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(54) **MACROPOROUS POLYMER SCAFFOLD  
CONTAINING CALCIUM PHOSPHATE  
PARTICLES**

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435/180; 435/396; 435/402

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See application file for complete search history.

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(57) **ABSTRACT**

A polymer scaffold is provided comprising an extensively  
interconnected macroporous network. The polymer scaffold  
embodies macropores having a diameter in a range of  
0.5-3.5 mm, and preferably in a range of about 1.0-2.0 mm.  
The polymer scaffold is prepared using a novel process  
which advantageously combines the techniques of particu-  
late leaching and phase inversion to render a process that  
provides amplified means by which to control the morphol-  
ogy of the resulting polymer scaffold. The polymer scaffold  
has utility in the area of tissue engineering, particularly as a  
scaffold for both in vitro and in vivo cell growth. The  
polymer scaffold may be produced using pure polymer or  
alternatively a composite material may be formed consisting  
of a macroporous polymer scaffold and osteoclast-  
resorbable calcium phosphate particles with a binding agent  
binding the calcium phosphate particles to the polymer  
scaffold.