

**#14025**

Italy

## **Kernel Collection**

**Gio Minelli**

ART AND COLLECTIBLE DESIGN



### **Description**

The Kernel collection was born from my collaboration with Rivierasca Spa and the European FiberEUse project. The project aims to find effective solutions for the recycling of end-of-life wind turbines. My task as an artist and designer was to find technical and aesthetic solutions that would make the most of this new circular economy material called Glebanite. Two years of experimentation on textures, techniques, colors that have led Glebanite to be a very versatile and extremely interesting material in the artistic and product design fields. My research project starts from a completely artistic experimentation by making tables, vases, seats, lamps, all by hand and only in unique pieces. All the research on the actual material was born from this first experimentation to also find industrial

applications in the field of interior and exterior furnishings.

## **Concept**

The purpose of my project is to communicate the strong aesthetic value of a circular economy material by increasing the perceived quality and elevating it compared to the starting material. Communicate to the industry and the end user the beauty that can arise from a material or product such as a boat, a wind turbine, an old carousel. Discovering that the limit is only mental, creative. It is important that art and design act as a driving force and are able to educate and communicate more and more the importance of producing with 100% recycled and recyclable materials, committing themselves to enhancing beauty.

## **Origin of Plastic**

Upcycled

## **Type of Plastic**

GFRP (Glass Fiber Reinforced Plastics)

## **Other Materials Involved as Support**

Nobody. It is important to produce with only one material and if not, always design with disassembly in mind.

## **Dimensions and Weight**

Diameter 120 cm H 74 cm / 70 kg

## **Manufacturing**

Self-production:

## **Project Images**



**Project presentation**

[Download attachment](#)

**Other Link (if necessary)**

<http://www.giominelli.com/wp-content/uploads/2022/05/04.jpg>

**Are you applying as a Single or a Team?**

Single

**Art name**

Gio Minelli

**First name**

Gio

**Last name**

Minelli

**Date of birth**

15-12-1976

**Nationality**

Italy

**Education**

University Degree / Accademia di Belle Arti di Brera Milano

**Country**

Italy

**City**

Bergamo

**Photo portrait****Did you participate in other contests with the same project?**

No:

**How did you come across Ro Plastic Prize, the challenge of RoGUILTLESSPLASTIC Project?**

Press

**Have you joined Ro Plastic Prize before?**

No

**Website**

[www.giominelli.com](http://www.giominelli.com)

**Instagram**

[gio\\_minelli\\_](https://www.instagram.com/gio_minelli_)

#9923

Spain

## Pure Plants

**Carmelo Zappulla**

ART AND COLLECTIBLE DESIGN



### Description

Pure Plants is a family of 3D-printed plants using PURE.TECH is the result of research carried out by our architecture studio, External Reference, in the field of experimental design and new materials. The manufacturing of the plants was carried out by our partners, LAMÁQUINA by Noumena, a state-of-the-art advanced manufacturing center led by innovative sustainable 3D printing solutions for the architecture and design sector. Together with our partners, we developed the world's first tree with PURE.TECH technology that absorbs CO<sub>2</sub>. It was a Christmas tree made of an intelligent biomaterial capable of absorbing more than 15 kg of CO<sub>2</sub> per year through photolysis. Taking this first product as a starting point, today the Pure Plants family shows different species. The 3D-printed Pure Plants

