Powder Metallurgy (PM) 2014 World Congress, Orlando Florida, 18-22 May 2014

Binder Development for Metal Injection Moulding: A CSIR Perspective

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Abstract

The paper reviews the CSIR's progress and challenges concerning the development of a wax-based binder system suitable for metal injection moulding (MIM). It reports on a consolidation study wherein different widely used wax-based feedstock formulations were developed for Ti6Al4V, Al2124, SUS316L powders as conducted at CSIR. The results are discussed in terms of the binder systems choices; the characterization of polymeric and metal powder materials, and their effects on the processing parameters on the properties of metal injection-moulded specimens, and the contribution of sintering parameters onto the density and quality characteristics of the final part. The optimization of process parameters is briefly discussed in this review.