

Supplementary Materials

# Inversely 3D-Printed $\beta$ -TCP Scaffolds for Bone Replacement

Michael Seidenstuecker <sup>1,\*</sup>, Svenja Lange <sup>1,2</sup>, Steffen Esslinger <sup>3,4</sup>, Sergio H. Latorre <sup>1</sup>, Rumen Krastev <sup>2</sup>, Rainer Gadow <sup>3,4</sup>, Hermann O. Mayr <sup>1</sup> and Anke Bernstein <sup>1</sup>

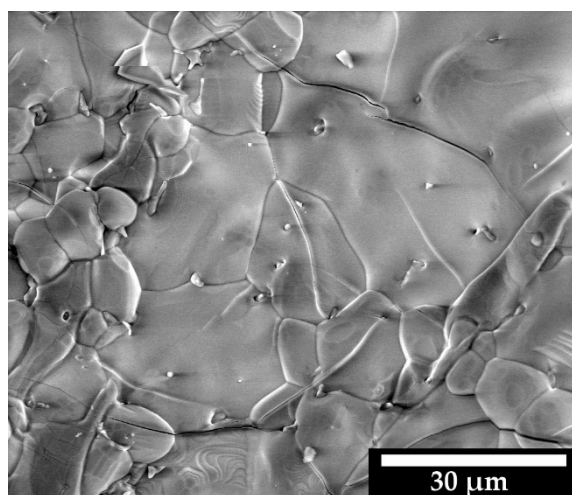
<sup>1</sup> G.E.R.N. Tissue Replacement, Regeneration & Neogenesis, Department of Orthopedics and Trauma Surgery, Medical Center - Albert-Ludwigs-University of Freiburg, Faculty of Medicine, Albert-Ludwigs-University of Freiburg, Hugstetter Straße 55, 79106 Freiburg, Germany

<sup>2</sup> Faculty of Applied Chemistry, Reutlingen University, Alteburgstraße 150, 72762 Reutlingen, Germany

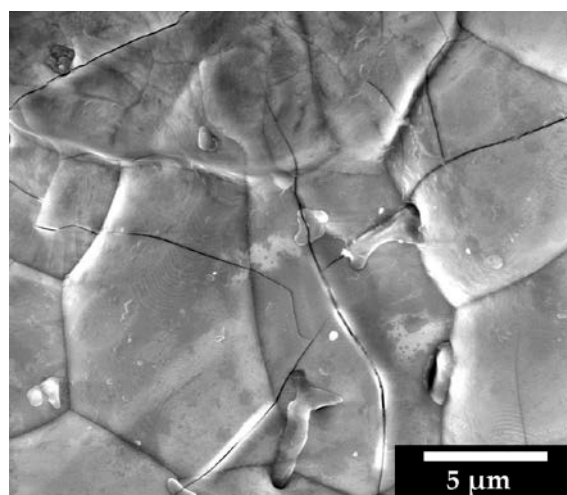
<sup>3</sup> Institute for Manufacturing Technologies of Ceramic Components and Composites (IMTCCC), Faculty 07, University of Stuttgart, Allmandring 7b, 70569 Stuttgart, Germany

<sup>4</sup> GSaME – Graduate School of Excellence advanced Manufacturing Engineering; University of Stuttgart, Nobelstraße 12; 70569 Stuttgart; Germany

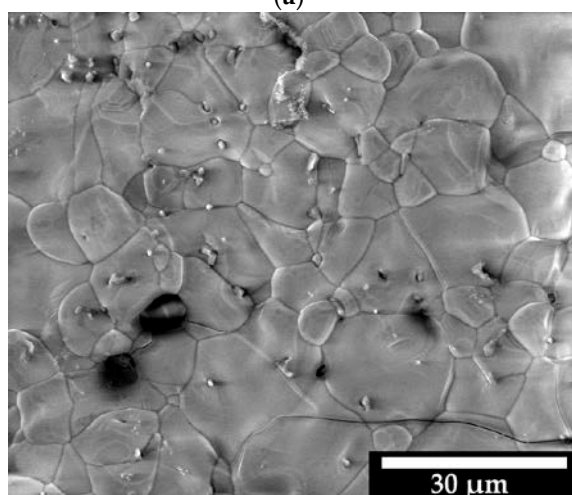
\* Correspondence: michael.seidenstuecker@uniklinik-freiburg.de; Tel.: +49-761-270-26104