product line consists of 17 different products, which vary in shape, geometry, and therefore air purifying surface that is capable of absorbing and neutralizing CO<sub>2</sub>, nitrogen oxides (NO<sub>x</sub>), and volatile organic compounds (VOCs) due to PURE.TECH material which is an advanced polymer composed of 100% natural minerals that have the property to absorb CO<sub>2</sub> and purify the air we breathe. For its production, a bioplastic polymer made with corn dextrose (sugar) has been mixed to achieve a 100% natural mineral compound that has the property of capturing and mineralizing the main greenhouse gases and pollutants that we find in the atmosphere. By applying PURE.TECH on large surfaces can trigger a positive impact on our environment. Several studies and certifications show that PURE.TECH has the capacity to absorb the main greenhouse gases and 1000 sqm of product can represent the same amount of absorption of 8 trees over 30 years old. The material is manufactured with a low carbon footprint, to ensure efficiency throughout the entire life cycle, from production to application. PURE.TECH material applied to the filament used to print Pure Plants and all its derivatives are studied in a controlled environment and has more than thirty studies and certifications that demonstrate its characteristics and impact capacity. Absorption capacities are measured using samples placed in vacuum chambers filled with a high concentration of CO<sub>2</sub>e. We install sensor devices equipped to measure the concentration of GHG that are implemented in uncontrolled environments such as stores, streets, and homes, among others. By crossing laboratory and spatial data, the absorption performance of PURE.TECH and its applications are estimated after being introduced into specific sites and locations previously monitored by sensor devices. Additionally, each part is produced using Fused Deposition Modelling (FDM), an extrusion-based 3D printing technology that requires less energy than other manufacturing techniques, as well as eliminating additional material consumption generated by mold manufacturing. The construction materials used in FDM are biodegradable thermoplastic polymers and are presented in filament format. Therefore, the product is fully recyclable. It can be crushed and re-formed into paddles or into an extruded filament format.

## **Concept**

The design of Pure Plants by External Reference follows the principles of biomimicry. Each plant presents an intricate geometry inspired by the natural phenomenon of the phyllotaxis pattern, artistically interpreted and transformed or modulated by means of parametric instruments. Air purifying 3D printed sculpted plants bring the perception of nature to any space while incorporating the primary function of natural plants in the environment: CO<sub>2</sub> absorption. The Pure Plants product series, which includes 17 different sizes and design options, accommodates the user's budget, needs, and aesthetic preferences. The product is completely safe and has no electrical plugs or chemical applications. It arouses the user's curiosity and offers and represents the function of a healthy natural environment in a design product. The nature-inspired design of Pure Plants and its function as an air-purifying sculpture, made using optimized manufacturing processes, is a statement product that raises environmental awareness in both the design and consumer arenas. When used, Pure Plants provides healthy public and community spaces, while raising awareness around the issues of material waste, air pollution, and the value of the natural elements around us. The incorporation of PURE.TECH -a material that respects the environment and is of natural origin in a piece of functional

design or a public installation, as well as in various material applications, aims at the environmental and social impact, providing an example of the potential application of sustainable solutions to the fields of design and architecture, currently responsible for more than 40% of CO2 emissions in the environment. While increasing ecological awareness, it also highlights the mission to drive the industry towards sustainable, efficient, and affordable technologies against climate change. PURE.TECH aims to empower people to defend our planet, becoming active ambassadors of a new ecological revolution.

## Origin of Plastic

Recycled

## Type of Plastic

PLA

## Other Materials Involved as Support

PURE.TECH

## Dimensions and Weight

It varies in height, the biggest being 1.2 sqm and smallest being 0.2 sqm. Though Pure Plants are customizable based on the user's needs.

