Supplementary Information

1. Researchers interested in obtaining the DMV software may contact the author at abasu@eng.wayne.edu. A video demonstration and tutorial of the software, along with related documentation, can be found on the author's website at http://microfluidics.wayne.edu.

2. The following DMV settings were used in sample videos.

Video	FPS	Length scale	ROI	Background image	Subtraction Method	Edge Detection	Small Object removal	Fill and Close	Circle Detection	Movie Frames	Distance Match	Area Match
Drop generator	5000	0.75	[1 200 1280 320]	Mode, all frames 1-196	Absolute Difference	Threshold 0.1	1000, DBO	0	0.5	1-196	0.7	0.2
Drop splitter	4000	N/A	[199 99 172 148]	Min, 1-100	Standard w/ Inversion	Threshold, .62	100, DBO	2	0.3	1-790	1.2	0.2
Drop merging	10000	1.68	[1 1 704 160]	Manually generated empty channel	Absolute Difference	Threshold, .038	100, DBO	10	0.1	1-459	3	0.1
Cell encapsulation A	N/A	N/A	[864 278 393 112]	None	Absolute Difference	Threshold, 0.62	400, DBO	1	0.2	1-864	1.2	0.2
Cell encapsulation B	10000	1.78	[283 85 50 40]	Mode, frames 1-200	Absolute Difference	Sobel, .025	20, DBO	1	0.5	1-1809	1.2	0.5
Drop dilutor	N/A	N/A	[416 345 93 221]	Average, frame 1	Absolute Difference	Sobel, 0.02	100, DBO	10	0.5	1-491	2	0.4
Tensiophoresis sorting	30	4	[344 209 450 313]	Average of frame 45 (empty channel)	Standard w/ Inversion	Threshold, 0.52	2000, DBO	0	0.65	1-11946	10	0.7
Serpentine channel	352	1.48	[430 448 1056 411]	Min function, all frames	Standard	Threshold, 0.55	200, DBO	0	0.6	406	1.2	0.5
Drop reinjector	7116	7	[1 1 490 129]	Manually generated, dark channel	Standard	Threshold, .8	30, DBO	0	0.65	417	10	0.7