Supplementary Information:

Art-on-a-Chip: Preserving Microfluidic Chips for Visualisation and Permanent Display

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Supplementary Information S1: Microfluidic Chip Photographs

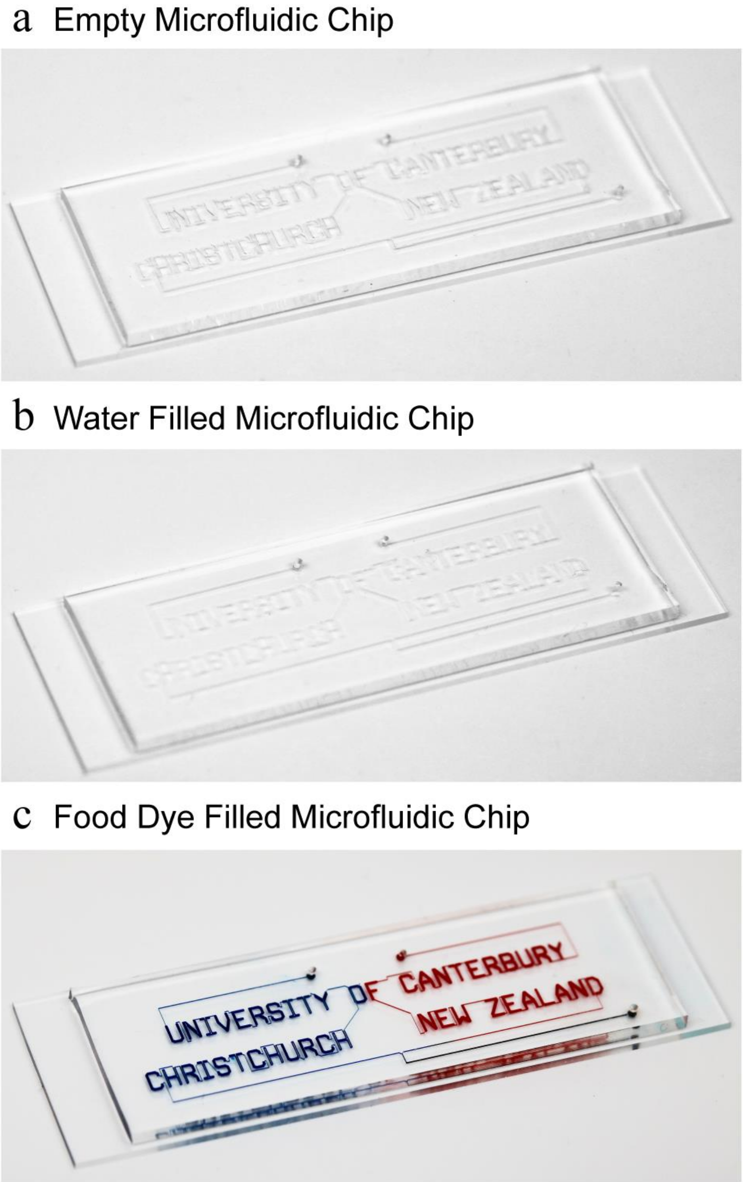

Figure S1. Conventional Microfluidic Presentation Options for Presentations/Publication. (a) Empty microfluidic chip. (b) Deionised water filled microfluidic chip. (c) Food dye/colouring filled microfluidic chip.

