websites, to check the available research facilities

relevant to my subject of research. By doing this, I found potential research labs and supervisors, and directly contacted them. It was also useful that I already knew a research fellow at the host Institute who gave me useful information about the host.

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.



### **What kind of support did you get?**

I had discussions with former MSCA applicants and other collaborators who gave me useful advice on how to formulate my idea in this call. Furthermore, I participated in seminars on the specific call but also on other European programmes. These seminars were very beneficial for understanding the evaluation criteria and the specific details, and greatly helped me to write a successful proposal.

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

Stay focused on and passionate about your goal, pay attention to the details and do not give up until you succeed!

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 Individual Fellowships (IF) provide opportunities to researchers of any nationality to acquire and transfer new knowledge and to work on research and innovation in Europe and beyond.

The MSCA-NET project is the MSCA NCP project to facilitate the transnational