



PhD in INGEGNERIA DELL'INFORMAZIONE / INFORMATION TECHNOLOGY - 38th cycle

Research Area n. 3 - Systems and Control

**THEMATIC Research Field: NEXT GENERATION ELECTROCHEMICAL BATTERY
MODELING FROM LOW TO HIGH FIDELITY MODELS**

Monthly net income of PhDscholarship (max 36 months)

€ 1325.0

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 current global climate crisis is pushing toward the development of electric vehicles for land, sea, and air transport. Batteries are complex systems that require model-based advanced Battery Management Systems. The objective of this project is to propose new approaches to the mathematical modeling of the next generation electrochemical batteries that will be used in vehicles, with special attention to flying vehicles.
Methods and techniques that will be developed and used to carry out the research	The project calls for the application of mathematical modeling tools as well as parameter identification and experiment design. Different models with different levels of complexity will be designed.
Educational objectives	The PhD candidate will develop the engineering skills required to design advanced Battery Management System and to size battery packs for vehicles.
Job opportunities	The successful completion of the PhD programme will prepare the candidate to work as a system designer for companies involved in the electrification of vehicles and companies involved in the design of electrochemical fixed storage systems to be integrated in a grid.
Composition of the research group	0 Full Professors



	1 Associated Professors 0 Assistant Professors 1 PhD Students
Name of the research directors	Matteo Corno

Contacts
Prof Corno 02-2399-4037 https://www.move.deib.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	662.5 €
By number of months	6

Additional information: educational activity, teaching assistantship, computer availability, desk availability, any other information
<p>LIST OF UNIVERSITIES, COMPANIES, AGENCIES AND/OR NATIONAL OR INTERNATIONAL INSTITUTIONS THAT ARE COOPERATING IN THE RESEARCH: Leonardo SpA</p> <p>EDUCATIONAL ACTIVITIES (purchase of study books and material, including computers, funding for participation in courses, summer schools, workshops and conferences): financial aid per PhD student 5.401,42 Euro per student</p> <p>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.</p> <p>COMPUTER AVAILABILITY: individual use</p> <p>DESK AVAILABILITY: individual use</p>