



DC 6		Tunable polar topologies in lead-free ferroelectric/paraelectric heterostructures
Host Institution	TTS	
Supervisor	Jaroslav Merta	
Duration	36 months	
Subject Area	Materials, ferroelectrics energy storage	
Doctoral degree	Doctoral Program in Physics (MAP-Fis) or Materials Engineering Doctoral Program at UMINHO	
Description		
<p>Supercapacitors with high energy storage density are nowadays in high demand to power IOT sensors. Recently, there has been increasing interest in purely electrostatic solid-state supercapacitors based on highly polarizable materials, e.g., ferroelectrics and antiferroelectrics. This project will focus on the fabrication and optimization of the energy storage performance of lead-free perovskite-based multilayered capacitors. The selected candidate will learn to fabricate these capacitors, becoming an expert in the entire process: from the growth to the device fabrication and will work on the optimization and understanding of the underlying physics. The candidate will spend a period of time at the Institute of Materials Science of Barcelona and University of Minho to fabricate and characterize the energy storage capacitors.</p>		
Project-specific selection criteria:		
<ul style="list-style-type: none"> • Master's degree in materials engineering, physics engineering, chemistry or physics. • Affinity for experimental work. 		
Other criteria:		
<ul style="list-style-type: none"> • Highly proficient English language skills. • Willingness to work collaboratively in a research environment. • A strong commitment to their own continuous professional development. • Willingness to travel and work across Europe. 		
Additional information		
<p>As part of the MSCA programme, all recruited MASAUTO researchers must comply with the Horizon Europe MSCA eligibility criteria:</p>		
<p>a) Doctoral Candidates must not have a doctoral degree at the date of the recruitment by the host organisation.</p>		
<p>b) At the time of recruitment by the host organisation, DCs must not have resided or carried out their main activity (work, studies, etc.) in the country of their host organisation for more than 12 months in the three years immediately prior to the recruitment date. Compulsory national service and/or short stays such as holidays and time spent as part of a procedure for obtaining refugee status under the Geneva Convention are not taken into account.</p>		

