POLITECNICO DI MILANO

PhD in INGEGNERIA ELETTRICA / ELECTRICAL ENGINEERING - 40th cycle

THEMATIC Research Field: CONVERTERS, ELECTRICAL MACHINES AND DRIVES

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	Sizing and operation modelling of static devices (transformers and electronic converters) and electromechanical components (standard and special rotating electrical machines), aimed to improve performances and energy efficiency. Design, development, control and testing of electrical drives and of machines with novel, patented configuration (*), for the energy production from renewable sources (wind, hydro).Coordinated employ and control of static and rotating components for the optimized production, control and exploitation of electric energy. Microgrids and synthetic inertia: analysis and control. (*) https://www.polimi.it/index.php?id=6247&sel_brevetto=3821
Methods and techniques that will be developed and used to carry out the research	Development of algorithms for design and operation modelling of electromagnetic, electromechanical and electronics components. Definition of control techniques and schemes to optimize the performances of electrical drives. Experimental activities for parameter identification and validation tests.
Educational objectives	Refinement of skills in design and optimization of components and drives. Assistance in development of models of complex electromechanical and electronic systems. Training in actively contributing to the project

	team, both in academic researches and in activities with industrial partners.
Job opportunities	R&D Companies, University career.
Composition of the research group	1 Full Professors 3 Associated Professors 1 Assistant Professors 3 PhD Students
Name of the research directors	Antonino Di Gerlando

Contacts
antonino.digerlando@polimi.it phone: 02 23993722 https://www4.ceda.polimi.it/manifesti/manifesti/controller/ricerche/RicercaPerDocentiPublic.do?EVN_ELENCO_DIDATTICA=evento&lang=IT&k_doc=879&aa=2019&n_docente=di%20ger&tab_ricerca=2&jaf_currentWFID=main Links: https://www.energia.polimi.it/en/energy-department/research/research-groups/converters-electrical-machines-and-drives/ https://www.energia.polimi.it/en/energy-department/laboratories/research-laboratories/converters-electrical-machines-nd-drivers/#c1818

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	750.0 €
By number of months	6

Additional information: educational activity, teaching assistantship, computer availability, desk availability, any other information

Educational activities:

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.

Teaching assistantship:
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.

Computer availability: individual use.
Desk availability: individual use.