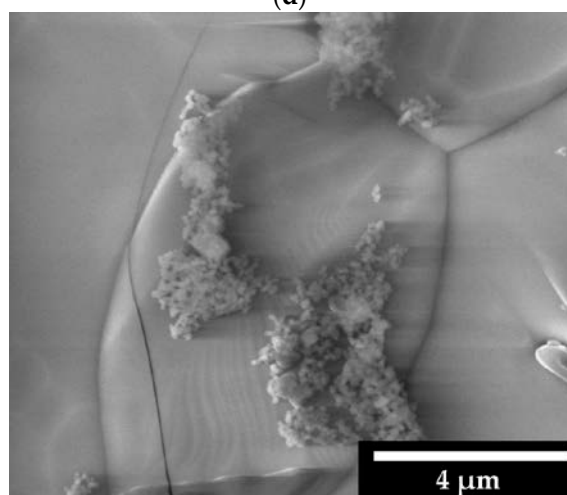
(a)



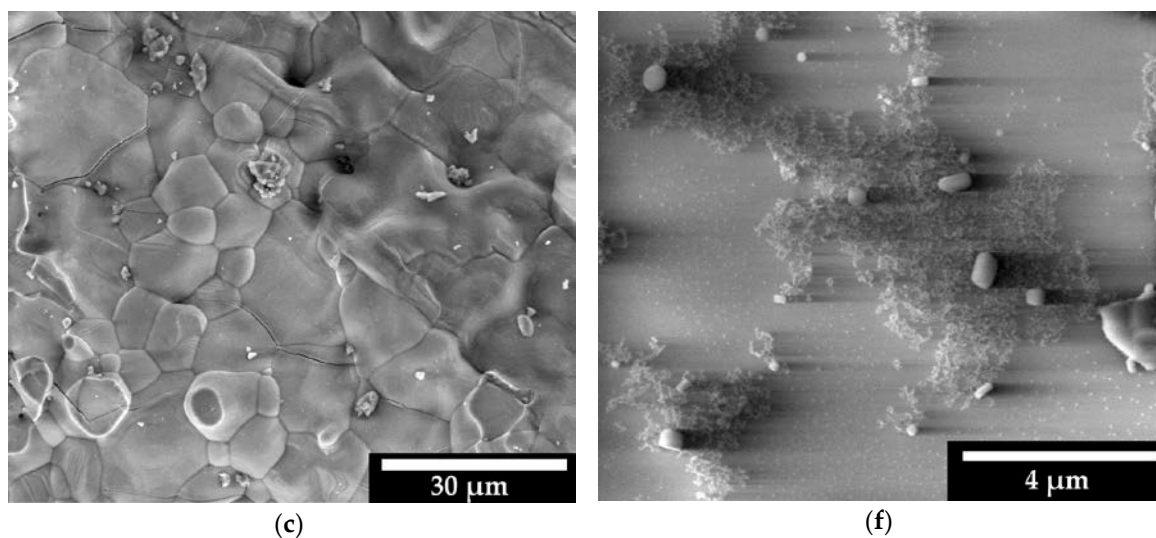
(d)



