United States Patent [19]

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[54] **HIGH STRENGTH GLASS-CERAMIC CONTAINING APATITE AND ALKALINE EARTH METAL SILICATE CRYSTALS AND PROCESS FOR PRODUCING THE SAME**

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[30] **Foreign Application Priority Data**

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[58] **Field of Search** 501/5, 10, 73, 63, 57, 501/58, 59, 77; 3/1.91; 433/201, 202; 65/33

[56] **References Cited**

U.S. PATENT DOCUMENTS

3,881,945	5/1975	Trojer et al.	501/5
3,981,736	9/1976	Broemer et al.	501/10
4,365,356	12/1982	Broemer et al.	501/77
4,366,253	12/1982	Yagi et al.	501/63
4,437,192	3/1984	Fujiu et al.	501/63
4,483,678	11/1984	Nishio et al.	3/1.91

FOREIGN PATENT DOCUMENTS

57-191252 11/1982 Japan .

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[57] **ABSTRACT**

A high strength glass-ceramic containing apatite and alkaline earth metal silicate (diopside/forsterite/akermanite) crystals having an excellent affinity for a living body and a process for producing the same are disclosed. The glass-ceramic is useful as an implant material such as an artificial dental root and an artificial bone.

4 Claims, 4 Drawing Figures