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Influence of Sintering Parameters on the Properties of Powder Metallurgy Ti-3Al-2.5V**Alloy**L. Bolzoni^{1,*}, E.M. Ruiz-Navas² and E. Gordo³

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e-mail: ¹bolzoni.leandro@gmail.com, ²emruiz@ing.uc3m.es, ³elena.gordo@uc3m.es**Abstract**

The processing of near net shape Ti-3Al-2.5V components using the conventional pressing and sintering route is addressed in this study. The Ti-3Al-2.5V starting powder was obtained considering both the blending elemental and the master alloy addition methods. The powders were uniaxially pressed and sintered in a high-vacuum furnace under various temperature-time combinations. The influence of the processing parameters on the relative density, microstructural features, amount of interstitials, mechanical behaviour, thermal conductivity and electrical resistivity of the sintered materials was evaluated. It was found that the relative density of the samples increases with processing temperature and time, and almost fully dense materials were obtained. The mechanical performance of the Ti-3Al-2.5V improves due to the reduction of the residual porosity and are, generally, of the same order of magnitude of those required for titanium biomedical products. Furthermore, the temperatures-times selected permit to obtain thermal and electrical properties similar to the wrought alloy.

Keywords: titanium alloys, Ti-3Al-2.5V, powder metallurgy (PM), flexural properties, thermal conductivity, electrical resistivity

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