



PhD in INGEGNERIA STRUTTURALE, SISMICA, GEOTECNICA / STRUCTURAL SEISMIC AND GEOTECHNICAL ENGINEERING - 40th cycle

THEMATIC Research Field: INNOVATIVE BIO-INSPIRED SENSORS

Monthly net income of PhDscholarship (max 36 months)

€ 1600.0

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 research activity will be carried out in the framework of the ERC-advanced Grant research project IMMENSE, with PI Prof. Alberto Corigliano. The overarching aim of the project is to obtain sentient materials and structures able to sense, transmit and classify the sensed signals and learn how to react to the received signals to adapt to the evolving internal and/or external environment. The specific activity of the PhD will focus on the creation of innovative bio-inspired sensors exploiting new opportunities given by additive manufacturing techniques at the nano, macro and meso-scales.

Methods and techniques that will be developed and used to carry out the research

The PhD candidate will make use of innovative additive manufacturing techniques based on Vat photopolymerization at the nano, micro and meso scales. The sensing devices will be preliminary conceived, studied and simulated by means of advanced multi-physics modelling and simulation techniques.

Educational objectives

The research field is highly innovative and multi-disciplinary. The PhD candidate will be part of an ambitious research project and will have the possibility to increase his/her knowledge in materials and structural mechanics, advanced sensors, computational methods signal treatment techniques, and additive manufacturing.

Job opportunities



	The PhD candidate will collaborate with other research groups of Politecnico di Milano and with various international groups abroad. Contacts with important industries will be also possible throughout the whole project duration.
Composition of the research group	1 Full Professors 2 Associated Professors 2 Assistant Professors 4 PhD Students
Name of the research directors	Alberto Corigliano, Raffaele Ardito

Contacts	
alberto.corigliano@polimi.it, +39 0223994244, www.corigliano.faculty.polimi.it	

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	800.0 €
By number of months	6

Additional information: educational activity, teaching assistantship, computer availability, desk availability, any other information
<p><u>Educational activities</u> (purchase of study books and material, funding for participation to courses, summer schools, workshops and conferences): financial aid per PhD student per year The Ph.D. course supports the educational activities of its Ph.D. students with additional funding equal to 10% of the scholarship, starting from the first year.</p> <p><u>Teaching assistantship</u>: availability of funding in recognition of support to teaching activities by the PhD student There are various forms of financial aid for activities of support to the teaching practice. The PhD is encouraged to take part in these activities, within the limits allowed by the regulations.</p> <p><u>Computer availability</u>: Each Ph.D. student has his/her own computer for individual use.</p> <p><u>Desk availability</u>: Each Ph.D. student has his/her own desk, cabinet and locker.</p>