

## عنوان مقاله:

THE EFFECT OF NANO BIOGLASS ON THE FABRICATION OF POROUSTTANUM SCAFFOLDS

## محل انتشار:

سومین کنفرانس بین المللی مواد فوق ریزدانه و نانوساختار (سال: 1390)

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## نویسندگان:

MAHNAZ GHAVDEL - *Faculty of Mechanical Engineering, Babol University of Technology, Babol, Shariatist, Babol, Mazandaran, Iran*

SAYED MAHMOOD RABEE - *Faculty of Mechanical Engineering, Babol University of Technology, Babol, Shariatist, Babol, Mazandaran, Iran Nanotechnology Research Institute, Nanobiotechnology Research Group, Babol University of Technology, Babol, Iran*

MOHAMMAD RAJABI - *Faculty of Mechanical Engineering, Babol University of Technology, Babol, Shariatist., Babol, Mazandaran, Iran*

## خلاصه مقاله:

Titanium implants possess a good biocompatibility among materials used for medical application. Bioglass have ability of hard tissue regeneration because of similarity to bone mineral phase. Beside, because this powder particles have a lower melt temperature than titanium, therefore they are used as help-sinter at powder metallurgy process, Nano Bioglass material of the type  $\text{CaO-P}_2\text{O}_5\text{-SiO}_2$  was obtained by the sol-gel processing method. At this work, titanium-bioglass nanocomposite composite powder mixture was uniaxially pressed at pressure of 450 MPa and sintered at  $1000^\circ\text{C}$  for 3h. The changes of microstructure were evaluated by scanning electron microscopy (SEM) equipped with EDAX and X-ray diffraction method (XRD). Compression tests were performed to assess mechanical properties at room temperature. The results show that ultimate phase of sintered specimens are titanium oxides mineral contain of anatase and rutile. All samples had between 23% and 28% porosity. An improved strength was achieved by addition of nano bioglass.

## کلمات کلیدی:

titanium, implant, nano bioglass, powder metallurgy

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