



PhD in CHIMICA INDUSTRIALE E INGEGNERIA

CHIMICA / INDUSTRIAL CHEMISTRY AND CHEMICAL ENGINEERING - 37th cycle

THEMATIC Research Field: FLUORINATION OF MATERIALS FOR LITHIUM BATTERY PRODUCTION

Monthly net income of PhDscholarship (max 36 months)

€ 1400.0

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 aim of the research activity is the development of new fluorination processes to integrate new fluorinated materials into Lithium batteries technology. This will lead to an improvement of the performances of the final devices in terms of energy density and durability.
Methods and techniques that will be developed and used to carry out the research	The research activities will include the evaluation of new materials to be integrated into Lithium batteries technology, their modification by fluorination processes and their characterization from the chemical, morphological and mechanical point of view. The performances of these materials in final devices will be also evaluated.
Educational objectives	The educational targets are: (1) amplify supported PhD research experience and favour co-op research experience at possible partners; (2) elevate the educational experience by creating a highly-visible center for new fluorination treatments combined with lithium battery design and testing.
Job opportunities	Fluorinated materials are highly compatible with Lithium battery technology, improving the performances of each component (electrodes, electrolytes, solvents, additives). The development of new treatments and processes will



	implement the number of applications for fluorinated materials in this field. Job opportunities for an expert PhD in this field are expected in the private and academic sector.
Composition of the research group	1 Full Professors 2 Associated Professors 1 Assistant Professors 8 PhD Students
Name of the research directors	Prof. Maurizio Sansotera

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>Educational activities (funding for participation in courses, summer schools, workshops and conferences) - financial aid per PhD student per year:</p> <p>1st year: -</p> <p>2nd year: about 1.500 euros per student</p> <p>3rd year: about 1.500 euros per student</p> <p>Teaching assistantship: availability of funding in recognition of supporting teaching activities by the</p> <p>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 regulation.</p>