

Supplementary Information

Acoustic Droplet Printing of Functional Tumor Microenvironments

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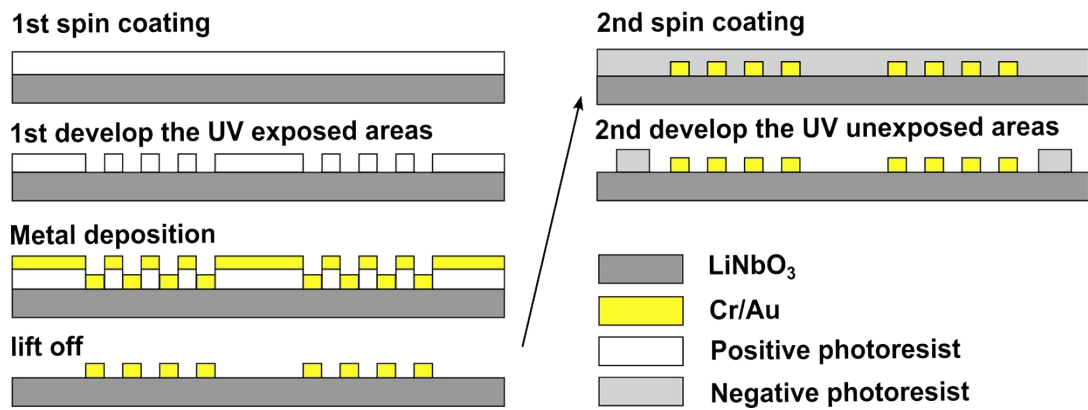


Fig. S1. Fabrication chart illustrating the two-step standard soft lithography process to make the acoustic droplet printer. Firstly, positive photoresist is spin-coated and UV-exposed. Then the UV exposed areas get developed to prepare for metal deposition. The lift off process is done to form the interdigital transducer on the LiNbO₃ substrate that next continues to be spin-coated with negative photoresist. Final the UV unexposed areas get developed to form a circle chamber served as an open cartridge.