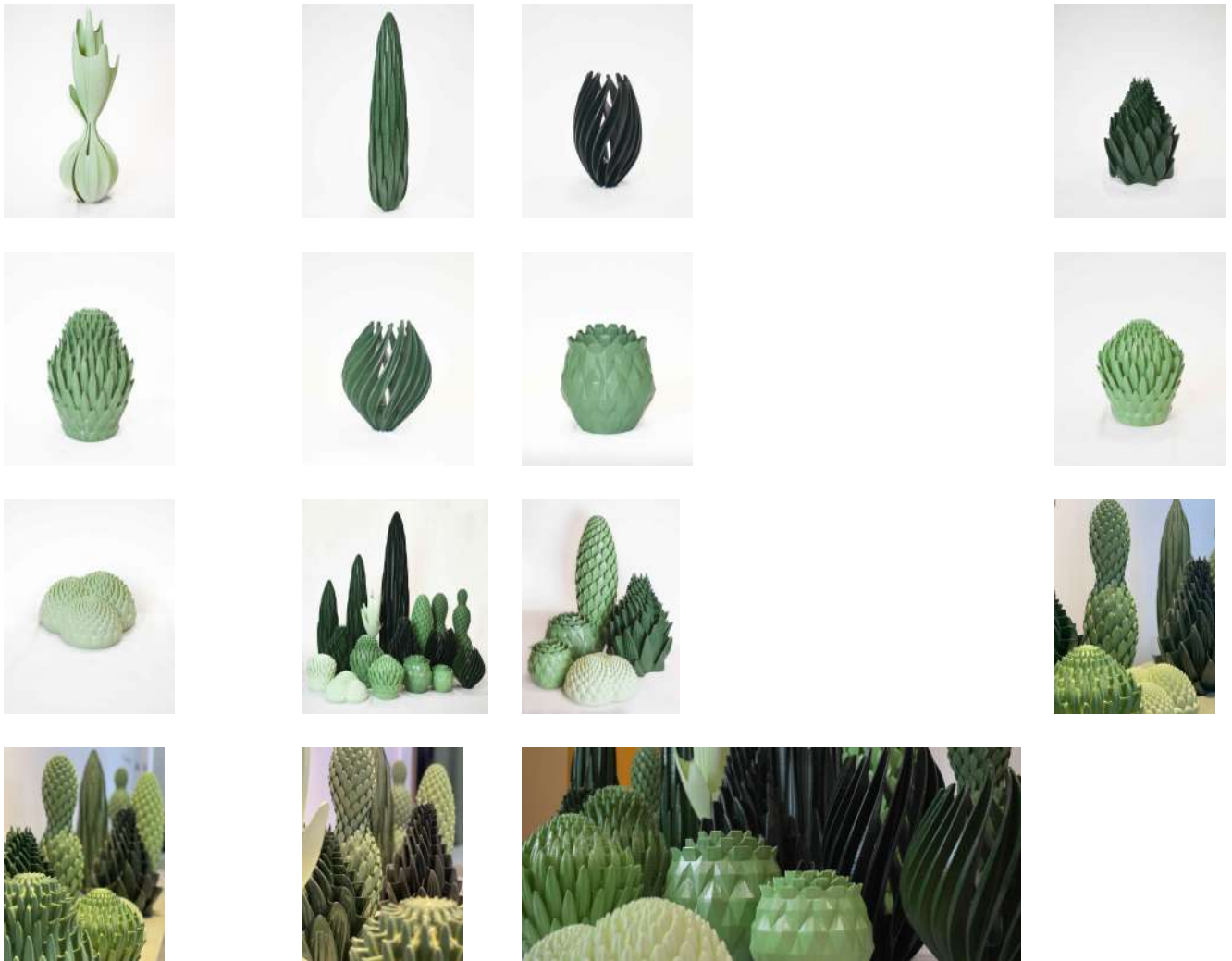
## Manufacturing

Self-production:

## Project Images







**Other Link (if necessary)**

<https://externalreference.com/proyectos/pure-plant/>

**Are you applying as a Single or a Team?**

Team

**Art name**

Pure Plants

**First name**

Carmelo

**Last name**

Zappulla

**Date of birth**

20-07-1978

**Nationality**

Italy

**Education**

Doctorate in Architecture

**Country**

Spain

**City**

Barcelona

**Photo portrait**



**Did you participate in other contests with the same project?**

Yes: Premio Catalunya de Ecodiseño 2023

**How did you come across Ro Plastic Prize, the challenge of RoGUILTLESSPLASTIC Project?**

Word of mouth

**Have you joined Ro Plastic Prize before?**

No

**Website**

[www.externalreference.com](http://www.externalreference.com)

