

DESIGN AND NANOSTRUCTURING OF CALCIUM PHOSPHATES FOR BONE REGENERATION

K. A. Gross*

*Biomaterials Research Laboratory, Riga Technical University, Latvia
e-mail: Karlis-Agris.Gross@rtu.lv*

ABSTRACT

With bone loss from trauma and disease, there is a need to regenerate bone more actively compared to other hard tissue sites in the body. This pursuit requires a deeper understanding of the healing process and the changes in the biomaterial. It becomes particularly interesting with a material based on the chemistry of apatite that can nanostructure to resemble bone mineral in the body. Here, we shall track back to the bone generation process with a focus on bone mineral and see the changes that take place during growth. A review from a three decade pursuit will display the challenges in characterizing biomineral-like deposits, show the design considerations, and the preparation through nanostructuring and microstructuring.