

**ALBINI**  
**\_next**



# ABOUT

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**ALBINI\_next** is the Albini Group innovation hub created in 2019 to introduce sustainable innovations in all its supply chain.

A new mindset reigns here: the starting point for reaching new frontiers, working through the lens of **Open Innovation**, creating **what is yet to be invented**.



# APPROACH

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We imagine and develop new products and processes with an **unconventional approach** to find solutions for specific issues related to textile industry.

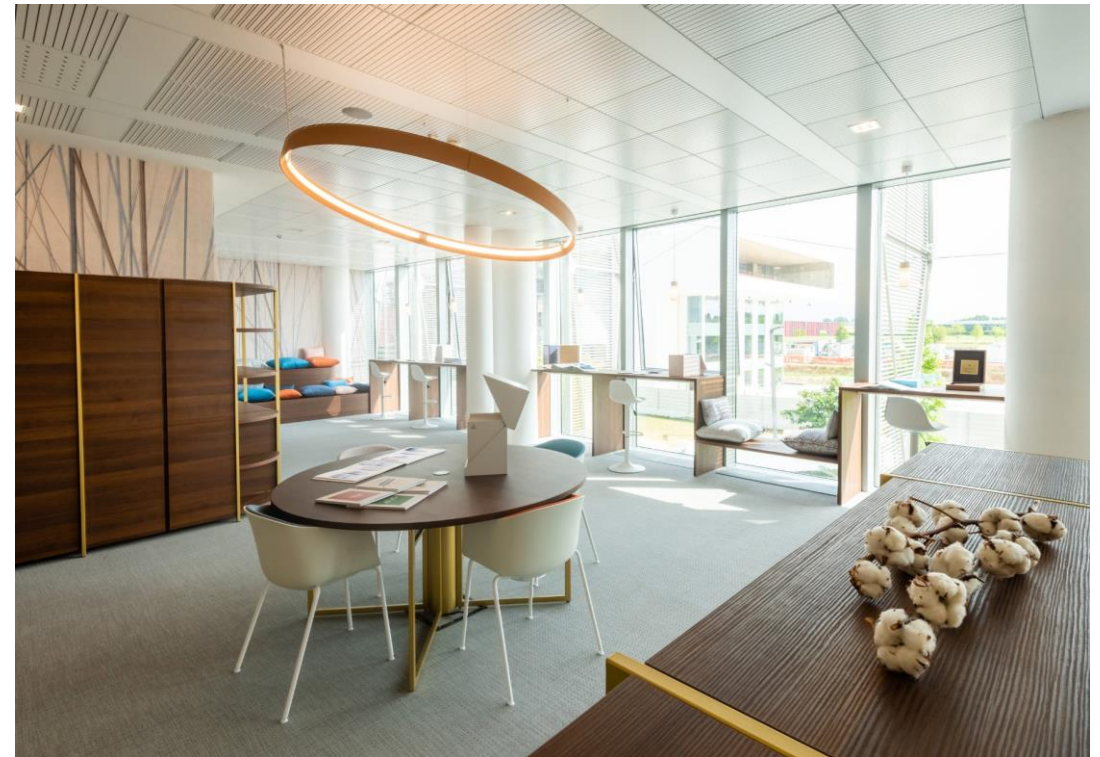
We collaborate with universities, startups and research centers. We facilitate the **technological transfer** between science and industry to accelerate ideas, implementing them in an industrial business.

# LOCATION

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We are located inside the innovation district **Kilometro Rosso** for two main reasons:

- we believe in the **exchange of ideas** and in the collaboration with different companies and industries;
- the **timing** of our projects does not follow the normal workflow of development of the collections inside Albinì Group. We work on projects that can last beyond six months.



# TEAM

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As ALBINI\_next, we are a dedicated team, made up of **young people** under 35 **with different backgrounds**: chemical, textile and management engineers, biotechnologists, agronomists and fashion designers.

# STRATEGY

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## **Sustainable Innovation**

Develop products and processes that minimize environmental impact.



## **Collaboration**

Collaborate with universities, research centers, start-ups and other companies to accelerate innovation and the development of sustainable solutions.



## **Technology and Digitalization**

Investing in advanced technologies and digitalization to optimize production, improve product quality and reduce waste.



