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(57) Abstract :
The present invention relates to the ß-Ti implant was subjected to PMEDM for surface modification to produce a novel biomimetic nanoporous bioceramic surface with the aim to improve the corrosion resistance, wear resistance, fatigue performance and bioactivity of the ß-Ti-based implant. Orthopedic implants are used as artificial organs to restore the functionality of natural organs in the body. Metallic biomaterials, such as stainless steel, cobalt chromium, and titanium and its alloys have been used as medical implants. Among these, Ti and its alloys have recently gained increasing attention for application in the biomedical field owing to their superior biocompatibility and excellent mechanical properties. Biomedical industries evinced interest on the application of ß-phase titanium alloy for fabrication of implants and instruments due to their superior biocompatibility and excellent mechanical properties such as low young's modulus, high fatigue performance, high corrosion resistance and low density as compared with other metallic biomaterials.

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