

Web of Science

Search | Search Results | My Tools | Search History | Marked List

Look Up Full Text | Save to EndNote online | Add to Marked List 256 of 449

Effect of ion concentration on mechanosynthesis of carbonated chlorapatite nanopowders

By: Fahami, A (Fahami, Abbas)^[1]; Nasiri-Tabrizi, B (Nasiri-Tabrizi, Bahman)^[2]; Beall, GW (Beall, Gary W.)^[3,4]; Pिंगguan-Murphy, B (Pिंगguan-Murphy, Belinda)^[2]

[View ResearcherID and ORCID](#)

MATERIALS LETTERS

Volume: 146 Pages: 16-19
 DOI: 10.1016/j.matlet.2015.01.149
 Published: MAY 1 2015
[View Journal Impact](#)

Abstract

Carbonated chlorapatite nanopowders (n-CCAp) with different degrees of substitution were successfully synthesized by the one-step mechanochemical process. Results demonstrated that the formation of n-CCAp was influenced strongly by the carbonate content (x). From X-ray analysis, crystallite size, crystallinity degree, and unit cell volume of n-CCAp decreased significantly as carbonate content (x) increased from 0 to 2. Conversely, the lattice strain and the volume fraction of grain boundaries grew considerably. Microscopic analysis showed the average particle size of the synthesized powders was 15 +/- 10 nm. The influence of carbonate concentration on mechanosynthesis of pure n-CCAp utilizing a facile solid-state process has not been reported yet; it has potential application for biomedical engineering. (C) 2015 Elsevier B.V. All rights reserved.

Keywords

Author Keywords: Bioceramics; X-ray techniques; FTIR; Electron microscopy; Nanoparticles
KeyWords Plus: APATITE; HYDROXYAPATITE; SOLUBILITY

Author Information

Reprint Address: Fahami, A (reprint author)

+ Texas State Univ, Ingram Sch Engr & Mat Sci, Engr & Commercializat Program, San Marcos, TX 78666 USA.

Addresses:

- + [1] Texas State Univ, Ingram Sch Engr & Mat Sci, Engr & Commercializat Program, San Marcos, TX 78666 USA
- + [2] Univ Malaya, Fac Engr, Dept Biomed Engr, Kuala Lumpur 50603, Malaysia
- + [3] Texas State Univ, Dept Chem & Biochem, San Marcos, TX 78666 USA
- + [4] King Abdulaziz Univ, Fac Sci, Dept Phys, Jeddah 21589, Saudi Arabia

E-mail Addresses: fahami@txstate.edu; bahman_nasiri@hotmail.com

Funding

Funding Agency	Grant Number
UM High Impact Research Grant (Regenerative Biomechanics of Human Body) from Ministry of Higher Education Malaysia	UM-MOHE UM.C/625/1/HIR/MOHE/ENG/44

[View funding text](#)

Publisher

ELSEVIER SCIENCE BV, PO BOX 211, 1000 AE AMSTERDAM, NETHERLANDS

Categories / Classification

Research Areas: Materials Science; Physics

Citation Network

4 Times Cited
 17 Cited References
[View Related Records](#)
[Create Citation Alert](#)

(data from Web of Science Core Collection)

All Times Cited Counts

- 4 in All Databases
- 4 in Web of Science Core Collection
- 0 in BIOSIS Citation Index
- 0 in Chinese Science Citation Database
- 0 in Data Citation Index
- 0 in Russian Science Citation Index
- 0 in SciELO Citation Index

Usage Count

Last 180 Days: 0
 Since 2013: 5
[Learn more](#)

Most Recent Citation

Pasteris, Jill Dill. *A mineralogical view of apatitic biomaterials*. AMERICAN MINERALOGIST, DEC 2016.

[View All](#)

This record is from:

Web of Science Core Collection
 - Science Citation Index Expanded

Suggest a correction

If you would like to improve the quality of the data in this record, please [suggest a correction](#).

Web of Science Categories: Materials Science, Multidisciplinary; Physics, Applied

Document Information

Document Type: Article

Language: English

Accession Number: WOS:000352049600005

ISSN: 0167-577X

eISSN: 1873-4979

Journal Information

Table of Contents: [Current Contents Connect](#)

Impact Factor: [Journal Citation Reports](#)

Other Information

IDS Number: CE7VI

Cited References in Web of Science Core Collection: 17

Times Cited in Web of Science Core Collection: 4

256 of 449