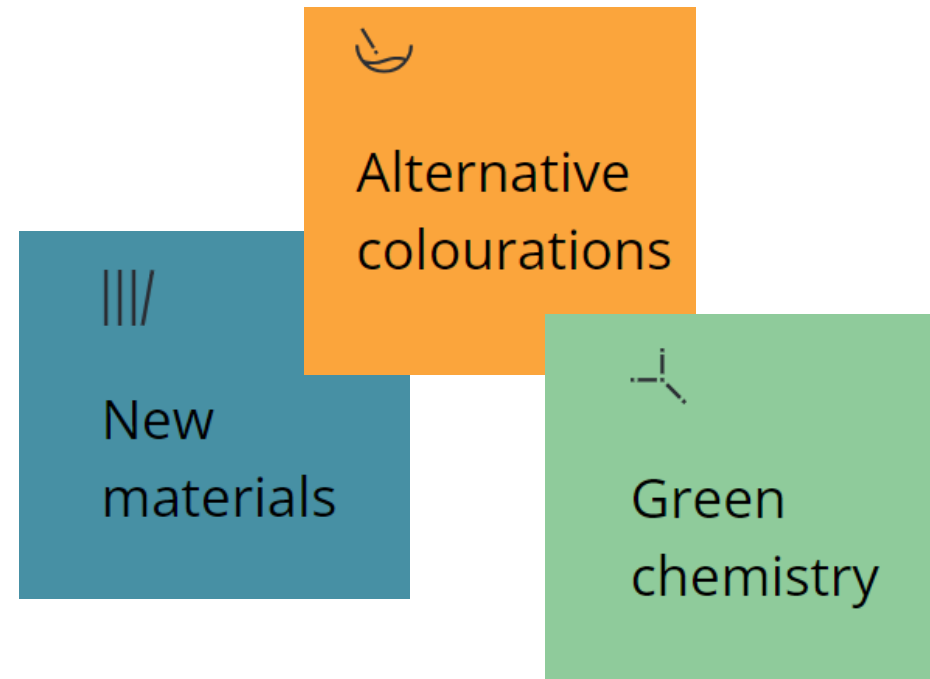
## **Training and Development**

Develop internal skills on sustainable innovation through dedicated training programs and external collaborations.

# RESEARCH AREAS

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Albini Group has a totally verticalized supply chain, from the cotton seed to the finished fabric. As ALBINI\_next we introduce sustainable innovations within all stages of production, dividing research into three main areas.



# NEW MATERIALS

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New materials for the fabrics of the future. Albini Group know-how meets ALBINI\_next creativity in imagining new solutions to improve the cotton cultivation methods; to recycle its textile waste and leftovers through upcycling projects; to produce new yarns with innovative fibers.





# ALTERNATIVE COLOURATIONS

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Using ingredients made with plants, minerals and microorganisms, the colourations of the future combine tradition and techniques never experimented before.



# GREEN CHEMISTRY

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Everything around us is chemistry. ALBINI\_next is committed to researching and industrializing chemical processes and products that will reduce environmental impact and improve performances in the textile chain.



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**NEW MATERIALS**



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**RETWIST+**



## RETWIST+

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ALBINI\_next has created a new circular economy project where **recycling becomes entirely closed-loop**: from **denim fabric left-overs** to new base fabrics for the Albiate 1830 collection.

100% cotton denim remnants from past collections have been shredded and made into fibre. It resulted in a blend composed of **30% recycled cotton** and 70% organic Supima virgin cotton.



## RETWIST+

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Using solely denim fabrics has made it possible to obtain an already dyed finished product featuring a pale indigo nuance, thus **eliminating the entire dyeing phase** and reducing the use of water and resources during the production process.

Thanks to the support and creativity of the Group's Style Department, several base fabrics were designed which will complete the new selection presented in the forthcoming Albiate 1830 denim collection.

