Mogu book
As a company fully rooted in the principles of Circular Economy, at Mogu we constantly observe the environment, the society we're part of and the related economies, to promptly respond to the needs emerging from such complex and interconnected systems.

During the past decades, most responses have unfortunately come from synthetic processes and the related products, hence letting us losing touch with the rhythms of natural cycles. While paying a shameful bill in terms of sustainability.

To counteract such negative trend, the developments happening within the field of bio-fabrication have delivered great interest, first on a research level, later through a large array of demonstrator projects, and today finally touching upon real economies to reach us in our everyday life, in our homes, our offices, our clothing, our transports system.
Clearly, such advancements do not take place by pure chance or in any simple way. Years of work and large amount of resources are needed, to be capable of creating performance-driven materials. Much more is then needed for transforming such novel opportunities into effective products.

Often, the actors dealing with development of novel experimental materials do not unfortunately succeed in working out that last fundamental step related to functionalisation, that would allow competing in the related markets.

At the same time, traditional industries tend to be highly conservative, focusing on safeguarding their own positioning, rather than believing and investing in novel revolutionary processes. Too often this results in lost opportunities.

Today Mogu is filling the gap.

Mogu is now proud to validate a concrete trajectory, undergone during the past few years, exploring the opportunity of creating novel revolutionary materials and products, deriving from the combination of residual organic fibres and fungal mycelium. The Company has reached this important milestone by deciding to focus on solutions dedicated to the field of interior design, improving its products by means of a balanced combination between aesthetics and embedded technical features.

This is the beginning of a new journey. A fresh adventure, pushing us beyond the borders of our Laboratories and of our company, allowing to strengthen evermore our strategic collaborations with trusted Partners, reaching a sophisticated and demanding audience.

Our products aim to shorten the existing gap between Humans and Nature, bringing back
the real notion of organic at the core of the spaces where we daily live and work and where synthetic products have for too long stolen the scene to all that is natural.

Such solutions testify that not only the future, but particularly the present, still belong to Nature and that Nature can keep surprising us through its most diverse manifestations.

Just because Nature is Radical.
And WE are Radical by Nature.

Stefano Babbini - CEO
Index
RADICAL BY NATURE

TECHNOLOGY

ACOUSTIC PANELS

Wave Hex

Kite

Fields

Plain

FLOORING

A DESIGN PERSPECTIVE

DATASHEET ACOUSTIC PANELS

DATASHEET FLOORING

CONTACT
Our everyday life has become more and more detached from natural sensations - surrounded by artificial and spotless materials, we are constantly exposed to pre-fabricated aesthetics.

At Mogu, we bring Nature closer to people, meeting the needs of everyday life, both functionally and aesthetically.

A vision of home, offices, retails and spaces that embraces Nature's radical character, to establish a more honest and virtuous relationship with the surrounding environment.
nature
Through our products, we shape novel experiences, inspiring a higher awareness of the value of materials surrounding us, as well as about their constituting processes and life cycle.

This vision is embedded in the products designed and manufactured by Mogu, crafted with the lowest environmental impact possible, to offer radically innovative functional and perceptual experiences.
Responsible value
We offer functional, beautiful and meaningful products with a durable and sustainable life cycle. The resulting materials are 100% plastic-free, circular and biodegradable.
By employing one of its finest technologies - mycelium - Mogu delivers responsible products for interior design.
Mycelium
Nature is the best architect of all. Mogu was founded on the belief that it is possible to employ Nature's intelligence to radically disrupt the design of everyday products, seeking a finer balance between the man-made and the rhythms of the natural ecosystem.

To this end, over the years Mogu has explored the potential of one of Nature's finest living technologies - mycelium - towards the production of alternative solutions for interior design and architecture.
Our cutting-edge technology is based on mycelium, the complex network of filamentous cells constituting the vegetative stage of mushrooms.

We produce materials by growing mycelium on pre-engineered, low-value substrates, coming from different industries, such as the agro-industrial value-chains.

Fungal mycelium acts as reinforcement to the matrix structure, creating a 100% plastic-free and coherent material composite.

At the end of the production process, mycelium materials are made inert by slow drying, for reduced energy consumption.

