



PhD in SCIENZE E TECNOLOGIE ENERGETICHE E NUCLEARI / ENERGY AND NUCLEAR SCIENCE AND TECHNOLOGY - 38th cycle

THEMATIC Research Field: PRINTABLE CARBON BASED MATERIALS

Monthly net income of PhDscholarship (max 36 months)	
<p align="center">€ 1400.0</p> <p>In case of a change of the welfare rates or of changes of the scholarship minimum amount from the Ministry of University and Research, during the three-year period, the amount could be modified.</p>	
Context of the research activity	
Motivation and objectives of the research in this field	<p>Printed Electronics is an emerging field, aiming at fabricating large-area, flexible and lightweight electronics and opto-electronics by means of scalable printing techniques, with applications ranging from energy to microelectronics and healthcare. In this context, solution-processable carbon based semiconductors and conductors are among the most promising options, since they easily lend themselves to printing techniques. In particular, this PhD will focus on printable sp-carbon wires and sp²-carbon molecules and polymers, investigating their electronic properties with the aim at revealing structure-property relationship for a rational design of electronic devices.</p>
Methods and techniques that will be developed and used to carry out the research	<p>The experimental activities will be performed in collaboration with the Printed and Molecular Electronics group, in the Milan Center of the Istituto Italiano di Tecnologia. The study will require the suitable formulation of solutions of organic materials, the development of deposition methodologies, especially printing, and their integration in devices for the study of electronic properties.</p>
Educational objectives	<p>A solid knowledge of electronic device physics and of printing techniques for the patterning of functional materials will be developed.</p>
Job opportunities	



	Private and public R. & D. Highly qualified positions in a wide range of industries related with production, development and use of materials.
Composition of the research group	3 Full Professors 4 Associated Professors 2 Assistant Professors 8 PhD Students
Name of the research directors	Mario Caironi and Carlo Casari

Contacts	
<p>Mario Caironi Email: Mario.caironi@iit.it, tel. +39 02 2399 9875; webpage of the Printed and Molecular Electronics group at IIT: https://www.iit.it/research/lines/printed-and-molecular-electronics</p> <p>Carlo S. Casari Email: carlo.casari@polimi.it Tel. +39-022399-6331 http://www.nanolab.polimi.it/Persone/Casari-eng.htm</p>	

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	700.0 €
By number of months	6

Additional information: educational activity, teaching assistantship, computer availability, desk availability, any other information
<p>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.. The amount is about Euro 5.700=.</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. Desk availability: individual use.</p>