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**FUTURA**

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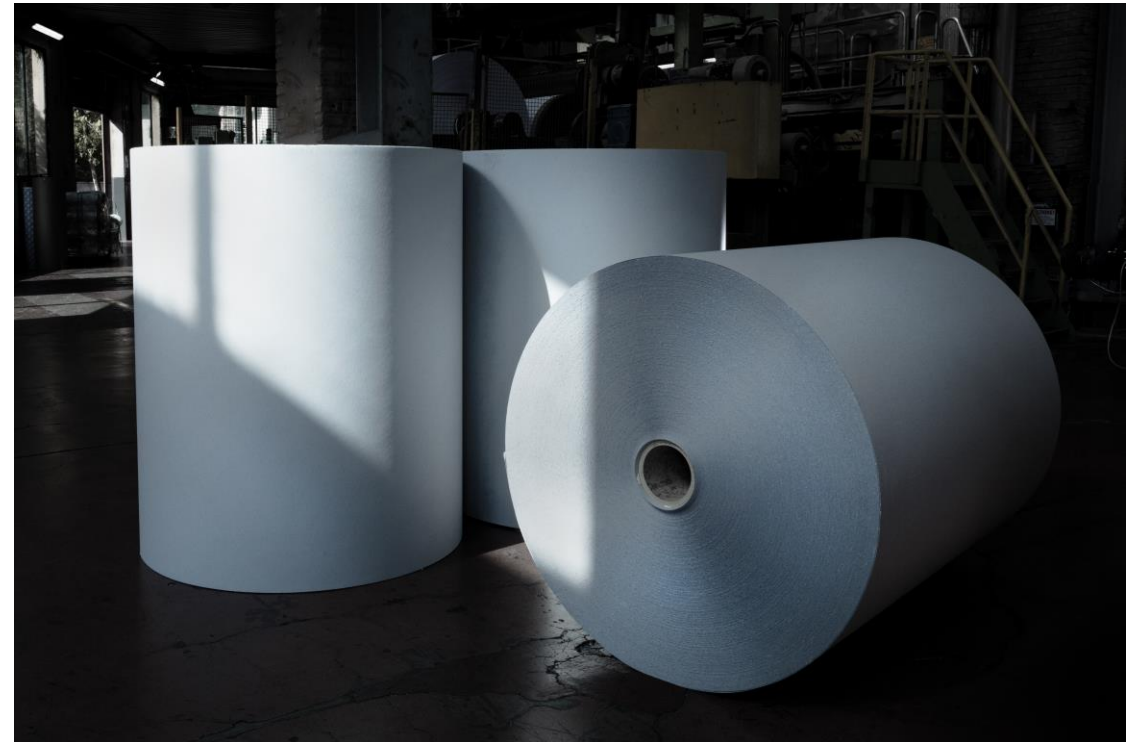


# FUTURA

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Futura is a project born thanks to the **collaboration** between ALBINI\_next and the R&D Department of Fedrigoni, a leading European manufacturer of special paper for packaging, graphics and art.

This partnership has resulted in the production of a new type of paper with an outstanding **25% of fibres obtained from textile waste** of Albini Group's production sites, specifically from the sampling, quality control and weaving departments.





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**WEAV3D**



# WEAV3D

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ALBINI\_next has launched an exploration of **biopolymer composite materials** as a solution for **recycling textile fibres**, creating unique blends of bio-based and/or recyclable polymers combined with textile fibre of plant origin. These new materials have a wide range of applications, including **3D printing**, and can give rise to innovative products.

To bring the Weav3d project to life, ALBINI\_next collaborated with **several partners** like Mixcycling, Nazena and PSCT Digital Lab .