The resulting products are completely stable, safe and durable – and biodegradable too!
The impact of our industrial production systems is easily evident when looking at the tons of waste generated daily as part of human activities, in all industry sectors.

Mogu is committed to run its production processes starting from low-value materials, which cannot find any other valuable application.

By feeding on the organic matter, mycelium will convert the low-value input matter into a product with high added value.
A collection of decorative wall panels with remarkable sound absorption properties – did we say they are beautiful too?
Mogu Acoustic modules are made from soft, foam-like mycelium materials and are designed as modular elements that can fit into any residential style.
A step into your Nature

Mogu Acoustics modular panels are designed to fit any residential style, thanks to their unintrusive, yet unique design and functionality. Mogu Acoustics collection includes several modules, each inspired by a different aesthetic and conceptual interpretation of mycelium technology. The products are available in several shapes, configurations and textures, to support design flexibility at its max.
Wave Hex
Feel free to shout

Home is where your true Nature is. Perhaps your morning routine involves heavy metal - or you just love your loud neighbours. Do you? Mogu Wave panels feature excellent performances in absorbing the frequencies of speech, maximizing acoustic comfort and privacy for our homes.

Mogu products are certified as safe, durable and as positively contributing to indoor air quality. Our materials have been tested for allergenic and VOC Emissions. They are safer than wood and many other industrial materials populating our everyday living environments.
Feel free to shout.
Soft and ethereal wall panels that evoke the sensation of wandering through hills covered in fresh snow.

The visual softness and sound-dampening properties of Mogu Wave enhance comfort, resting the mind on both visual and acoustic sensorial levels.

Each product combines functionality with the organic beauty of Nature, where small captivating tone variations contribute to make the aesthetic of each single piece rather unique.
Thanks to their unique velvety surface, Mogu Acoustic panels provide unusually intriguing tactile feelings. And yes - touching them can be addictive!
Mogu Wave panels are produced in their beautifully natural white color, with small captivating tone variations, making the aesthetic of each single piece rather unique.
Wave Hex Acoustic Panel
560x485 mm
height: 25-75 mm
The Kite model is inspired by the interplay between light and the candid surface of mycelium materials. The geometric folds create a visual pattern through shadows and highlights, playfully contrasting with the softness of Mogu materials.
Feel the unexpected
Kite Acoustic Panel
500x500 mm
height: 40-75 mm
Open spaces to sound

We share spaces with strangers on a daily basis - from restaurants to building halls and elevators. Mogu Acoustic products create a comfort zone, even in noisy environments. Their acoustic performance is complemented with an exceptional fire rating (B-s1-d0), which makes Mogu Acoustics suitable for all typologies of public environments. The modular panels are provided with their own easy-to-mount and screw-less fixing system.
A sculptural product that makes each wall a classic.
Agriculture is the perfect example of a technology testifying human's long-lasting collaboration with Nature.

The linear texture and irregular shape of Mogu Fields is inspired by the patches of cultivated land as seen from above, allowing us to morph our perspective about the relationship between Humans and Nature.

By the simple rotation of each module, the Kite panels create surprising geometric compositions. Their decorative potential is complemented with the natural color of Mogu materials - for a bold, radical and yet unintrusive design.
Delicate lines mark the pattern of seeding tracks.
Though irregularly shaped, Mogu Fields modules allow for a perfect tiling by means of simple rotation of its irregular geometry on one side.

When adjacent, as in their standard configuration, the lines will always meet the other modular tiles', creating a visually ordered and elegant pattern.
Fields Acoustic Panel
760x535 mm
height: 45 mm
Enjoy the silence
Relaxing at home or busy at work, comfort is always paramount. Mogu Acoustics modular panels are a perfect solution for office environments, elegantly fitting your professional landscape with a beautiful, responsible and emotionally engaging functionality.
Less is more. Sometimes simple volumes valorise the unique qualities of a material better than any complex shape. The Plain modules are regular tiles allowing for interesting and playful compositions, while shouting their manifesto through a silent simplicity.
A view on Nature – who said offices are boring?
The small captivating variations of Mogu Plain surfaces make each single piece rather unique.
Plain Acoustic Panel 50
500x500 mm
height: 40 mm

