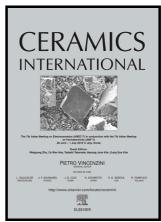
Author's Accepted Manuscript

Self-assembled Sponge-like Hydroxyapatite Induced by Modified Articular Cartilage Membrane Template

Xun Liu, Yaxin Zheng, Yongjun Ma, Tingting Huo, Chonghua Pei



www.elsevier.com/locate/ceri

PII: S0272-8842(18)31481-0

DOI: https://doi.org/10.1016/j.ceramint.2018.06.050

Reference: CERI18494

To appear in: Ceramics International

Received date: 11 May 2018 Revised date: 6 June 2018 Accepted date: 7 June 2018

Cite this article as: Xun Liu, Yaxin Zheng, Yongjun Ma, Tingting Huo and Chonghua Pei, Self-assembled Sponge-like Hydroxyapatite Induced by Modified Articular Cartilage Membrane Template, *Ceramics International*, https://doi.org/10.1016/j.ceramint.2018.06.050

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting galley proof before it is published in its final citable form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

ACCEPTED MANUSCRIPT

Self-assembled Sponge-like Hydroxyapatite Induced by Modified Articular Cartilage Membrane Template

Xun Liu*a, Yaxin Zhenga, Yongjun Mab, Tingting Huoc, Chonghua Pei*a

^aState Key Laboratory of Environment-friendly Energy Materials, Southwest University of Science and Technology, Mianyang 621010, P. R. China

^bAnalytical and Testing Center, Southwest University of Science and Technology, Mianyang 621010,

P. R. China

^cKey Laboratory of Solid Waste Treatment and Resource Recycle, Ministry of Education, Southwest University of Science and Technology, Mianyang 621010, P. R. China

E-mail address: liuxun@swust.edu.cn;

peichonghua@swust.edu.cn.

*Corresponding author: Xun Liu, A.P.; Chonghua Pei, Prof. Address: State Key Laboratory of Environment-friendly Energy Materials, Southwest University of Science and Technology, Mianyang 621010, P. R. China. Telephone: 0086-0816-2419280; Fax: 0086-0816-2419492

Abstract: Using modified pig bone articular cartilage membrane as template, a sponge-like hydroxyapatite (HA) scaffold material was in-situ synthesized by self-assembly in simulated body fluid. Its crystallographic structure and composition were studied by SEM, XRD, FTIR and TEM, which showed that the synthesized sample was carbonated HA crystals and the three-dimensional interconnected sponge-like structure consists of massive nano hydroxyapatite plates. The physicochemical properties of the samples were tested and the results indicated that the sponge-like HA had high density, porosity and specific surface. Experimental cell culture results also showed that sponge-like HA greatly increases the bioactivity, osteoconductivity and differentiation of human

Download English Version:

https://daneshyari.com/en/article/7885889

Download Persian Version:

https://daneshyari.com/article/7885889

<u>Daneshyari.com</u>