**Instagram**

<https://www.instagram.com/externalreference/?hl=en>

## **LinkedIn**

<https://es.linkedin.com/company/external-reference>

#15054

**Letizia**

EMERGING HIGH TECHNOLOGY

Italy

**Cristian Fracassi**



### **Project overview**

Letizia is an innovative method that allows you to create artificial legs at low cost and in a very short time, as an emergency measure in particular conditions in which amputations may occur, such as wars, epidemics, earthquakes or other dramatic events. It is important to know that one of the main causes of failure to walk after amputation is the slowness in "verticalizing" the patient: if within 3/6 months the patient does not walk again with a prosthesis, there is the risk that he will not be able to walk anymore. In fact, a series of complex problems take over: the muscles atrophy, the stump loses mass, the nerve endings "turn off" and circulation slows down. To all this is added a neurological and mental problem: the lack of a limb, in fact, triggers the phenomenon of the phantom limb whereby

the brain adapts to the new configuration and loses certain abilities. Lastly, a significant role is played by the patient's fear of no longer being able to walk. The speed of getting an amputee back on his feet is therefore crucial to the success of the project. Letizia project was born from the dramatic situation of the war in Ukraine, where normality has given way to emergency. There are mainly two problems that are at the base of the idea: on the one hand the incredible number of amputees that was generated in a short time, on the other hand, the high investment costs and the availability of materials and personnel specialized in the creation of prosthesis. Starting from these problems, the Letizia method has set itself the goal of being the solution. First of all, the prostheses made in this way are definitely cheap, at least 10 times less expensive than the cheapest on the market; they also adapt very well to many types of amputations and patients. All this is made possible thanks to the use of 3D printing which allows you to edit files in a short time or to stop printing once the desired height has been reached. To be light, Letizia is largely made of plastic, with the exception of 2 steel sticks and an aluminum profile that simulates bone. Specifically, 3D printing was chosen for 5 reasons:

- it allows you to send files anywhere in the world in zero time, without necessarily having to ship a product (0 CO2 produced for transport)
- it allows you to change the geometry based on the patient.
- it allows you to have minimal initial investments.
- It allows you to create a different aesthetic every time because it does not require molds.
- it allows you to customize the color.

The polymers that can be used are different: we are currently using both RPET (recycled PET) and RPLA (recycled PLA). The first is derived from the waste of plastic water bottles, the second from the waste of unsuccessful components printed. In addition, PLA is a derivative of natural origin and is therefore considered a biopolymer. Even the foot of the prosthesis can be molded in recycled polymer and, if particular characteristics are needed, we have an extruder that is able to create recycled filament with a carbon fiber filler, mainly for dynamic feet, i.e. with an elastic return during walking. A second alternative material for the foot is polyurethane: in fact, if the patient uses the artificial limb a lot without shoe, wear becomes the main enemy. Polyurethane has a very high resistance to abrasion. In this case, again using a 3D printer, we make the casting molds of the polyurethane which hardens in a few minutes. The polymer used this time is nylon, again recycled, because it has to resist temperatures of 70-80 degrees, generated by the polyurethane mixing process.

## **Project goals and objectives**

The objective of the project is to be able to develop a solution that is simple to replicate all over the world and at very low cost, using 3D printers to build and create artificial legs in a short time. Plastic, unfortunately, is too often seen as a harmful material, dangerous for the environment and therefore to be eliminated. With the Letizia project we want to demonstrate that ONLY thanks to plastic we can produce artificial limbs that are low-cost and resistant at the same time. Its impermeability, its lightness, and its flexibility are fundamental (if not essential) characteristics for the product we have to make. Our goal is to produce 500 legs by summer 2023. Thanks to the first feedback from the 50 Ukrainians to whom we have already sent the prostheses, we will be able to further perfect Letizia, making it even more performing. Another goal we have is to go beyond the Ukrainian territory and to bring Letizia to other countries that need help and don't have enough money, such as the Ivory Coast, Sudan, Syria, Afghanistan, etc.