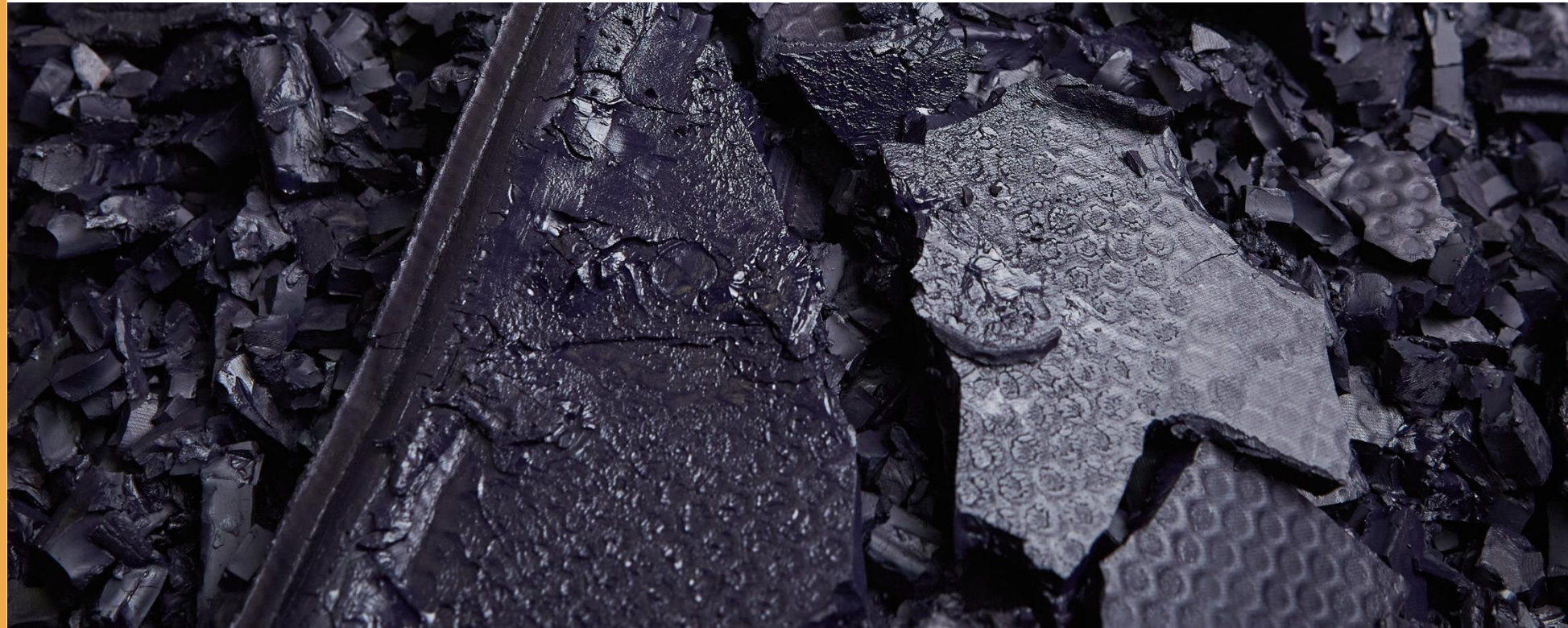
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# ALTERNATIVE COLOURATIONS

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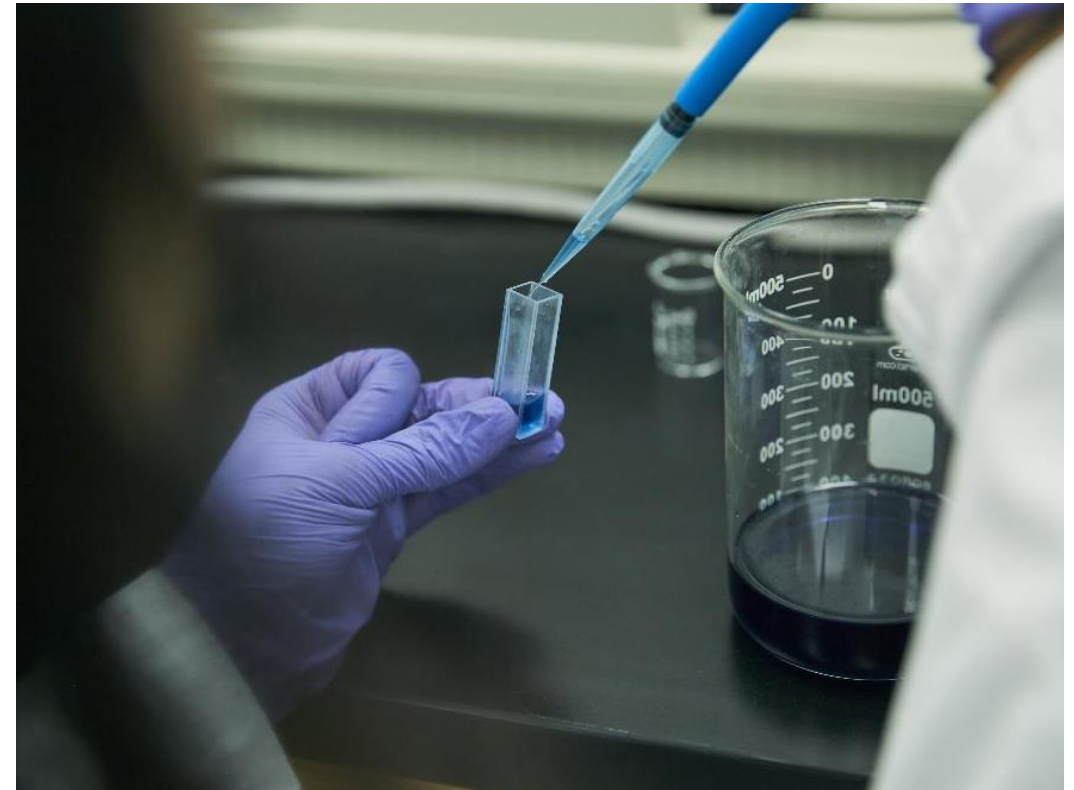
# **GROUNDED INDIGO**



