



## Review

# A review of biocompatible metal injection moulding process parameters for biomedical applications



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## ABSTRACT

Biocompatible metals have been revolutionizing the biomedical field, predominantly in human implant applications, where these metals widely used as a substitute to or as function restoration of degenerated tissues or organs. Powder metallurgy techniques, in specific the metal injection moulding (MIM) process, have been employed for the fabrication of controlled porous structures used for dental and orthopaedic surgical implants. The porous metal implant allows bony tissue ingrowth on the implant surface, thereby enhancing fixation and recovery. This paper elaborates a systematic classification of various biocompatible metals from the aspect of MIM process as used in medical industries. In this study, three biocompatible metals are reviewed—stainless steels, cobalt alloys, and titanium alloys. The applications of MIM technology in biomedicine focusing primarily on the MIM process setting parameters discussed thoroughly. This paper should be of value to investigators who are interested in state of the art of metal powder metallurgy, particularly the MIM technology for biocompatible metal implant design and development.

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