ADVANCED MATERIALS TECHNOLOGIES

Supporting Information

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Microfluidic 3D Printing of Emulsion Ink for Engineering Porous Functionally Graded Materials

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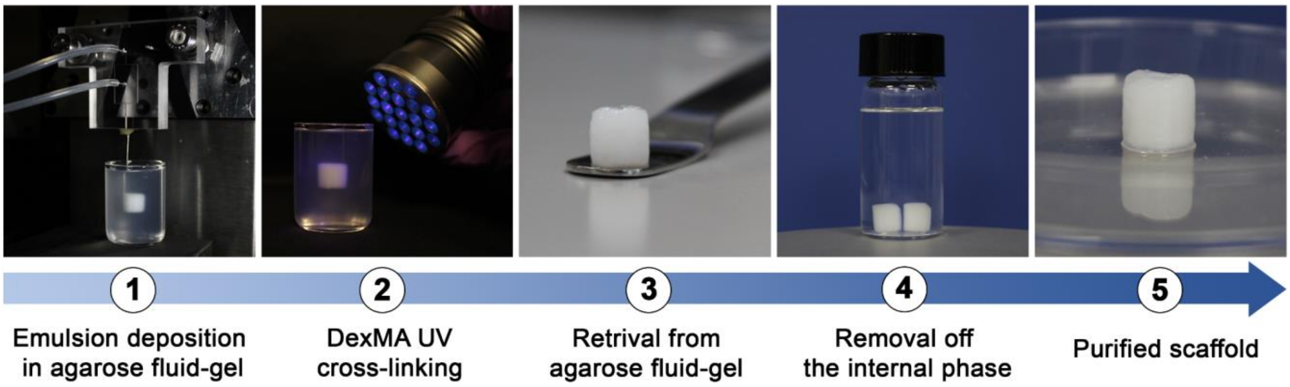

Figure S1. Sequence of steps illustrating the process of scaffold fabrication and purification.

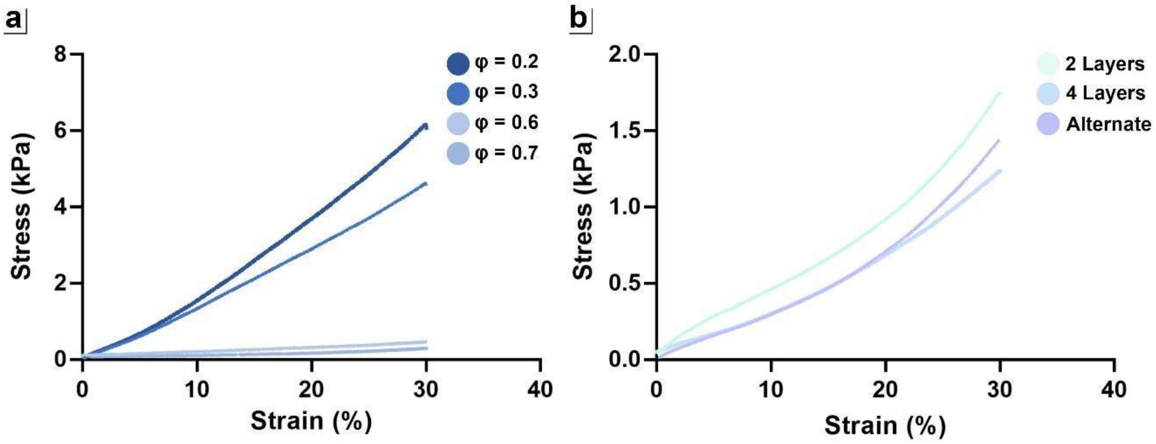

Figure S2. Compression mechanical characterisation of 3D printed porous FGMs. Stress-strain plots: a) control homogeneous samples prepared with a single porosity value and b) FGM samples.

