Electronic Supplementary Material (ESI) for Lab on a Chip.

Electronic Supplementary Information: Thermal considerations for microswimmer trap-and-release using standing surface acoustic waves

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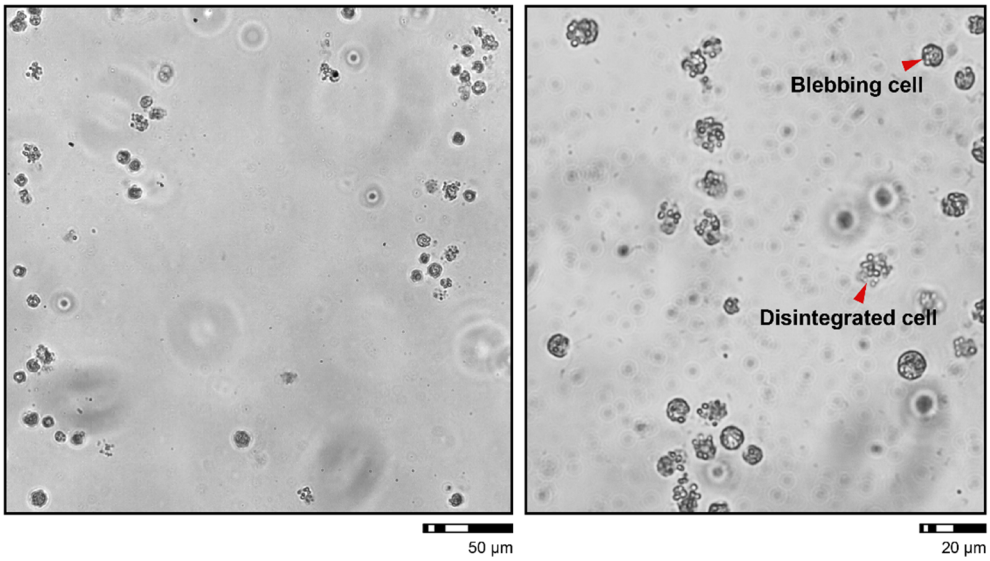
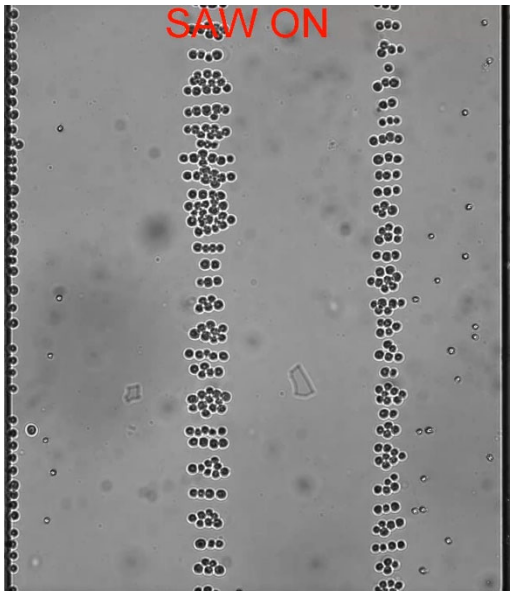
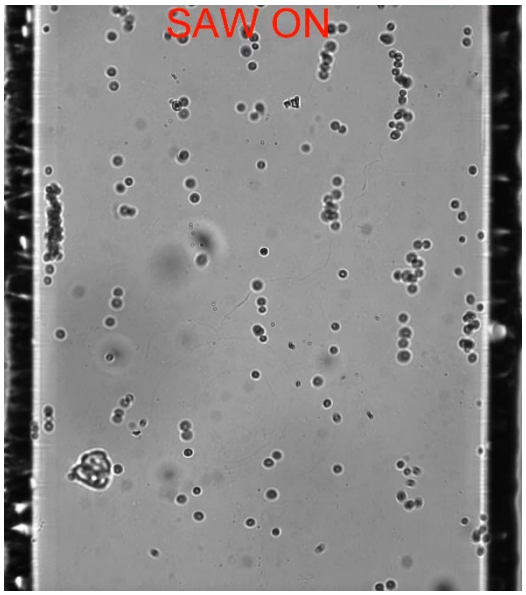


