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Supporting Information

Three dimensionally printed mesoporous bioactive glass and poly(3-hydroxybutyrate-co-3-hydroxyhexanoate) composite scaffolds for bone regeneration

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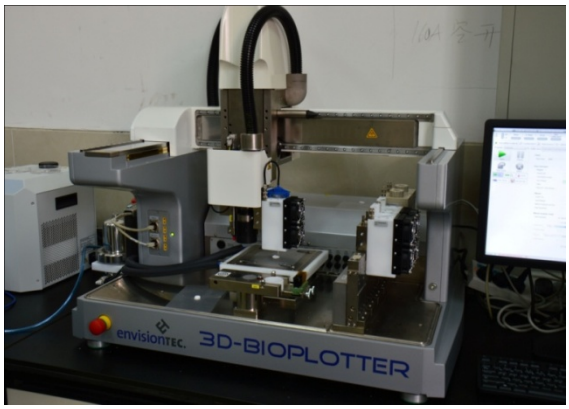

Fig.1s The 4th generation of 3D-Bioplotter system (EnvisionTEC, Germany) used in printing all MBG-based composite scaffolds. MBG/polymer pastes were inserted into the syringe and then compressed out by air pressure to plot the cylindrical scaffolds under the three-axi positioning system.

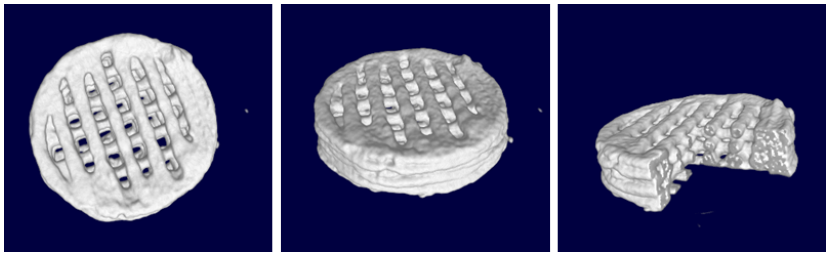

Fig.2s Typical micro-CT images of a representative MPH-3 scaffold. The strands followed an alternative X-Y pattern as designed in advance, which thus resulted in well-defined square open pore structure.

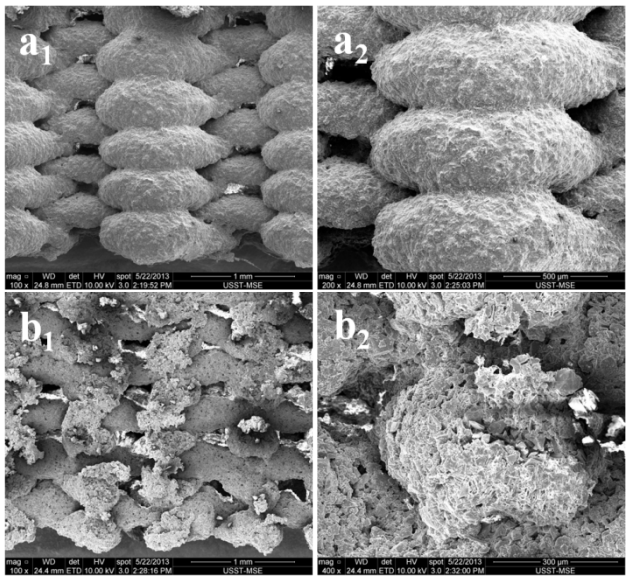

Fig.3s SEM images of a representative MPH-3 scaffold (a1,a2) side view; (b1,b2) cross-section.

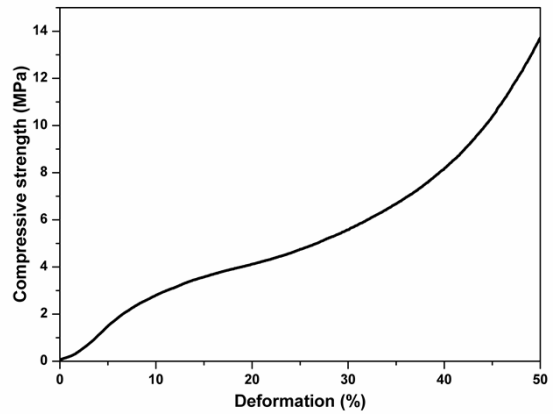

Fig.4s Stress vs. deformation response of one representative MPH-7 scaffold in compression.

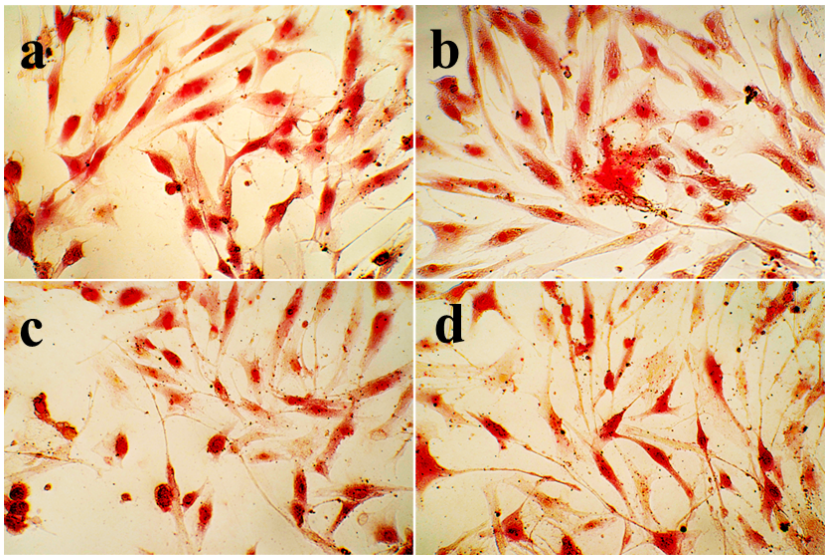

Fig.5s The ability of (a) MPV, (b) MPH-7, (c) MPH-5 and (d) MPH-3 scaffolds to support extracellular matrix (ECM) mineralization of the hBMSCs was studied using the Alizarin red S assay (Genmed Scientifics Inc., U.S.A). After 14 days culture, cells detached from all the testing scaffolds were rinsed with PBS for 3 times and fixed in 4% (w/v) paraformaldehyde (PFA) for 15 min at room temperature and stained for 15 min with 2% (w/v) Alizarin Red S solution at pH 4.2. The cells were washed extensively with distilled water and viewed under a phase contrast light microscope.