

Microstructure of New Cobalt Alloy for Medical Use

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The objective of this work was to investigate and evaluate the effect of the composition and production on microstructure and tribological properties of cobalt alloys. The reference material was Co-28Cr-6Mo alloy, which is successfully used in the medicine for many years. The excellent corrosion resistance is the advantage, as well as better wear resistance than is offered by titanium or stainless steel implants. Standard Co-Cr-Mo alloy and also Co-Cr-Mo alloy with Ti in an amount 5 wt. %, were prepared by casting and also mechanical alloying followed by "Spark Plasma Sintering" consolidation. The influence of production route as well as influence of alloying elements on the microstructure and tribological properties was observed. Based on the obtained results, the Co-Cr-Mo-Ti alloy produced by casting seems to be most suitable, because the addition of titanium has greatly improved the wear resistance.

Keywords: cobalt alloy, microstructure, biomaterial, type of production

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