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## Review

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



M.F.F.A. Hamidi <sup>a</sup>, W.S.W. Harun <sup>b,\*</sup>, M. Samykano <sup>c</sup>, S.A.C. Ghani <sup>b</sup>, Z. Ghazalli <sup>b</sup>, F. Ahmad <sup>d</sup>, A.B. Sulong <sup>e</sup>

<sup>a</sup> Institute of Postgraduate Studies, Universiti Malaysia Pahang, Lebuhraya Tun Razak, 26300 Gambang, Kuantan, Pahang, Malaysia

<sup>b</sup> Green Research for Advanced Materials Laboratory, Human Engineering Group, Faculty of Mechanical Engineering, Universiti Malaysia Pahang, 26600 Pekan, Pahang, Malaysia

<sup>c</sup> Structural and Material Degradation Group, Faculty of Mechanical Engineering, Universiti Malaysia Pahang, 26600 Pekan, Pahang, Malaysia

<sup>d</sup> Department of Mechanical Engineering, Universiti Teknologi PETRONAS, Malaysia

<sup>e</sup> Department of Mechanical & Materials Engineering, Faculty of Engineering & Built Environment, Universiti Kebangsaan Malaysia, 43600 UKM, Bangi, Malaysia

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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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## Contents

1. Introduction . . . . .	1264
2. Biocompatible metals for biomedical applications . . . . .	1264
2.1. Stainless steels . . . . .	1264
2.2. Titanium and its alloys . . . . .	1265
2.3. Cobalt-based alloys . . . . .	1266
3. Metal injection moulding process for biocompatible metals . . . . .	1266
3.1. Feedstock . . . . .	1268
3.1.1. Metal powder . . . . .	1268
3.1.2. Binder selection . . . . .	1269
3.1.3. Feedstock preparation . . . . .	1269
3.2. De-binding process . . . . .	1269
3.3. Sintering process . . . . .	1270
4. MIM challenges . . . . .	1271
5. Future prospects . . . . .	1271
6. Conclusion . . . . .	1272
Acknowledgement . . . . .	1272
References . . . . .	1272

\* Corresponding author.

E-mail address: [sharuzi@ump.edu.my](mailto:sharuzi@ump.edu.my) (W.S.W. Harun).