# GROUNDED INDIGO

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The collaboration between ALBINI\_next and Stony Creek Colors was born in 2020. Stony Creek Colors is an American producer of **natural indigo**, obtained thanks to innovative methods of sustainable agriculture and chemical engineering. Stony Creek Colors produces the world's only 100% plant-based indigo, certified by USDA.



# GROUNDED INDIGO

ALBINI\_next uses Stony Creek's natural indigo also in combination with other natural colours to dye the Albini Group's yarns, giving life to the following color shades:



\* The color palettes are indicative. They can undergo variations based on the fiber, the mixture of colors and their concentration. In collaboration with the customer, exclusive colors can be developed.



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# VERTICAL INDIGO





# VERTICAL INDIGO

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ALBINI\_next collaborated with **GPM Innovation** to study the application of **indigo derived from vertical farming in an industrial context.**

GPM cultivates **Persicaria Tinctoria** in vertical farms inside greenhouses using an **aeroponic technique**, from which the natural Indigo Blue dye was subsequently extracted. This cultivation technique does **not require the use of soil.**

# VERTICAL INDIGO

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Thanks to a support system, it is possible to grow the plantations by feeding them directly on the roots with a **spray of water and mineral nutrients**. Energy-saving LED lights then provide the necessary illumination.

In collaboration with GPM Innovation, ALBINI\_next's research also focused on the development of the **dye application formula** and the use of **bio-based auxiliary products**, which contribute to the sustainability of the entire dyeing process.

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# **BLACK WOOD**



# BLACK WOOD

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ALBINI\_next has introduced in Albin's world the cleanest **black pigment** on Earth made **from wood waste from FSC®-certified sources**, **BioBlack TX** from the startup **Nature Coatings**.

BioBlack TX is produced through a **closed-loop, circular system of manufacturing**: there's **no burning** of the wood waste and **no chemicals** added, and **the only by-product of the process is steam**, which is captured and used to power parts of the production facility.



# BLACK WOOD

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BioBlack TX can be applied to textiles in several ways, among them are **yarn spray dyeing**, and **screen and rotary printing**.

ALBINI\_next, in the “Black Wood” project, industrialised the formula for **spray-dyeing this pigment through its partnership with Dyeberg**, a yarn-dyeing company with a 100-year tradition, and its patented **‘ONE to ONE’ machinery**.



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# OFF THE GRAIN



# OFF THE GRAIN

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An innovative and ambitious **upcycling** project born from the research work done by ALBINI\_next, and thanks to the collaboration with Riso Gallo, company leader in the production of rice in Italy.

Off the Grain is a new type of dye, obtained from a **by-product derived from the processing of a particular variety of black rice** grown by Riso Gallo.

# OFF THE GRAIN

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Thanks to this circularity project, ALBINI\_next gives new life to a by-product that is no longer valuable for the food industry. Combining technique and creativity, ALBINI\_next transforms waste into a new and precious raw material.



\* The color palettes are indicative. They can undergo variations based on the fiber, the mixture of colors and their concentration. In collaboration with the customer, exclusive colors can be developed.





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# HYPHAE



# HYPHAE

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In order to produce **new colours with a low environmental impact**, ALBINI\_next is collaborating with BGreen Technologies, the innovative Lombardy-based start-up, based in Kilometro Rosso, that brings **biotechnology** in the Italian industrial context.

BGreen studies **filamentous fungi** in order to produce dyes and ALBINI\_next tests their use **to replace fossil-derived products**.