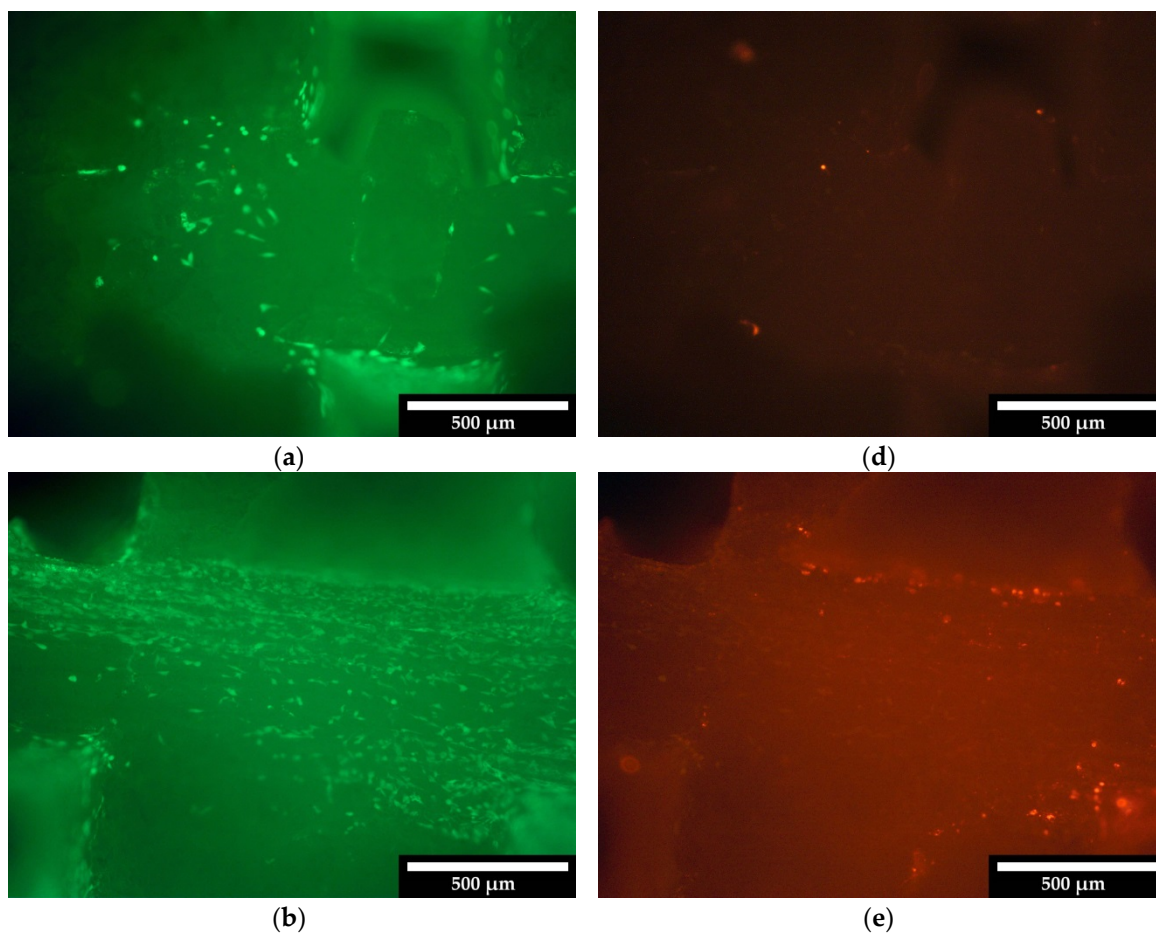
(b)

