Porous Ti-Si Alloys for Implants

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Porous alloys are very perspective materials for medical implants, particularly for surgical and dental applications. The reason - besides their biocompatibility - is their density. This is why the implants and bone replacements are lighter and more similar to a human bone in its structure and mechanical properties. Another advantage is good osseointegration, i.e. tissue growing through pores in the material, this makes the body accept the implant better and there is also no risk of rejection. New Ti-Si biomaterials were prepared by powder metallurgy using reactive sintering, during which the desired porous structure of the material is formed. In this experiment the observed subject was the microstructure of Ti-Si alloys, properties determined were porosity and yield strength in compression.

Keywords: titanium, silicon, porous, biomaterial

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