



# PhD in INGEGNERIA ELETTRICA / ELECTRICAL ENGINEERING - 40th cycle

**THEMATIC Research Field: ELECTROMAGNETIC COMPATIBILITY AND SIGNAL AND  
POWER INTEGRITY**

**Monthly net income of PhDscholarship (max 36 months)**

**€ 1500.0**

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

Research activity covers the following main lines: a) modeling of interference effects in complex wiring structures (i.e., field-to-wire coupling and crosstalk, conducted immunity and emissions, radiated emissions and immunity), b) statistical techniques for EMC estimation, c) new and/or simplified experimental procedures and setups for EMC testing, d) EMC-oriented design strategies (e.g., optimized design of EMI-filters, PCB lands, IC package, and interconnects), e) EMC aspects in power electronics. The research lines are mainly related to the Aerospace, Automotive, Shipbuilding, Energy, and Railway industry sectors.

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

Methods and techniques include: circuit theory and simulation, multiconductor transmission line theory, statistical techniques for EMC, full-wave simulation, measurement theory and techniques for EMC, electromagnetic modeling, modeling and simulation (at system, unit, device and component level) by means of mixed approaches, reduced-order techniques, model-parameters extraction from measurements, etc.

### Educational objectives

The aim is to form highly qualified PhD candidates in Electromagnetic Compatibility (EMC) and Signal and Power Integritiy, with the ability to face complex EMC/EM problems in real-life electronic and electrical systems and applications.



<b>Job opportunities</b>	Successful fulfilment of the research programs associated with this Scholarship will provide PhD candidates with the qualifications required to seek employment in diversified industry and university sectors in the EE field, such as Aerospace, Transportation (Automotive, Aeronautics, and Railway), Energy, Environment, etc.
<b>Composition of the research group</b>	2 Full Professors 2 Associated Professors 3 Assistant Professors 10 PhD Students
<b>Name of the research directors</b>	Prof. Sergio Pignari

<b>Contacts</b>	
Email: sergio.pignari@polimi.it Phone: +39 02 2399 3726 Web-page: <a href="http://www.deib.polimi.it/ita/personale/dettagli/68176">http://www.deib.polimi.it/ita/personale/dettagli/68176</a> phd-elt@polimi.it	

<b>Additional support - Financial aid per PhD student per year (gross amount)</b>	
<b>Housing - Foreign Students</b>	--
<b>Housing - Out-of-town residents (more than 80Km out of Milano)</b>	--

<b>Scholarship Increase for a period abroad</b>	
<b>Amount monthly</b>	750.0 €
<b>By number of months</b>	6

<b>Additional information: educational activity, teaching assistantship, computer availability, desk availability, any other information</b>
<p><b>Educational activities:</b> Financial aid per PhD student is available for purchase of study books and material, funding for participation in courses, summer schools, workshops and conferences, instrumentations and computer, etc. This amount is equal to 10% of the annual gross amount, for 3 years.</p> <p><b>Teaching assistantship:</b> Availability of funding in recognition of supporting teaching activities by the PhD student. There are various forms of financial aid for activities of support to the teaching practice. The PhD student is encouraged to take part in these activities, within the limits allowed by the regulations.</p> <p><b>Computer availability:</b> individual use.</p>



**Desk availability:** individual use.