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COORDINATOR	Vania Silverio, PhD, Susana Cardoso, PhD
PHD/PÓS-DOC/...	-
INSTITUTE/LAB	INESC Microsistemas e Nanotecnologias http://www.inesc-mn.pt
PROJECT TITLE	Microfabrication technologies: Optimization of Micromolding fabrication parameters towards high-resolution fluidic structures
PROJECT DESCRIPTION	<p>Recently, there is great attention to the development of novel microfluidic systems for high-throughput screening and industrial chemical and biochemical processes.</p> <p>One of the current challenges in further developing such systems is the microfabrication resolution of fluidic structures of just few micrometers (<50um).</p> <p>The project consists on optimizing micromolding fabrication technologies towards an easily combinable set of integrated microfluidic unit-operations, following the research activities at INESC-MN.</p>
WORK FIELD/CONCEPTS	Microfluidics, microfabrication, micromolding.
NUMBER OF VACANCIES	One (1)
STUDENT PROFILE	Organized; sociable; responsible; reliable; adaptable; motivated; willing to learn; good team worker; committed to the study, even after the internship, if the work is found relevant for scientific publication.
REQUIRED SKILLS	Knowledge of English
OBJECTIVES	<p>The student will be involved in the optimization of micromolding process for the fabrication of microfluidic structures with designs compatible with the specified for fluidic manipulation.</p> <p>The work includes exploring cutting edge microfabrication techniques targeting the development of novel microfluidic systems:</p> <ul style="list-style-type: none"> - CAD design of fluidic structures - Magnetron sputtering as a base for hardmask fabrication - Laser Direct Write Lithography to transfer the patterns to the hardmask - Soft lithography to create the master molds - Optimization of thermal micromolding parameters towards high-resolution fluidic structures

	<p>The work will be developed at INESC MN cleanroom and laboratories. The student will receive training at INESC MN facilities (cleanroom and lab security, microfabrication guidelines and standards, equipment operation, CAD design software)</p> <p>The student is expected to discuss his/her progress at the end of each session/week and deliver a short report and an oral presentation communicating the outcomes of the work developed during the project.</p>
NECESSARY EQUIPMENT	Laptop.
DURATION	18 weeks Start: March 12 Finish: June 30 th (can be extended)
RECOMMENDED SCHEDULE	Presence once/twice a week (8 h)