Plain Acoustic Panel 60
600x600 mm
height: 40 mm

Plain Acoustic Panel 100
500x1000 mm
height: 40 mm
Flooring
From agroindustrial residues to luxury living environments, Mogu Floor is a collection of biobased resilient tiles for interior design and architecture. A perfect solution to support a fully circular approach in the building industry.
Mogu Floor tiles consist of a mycelium composite core, coated with a proprietary formulation of 95% bio-based resins. The proprietary formulation of the bio-based resin utilised in Mogu Floor products is literally 90% bio-based, replacing traditional industrial pigments with low-value biomasses, such as corn crops, rice straw, spent coffee grounds, discarded seaweed and clam shells.
Mogu Floor tiles consist of a mycelium composite core, coated with a proprietary formulation of 95% bio-based resins. The proprietary formulation of the bio-based resin utilised in Mogu Floor products is literally 90% bio-based, replacing traditional industrial pigments with low-value biomasses, such as corn crops, rice straw, spent coffee grounds, discarded seaweed and clam shells.
Mogu Floor tiles are designed as modular elements, allowing to create colorful compositions and aesthetically pleasant patterns, according to personal taste and creativity.

The tiles are available with a fibered or non-fibered appearance, depending on the design requirements of the specific project. A soft touch & matte texture complete the appealing design of Mogu Floor products.
Dimensions
350x350 mm
500x500 mm
600x600 mm
thickness 10 mm
Mogu Floor modular tiles are designed for easy mounting, granting quick installation and dismantling operations.
A design perspective
The complex and uncertain times we live in call for new rebels.

Competent rebels, daring to divert and face challenges, by dreaming of alternative presents. Rebels, capable of changing our perspective in regard to the way we look at our surroundings. Rebels, addressing and tackling complex issues, by building bridges between seemingly separated disciplines, while calling for an effective and inclusive re-connection with the larger ecosystem, and with the many "others". Rebels, materialising concrete pathways, tangibly challenging the status quo.

To be a conscious rebel one must be radical.

In its purest etymological sense, the term (i.e.: Latin radix = root) refers to "forming the root" and becoming fundamentally embedded in the nature of something. Such linguistic analogy appears as perfect fit when reflecting about the explorations performed over the past decade, in direct cooperation with the most wonderful microscopic partners: fungi. And specifically, with their fundamental body - the mycelium - the extended mass of branching living cells, fairly resembling at first sight the structural organisation of plants' roots, despite its greater complexity and certainly different way of functioning.

When starting such compelling adventure, I would have never expected that the encounter with these surprising microscopic actors
would have evolved so far.
It's been a strong bond since the early beginning, maybe a beneficial infection, which silently expanded overtime, contributing to shape my existence and the one of many "others", across the different spheres of life.

Working for many years as independent designer, acting at the cross-border between creative practice and techno-scientific research, I early realised about the pivotal role that design holds in delivering radical perspectives and tangible alternatives, contributing to positively inform and affect the world we live in.

Today, more than ever before, it is paramount to observe the potential of promising experimentation and to go beyond it, by concretely demonstrating feasibility through the effective implementation of disruptive and positive innovations, at scale.

In order to thrive, the various visions explored across the related design-research projects expanded overtime, aligning with many more disciplines, while connecting with a wide network of stakeholders, human and other-than-human alike. In this way, they met fertile grounds, where relatively limited scenarios transformed into real life.

Such great turning point started fully unravelling when encountering like-minded innovators, nowadays dear colleagues and close allies. A set of connections that brought
Mogu to shape itself, transforming in the virtuous entity that we feel so proud of today.

Lots has happened; many the challenges and the sacrifices. Countless the people that have contributed to this wonderful adventure, so far. Years of learning, by growing. Or viceversa.

And, no matter if it already feels like an incredibly long journey, there's no doubt that this is only the very beginning of a much longer travel. A mission, devoted to address and facilitate the most urgent collective reconciliation with our Natural origin, aiming to seek back the very essence of our selves, through a cyclical and active re-connection with the constant flux of the larger ecosystem.

