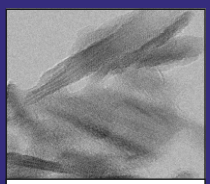
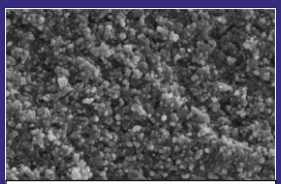
www.labnano.pl

Nanopowder GoHAP® (hydroxyapatite)

Thanks to unique world-wide reactors of microwave solvothermal synthesis we are able to sythesise HAp nanopowders in reaction carried out in water solution. The hydroxyapatite is produced in reaction of the pure $Ca(OH)_2$ and pure H_3PO_4.

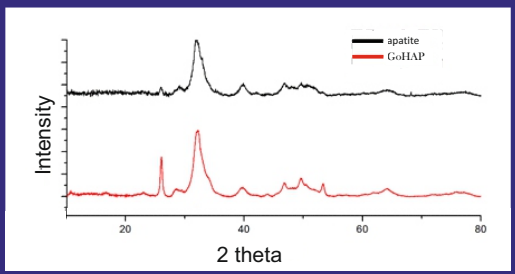


TEM image of GoHAP



SEM image of GoHAP

$$Ca(OH)_2 + H_3PO_4 \rightarrow HAp$$



XRD of GoHAP and apatite from pig bone

Specific surface area	240m^2/g
Density	2.93 g/cm^3
Particle size	6-9 nm
Molar ratio Ca/P	1.57- 1.59

Application: regenerative medicine

The developed method enables the synthesis of pure, full crystalline hexagonal and highly biocompatible hydroxyapatite called GoHAP. A degradation test and a biocompatibility study in vitro using human osteoblast cells were conducted and described on the papers:

1. Hydroxyapatite nanopowder synthesis with a programmed resorption rate, Journal of Nanomaterials,vol 2012, 1-9, 2012.
2. Highly biocompatible, nanocrystalline hydroxyapatite synthesized in a solvothermal process driven by high energy density microwave radiation, International Journal of Nanomedicine, 8, 1-16, 2013.

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