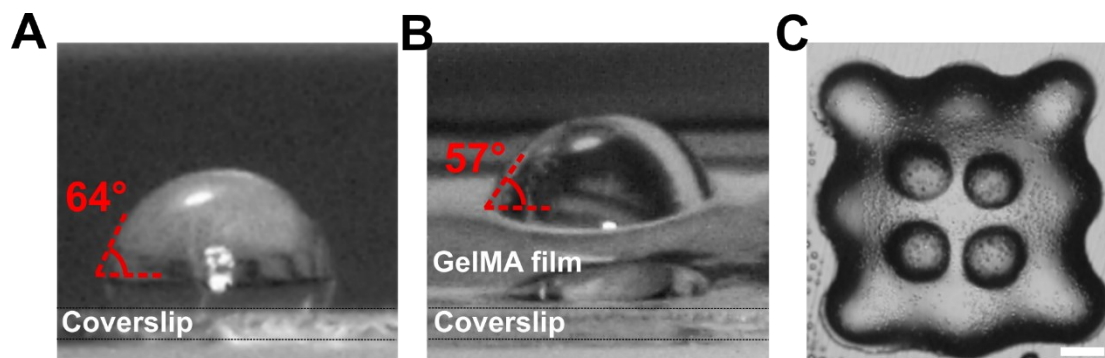
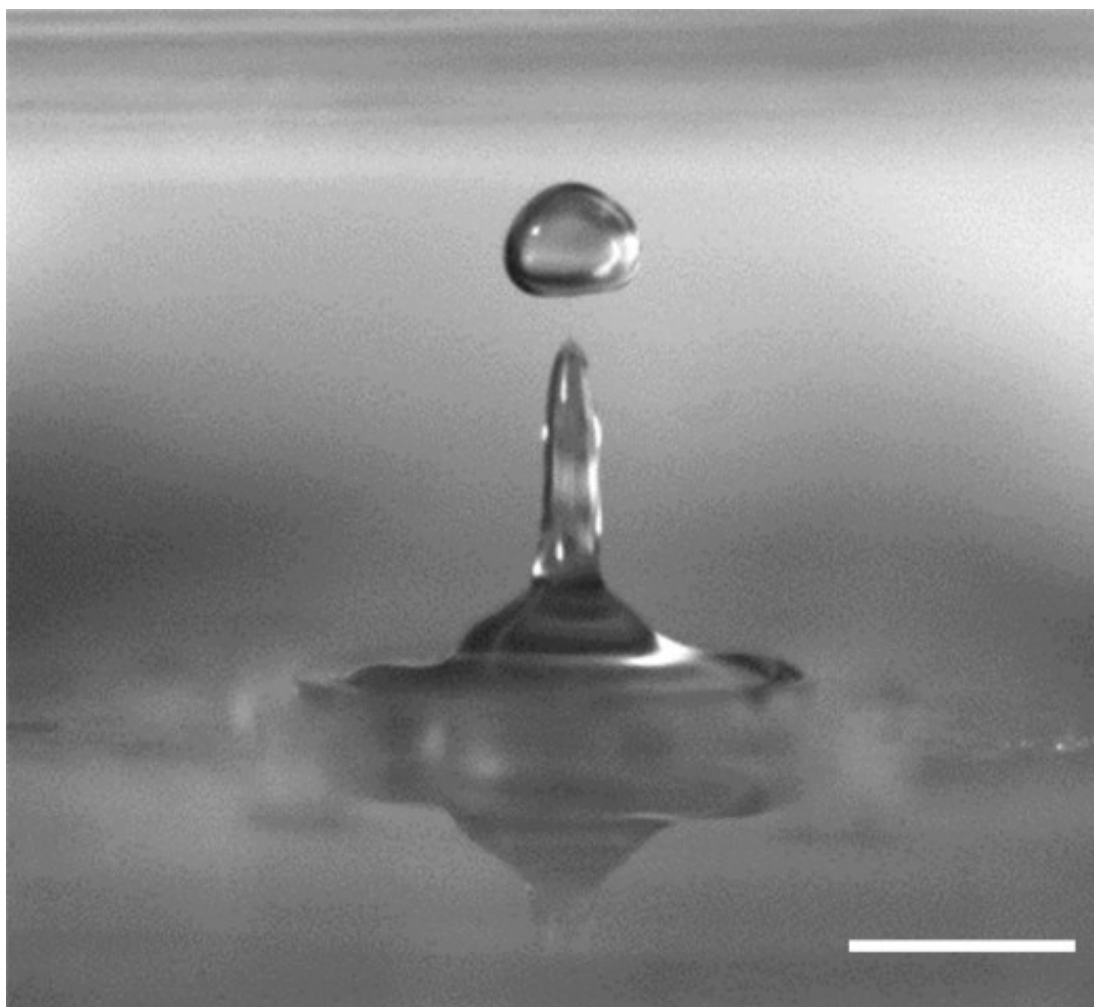
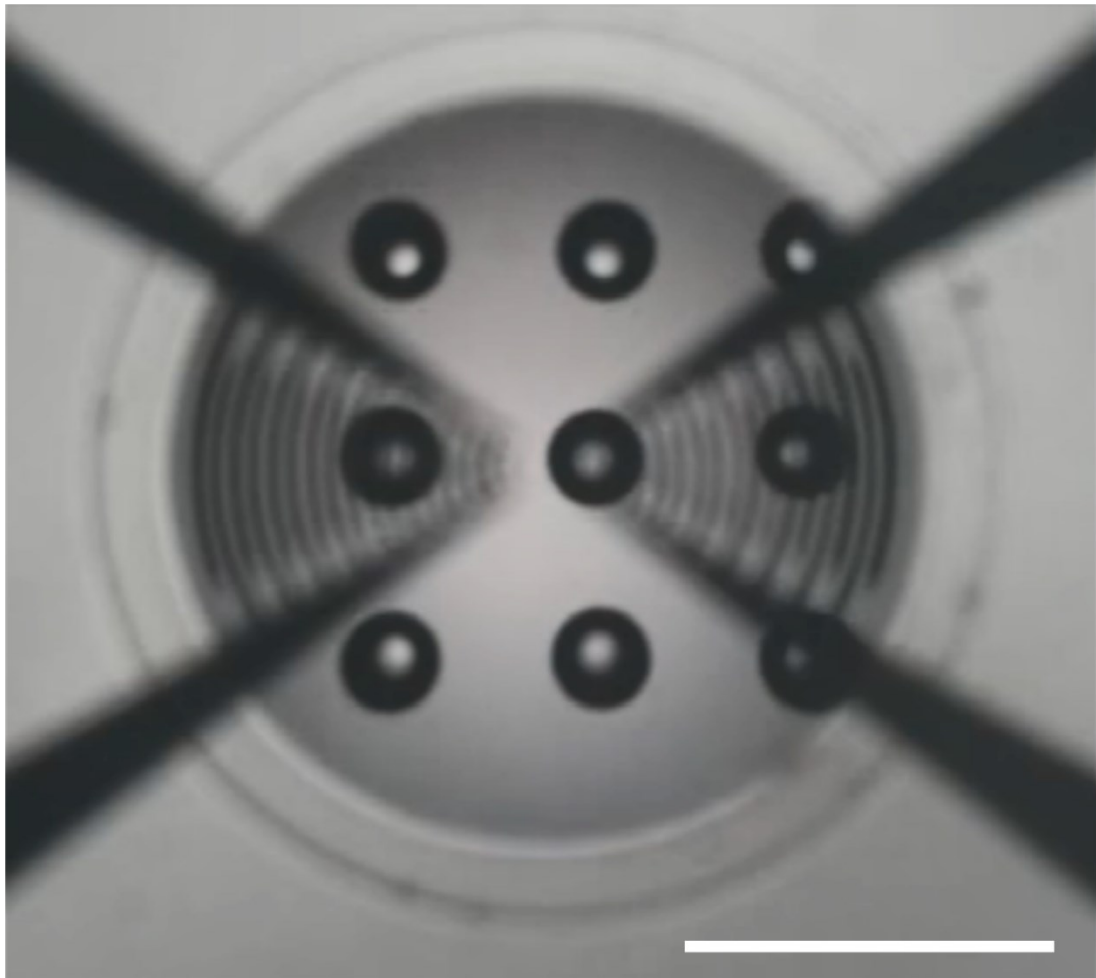


