



## Surface Design in Additive Manufacturing Medical Implants

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### Abstract

Bone–implant stability can be improved by fabricating porous titanium implant surfaces using additive manufacturing interfacial bonded, a thorough understanding of the biomechanical properties of porous (lattice) implants is essential. favorable physiological environment for bone ingrowth and strengthens the bond between the implant and bone.

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Mechanical properties of the FE-based design can be evaluated using finite element analysis (FEA) to predict the mechanical behavior and stress distribution under various loading conditions. The design is subjected to various loading conditions, including static, dynamic, and impact loading, to ensure its structural integrity and performance.

In the design of the implant, the mechanical behavior of the material is a critical consideration. The design is subjected to various loading conditions, including static, dynamic, and impact loading, to ensure its structural integrity and performance. The design is subjected to various loading conditions, including static, dynamic, and impact loading, to ensure its structural integrity and performance.

The design of the implant is a complex task that requires a deep understanding of the material properties and the mechanical behavior of the design. The design is subjected to various loading conditions, including static, dynamic, and impact loading, to ensure its structural integrity and performance. The design is subjected to various loading conditions, including static, dynamic, and impact loading, to ensure its structural integrity and performance.