Growth of Hydroxyapatite Huge Single Crystals by Hydrothermal decomposition of PolyPhosphate

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Hydroxy-apatite

Method Article

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Abstract

Using Polyphosphate, Calcium mixture and water, causes pure single apatite crystal by hydrothermal synthesis.

Reagents

water Calcium Oxide Ortho Phosphate

Equipment

Pressure vessel PTFE Beaker

Procedure

Prepare Polyphosphate Put Orthophosphate into the chemical resistant Beaker, e.x PTFE, keep it 210degrees Celsius at least 2 weeks. Hydrothermal Synthesis PTFE High pressure reactor vessel, 25ml volume, put 0.5g of upper polyphosphate. add 0.6-0.7g Calcium oxide then mix them. add 12-14ml water, Tighten the vessel and put into electro Furness 200-240C. Keep it for 5-7days. You can find mm size Hydroxyapatite crystals.

Timing

2 weeks or more for prepare polyphosphate. 1 week for Hydroxyapatite synthetization.

Anticipated Results

[See figure in Figures section.](#) [See figure in Figures section.](#) [See figure in Figures section.](#)

References

1.Perloff, A., & POSNER, A. S. \((1956)\). Preparation of Pure Hydroxyapatite Crystals. Science \((New York, N.Y.)\), 124\((3222)\), 583–4.

Figures

Figure 1

Macro Picture

Figure 2

Figure 3

SEM View

Figure 4

TEM image Chose thin crystal due to crystal analysis