Fig. S2. Experimental investigation of the GelMA droplet's 3D profile. The contact Angle of a GelMA droplet on a pure coverslip (A) and on a GelMA hydrogel film coated coverslip (B), respectively. (C) Four GelMA droplets can be deposited on the printed hydrogel layer using acoustic droplet printing. Scale bar: 200 μm .



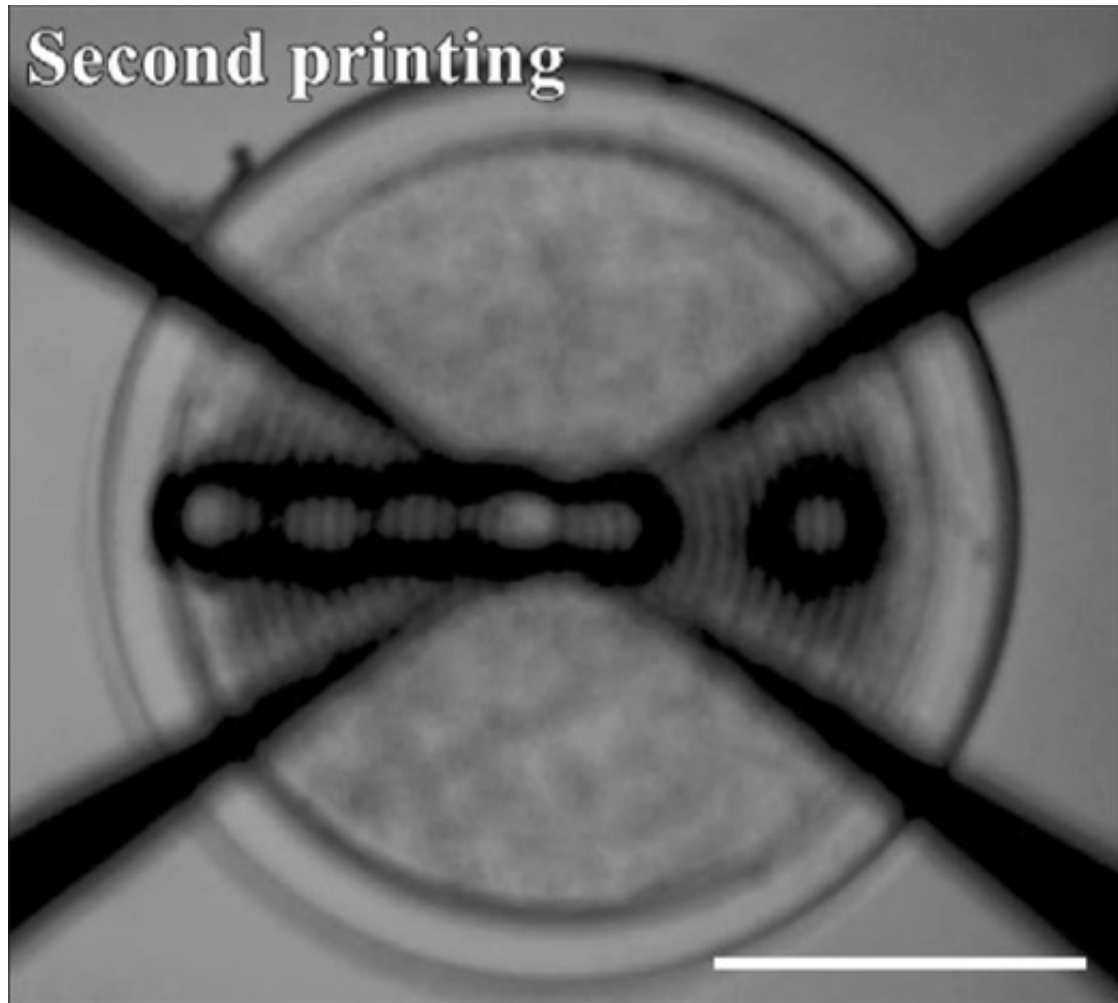
Movie S1. The time-lapse images of droplet ejection obtained via high speed movie.