## Measurement of success

Project Letizia certainly does not have the strength and desire to use all the recycled plastic in the world. It is not in tons or thousands of tons that we want to measure the environmental impact, but in its possible positive reuse. We want to demonstrate that recycled plastic not only works, but has the noble ability to support a person's weight and allow a man, woman or child to walk again, at a cost 90% less with respect to the market today. Thanks to the use of recycled plastic, we are able to improve people's quality of life and restore normality even to all those who currently do not have sufficient financial resources to buy a traditional prosthesis, regardless of the area in which they are located. The social impact, on the other hand, is easier to measure because it corresponds to the number of human beings that Letizia will be able to make walk. To date, there are already 78 legs under construction, but the idea is to leave the 3D printing files free and easily downloadable to spread the project as much as possible and help as many people as possible. Thanks to the designers who want to support us, we will also upload new aesthetic design models over time, to allow those who have lost a leg to be able to improve their prosthesis. After all, a prosthesis doesn't necessarily have to be ugly!

## Materials involved

The materials chosen for the project are: • R-PLA (Recycled Polylactic Acid) used for the aesthetics of the Letizia leg • R-PET (recycled polyethylene terephthalate) used for the aesthetics of the Letizia leg NYLON (PA12) recycled, used to make 3D molds for compact polyurethane casting • ALUMINUM (Al) for the tubular part of the Letizia leg • STAINLESS STEEL for component joining screws

## Dimensions and Weight

from 60 to 100cm - 1.5/2kg

## Manufacturing

Suppliers: ESTRAL, SIFRA, IRON SISTEMI

## Project Images





**Are you applying as a Single or a Team?**

Team

**Art name**

Isinnova Srl

**First name**

Cristian

**Last name**

Fracassi

**Date of birth**

27-03-1983

**Nationality**

Italy



## Education

PhD

## Country

Italy

## City

Brescia

## Photo portrait



## Did you participate in other contests with the same project?

No:

## How did you come across Ro Plastic Prize, the challenge of RoGUILTLESSPLASTIC Project?

We saw it on the internet

## **Have you joined Ro Plastic Prize before?**

No

### **Website**

<https://www.isinnova.it>

### **Instagram**

<https://www.instagram.com/isinnova/>

### **LinkedIn**

<https://it.linkedin.com/company/isinnova>

### **Facebook**

<https://it-it.facebook.com/isinnova/>

**#18714**

## **TOTEMO toy for expanding creativity**

INSPIRING LEARNING PROJECTS

Czech Republic

**Adriana Kováčová**



### **Description**

TOTEMO was produced first using plywood with connectors made from recycled PET bottles. Recently, together with studio Pitoresq, we have developed a 100% recycled version. Pitoresq studio processes ordinary plastic waste-shaping it by thermal compression. The process is carried out at the lowest possible temperature to prevent the release of any harmful substances. We like the transformation of TOTEMO into a completely recycled form because we no more need to manufacture new material. Because what precisely are we passing on to the next generation by constantly producing new objects? And what do children in turn learn by being exposed to recycled materials and the recycling

principles from a tender age?

## Concept

**The purpose of the project** TOTEMO wants to be with you as long as possible. A toddler sees it for the first time as a mobile hanger above the cot. TOTEMO later turns into a construction set with more and more pieces being added. Then it becomes an accessory to your home or your child's room. TOTEMO stimulates imagination, develops a sense of spatial perception and promotes self-awareness in the creative process. It helps to release tension, leads to relaxation of the mind and focuses on the present. We have also received some touching feedback and results from autistic children. **Target groups** The initial target group were children from four to twelve years of age. But as soon as TOTEMO was created, it attracted the attention of adults. This made us realise its full potential – it pulls everyone into playful mood and within minutes of interacting with TOTEMO, you become fully immersed the playful flow you remember from childhood. As a result, TOTEMO will be appreciated by designers, teachers, lawyers, creatives and simply anyone who needs to give a fresh breath to their mind, take a break and change their perspective. We are additionally approaching artists to create limited editions and collectible TOTEMO pieces. **Mission** In addition to collaborating with artists, TOTEMO's goal is to intervene in the public space and spread that creative flow throughout society. That is why we organise creative workshops in schools, galleries, festivals and other venues. The best feedback and driving force for us is the personal encounter with children and adults. When we see how they lose themselves in play, regardless of age, and forgetting any worries.