Time has finally come for becoming RADICAL, once again.

Maurizio Montalti - Founding Partner
Material Data Sheet

Acoustic mycelium-based products

Mogu Acoustic collection marks an unprecedented revolution for interior design comfort. Mogu Acoustic are the first commercially available products of their kind, entirely made of fungal mycelium and of upcycled textile residues. Thanks to the unique technology, Mogu Acoustic panels represent today the most sustainable solution dedicated to acoustic comfort.

Models

- WAVE HEX
- WAVE RHOMBID
- KITE
- FIELDS

PLAIN - 50
PLAIN - 60
PLAIN - 100

Dimensions & weight

<table>
<thead>
<tr>
<th>Model</th>
<th>w [mm]</th>
<th>h [mm]</th>
<th>t [mm]</th>
<th>side [mm]</th>
<th>sqm</th>
<th>n'/sqm</th>
<th>weight [Kg]</th>
</tr>
</thead>
<tbody>
<tr>
<td>WAVE HEX</td>
<td>560</td>
<td>485</td>
<td>25-75</td>
<td>280</td>
<td>0.2</td>
<td>5</td>
<td>1.1</td>
</tr>
<tr>
<td>WAVE RHOMBID</td>
<td>280</td>
<td>485</td>
<td>25-60</td>
<td>280</td>
<td>0.1</td>
<td>10</td>
<td>0.6</td>
</tr>
<tr>
<td>KITE</td>
<td>500</td>
<td>500</td>
<td>40-75</td>
<td>500</td>
<td>0.25</td>
<td>4</td>
<td>1.3</td>
</tr>
<tr>
<td>FIELDS</td>
<td>760</td>
<td>550</td>
<td>45</td>
<td>210</td>
<td>0.25</td>
<td>4</td>
<td>1.2</td>
</tr>
<tr>
<td>PLAIN - 50</td>
<td>500</td>
<td>500</td>
<td>40</td>
<td>500</td>
<td>0.25</td>
<td>4</td>
<td>1.0</td>
</tr>
<tr>
<td>PLAIN - 60</td>
<td>600</td>
<td>600</td>
<td>40</td>
<td>600</td>
<td>0.36</td>
<td>2.78</td>
<td>1.2</td>
</tr>
<tr>
<td>PLAIN - 100</td>
<td>500</td>
<td>1000</td>
<td>40</td>
<td>500</td>
<td>0.5</td>
<td>2</td>
<td>1.5</td>
</tr>
</tbody>
</table>

Reaction to fire & standards

<table>
<thead>
<tr>
<th>Classification - UNI EN 13501-1</th>
<th>Fire-proof</th>
<th>Natural touch</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class B-s1-d0</td>
<td>D-s1-d0</td>
<td></td>
</tr>
<tr>
<td>Flame Retardant typology</td>
<td>water-based, eco-friendly, non-halogenated, heavy-metals free</td>
<td>none</td>
</tr>
<tr>
<td>Texture appearance</td>
<td>white, compact and tough</td>
<td>white with small tone variations, velvety and soft</td>
</tr>
<tr>
<td>Moisture sensitivity</td>
<td>RH &gt; 50% (small tone variations may appear on surface)</td>
<td>RH &gt; 80%</td>
</tr>
</tbody>
</table>

92
Acoustic performance

Measurements according to ISO 354 - Reverberation Room Measurement Method, with no distance between panels and floor.

A distance of 25 mm can further improve the acoustic performance.

Acoustic characteristics (NRC)

<table>
<thead>
<tr>
<th>Panel Type</th>
<th>t [mm]</th>
<th>$\alpha$ [250 Hz]</th>
<th>$\alpha$ [500 Hz]</th>
<th>$\alpha$ [1000 Hz]</th>
<th>$\alpha$ [2000 Hz]</th>
<th>NRC</th>
</tr>
</thead>
<tbody>
<tr>
<td>WAVE HEX</td>
<td>25-75</td>
<td>0.4</td>
<td>0.6</td>
<td>0.5</td>
<td>0.5</td>
<td>0.53</td>
</tr>
<tr>
<td>KITE</td>
<td>40-75</td>
<td>0.3</td>
<td>0.6</td>
<td>0.6</td>
<td>0.6</td>
<td>0.53</td>
</tr>
<tr>
<td>FIELDS</td>
<td>45</td>
<td>0.3</td>
<td>0.5</td>
<td>0.4</td>
<td>0.4</td>
<td>0.4</td>
</tr>
<tr>
<td>PLAIN - 50</td>
<td>40</td>
<td>0.4</td>
<td>0.4</td>
<td>0.4</td>
<td>0.4</td>
<td>0.4</td>
</tr>
</tbody>
</table>