The movie is played at 30X slower speed. Scale bar: 1 mm.



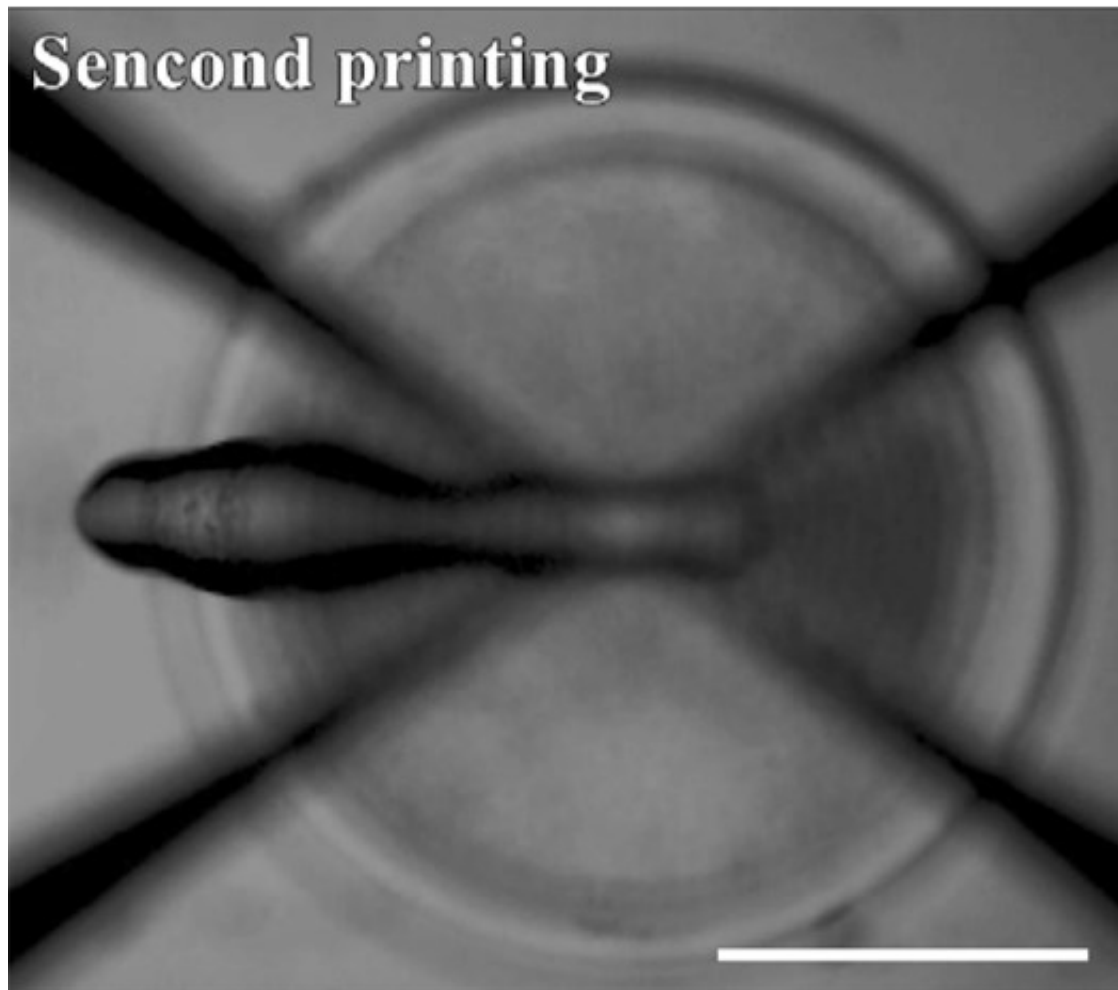
Movie S2. Acoustic droplet printing of “3 x 3” dots. The movie is played at 2X speed.