Supplementary Information S2: Epoxy Dye Preparation

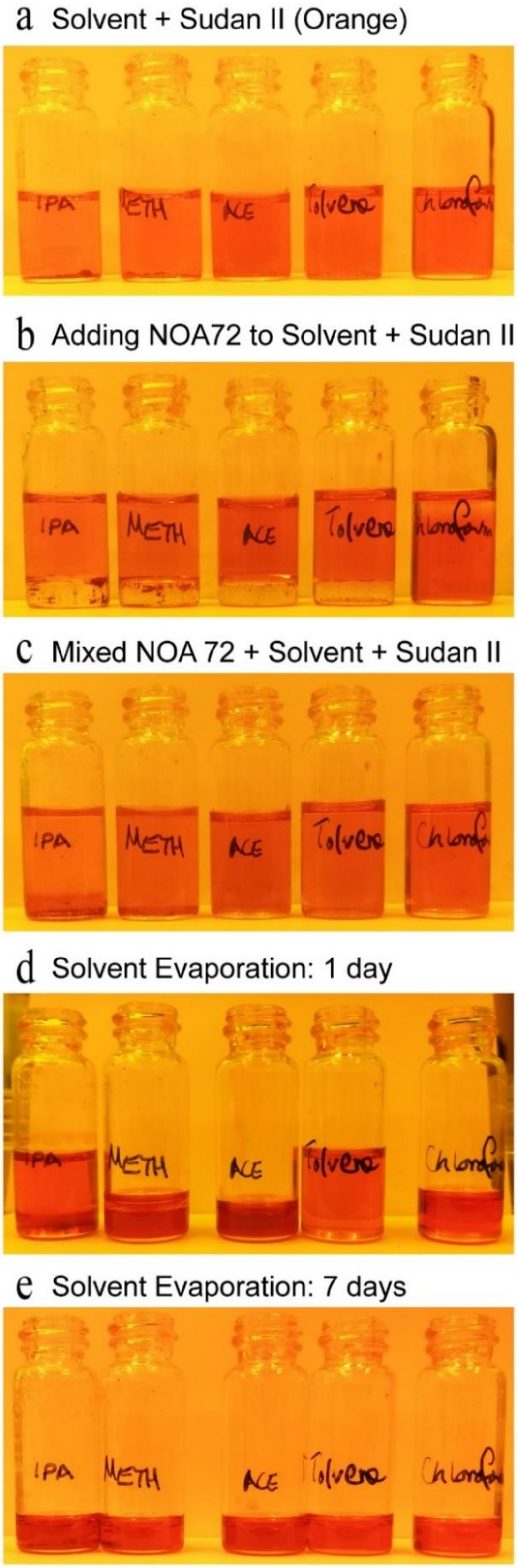

Figure S2. Epoxy Dye Preparation with Sudan II (orange). (a) Sudan II (2 mg) and solvents (1 mL). From left to right: isopropanol (IPA), methanol (METH), acetone (ACE), toluene and chloroform. (b) Addition of NOA72. (c) Mixing of epoxy dye solution. (d) Evaporation of the solvents to produce the final epoxy dye (e).

Supplementary Information S3: Incomplete Cured Epoxy Dye in Ivy Nervature Microfluidic Chip

