Supplementary Video Captions

"Figure_2a_ESI_10000_fps.avi"

Representative video (10,000 fps) for data in Figure 2a. Vegetative algae (with flagella) at the end of a 6 cm long, 27 µm by 52 µm channel at 10 µL/min.

"Figure_2b_ESI_3200fps.avi"
Representative video (3,200 fps) for data in Figure 2b. Vegetative algae (without flagella) at the end of a 6 cm long, 27 µm by 52 µm channel at 10 µL/min.

"Figure_4a_ESI_13005_fps.avi"
Representative video (13,005 fps) for data in Figure 4a. Co-encapsulation of ordered 10 µm polystyrene microspheres. The flow rate in each 44 µm by 31 µm channel was 10 µL/min.

"Figure_4c_ESI_13005_fps.avi"
Representative video (13,005 fps) for data in Figure 4a. Co-encapsulation of ordered 10 µm polystyrene microspheres. The flow rate in each 44 µm by 31 µm channel was 10 µL/min.

"Figure_6_a_ESI_13005_fps.avi"
Representative video (13,005 fps) for data in Figure 6a. Co-encapsulation of ordered mt+ and mt- algae cells. The flow rate in each 44 µm by 31 µm channel was 10 µL/min.

"Figure_7_a_ESI_100_fps.avi"
Algae mating in droplets (100 fps). In the left droplets, mating had begun. In the right droplet, two algae gametes join together to start the mating process.

"Figure_7_b_ESI_100_fps.avi"
Algae in droplets 30 minutes post-encapsulation (100 fps). The gametes freely move and begin looking for a mating pair.

"Figure_7_c_ESI_100_fps.avi"
Algae droplets (same as those in Figure 7b video) 18 hours post-encapsulation (100 fps). The motion of cells is visibly stopped, and the number of cells reduced, in droplets where gametes have mated.

"Figure_7_d_ESI_100_fps.avi"
Close-up view of flagellar agglutination (100 fps). Note the visible flagella entanglement between the two mating gametes.