SUPPORTING INFORMATION

Table S1. Comparison between nominal and generated surface tension (with and without correction factors) at different droplet volumes

Volume (μL)	Input parameters (cm)		Surface tension (mN/m)			
	a	b	With correction	Error (%)	Without correction	Error (%)
1	0.0636	0.0628	72	0	77.1	7.083
10	0.1388	0.1314	72.29	0.403	80.4	11.667
30	0.2087	0.1866	73.69	2.347	82.6	14.722
100	0.3280	0.2589	71.99	0.139	81.2	12.778
300	0.5135	0.3323	70.47	2.125	80	11.111

Table S2. Droplet parameters at different volumes and full range of contact angles: (i) Young-Laplace theoretical droplet; (ii) Generated droplet using elliptic model

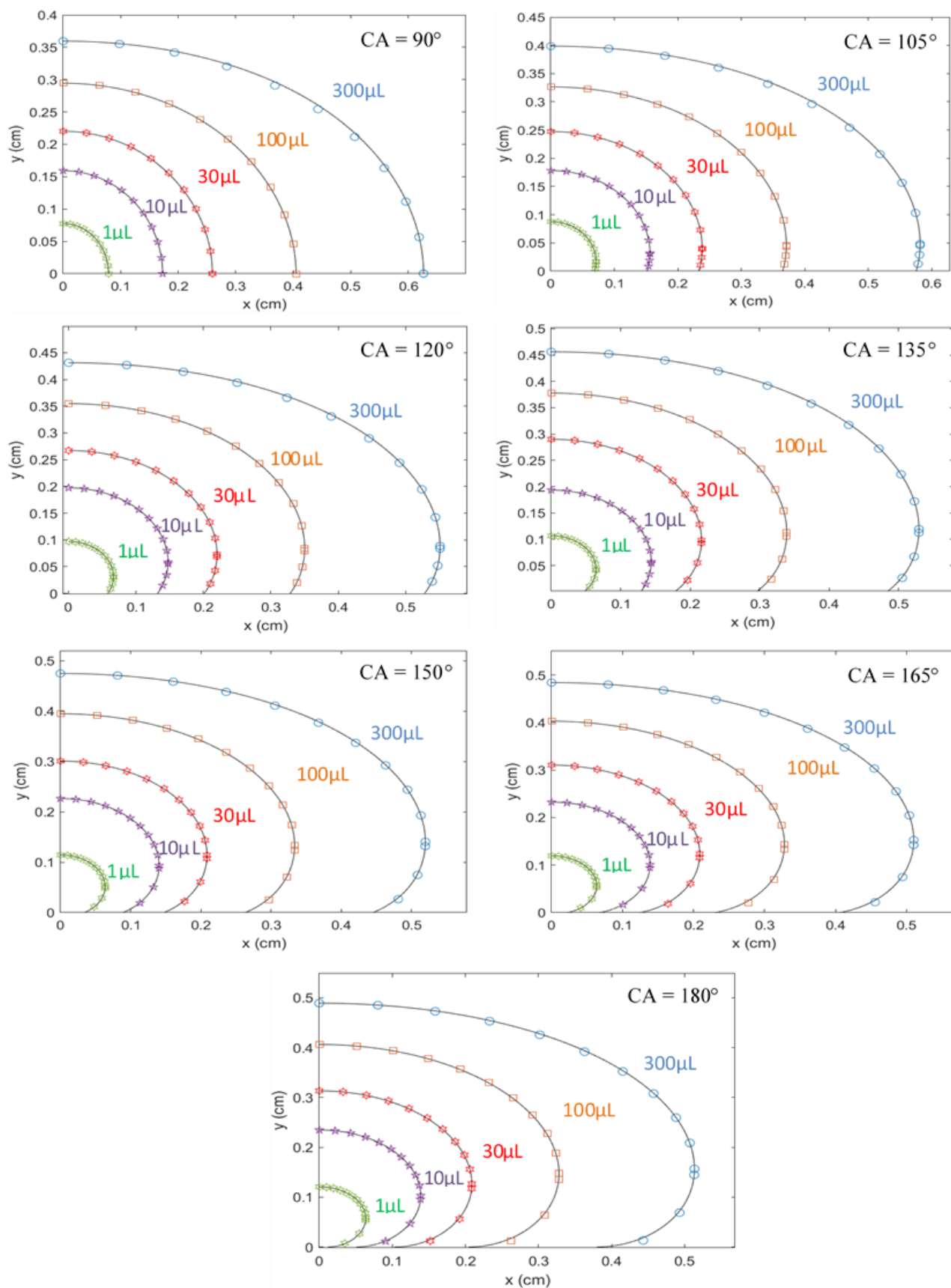| Pre-defined volume (µL)	Contact angle (°)			Volume (µL)			Surface area (cm²)		
	(i)	(ii)	Error (%)	(i)	(ii)	Error (%)	(i)	(ii)	Error (%)
1	90	90	0	1.0	1.0	0	0.039	0.039	0
	105	105.02	0.02	1.0	1.0	0	0.039	0.038	3.14
	120	119.53	0.39	1.0	1.0	0	0.041	0.041	0.25
	135	134.13	0.65	1.0	1.0	0	0.044	0.043	0.23
	150	148.87	0.76	1.0	1.0	0	0.046	0.046	0.22
	165	162.96	1.25	1.0	1.0	0	0.048	0.048	0.41
	180	174.75	3	1.0	1.0	0	0.050	0.049	0.41
10	90	90	0	9.9	10.0	1.00	0.178	0.178	0.28
	105	105.82	0.78	9.8	9.8	0	0.178	0.178	0.06
	120	121.53	1.26	10.0	10.0	0	0.186	0.185	0.22
	135	137.12	1.55	10.4	10.4	0	0.199	0.199	0.10