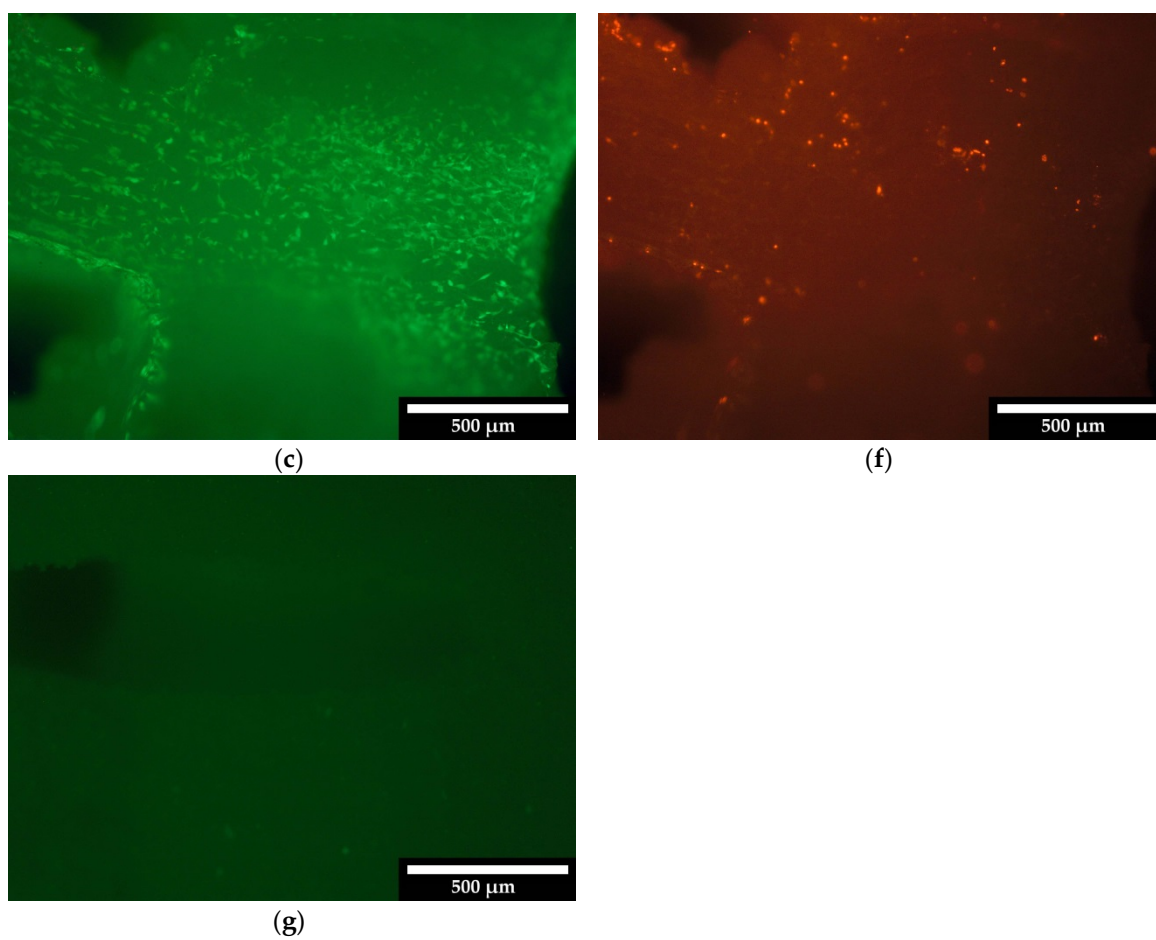


(e)

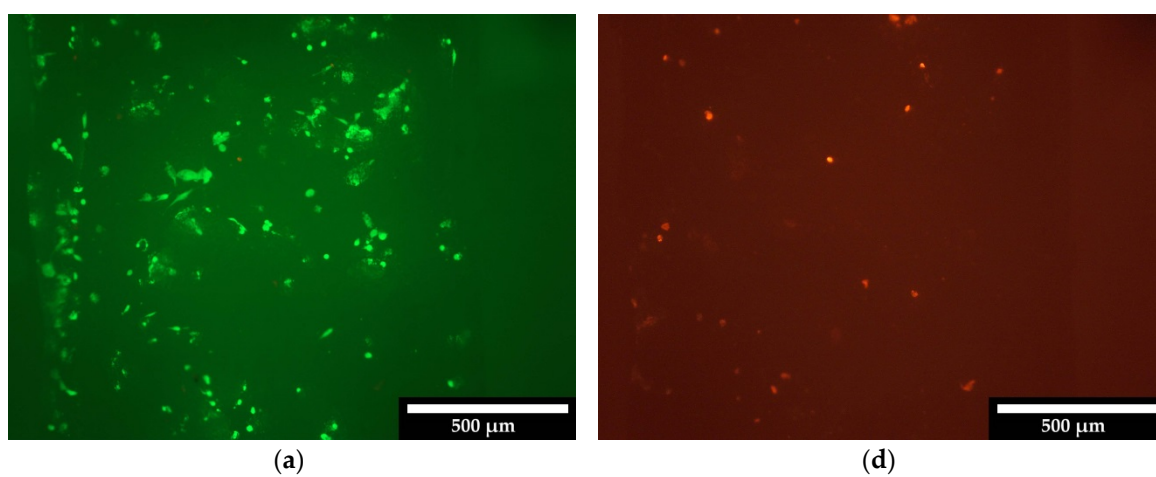


**Figure S1.** SBF treated samples, left = ESEM images of all three scaffold sizes (a: 500 μm; b: 750 μm; c: 1000 μm) with HFW of 93.3 μm; right = magnification of selected section with HFW of 11.7 μm (d: 500 μm; e: 750 μm; f: 1000 μm).

