



# PhD in INGEGNERIA DEI MATERIALI / MATERIALS ENGINEERING - 41st cycle

**THEMATIC Research Field: ELECTROPLATING OF FUNCTIONAL METALLIC LAYERS**

**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 scope of the work is the development of new materials and electrolytes for the deposition of functional metallic layers in the surface finishing sector and storage technology. The outcomes of the proposed research aimed to produce electrodeposits with controlled morphology, limiting dendritic growth and on substrates with complex geometries.

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

The research activities will include the evaluation of new materials and electrolytes for the electroplating of functional metallic coatings. The use of electrochemical techniques and structural/morphological analyses will be part of the activities for the evaluation of the layers. This scenario motivates doctoral multidisciplinary research also in the field of energy storage. The proposed research will gain from knowledge coming from various disciplines, from material science to chemistry, from electrochemical processes to energy management, answering to the needs of innovation and new expertise and skills for the surface finishing sector.

### Educational objectives

The educational aims are: (1) amplify supported PhD research experience and favour co-operative research experience at possible partners; (2) elevate the educational experience by creating a highly-visible centre for surface finishing technology.

### Job opportunities

The introduction of new materials, electrolytes and



	electroplating processes will implement the number of applications in the surface finishing sector. Job opportunities for an expert PhD in this field are expected in the private and academic sector.
<b>Composition of the research group</b>	1 Full Professors 2 Associated Professors 3 Assistant Professors 8 PhD Students
<b>Name of the research directors</b>	Prof. Luca Magagnin

<b>Contacts</b>	
Telephone: +390223993124 Email: luca.magagnin@polimi.it Web-pages of the research group: <a href="http://www.cmic.polimi.it/en/ricerca/elenco-gruppi-di-ricerca/seelab/">www.cmic.polimi.it/en/ricerca/elenco-gruppi-di-ricerca/seelab/</a>	

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

<b>Scholarship Increase for a period abroad</b>	
<b>Amount monthly</b>	700.0 €
<b>By number of months</b>	6

<b>Additional information: educational activity, teaching assistantship, computer availability, desk availability, any other information</b>
<p><b>Confidentiality:</b> since this is a thematic scholarship, the management of Confidential Information, Results and their publication is subordinate to the restrictions agreed upon with the funding company. Upon acceptance of the scholarship, the beneficiary may sign a specific commitment.</p> <p><b>Educational activities</b> (funding for participation in courses, summer schools, workshops and conferences) - financial aid per PhD student per year:          1st year: around 1.900 euros          2nd year: around 1.900 euros          3rd year: around 1.900 euros</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 support for activities related to the teaching practice. The PhD student is encouraged to take part in these activities within the limits allowed by the regulation.</p>