Composites for Biomedical Applications

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ABSTRACT

Composites comprise of two or more materials at different composition and produce tailored physical and mechanical properties. In biomedical applications, implants materials are usually made of metals which yield optimal interaction with the hosting tissue. However, metallic implants applied in human body were known to cause problems like allergies, strain mismatch, and susceptibility to corrosion. Thus, composites have been introduced for its structure biocompatibility to the human tissue. Researches focus on developing load-bearing implant and devices from fiber-reinforced polymer like PEEK-carbon fiber composite and dentistry restoration materials. In order to manufacture composite implants at high volume, squeeze forming and injection molding are considered cost-effective processing..

KEYWORDS

Bioactive coatings; Carbon–carbon composite; Composite squeeze forming; Dental composites; Fiber-reinforced implants; Injection molding; PEEK-carbon fiber-reinforced; Structural compatibility

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