Physical appearance & performance

<table>
<thead>
<tr>
<th>Property</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product type</td>
<td>Wall / ceiling panels for interior design</td>
</tr>
<tr>
<td>Color</td>
<td>Natural white</td>
</tr>
<tr>
<td>Odor</td>
<td>Medium smell at first opening, dissolved in 1 week.</td>
</tr>
<tr>
<td>Density</td>
<td>180 kg/m³</td>
</tr>
<tr>
<td>Flexural Strength</td>
<td>0.05 MPa</td>
</tr>
<tr>
<td>Compression Strength UNI EN 826</td>
<td>10.72 kPa</td>
</tr>
<tr>
<td>Impact Resistance ISO 4211-4</td>
<td>10-200mm: no damage [5/5]; 400 mm: slight sign [4/5]</td>
</tr>
<tr>
<td>Deformation</td>
<td>2.5% before rupture</td>
</tr>
</tbody>
</table>

Fire Reaction UNI EN 13501-1
UV resistance UNI EN 15187
Dimensional variation UNI EN 1604
Thermal Conductivity UNI EN12664-2
TVOC emission rate (µg/m²h)*
VOC emission rate (µg/m²h)*
SVOC emission rate (µg/m²h)*

B-s1-d0
Excellent [grey: 5/5; blue scale: >6]
< 0.4% (40°C; RH=70%) (70°C; RH=90%)
0.050 W/mK (34 mm thickness)
10
91
<2

*Simulated results of VOC Emissions based on 15-days chamber testing. Official results according to Indoor Air Comfort test will be released in autumn 2019.
Datasheet
Flooring
Material Data Sheet

Resilient mycelium-based floors

MOGU Floor consists of a core of mycelium composite, grown from the fiber waste of textile industry. The tile is coated with an exclusively formulated bio-based covering that contributes to ensure the quality of their technical performances as well as long-lasting durability.

The bio-PU layer (2 mm) is strongly based on bio-based, renewable and recycled content, up to 90% of the formulation. Traditional fillers have been replaced with low-value products, such as waste shells that are currently accumulating on oceanic shores due to global warming.

At the end of product lifespan, the bio-PU layer can be separated from the mycelium composite core, enabling the correct biodegradability of the core.

Models

- SQUARE M
- SQUARE L
- PLANK
- RHOMBOID + SLAB
- IRREGULAR PENTAGON

Composition

topcoat
bio-PU
mycelium
composite
moisture
barrier
### Dimensions & weight

<table>
<thead>
<tr>
<th>Dimensions &amp; weight</th>
<th>w [mm]</th>
<th>h [mm]</th>
<th>t [mm]</th>
<th>side [mm]</th>
<th>sqm</th>
<th>n'/sqm</th>
<th>weight [Kg]</th>
</tr>
</thead>
<tbody>
<tr>
<td>SQUARE M</td>
<td>500</td>
<td>500</td>
<td>10</td>
<td>500</td>
<td>0.25</td>
<td>4</td>
<td>1.1</td>
</tr>
<tr>
<td>SQUARE L</td>
<td>600</td>
<td>600</td>
<td>10</td>
<td>600</td>
<td>0.36</td>
<td>3</td>
<td>0.6</td>
</tr>
<tr>
<td>PLANK</td>
<td>500</td>
<td>250</td>
<td>10</td>
<td>500</td>
<td>0.13</td>
<td>7.70</td>
<td>1.3</td>
</tr>
<tr>
<td>RHOMBÖID</td>
<td>437</td>
<td>750</td>
<td>10</td>
<td>436</td>
<td>0.25</td>
<td>4</td>
<td>1.2</td>
</tr>
<tr>
<td>SLAB</td>
<td>370</td>
<td>400</td>
<td>10</td>
<td>436</td>
<td>0.16</td>
<td>6.25</td>
<td>1.0</td>
</tr>
<tr>
<td>IRREGULAR PENTAGON</td>
<td>820</td>
<td>346</td>
<td>10</td>
<td>546</td>
<td>0.20</td>
<td>5</td>
<td>1.2</td>
</tr>
</tbody>
</table>

