



Synthesis and Characterization of Bioactive Glass Nanopowders for Bone Tissue Regeneration

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Abstract:

Sol-gel bioactive glasses have been expanded for bone tissue regeneration as they have the unique structure and high bioactivity in vitro. This study deals with the sol-gel synthesis of bioactive glass Nano-powders with a unique combination of properties including porosity and biocompatibility, for bone tissue repair applications. To make more dependable bone tissue regeneration systems, it is essential to control the morphology and microstructure of bioactive glasses. For this purpose, bioactive glass Nano-powders were synthesized by sol-gel synchronization technology using lactic acid as catalyst. The effects of lactic acid on the microstructure of the products as well as the ability of product to form hydroxyapatite in simulated body fluid were then investigated via various characterization methods. The obtained results confirmed the controlling role of lactic acid in morphology and the microstructure of the synthesized bioactive glass powders. In vitro bioactivity test showed that the more ability of hydroxyapatite formation in lactic acid-derived glass powders in comparison with the other samples.



Biography:

He is a M.Sc Material science and engineering student in Ferdowsi University of Mashhad, Iran

Recent Publications:

- Davood Khoshheykala, Synthesis and Characterization of Bioactive Glass Nanopowders for Bone Tissue Regeneration, June 22-23, 2020, Osaka, Japan

15th International Conference on Laser Advanced Materials Processing , June 22-23, 2020, Osaka, Japan

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