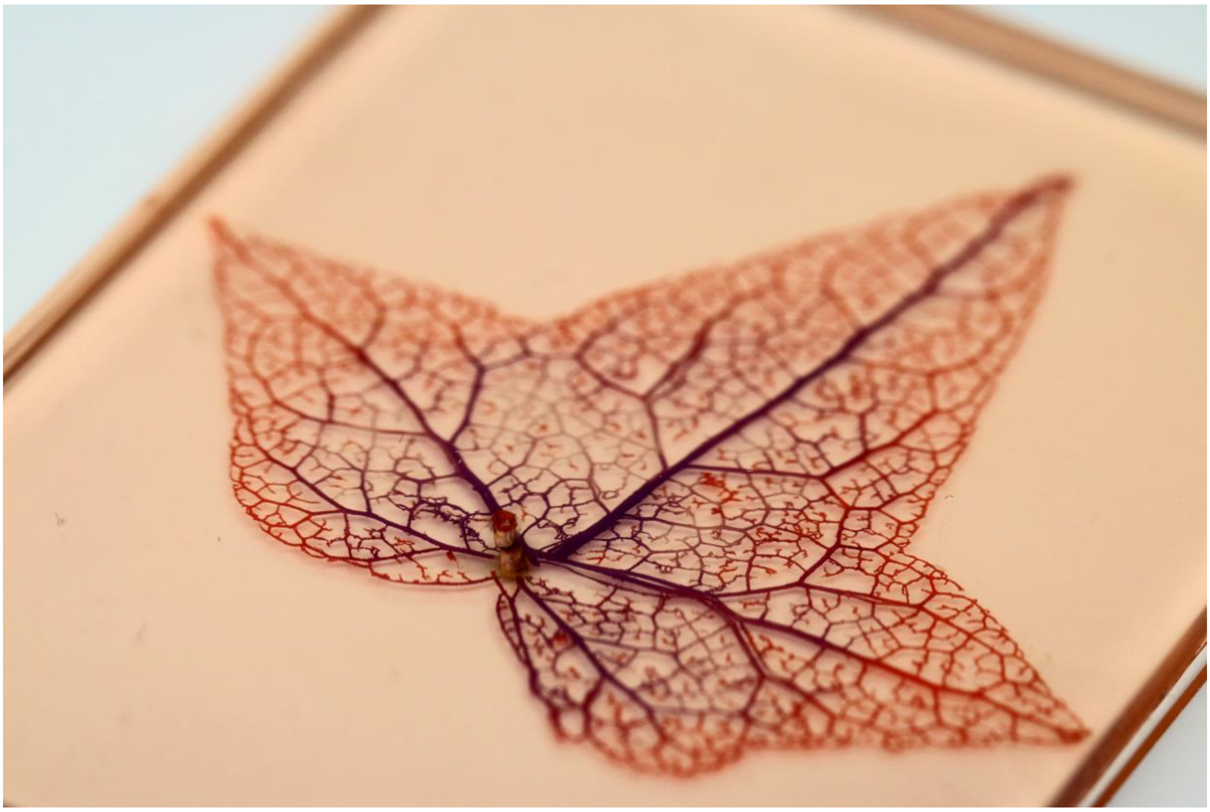

Figure S3. Incomplete Cured Epoxy Dye in Ivy Nervature Microfluidic Chip. The microfluidic chip was sequentially filled with orange, red, purple epoxy dye. With the dye diffusing into the PDMS overnight due to incomplete curing. Photograph taken six months after UV curing of the epoxy dye.

Supplementary Information S4: Microfluidic Golden Gate Bridge Longevity

Figure S4. Microfluidic Golden Gate Bridge. (a) Photograph of the Microfluidic Golden Gate Bridge displayed in a frame, and photographs of the same chip taken (b) seven and (c) eleven years after the initial photograph in (a).

Supplementary Information S5: Silver Fern with Microfluidic Text Patterned on Glass

Figure S5. Microfluidic Silver Fern Nervature with Microfluidic Text. (a) Photograph of a two-toned silver fern and microfluidic text- *Te Whare Wānanga o Waitaha* (The University of Canterbury in Te Reo Māori) patterned on glass.

Supplementary Information S6: Patterning Substrates using Standard Photolithography Techniques

To pattern substrates using standard photolithography techniques a prime silicon <100> wafer was dehydrated overnight in an oven (> 100 °C), and then left to cool to room temperature. The wafer was then cleaned in oxygen plasma. The epoxy dye (with a NOA72 base) was spun at 3000 rpm for 30 s, which resulted in a thickness of 32 ± 3 μm on the silicon wafer. The epoxy dye was then exposed in a Karl Süss MA-6 mask aligner, at two times the specified NOA72 dose. The uncured epoxy dye was then washed away using acetone to reveal the patterned epoxy dye on the silicon wafer.

