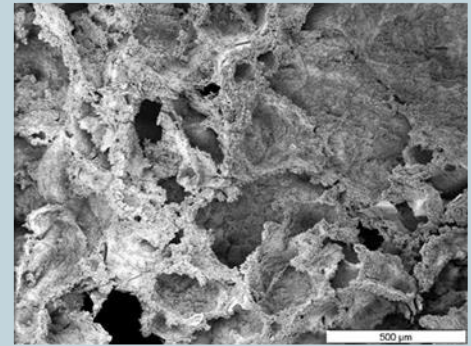
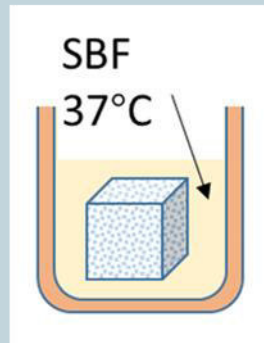
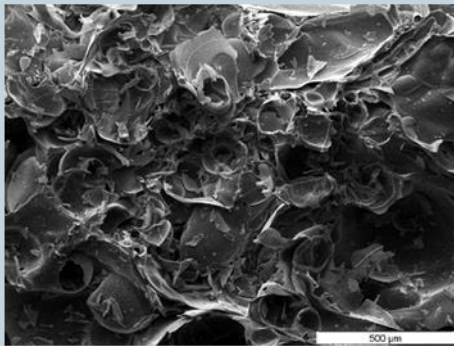


Degradation and biocompatibility behavior of water-glass based hierarchical structure



Water glasses are expected to be biocompatible, due to their composition similar to the widely-used bioglasses from the Si-Na-Ca-P system, such as Bioglass®. To fabricate the water-glass based hierarchical structure, the different methods can be used, such as microwave heating and PU-replication. It is exiting to characterize the degradation and biocompatibility behavior of the hierarchical structure produced by different methods.

In this study, different medium, which mimics body fluid, for characterization should be prepared. Then the samples should be immersed in the prepared medium for the bioactivity test. The pre-test and post-test characterization of the samples should be carried out with FTIR, XRD and SEM. The concerned element concentrations in solution should be measured with inductively coupled plasma-optical emission spectrometer (ICP-OES) for the bioactivity characterization. The bioactivity differences between different hierarchical structure and in different medium should be investigated.

This project can be adapted to a bachelor or master thesis.

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