

LATTICE POLE AND RELATED RHOMBOIDAL STRUCTURE

ALMA MATER STUDIORUM-UNIVERSITÀ DI BOLOGNA



Innovative lattice pole with a rhomboidal structure, formed by interconnected lateral faces projecting a polygonal shape. The pole, developed vertically with interconnected rhomboidal lattice elements, is manufactured using WAAM (Wire and Arc Additive Manufacturing) technology in a "dot-by-dot" or "point-by-point" method.

Protection: Italy, with the possibility to extend internationally

Inventors: Vittoria Laghi, Giada Gasparini, Tomaso Trombetti e Michele Palermo

INVENTION

The present innovation concerns a grid pole with a rhomboidal structure, produced through 3D printing. This pole is designed to enhance material efficiency and mechanical strength compared to traditional metal tubes, which often have excessive material relative to the required strength, resulting in inefficiencies and heaviness. The 3D-printed grid pole, based on WAAM (Wire and Arc Additive Manufacturing) technology, addresses this issue by using less material without compromising performance. Additionally, it offers the possibility of creating various appealing designs, allowing for unprecedented aesthetic and functional customization.

ADVANTAGES

- **Material Optimization:** Allows the use of the minimal amount of material while maintaining high mechanical strength.
- **Safety:** Provides greater shock absorption, reducing the risks of penetration in the event of an impact.
- **Versatility:** Suitable for various applications such as interior furnishings, urban furniture, public lighting, sculptures, and artistic design.

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APPLICATIONS

- **Construction and Building:** As support for lattice structures and architectural components.
- **Urban Furniture:** For street lighting and signage.
- **Artistic Design:** Sculptures and design installations due to its unique and aesthetic structure.



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