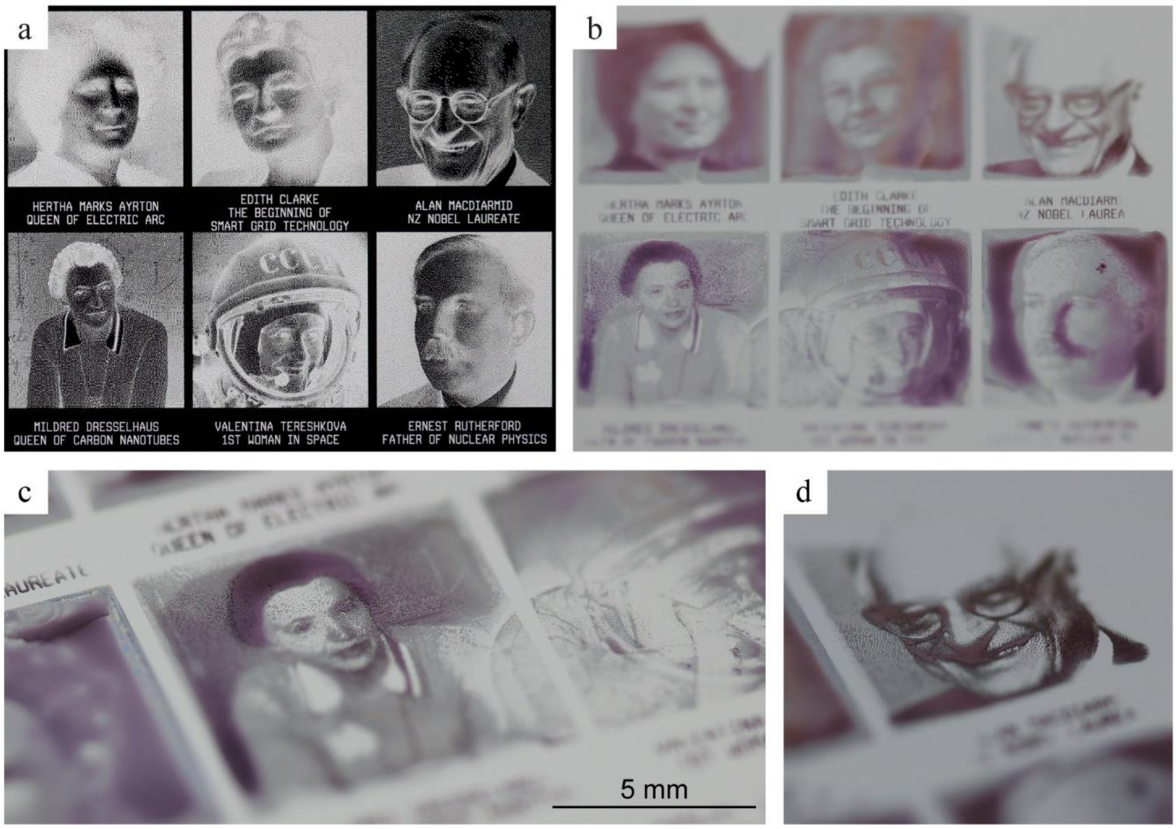

Figure S6. Standard Photolithography Epoxy Dye Patterning. Photographs of: (a) chrome on glass mask plate, (b, c, d) and corresponding colourful epoxy dye patterned silicon substrate using standard photolithography techniques.

Supplementary Information S7: Epoxy Dye Roughness

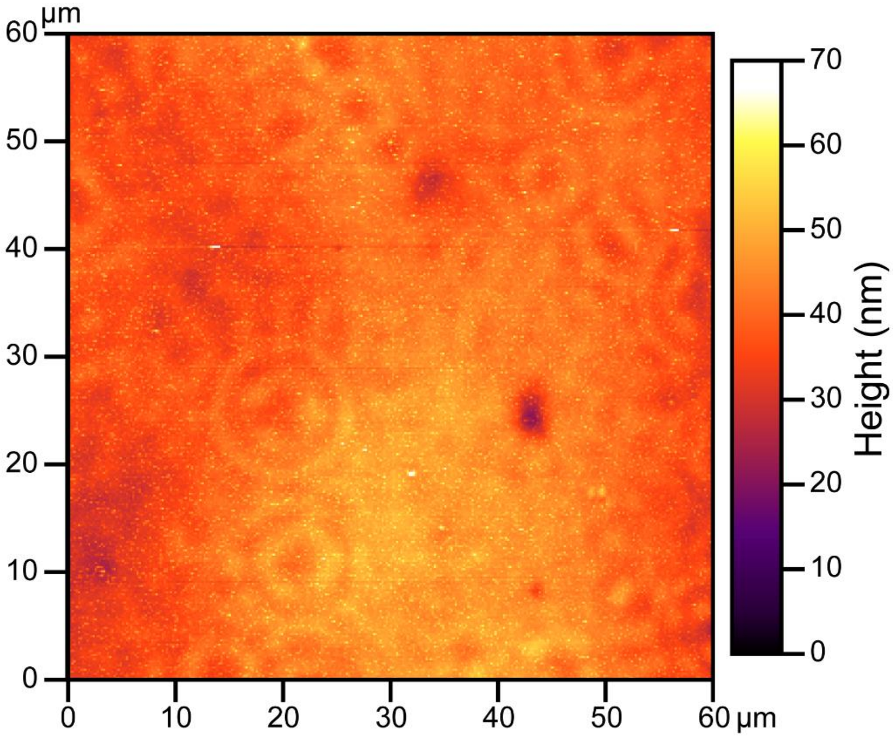

Figure S7. AFM Scan of the surface of patterned epoxy dye leaf nervature on glass, with an rms roughness of 5.17 nm.

