



PhD in INGEGNERIA GESTIONALE / MANAGEMENT ENGINEERING - 38th cycle

**PNRR_352 Research Field: IDENTIFICATION OF A CONCEPTUAL MODEL FOR THE
ADOPTION OF CIRCULAR APPROACHES IN AUTOMOTIVE ELECTRONICS FOR NEW E-
MOBILITY APPLICATIONS**

Monthly net income of PhDscholarship (max 36 months)
€ 1450.0
In case of a change of the welfare rates during the three-year period, the amount could be modified.

Context of the research activity	
<p>Motivation and objectives of the research in this field</p>	<p>Automotive is one of the most important industrial sectors for Italy, and it is subjected to terrific changes in the incoming years: new business models, new customers requirements, new regulations, new markets, new technologies, new markets, etc.</p> <p>Being a relevant sector for our national economy, not by chance PNRR is paying a relevant attention to some of these dimensions. In particular, we believe that the relevant focus of PNRR on circular economy is deeply rooted in this industry.</p> <p>The next automotive and mobility Italian industry should become circular, for being more sustainable, resilient, and competitive. In particular, we should pay attention to cars' end-of-life management, which is still suffering of several issues in terms of circular recovery of critical raw materials (e.g. car electronics, but also plastics and metals).</p> <p>In this context, this research action wants to empower high-profile competences, specifically in Key Enabling Technologies (KETs), related with smart reuse of materials in automotive electronics (e.g. ADAS and EEs) for new e-mobility applications.</p>
<p>Methods and techniques that will be developed and used to carry out the research</p>	<p>The research project will leverage on a tight collaboration between the candidate and STELLANTIS. Together with STELLANTIS, the following activities will be executed:</p>



	identification of the state of the art, identification of the baseline scenario, development of a conceptual model for the Italian car industry, material validation in relevant environment, assessment and validation of the model in a relevant automotive context like the one offered by STELLANTIS.
Educational objectives	The research is multidisciplinary in nature. The candidate will develop advanced research skills in the areas: sustainable mobility (e.g. electrified), automotive green materials, circular practices in automotive, and material recovery techniques and optimization.
Job opportunities	Considering the current evolution of the automotive sector towards sustainable mobility (e.g. electrified one) and green materials, there is a strong need for high-profile competences and skilled people able to propose/apply circular practices in relevant industrial contexts. To this aim, the expected market request for these profiles will increase in the next future.
Composition of the research group	3 Full Professors 1 Associated Professors 7 Assistant Professors 10 PhD Students
Name of the research directors	Sergio Terzi, Paolo Rosa

Contacts	
sergio.terzi@polimi.it; paolo1.rosa@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	725.0 €
By number of months	6

National Operational Program for Research and Innovation	
Company where the candidate will attend the stage (name and brief description)	STELLANTIS
By number of months at the company	6



Institution or company where the candidate will spend the period abroad (name and brief description)	The PhD student will spend a period of at least 6 months abroad to interact with researchers and participate in joint activities potentially foreseen in the project, according to specific needs. Indeed, the project is highly interdisciplinary, and this favors the collaboration with foreign research centers where the candidate can acquire in-depth knowledge on the theme.
By number of months abroad	6

Additional information: educational activity, teaching assistantship, computer availability, desk availability, any other information
<p><i>Funding for educational activities: 4.900,00 Euros for three years.</i></p> <p><i>Teaching assistantship: 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.</i></p> <p><i>Desk availability: shared use Computer availability: individual use</i></p>