

Abstract Submitted  
for the SES14 Meeting of  
The American Physical Society

**Bioactive Sol-Gel glasses composed of nanometer sized particles**

CHRISTIAN NGUYEN, Austin Peay State Univ, I.M.I. OF LEHIGH UNIVERSITY COLLABORATION, LAMAV RESEARCH GROUP COLLABORATION —  
The glasses of  $\text{SiO}_2\text{-CaO-P}_2\text{O}_5$  family are known by their high bioactivity, which makes them a strong candidates for the application in bone tissue engineering. It was shown recently, that bioactivity of these materials can be further enhanced through the nanoscale design of the scaffolds. The focus of this work was to obtain nanometer sized particles of  $\text{SiO}_2\text{-CaO-P}_2\text{O}_5$  bioglasses by sol-gel method. The sol-gel glass corresponded to 60:36:4 molar ratio of  $\text{SiO}_2\text{:CaO:P}_2\text{O}_5$  was prepared by the mixing acidic and basic solutions, followed by appropriate drying and sintering procedures. Size of the nanoparticles was estimated using XRD patterns. The analysis confirmed the presence of 53-59 nm size particles in our sol-gel derived glass, which then was used to fabricate scaffolds and bioactivity tests.

Christian Nguyen  
Austin Peay State Univ

Date submitted: 03 Oct 2014

Electronic form version 1.4