Scale bar: 1 mm.

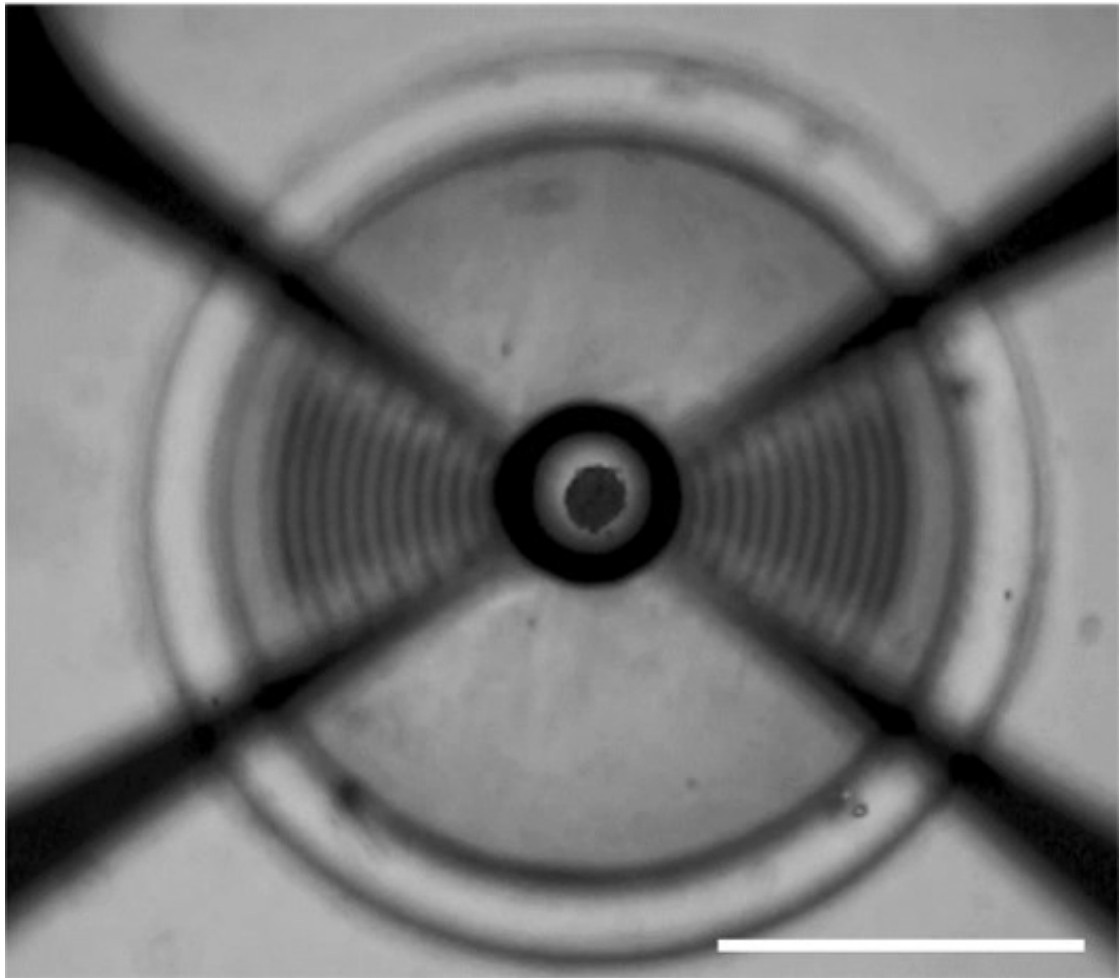


Movie S3. Printing process of the 1D hydrogel construct with good fidelity. After the first photocuring, the droplet array can form hydrogel beads act as fences to prevent the new droplets from spreading and coalescing. The movie is played at 2X speed.

Scale bar: 1 mm.



Movie S4. Printing process of the 1D hydrogel construct with bad fidelity. Without the first photocuring, the new droplets can coalesce with the firstly printed droplets. The movie is played at 2X speed. Scale bar: 1 mm.



Movie S5. Printing process of single tumor spheroid using an acoustic droplet printer device. The movie is in real time. Scale bar: 1 mm.