

**MARMO\_2.0**  
**Digital design evolution**

*An exposition curated by the designer Raffaello Galiotto known for his research in the stone field, which marks an epochal turning point in marble working*

**Five very high level experimental marble works**, designed with parametric software and exclusively made using numerical control machinery, to show that it is now possible to incite emotions through stone and reach unimaginable levels even without the direct touch of a human hand.

**There is no lack of astonishment and poetry** when faced with highly precise and complex, virtuous 3D works and, above all, the recovery and reduction in waste, one of the main aims of the initiative. The cutting edge use of technology - which can be considered a kind of **digital scalpel** - opens up new doors and marks a turning point compared to thousands of years of marble working tradition.

An exposition comprising marble objects made by some **top Italian companies (Citco, Helios Automazioni, Intermac, Lithos Design, Marmi Strada)**, interesting explanatory videos of the production processes and extremely intuitive infographics allow even an untrained audience to understand and appreciate the revolutionary and experimental content of every design.

These works are a continuation of the unrelenting innovative research being conducted in the stone field by the designer Raffaello Galiotto, also in association with the Verona Marmomacc trade fair, recently selected by the **ADI Index for the Compasso d'Oro award** in the "ricerca per l'impresa" (research for business) category.

Below is a brief description of the five works exhibited, especially created for each type of technology (5-axis water jet cutting, milling cutter, diamond disc).

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### AGAVE

Designer: **Raffaello Galiotto**

Company: **MARMI STRADA** ([www.marmistrada.it](http://www.marmistrada.it))

Type of marble: **Verde Alpi**

**Challenge to save materials.** Thanks to a complex design created using parametric software and the use of 5-axis water jet cutting technology, by overlapping ten marble slabs creating a total thickness of 30 cm, a multi-tipped, split, sinuous, twisted and hollow figure with an impressive height of 3m has been created, comprising 100 overlapping monolithic rings without producing any waste. The whole work has been hollowed out and its walls are no more than 3 cm thick.



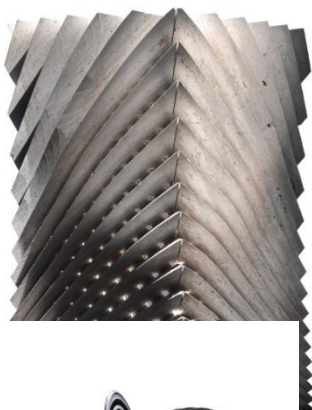
### GLOMUS

Design: **Raffaello Galiotto**

Company: **HELIOS AUTOMAZIONI** ([www.heliosautomazioni.com](http://www.heliosautomazioni.com))

Type of marble: **Bronzetto chiaro di Apricena**

**Like a ball of thread.** The challenge tackled by this design is the milling of a complex 3D surface requiring the continuous passage of a tool. The latter not only refines the surface (according to traditional use) but, during the process, also works from an aesthetic finish point of view. In fact, like in a ball made of one single continuous thread, in this work the tool rests on the refined surface and through a very long and winding but continuous path it works the surface giving it the required finish.



### LISCA

Design: **Raffaello Galiotto**

Company: **LITHOS DESIGN** ([www.lithosdesign.com](http://www.lithosdesign.com))

Type of marble: **Travertino**

**Lithic virtuosity.** The traditional diamond disc cut is reinterpreted starting from two blocks of thick solid marble joined together and worked in three dimensions with numerical control machinery through arduous curved paths distributed across an undulating surface. The machine works the two faces of the block creating V-shaped grooves and shaping a folded surface on both sides. The apexes of the folds cross creating a series of rhomboidal openings through which light can filter.



### RHINOCEROS

Design: **Raffaello Galiotto**

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Company: **CITCO** ([www.citco.it](http://www.citco.it))

Type of marble: **Grigio Bardiglio**

**Inspired by an incision by Albrecht Durer dated 1515.** Just as straight, curved or geometric manual strokes outline a 2D shape, the milling cutter carves a mass and draws a 3D surface. The graphic texture, first digital using software, then material using the tool, becomes the distinctive feature of the work itself, which is fully produced using machinery.



Title: **THORN**

Design: **Raffaello Galiotto**

Company: **INTERMAC** ([www.intermac.com](http://www.intermac.com))

Marble: **Arabescato Orobico**

**Cones and craters.** The challenge tackled by this work is to transform solid marble with a 5-axis milling cutter producing a series of thin, conical, translated and fixed elements, facing different directions. Aim: to increase the volume of the final figure with respect to the starting material in return for a reduction in waste and the optimised use of the marble.

The design of the cells, in which each tip is housed, was produced using the Voronoi\* diagram and handled with parametric software for controlling the orientation of each cone with respect to an attraction point.



*Raffaello Galiotto was born in Chiampo (VI), in 1967. After studying Fine Art at Venice he founded his own design studio in 1993. He united his product design activity, particularly in the furnishing area, with his interest in research, materials, production processes and technology. He has developed original experiments and international design exhibitions. In the field of marble and natural materials he has won various awards for his work with important companies in the industry. He is a lecturer of design at the University of Ferrara and his designs have been published in books and journals and exhibited at international events and museums. Since 2014 he has been curator of the Design and Architecture Pavilion at the Verona Marmomacc trade fair. In 2015 the Digital Lithic Design exhibition was selected by **ADI DESIGN INDEX for the Compasso d'Oro award** in the "ricerca per l'impresa" (research for business) category.*

\* In mathematics, a **Voronoi diagram** (named after Georgij Voronoii is a particular type of decomposition of a metric space due to the distances with respect to a certain discrete set of elements of the space (e.g. a finite set of points).