	150	152.1	1.38	10.2	10.2	0	0.206	0.206	0.05
	165	166.36	0.82	10.0	10.0	0	0.212	0.212	0.00
	180	179.21	0.44	10.0	10.0	0	0.218	0.219	0.23
30	90	90	0	30.8	30.8	0	0.379	0.379	0.03
	105	105.97	0.91	31.6	31.6	0	0.386	0.386	0.10
	120	122.16	1.77	30.1	30.1	0	0.382	0.383	0.10
	135	138.76	2.71	31.6	31.7	0.32	0.410	0.410	0.19
	150	151.25	0.83	30.2	30.1	0.43	0.414	0.415	0.10
	165	170.07	2.98	30.8	30.9	0.32	0.436	0.438	0.43
	180	180.00	0	30.9	31.1	0.64	0.452	0.454	0.57
100	90	90	0	100.7	101.0	0.30	0.846	0.848	0.19
	105	106.05	0.99	100.2	100.1	0.10	0.834	0.834	0.01
	120	123.07	2.50	100.3	100.5	0.20	0.845	0.843	0.27
	135	141.35	4.49	101.2	101.5	0.30	0.871	0.871	0.01
	150	157.83	4.96	102.0	102.4	0.39	0.906	0.908	0.21
	165	173.65	4.98	99.8	100.5	0.70	0.927	0.933	0.69
	180	180.00	0.00	100.4	101.3	0.89	0.963	0.972	0.88
300	90	90	0	300.7	294.4	2.14	1.821	1.801	1.10
	105	106.05	0.99	302.4	297.8	1.54	1.780	1.765	0.82
	120	122.30	1.88	302.0	299.2	0.94	1.772	1.762	0.58
	135	139.82	3.45	298.9	297.0	0.64	1.784	1.772	0.67
	150	157.21	4.59	300.6	299.2	0.47	1.835	1.832	0.17
	165	173.65	4.98	294.2	293.5	0.24	1.866	1.868	0.09
	180	180.00	0	300.8	300.0	0.27	1.959	1.964	0.28

Figure S1. Comparison between droplet profile of Young-Laplace theoretical model (continuous lines) and elliptic model (scattered data points) at different nominal contact angles