### Reaction to fire & standards

<table>
<thead>
<tr>
<th>CE MARK</th>
<th>EN 14041:2006</th>
<th>pass</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fire Reaction</td>
<td>EN 13238</td>
<td>C-fl</td>
</tr>
<tr>
<td>Formaldehyde</td>
<td>n/a – E1 class</td>
<td></td>
</tr>
<tr>
<td>Water tightness</td>
<td>EN 13553</td>
<td>pass</td>
</tr>
<tr>
<td>Thermal Conductivity</td>
<td>EN 12667</td>
<td>0.05 W/mK</td>
</tr>
</tbody>
</table>

### Physical properties & performance

<table>
<thead>
<tr>
<th>Physical properties &amp; performance</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Product type</strong></td>
<td>Resilient Flooring – modular multilayer tiles</td>
</tr>
<tr>
<td><strong>Color</strong></td>
<td>C-fl</td>
</tr>
<tr>
<td><strong>Density</strong></td>
<td>700 kg/m³</td>
</tr>
<tr>
<td><strong>Installation</strong></td>
<td>glue-based</td>
</tr>
<tr>
<td><strong>Residual indentation</strong></td>
<td>&lt; 0.15 mm</td>
</tr>
<tr>
<td><strong>Abrasion resistance</strong></td>
<td>T - type I</td>
</tr>
<tr>
<td><strong>Castor chair</strong></td>
<td>No damage</td>
</tr>
<tr>
<td><strong>Furniture leg</strong></td>
<td>No damage</td>
</tr>
<tr>
<td><strong>Slip resistance</strong></td>
<td>μ ≥ 0.30 (DS class)</td>
</tr>
<tr>
<td><strong>Electrical behaviour</strong></td>
<td>R &gt; 10^9 Ω ; ≤ 2 kV</td>
</tr>
<tr>
<td><strong>Sound absorption</strong></td>
<td>E1</td>
</tr>
<tr>
<td><strong>Impact sound insulation</strong></td>
<td>C (&lt;85 dB); 2 dB</td>
</tr>
<tr>
<td><strong>Dimensional Stability</strong></td>
<td>0.10%</td>
</tr>
<tr>
<td><strong>Chemical Resistance</strong></td>
<td>No damage</td>
</tr>
<tr>
<td><strong>VOC Emissions</strong></td>
<td>Platinum (&lt; 10 μg/m³)</td>
</tr>
</tbody>
</table>

97
Contact

GENERAL INQUIRY
enquire@mogu.bio

PRESS RELEASES
press@mogu.bio

ORDERS
sales@mogu.bio

CUSTOMER CARE
support@mogu.bio

via San Francesco d'Assisi, 62
21020 Inarzo (VA) - Italy

+ 39 0332 1802141
CREDITS

BRAND IDENTITY, ART DIRECTION & LAYOUT:
NERDO
@NERDOSTUDIO
NERDO.TV

PHOTOGRAPHY, VISUAL IDENTITY AND PRODUCTION:
A.WORLD PRODUCTIONS
@FILIPPOPIANTANIDA
AWORLDPRODUCTIONS.COM

STYLING:
STUDIO SALARIS
@STUDIOSALARIS
STUDIOSALARIS.COM

COORDINATION, TEXTS AND CONTENT SUPERVISION:
SERENA CAMERE
MAURIZIO MONTALTI

ACKNOWLEDGEMENTS:
FORMER / BUSNELLI - MIRROR MOD.REPLAY (P.52)
JEROEN VAN DEN BRANDHOF
CARLOTTA BORGATO
MOGU TEAM