

Marie-Skłodowska-Curie Actions – Postdoctoral Fellowships 2025

INL Expression of Interest

(To be advertised on INL website)

Research Group Leader /Research Group name:			
HANAY / IMINA			
Scientist in charge:			
Name & surname	Mehmet Selim Hanay		
Contact email	selimhanay@gmail.com		
Short description of the research group, including URL if applicable (<i>Strengths and scientific achievements (publications, patents, etc.), important infrastructure (up to 2000 characters with spaces)</i>):			
<p>Our research group uses advanced micro/nanofabrication tools to work on a diverse set of problems in MEMS/NEMS sensing, micro-optical elements, flexible devices, and electronic sensing in microwave domain. For the purposes of this MSCA proposal, the following papers in the field of microwave sensors are the most indicative:</p> <p>Permittivity-Based Microparticle Classification by the Integration of Impedance Cytometry and Microwave Resonators. <i>Advanced Materials</i> , 2023, 35, 46, 2304072</p> <p>Rapid Differentiation between Microplastic Particles Using Integrated Microwave Cytometry with 3D Electrodes. <i>ACS Sensors</i>, 2025, 3, 1729–1735</p>			
Project title:			
Microparticle Levitation Tracked by Microwave Resonators			
Project description (<i>up to 2000 characters with spaces</i>):			
<p>Levitated microparticles in magnetic fields show promise as robust mechanical sensors. However, their practical applications are currently limited by reliance on optical methods for motion tracking. In this project, we propose to develop a capacitive sensing approach leveraging our advanced microwave resonator technology. This innovative system will enable precise tracking without the constraints of optical methods, significantly expanding field applicability. Additionally, we will demonstrate the versatility of this technology by trapping and characterizing various biologically relevant microstructures.</p>			
Research fields (<i>You may choose more than one</i>)			
Chemistry (CHE)	<input type="checkbox"/>	Life Sciences (LIF)	<input type="checkbox"/>
Economic Sciences (ECO)	<input type="checkbox"/>	Mathematics (MAT)	<input type="checkbox"/>
Environment and Geosciences (ENV)	<input type="checkbox"/>	Physics (PHY)	X
Information Science and Engineering (ENG)	X	Social Sciences and Humanities (SOC)	<input type="checkbox"/>

Expiration date for Expressions of Interest from postdoctoral fellows:	11.08.2025
---	-------------------

Necessary documents to be submitted (in addition to the required CV and motivation letter):

- Publication List
- A detailed explanation of the earlier experimental setups built and / or signal processing tools designed by the candidate and how these setups / tools can be related to the project goals.