# HYPHAE

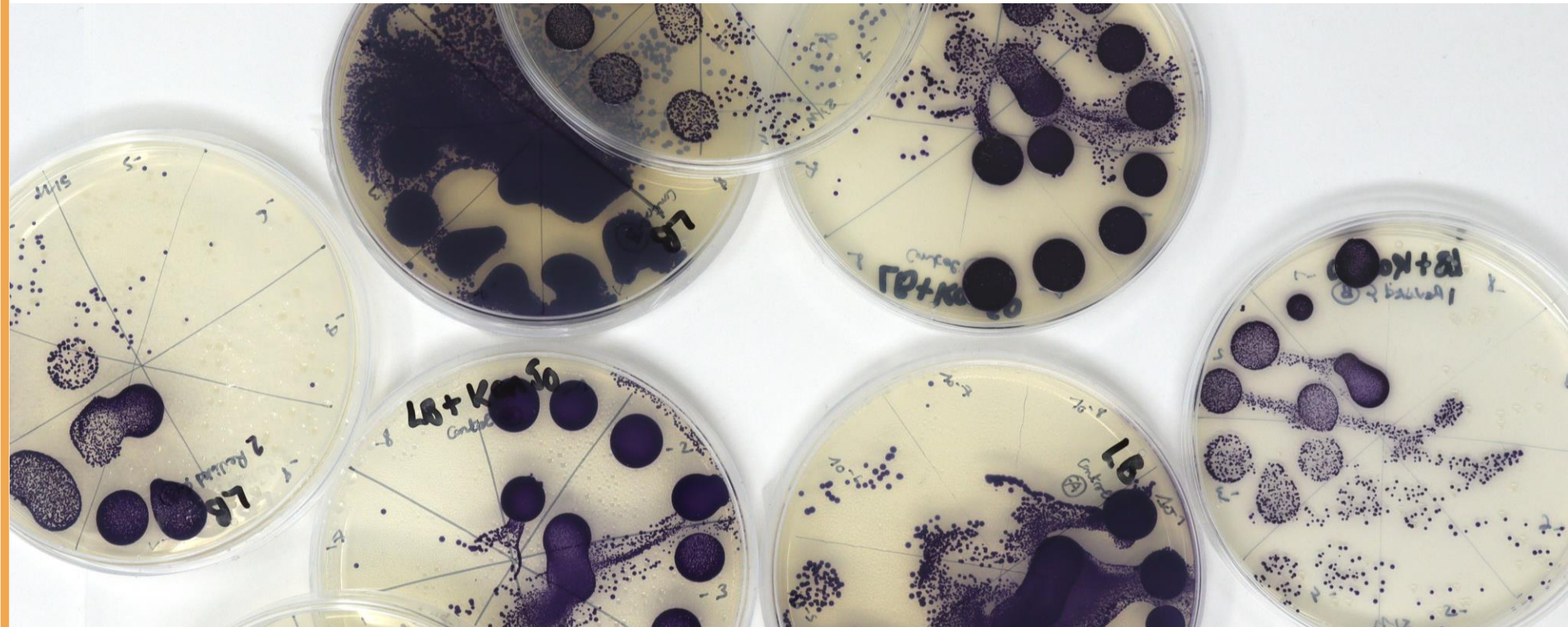
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The most important part of the production process, which is protected by the "**BGT MyChS**" patent and trademark owned by BGreen, regards the possibility of **stimulating biosynthesis and pre-extracting the pigment directly in fermentation**, thus **eliminating organic solvents** from the process.

The project is currently in a **research phase**: ALBINI\_next is evaluating how this type of dye behaves and performs, before eventually going forward with its industrialisation.

# EXTERIA



# EXTERIA


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ALBINI\_next and **Colorifix Limited** have collaborated on “Exteria - **Dyes from bacteria**”, a pioneering project that responds to a common goal: finding new sustainable technologies and materials for the fashion industry.

The project, **supported by the Kering’s Material Innovation Lab**, is aimed at the transition from synthetic dyes to **colours coming from engineered microorganisms**.

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# GREEN CHEMISTRY

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**HEMPFEEL**



# HEMPFEEL

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The research work of ALBINI\_next has led to the development of a new **green softening** product containing a mixture of vegetable oils and hemp oil, that is applied in the finishing phase.





# HEMPFEEL

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The project was born thanks to the collaboration with a **cosmetic company** specialised in the production of **cosmetic products based on CBD**, a cannabidiol contained in the Cannabis Sativa plants. The use of this oil replaces the use of other silicone-based products.

The oil is 95% **biodegradable**; therefore, it allows to drastically reduce the release of microplastics from garments during domestic washing.

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