## Manufacturing

Suppliers: We collaborate with PETMAT- 3D printing components from PET-G, Pitoresq studio help us with recycled plastic materials on TOTEMO pieces. We collaborate with PETMAT- 3D printing components from PET-G, Pitoresq studio help us with recycled plastic materials on TOTEMO pieces.

## Media tool

Recycled PET-G, PP,HDPE - the large TOTEMA box has 110 pieces and 70 different shapes. The smallest piece has a size of 8mmx20mm and the largest 200x250mm, the thickness of the piece is 4mm

## Project Images



## **Project Presentation**

[Download attachment](#)

## **Other Link (if necessary)**

<https://drive.google.com/drive/u/1/folders/1bXehzcdNKIkcnP6C5BWjzH-LAH8afqNg>

## **Are you applying as a Single or a Team?**

Single

## **Art name**

Totemo

## **First name**

Adriana

## **Last name**

Kováčová

## **Date of birth**

29-04-1992

## Nationality

Slovakia

## Education

Master of Art

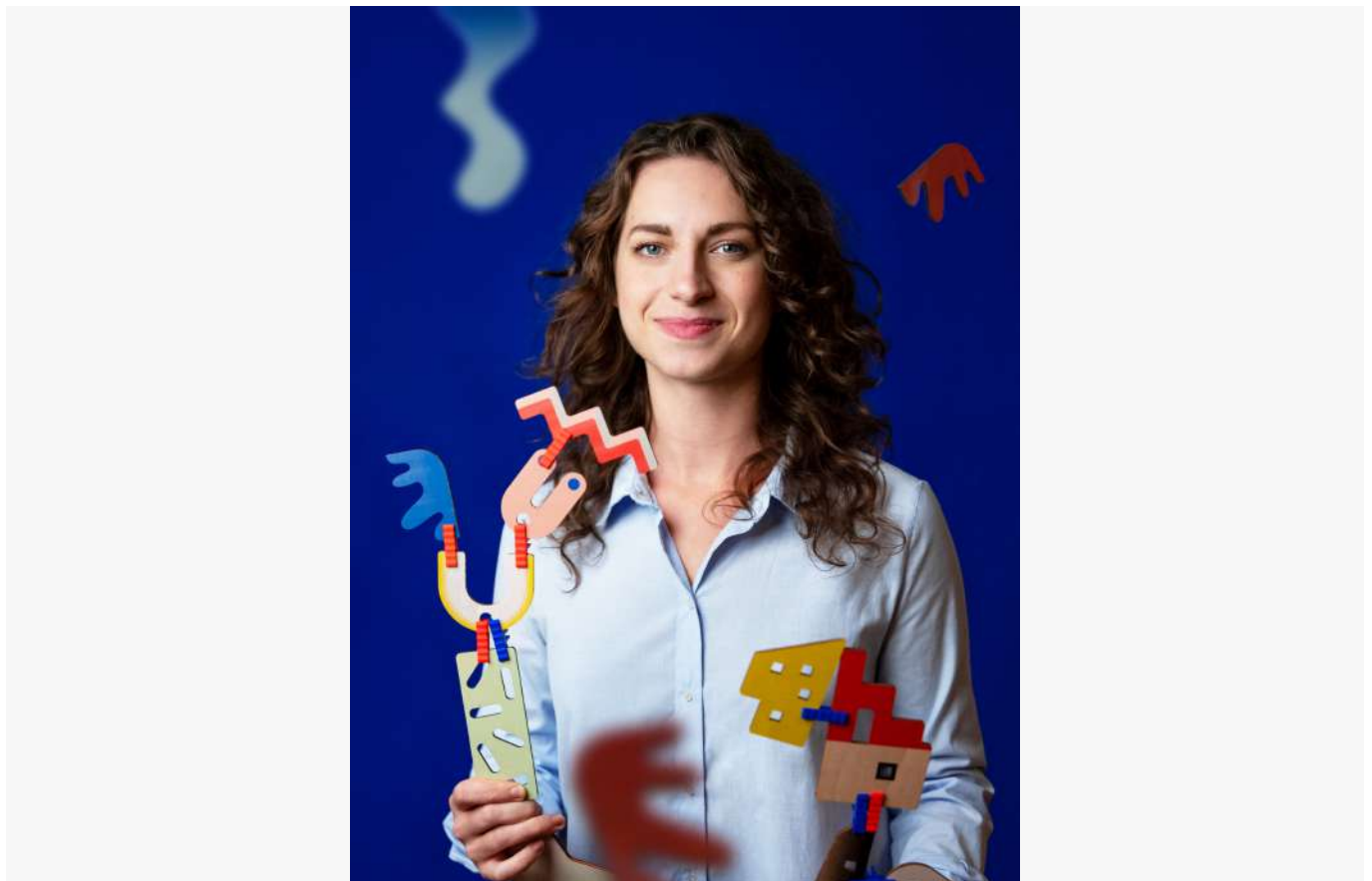
## Country

Czech Republic

## City

Prague

## Photo portrait



## Did you participate in other contests with the same project?

No:

**How did you come across Ro Plastic Prize, the challenge of RoGUILTLESSPLASTIC Project?**

Friends

**Have you joined Ro Plastic Prize before?**

No

**Website**

<https://totemo.cz/en>

**Instagram**

[totemo.cz](https://www.instagram.com/totemo.cz)

**Facebook**

[totemo.cz](https://www.facebook.com/totemo.cz)



#11815

## Artisans Of Now

INSPIRING LEARNING PROJECTS

Italy

**Ludovica Vando**



### Description

Our dream was to create a series of workshops with the best artisans and artists we met on our path, in order to spread the common love for natural materials, fading crafts, and sustainable living and to share the knowledge around it with conscious, creative souls.

This is how Artisans of Now was born, an archive of tradition coming from different fields, ready to be put in practice during laboratories held in the most beautiful locations around Italy, thoroughly curated by Cantieri Creativi and involving all senses for a sincere and memorable experience, in connection with Mother Earth.



