

Supplementary Information

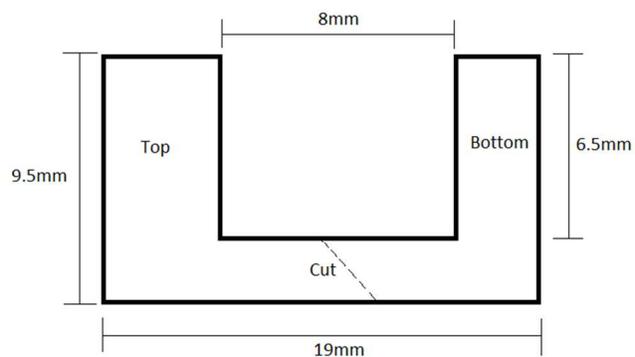


Figure S1: Diagram representing a C-card used to load samples for mechanical testing.

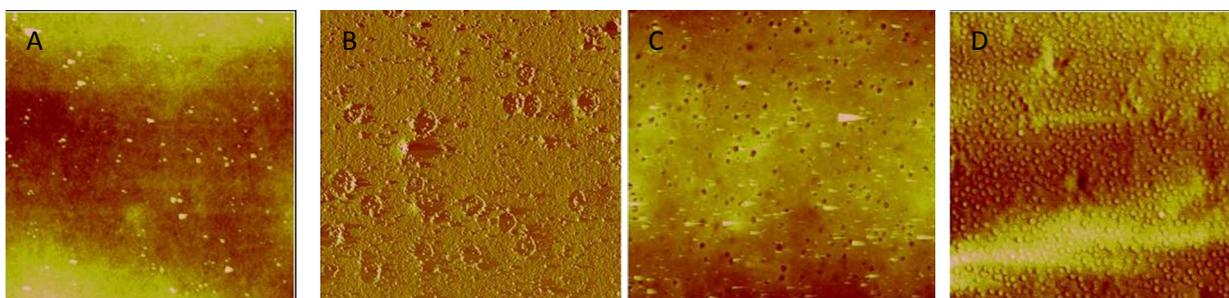


Figure S2: AFM images 20 x 20 μm comparing different drying methods of MaSp2. (A) Half sash with FA, (B) Refrigerated with FA, (C) Refrigerated, and (D) Vacuum chamber.

Table S1: Comparison of vapor treatments

Treatments	Average Energy to Break (MJ/m ³)	Average Stress (MPa)	Average Strain (mm/mm)
Cold	2.67 ± 1.85	65.73 ± 13.99	0.058 ± 0.03
IPA	1.38 ± 0.51	79.61 ± 24.48	0.03 ± 0.004
Methanol	2.46 ± 1.54	46.53 ± 12.23	0.097 ± 0.07
Water	1.27 ± 0.48	67.91 ± 10.74	0.031 ± 0.01

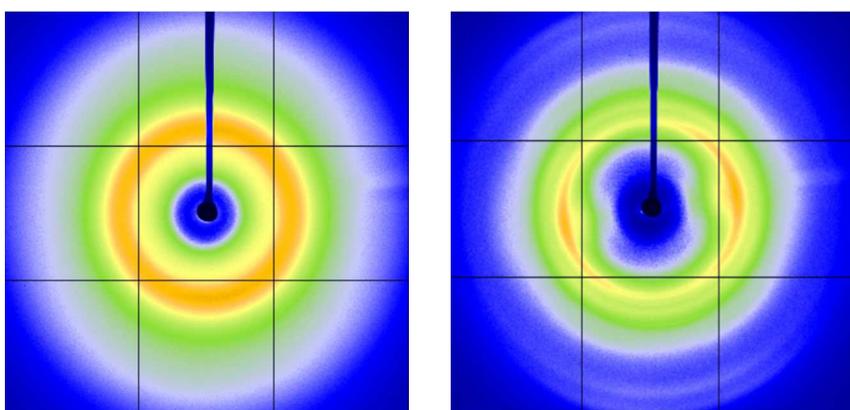


Figure S3: XRD images of HFIP-based MaSp1 (left) and MaSp2 (right) films post-pour stretched 2.5 times their original length after an 80/20 Methanol/Water

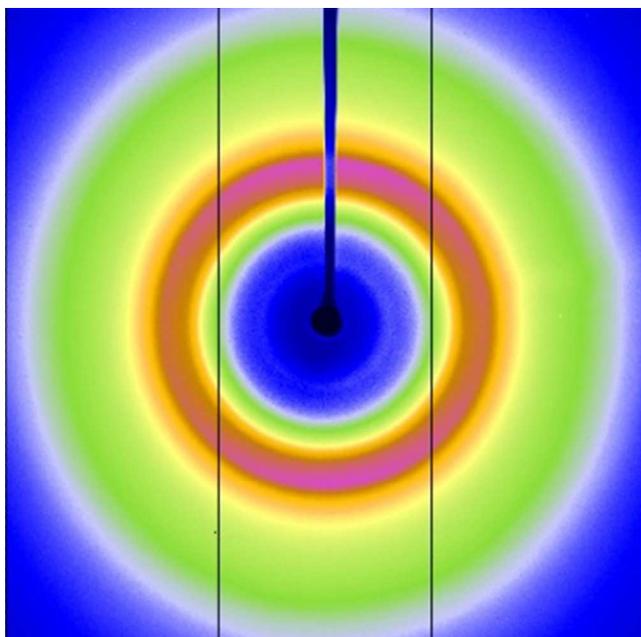


Figure S4: 2D WAXD images of water-based as-poured MaSp2 spider silk film.