Supplementary Information S8: 3D Optical Profilometer Cross Section Profiles

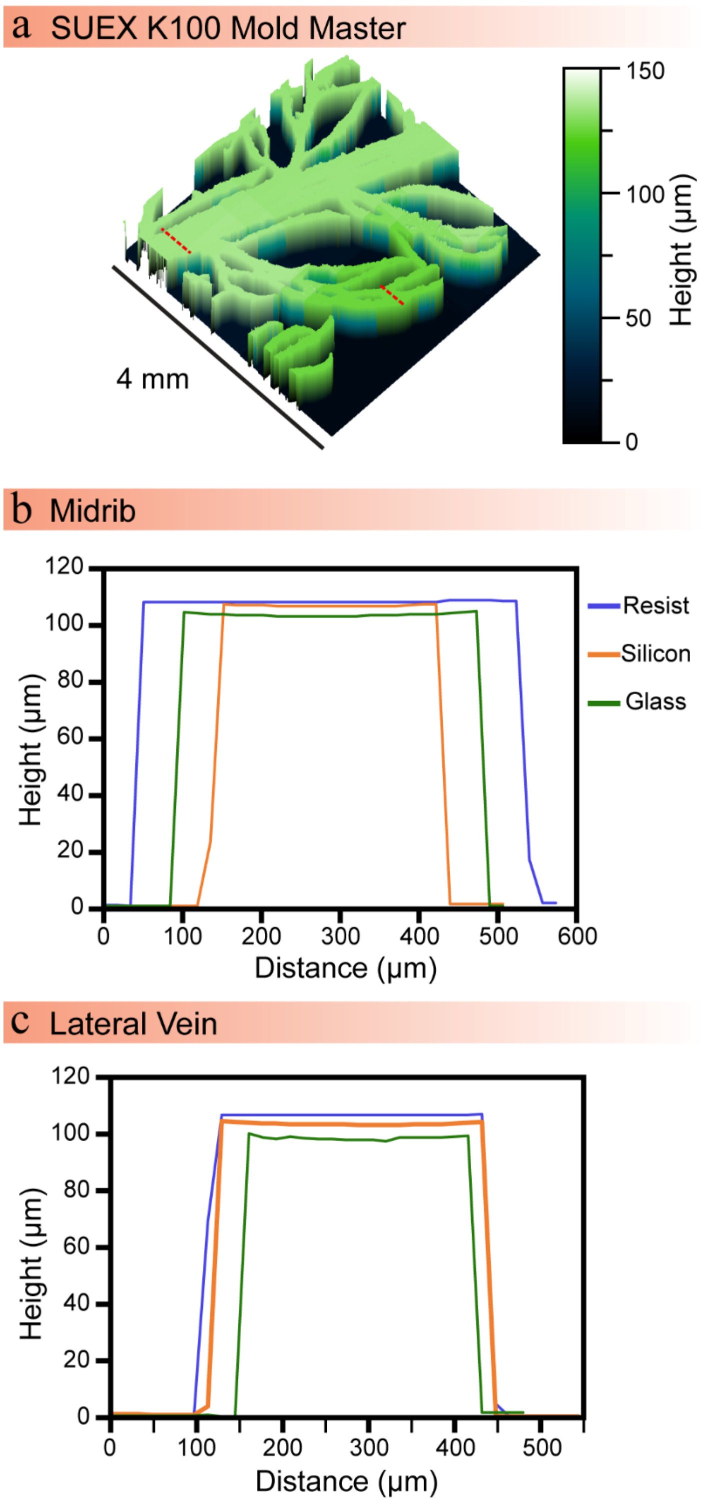

Figure S8. 3D Optical Cross Section Profiles of Silver Fern Nervature. (a) Optical profile segment of the SUEX K100 mold master to show locations of the cross sections (red). Cross section profile of the (b) midrib and a (c) lateral vein.