## Concept

Artisans of Now is a workshop series meant for everyone interested in discovering the world of natural, sustainable and reusable materials. It is open to everyone and doesn't require any particular skills, only curiosity, passion and creativity. It is slowly becoming a community of likeminded people where everyone is invited to share and spread the learnings. The workshops are held by Cantieri Creativi and other professional artisans and aim to undust and innovate old traditional craftsman techniques and tools, while introducing new ones, based on the latest researches on innovative bio based materials, waste and other organic matter. Our mission is to become a landmark for those who feel the urge to change their lifestyle, become sustainable in their work or simply understand how to lower their environmental footprint through creativity.

## Media tool

Instagram profile: [@artisans.of.now](#) and website [www.cantieri-com](#)

## Project Images





## Project link

<https://instagram.com/artisans.of.now?igshid=YmMyMTA2M2Y=>

## Other Link (if necessary)

<https://www.cantieri-creativi.com/workshop/>

## Are you applying as a Single or a Team?

Team

## Art name

Cantieri Creativi

**First name**

Ludovica

**Last name**

Vando

**Date of birth**

13-10-1988

**Nationality**

Italy

**Education**

Product and Service Designer, Politecnico of Milan

**Country**

Italy

**City**

Milano

**Photo portrait**



**Did you participate in other contests with the same project?**

No:

**How did you come across Ro Plastic Prize, the challenge of RoGUILTLESSPLASTIC Project?**

I came last year to the event

**Have you joined Ro Plastic Prize before?**

No

**Website**

[www.cantieri-creativi.com](http://www.cantieri-creativi.com)

**Instagram**

[@artisans.of.now](https://www.instagram.com/artisans.of.now)