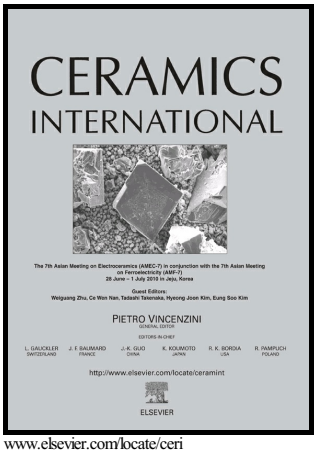

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Self-assembled Sponge-like Hydroxyapatite Induced by Modified Articular Cartilage Membrane Template

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Abstract: Using modified pig bone articular cartilage membrane as template, a sponge-like hydroxyapatite (HA) scaffold material was in-situ synthesized by self-assembly in simulated body fluid. Its crystallographic structure and composition were studied by SEM, XRD, FTIR and TEM, which showed that the synthesized sample was carbonated HA crystals and the three-dimensional interconnected sponge-like structure consists of massive nano hydroxyapatite plates. The physicochemical properties of the samples were tested and the results indicated that the sponge-like HA had high density, porosity and specific surface. Experimental cell culture results also showed that sponge-like HA greatly increases the bioactivity, osteoconductivity and differentiation of human