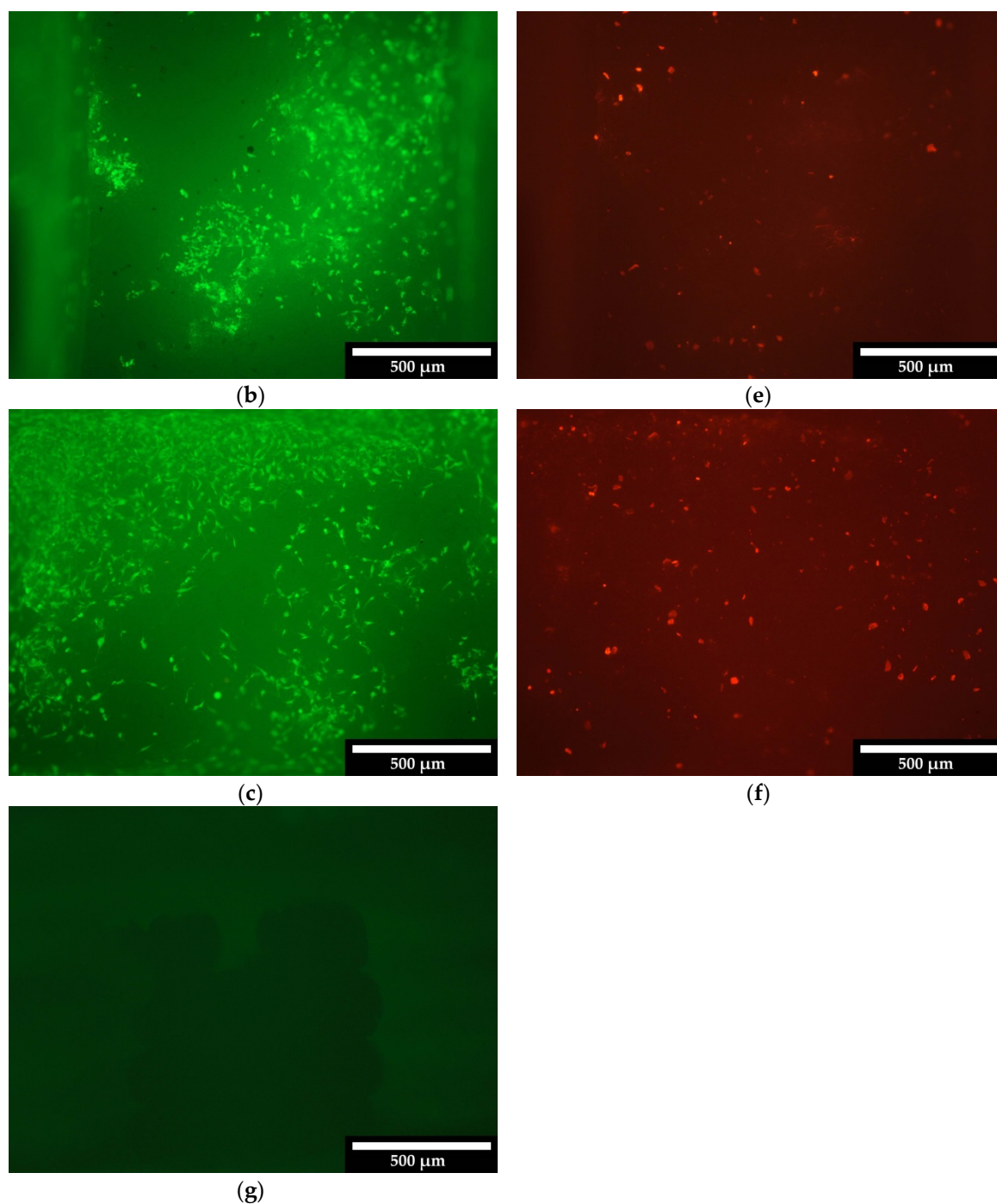




**Figure S2.** Living/dead Cells inside the ceramics, vertical cut of 750 μm scaffold after 3 days (**a**: living; **d**: dead), 7 days (**b**: living; **e**: dead) and 10 days (**c**: living; **f**: dead); **g**: auto-fluorescence of the ceramics; white bar = 500 μm.







**Figure S3.** Living/dead Cells on top of the 1000 µm scaffold after 3 days (a: living; d: dead), 7 days (b: living; e: dead) and 10 days (c: living; f: dead); g: auto-fluorescence of the ceramics; white bar = 500 µm.