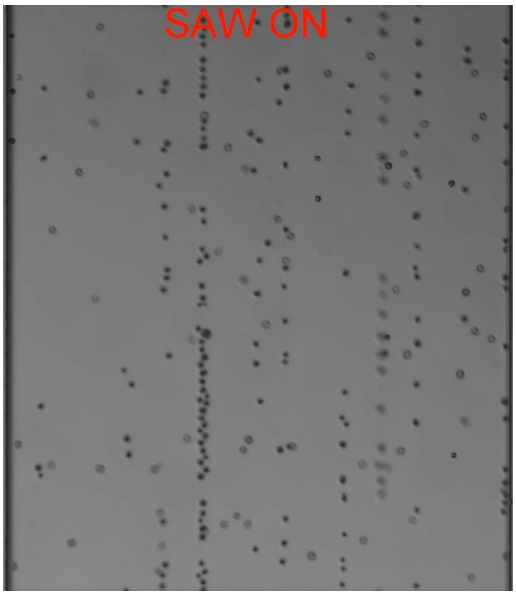
Figure S1. Brightfield microscopy images of heat-induced damage to *C. reinhardtii* cells after trap-and-release in the PDMS-based microchannel driven at 24.05 MHz and 25 V_{pp}.



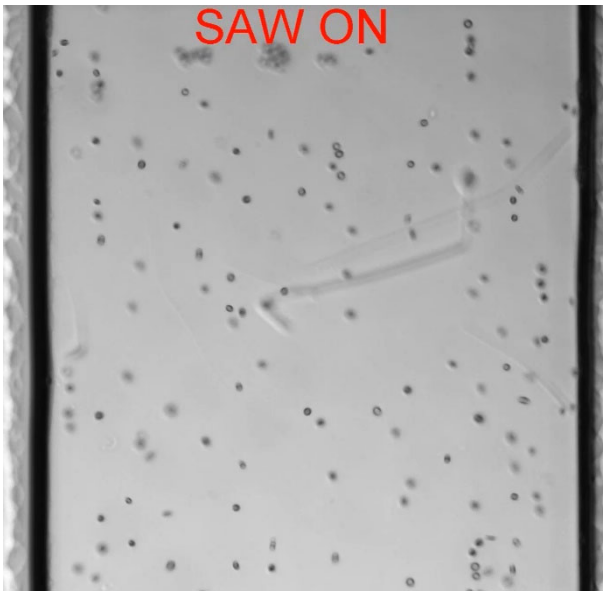
Movie S1. Trap-and-release in the PDMS-based microchannel driven at 9.62 MHz and 25 V_{pp}. The PDMS-based device is not able to trap swimming *C. reinhardtii* but focuses immotile cells. Immotile *C. reinhardtii* cells do not redistribute after the signal is turned off.



Movie S2. Trap-and-release in the glass-based microchannel driven at 9.62 MHz and 25 V_{pp}. The glass-based device successfully traps live *C. reinhardtii* at SBAW nodal positions. The motile *C. reinhardtii* cells redistribute evenly throughout the channel after the signal is removed.



Movie S3. Trap-and-release in the PDMS-based microchannel driven at 24.05 MHz and 25 V_{pp}. The PDMS-based device is not able to trap swimming *C. reinhardtii* but focuses immotile cells. Immotile *C. reinhardtii* cells do not redistribute after the signal is turned off.



Movie S4. Trap-and-release in the glass-based microchannel driven at 24.05 MHz and 25 V_{pp}. The glass-based device successfully traps live *C. reinhardtii* at SBAW nodal positions. The motile *C. reinhardtii* cells redistribute evenly throughout the channel after the signal is removed.