

A BIOMIMETIC COMPOSITE FOR ORTHOPEDIC AND DENTAL IMPLANTS AND METHOD OF FABRICATING THE SAME

Technology Description: A novel material which can be used an alternative to existing biomaterials in the field of orthopedic and dental implants and the manufacturing method for the same

Patent Status: Patent Pending

Proof-of-concept (PoC) available?

Yes

Current TRL Level: 4

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Key Features & Benefits:

Over existing implant biomaterials, our novel material possess material properties closer to the natural bone in addition to being biocompatible and bioactive. Young's modulus of natural bone is 10.4 GPa (standard deviation: 3.5), whereas it is 7 GPa (standard deviation: 0.5) for our biomimetic composite. Hydroxyapatite (HA) as one of the constituents of the material makes the material bioactive while all other constituents are biocompatible.

Potential Applications & Industries: Dental & Orthopedic implants

Any other relevant information/data:

Preliminary material testing is over.

Picture:



Composite before filament extrusion



Composite after filament extrusion



Filament subjected to tensile testing