



PhD in INGEGNERIA GESTIONALE / MANAGEMENT ENGINEERING - 38th cycle

PARTENARIATO PNRR Research Field: CIRCULAR BUSINESS MODELS FOR THE TEXTILE INDUSTRY

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

Motivation and objectives of the research in this field

The textile industry is among the most important in the European economy with 160,000 enterprises, mainly SMEs, and 1.5 million employees, ranking fourth as the largest negative impact on the environment and climate change and third in terms of exploitation. of water and soil. The Lombardy ecosystem of Textile Fashion Furniture, with 15,000 companies and 97,000 employees, represents more than 20% of the national total of the sector. Even the textile-technical segment, which is constantly growing in Europe, sees Italy in second place after Germany among the most competitive member countries. The PoliMi Supply Chain research group is establishing a textile laboratory, focusing on the user community to seek innovative solutions to social needs related to the specific sector and is therefore oriented towards co-planning between public and private and the ecosystem of open innovation. A place integrated with the territory, in which citizens, together with companies, universities, research centers and public administration, will create new services, products and infrastructures. Within this scenario, the research team recognizes the textile production sector as one of the most relevant within which to promote the transition towards sustainable and circular models of the entire value chain, from production to distribution to consumption.

In this context, the PhD research has the following objectives:

- Investigating the potentials of circular business models



	<p>to reduce waste of garments and to increase the recycling of textiles within the industry in Italy</p> <ul style="list-style-type: none"> - Investigating the barriers and the challenges within the supply chain to the application of these new business models - Investigating the supply chain solutions better supporting the implementation of these new business models - Proactively supporting the textile-fashion and the technical-textile supply chains in the creation of circular supply chains to support the new sustainable business models - Demonstrating the feasibility of the proposed solution by leveraging on the abovementioned laboratory
<p>Methods and techniques that will be developed and used to carry out the research</p>	<p>The following methodologies will be applied in the research project:</p> <ul style="list-style-type: none"> •Literature review •Focus group/industry and consumers workshop/expert interviews to identify the barriers and the challenges and draft the possible supply chain solutions •Action research to demonstrate the proposed methods, including the development of repositories, •Design of experiment: using the machinery and infrastructures of the lab, there will be the possibility to run physical tests and collect data useful for the next stages of the research •Conceptual development of methods and tools for supply chain innovation to accommodate circular business models in the textile industry <p>The project will be carried out within the Extended Partnership "3A-Italy", funded by the PNRR.</p>
<p>Educational objectives</p>	<p>In the context of "Piano Nazionale di Ripresa e Resilienza (PNRR)" and in particular of the Extended Partnership "3A-Italy", this scholarship promotes the competence required by the challenges of sustainability in the textile supply chain, with specific focus on creating a Circular Economy model in Italy.</p> <p>At the end of the PhD program, the candidate will develop</p>



	<p>At the end of the PhD program, the candidate will develop the following skills:</p> <ul style="list-style-type: none"> •Literature search skills: Ability to carry out an extensive literature review, and to use the results to support applied research •Research Design skills: e.g. Ability to design and carry out an experimental analysis, running a design of experiment on the one side, and developing and administering surveys and interviews on consumers and stakeholders on the other side •Organizational skills, e.g. organizing workshops with companies and consumers, to develop groundbreaking circular economy models
Job opportunities	<p>Upon PhD completion, the candidate will be tasked with empirical research competences and team leadership competences that she/he can use in interdisciplinary groups engaged with sustainability-oriented transformation. Public sector agencies and international organizations engaged with policy design and assessment are also a prospect employer, along with consulting organizations that advise companies and authorities on sustainable innovation.</p>
Composition of the research group	<p>3 Full Professors 3 Associated Professors 1 Assistant Professors 6 PhD Students</p>
Name of the research directors	<p>Proff. Margherita Pero e Alessandro Brun</p>

Contacts
<p>margherita.pero@polimi.it alessandro.brun@polimi.it</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	725.0 €
By number of months	6

Additional information: educational activity, teaching assistantship, computer availability, desk availability, any other information

The PhD candidate will have the opportunity to attend courses on Management Engineering research methods and manufacturing research at Politecnico di Milano and other Universities and research centers. He/she will be supervised by the research director through meetings and will receive feedbacks on his/her intermediate results during regular meetings with the Doctorate board and scientific conferences. The candidate will be involved in some teaching and communication activities, which are seen as a major opportunity to practice with dissemination of own and other relevant research results. He/she will be offered a desk and office facilities at the department building.

CUP: D43C22003120001

Decreto Direttoriale Avviso:

D.D. 341 del 15/03/2022 Avviso pubblico per la presentazione di Proposte di intervento per la creazione di Partenariati estesi alle università, ai centri di ricerca, alle aziende per il finanziamento di progetti di ricerca di base nell'ambito del Piano Nazionale di Ripresa e Resilienza, Missione 4 Istruzione e ricerca - Componente 2 Dalla ricerca all'impresa - Investimento 1.3, finanziato dall'Unione europea - NextGenerationEU

Decreto di concessione: D.D. 1551 del 11/10/2022