

DentaForm™

Customizable dental implants

“Formed for You. Built to Last.”

Technology

This invention presents an advanced dental implant that enhances mechanical performance and biological integration through a unique structure combining threaded and porous zones. Designed for use in orthodontic prosthetics, the implant features an elongated, tapered body with a longitudinal axis, including first and second threaded zones separated by a centrally positioned porous zone. The porous zone encourages superior osseointegration by allowing bone ingrowth, while the threaded zones offer strong anchorage and load distribution. The implant is made from biocompatible ceramic materials, such as alumina, using precision additive manufacturing techniques like Lithography-Based Ceramic (LBC) printing.

Market need

The global dental implant market faces challenges in managing implant rejection, mechanical failure under occlusal forces, and ensuring effective bone integration, especially in narrow implants used for anterior teeth. Current solutions often experience stress concentrations, poor load distribution, and limited long-term stability. Additionally, there is increasing demand for more customisable, durable, and biocompatible implants that decrease failure rates and improve patient outcomes. This invention directly addresses these needs by providing a structurally optimised implant that minimises stress concentrations and promotes osseointegration.



Features

- High-strength ceramic (e.g., alumina), offering excellent biocompatibility and reduced bacterial adhesion.
- Designed to promote bone ingrowth.
- Minimise stress during insertion and usage.
- Lithography-Based Ceramic (LBC) 3D printing for high-precision, patient-specific designs



Benefits

- Porous central zone facilitates bone bonding, reducing the risk of implant failure.
- Chamfered edges and biocompatible ceramics decrease inflammation, discomfort, and allergic reactions.
- Thread geometry and load-sharing design decrease stress and prevent cracking or loosening under pressure.
- Balanced mechanical and biological features support long-term implant success.



Industry

Manufacturing

Potential applications

- Dental and orthodontic prosthetics: replacement of missing teeth with enhanced stability and long-term performance.
- Anterior (front) tooth implants: ideal for narrow spaces requiring strong anchorage and aesthetic precision.
- Bone regeneration and integration studies: research on osseointegration and bone-implant interface improvements.
- Customised dental solutions: patient-specific implants using precision 3D ceramic printing.
- Minimally invasive implant procedures: suitable for patients with limited bone volume or sensitivity to metal implants.
- Advanced dental training and research: educational and clinical applications in dental implantology and biomaterial development.

Creators

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Stage of development

Prototype

Intellectual property

Patent Protection

Desired relationship

Co-development, Investors