

Scientific

Apatite Product

Apatites are uniquely biocompatible ceramic materials some of which closely resemble the mineral component of bone. The total global market for apatites in 2009 is € 500 million with an AAGR of 15%. Apatites find application in a number of lucrative industrial sectors including:

- Orthopedic cements (59%)
- Bone Grafts (23%)
- Cosmetics (7%)
- Protein Separation (4%)
- Orthopedic Coatings (3%)
- New Markets (2%)
- Research (1%)

Many commercial apatite products are of less than desirable purity, commonly being less than optimally crystalline and/or containing undesirable impurities such as tricalcium phosphate (TCP). HKPB Scientific has the capability to produce apatites of very high purity - see fig. 1.

HKPB also has the capability to produce apatites of varying particle size and morphology. Polycrystalline agglomerate powders and fine nanoparticulate powder can be synthesized. In addition agglomerate

particles can be either porous or dense as can be seen in fig. 2.

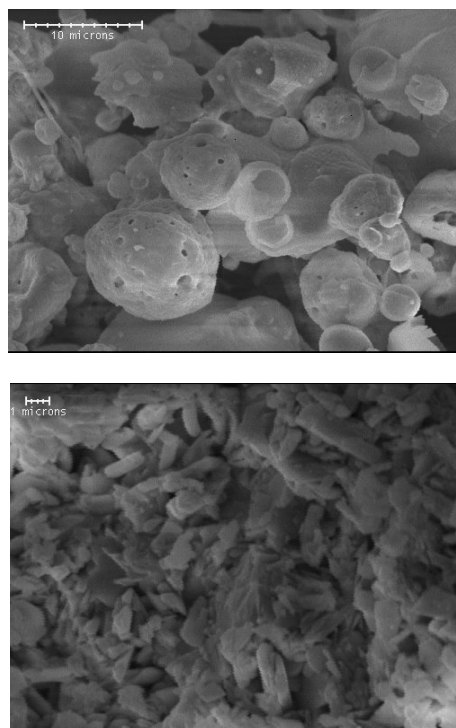


Fig. 2: Porous apatite particles (top) and dense apatite particles (bottom).

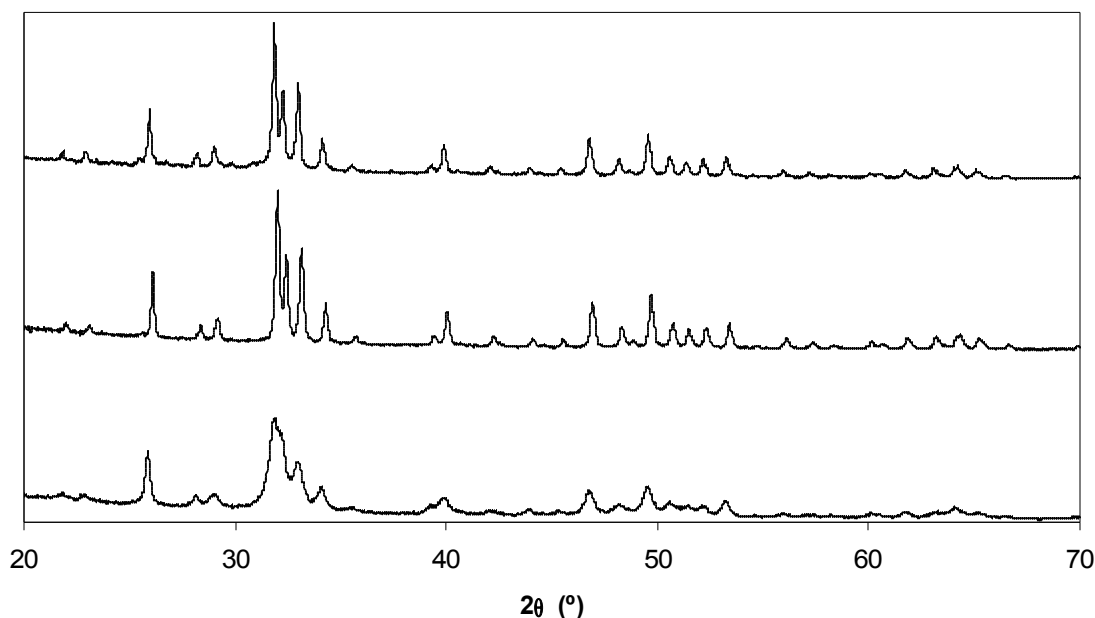


Fig. 1: Apatite samples from HKPB (top) hydroxyapatite from NIST (centre) and a commercial sample (bottom).