

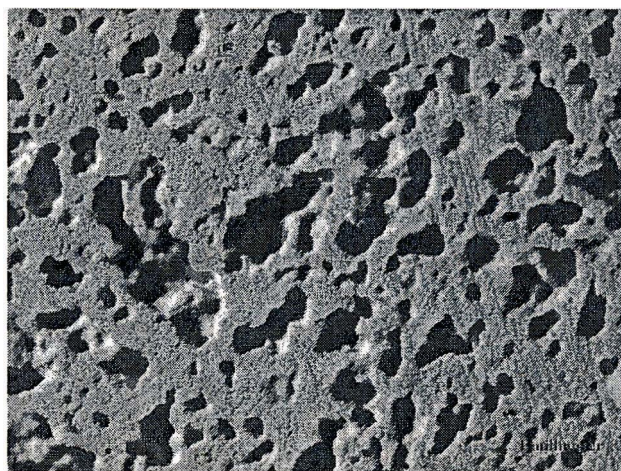
POROUS CALCIUM PHOSPHATE CERAMIC IMPLANTS

**Rita Serzane¹, Janis Locs¹, Indulis Freimanis¹,
Ilze Salma², Liga Berzina-Cimdina¹**

¹ Riga Biomaterials Innovation and Development Center,
Riga Technical University, Latvia

² Department of Oral and Maxillofacial Surgery,
Riga Stradins University, Latvia

Calcium phosphate ceramics, such as hydroxylapatite (Hap) possess a mineral composition very close to that of normal bone, and a total biocompatibility, which makes them successful bone substitutes. The target of the study was to develop a porous bioceramic material with suitable pore structure and appropriate mechanical properties for bone ingrowth and regeneration. In current research commercial Hap and on site in Riga Technical University, Riga Biomaterials innovation and development centre synthesized Hap was used. Ceramics made from on site synthesized Hap has presented good results in previous *in vivo* and clinical studies. Porous bioceramics for bone regeneration and tissue engineering have been produced by several techniques (uniaxial pressing, casting, molding) using different burn-out and foaming additives. The porosity and microstructure of the ceramics obtained are mainly influenced by manufacturing technology and additives used. Samples obtained were investigated using X-ray diffractometry, Fourier transformed infrared spectroscopy, scanning electron microscopy and mechanically tested.



Optical microscope microphotograph of porous Hap ceramics.