

## Biobone Symposium

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### Calcium phosphate bone graft substitutes

**Abstract:** Calcium phosphate (CaP) minerals have been extensively used as bone graft substitutes. Once implanted, they are generally resorbed and replaced by new bone in a process called osteotransduction. Current research activities are devoted the control and improvement of this osteotransduction process, for example by changing the chemical composition or the architecture of the implanted materials. The aim of my talk will be to briefly review our efforts in this field, in particular to try to answer the following questions: (i) (How) do impurities present in CaP minerals affect their biological performance? (ii) What is the influence of the micropores and macropores of CaP minerals in their healing process? (iii) What is the composition of sintered CaP minerals and the link to the in vivo response? (iv) How can ions be used to control the reaction rate of CaP cements?

**Bio:** Dr. Bohner currently leads the «skeletal substitute group» of the RMS Foundation in Bettlach, Switzerland, where he is also member of the management board. His career focus has been biomaterials, in particular bone graft substitutes / calcium phosphates. His interests comprise the synthesis, nanostructuration, and use of various calcium phosphates, the improvement of present delivery techniques for bone substitutes (in particular CaP and polymer cements), and the application of these materials, methods, and concepts in clinical applications. He holds over fifteen distinct patents, is the inventor of 4 commercial products, and has published and presented widely in his field (>90 articles; h = 34). His teaching positions have included adjunct and affiliated appointments at the University of Sherbrooke, and ETH Zurich.