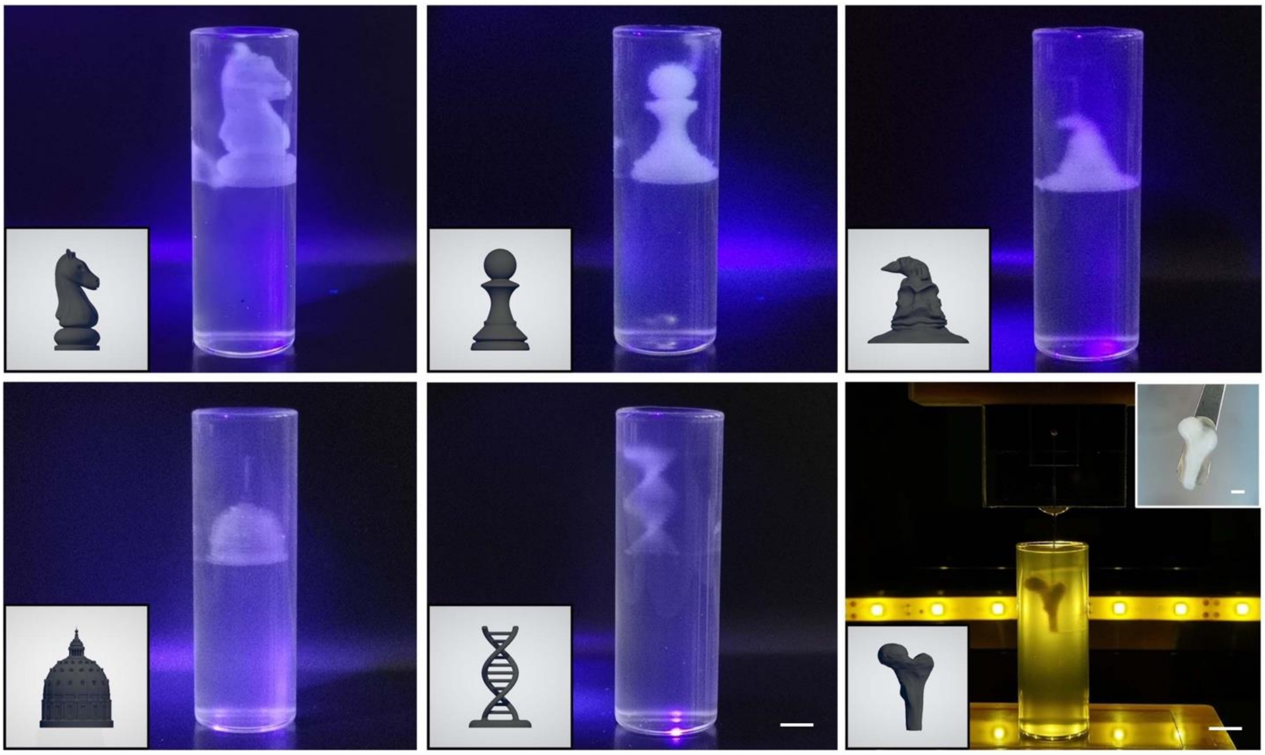

Figure S3. 3D printing of complex FGM architectures in fluid-gel. a) Various exemplary complex 3D structures 3D printed in agarose fluid-gel: chess knight and pawn, sorting hat, St. Peter's dome, DNA helix and a reproduction of a femur epiphysis. Scale bars: 500 mm.

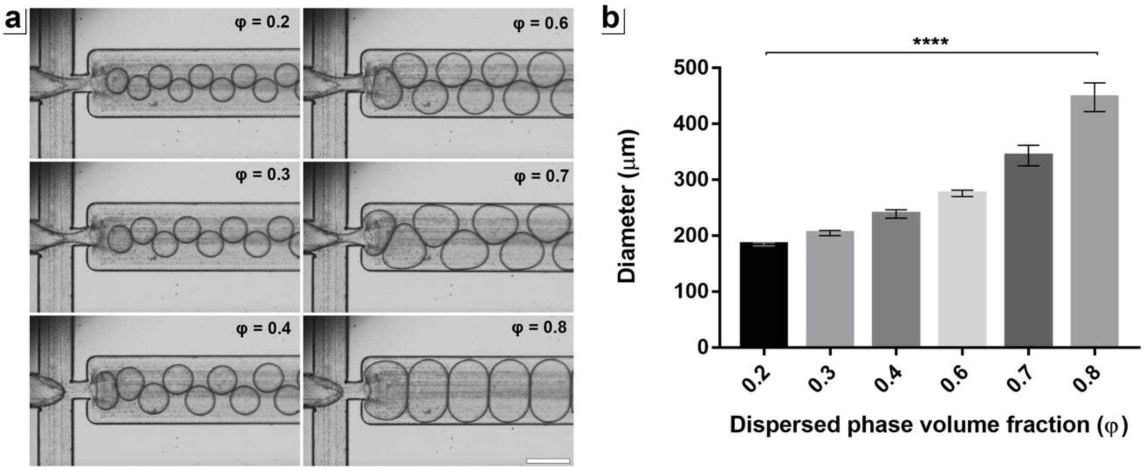

Figure S4. Operational range exploration for GelMA emulsion ink production. a) Microfluidic production of the cyclohexane-in-GelMA emulsions at different volume fractions of the dispersed phase (0.2 < φ < 0,8). b) Droplet size distributions measured for the selected values of φ. Scale bars: (a) 200 μm. Statistical significances were assessed by one-way ANOVA. Mean ± S.D. n=50, ****p<0.0001.