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Title
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Permalink
https://escholarship.org/uc/item/08v2k60q

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Publication Date
2001-06-09
Abstract 1

Berkeley in Silicon Valley: New Directions in Chemistry and Engineering
June 9, 2001, Santa Clara, CA.

A biomimetic approach toward artificial bone-like materials

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Bone consists of microcrystalline hydroxyapatite and collagen, an elastic protein matrix that is decorated with mineral-nucleating phosphoproteins. Our rational design of artificial bone-like material uses natural bone as a guide. Hydrogel and self-assembling polymers that possess anionic groups suitably positioned for nucleating biominerals, and therefore mimic the natural function of the collagen-phosphoprotein matrix in bone, were designed to direct template-driven biomimetic mineralization of hydroxyapatite. The monomer library synthesis, hydrogel and self-assembling polymer formation and structural characterization of polymer scaffolds on both micro- and nano-levels are presented.

Abstract 2

July 22-27, 2001, Plymouth, NH.

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