

## **Description of Additional Supplementary Files**

File Name: Supplementary Movie 1

Description: Bioprinting of MSC spheroid pairs in alginate microparticles (40X Speed)

File Name: Supplementary Movie 2

Description: Bioprinting of spheroids in yield-stress Carbopol gel (2X Speed)

File Name: Supplementary Movie 3

Description: A spheroid got stacked at the media-Carbopol interface during bioprinting process

File Name: Supplementary Movie 4

Description: Bouncing of a spheroid at the pipette tip while transitioning in Carbopol