



PhD in BIOINGEGNERIA / BIOENGINEERING - 37th cycle

THEMATIC Research Field: LIGHT ACTUATORS FOR CELL STIMULATION

Monthly net income of PhDscholarship (max 36 months)

€ 1250.0

In case of a change of the welfare rates during the three-year period, the amount could be modified.

Context of the research activity

Motivation and objectives of the research in this field	The overarching goal is to induce light sensitivity in bacterial cells, to control and study their biological functions, such as their proliferation ability and resistance to antibiotics. One major objective will be the understanding of the coupling mechanism at the abiotic/biotic interface using light actuators in a variety of shapes, from thin films to nanoparticles and molecular materials
Methods and techniques that will be developed and used to carry out the research	Characterization of the interaction between light sensitive materials and bacterial cells and the optomodulation capability of the abovementioned light actuators. This will include: classic colony counting methods, electrophysiological studies, all-optical methods, electrochemistry, optical imaging
Educational objectives	To provide a background in bioengineering, biophysics and biomaterials science. To provide problem solving skills and teach team work. The project will be carried out within a broad interdisciplinary collaboration that involved chemists, microbiologists and medical doctors.
Job opportunities	- R&D positions in high tech companies operating in the bio medical field.
Composition of the research group	1 Full Professors 0 Associated Professors 2 Assistant Professors 4 PhD Students



Name of the research directors	COSTANTINO MARIA LAURA
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Contacts	
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Additional support - Financial aid per PhD student per year (gross amount)	
Housing - Foreign Students	--
Housing - Out-of-town residents (more than 80Km out of Milano)	--

Scholarship Increase for a period abroad	
Amount monthly	566.36 €
By number of months	6

Additional information: educational activity, teaching assistantship, computer availability, desk availability, any other information
<p>IIT will provide a desk, a personal laptop and if necessary a desktop PC to the candidate during the whole PhD period</p> <p>Increase in the scholarship for stays abroad ? 566,36 per month, for up to 6 months</p>