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

Supplementary Information for

Light manipulated binary droplet transport on high energy surface

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■ Supplementary Figures

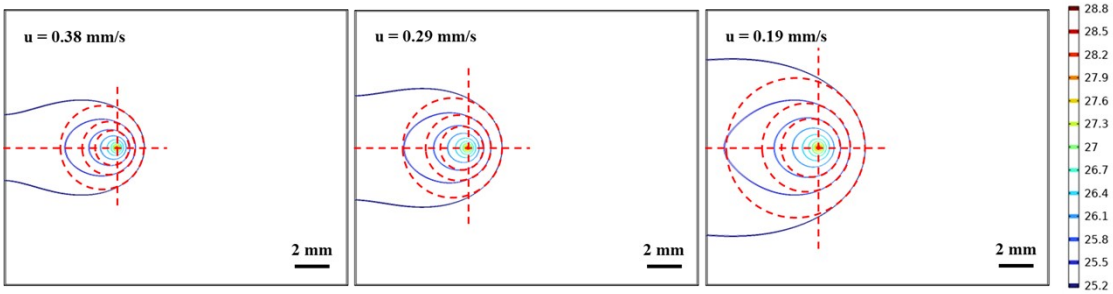
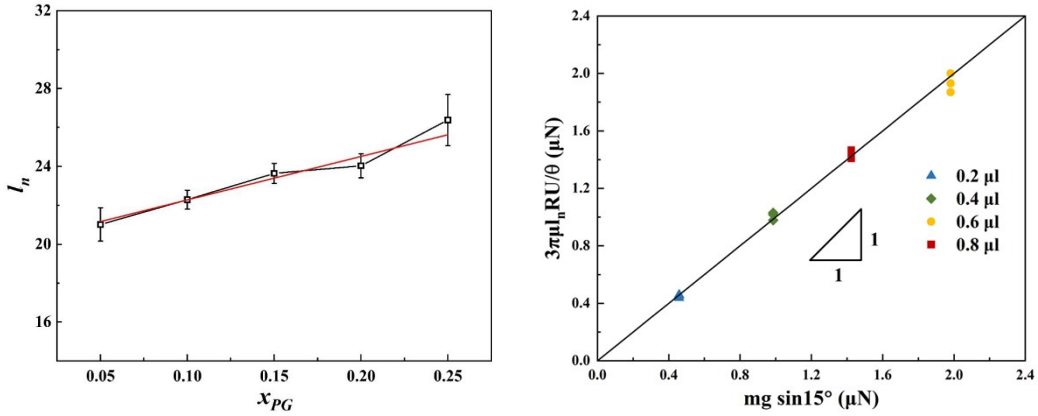


Fig. S1 Isothermal lines of thermal pattern and corresponding fitted circular isothermal lines (red dotted lines) under different laser beam moving velocities.



(A) (B)

Fig. S2 (A) l_n as a function of x_{PG} for 0.6 μL binary droplet sliding on a 15° inclined high energy surface. (B) Comparison between viscous drag force and gravity along the substrate for binary droplets (x_{PG}=0.1) with different volumes (The calculation of viscous drag force is based on l_n=22.6).

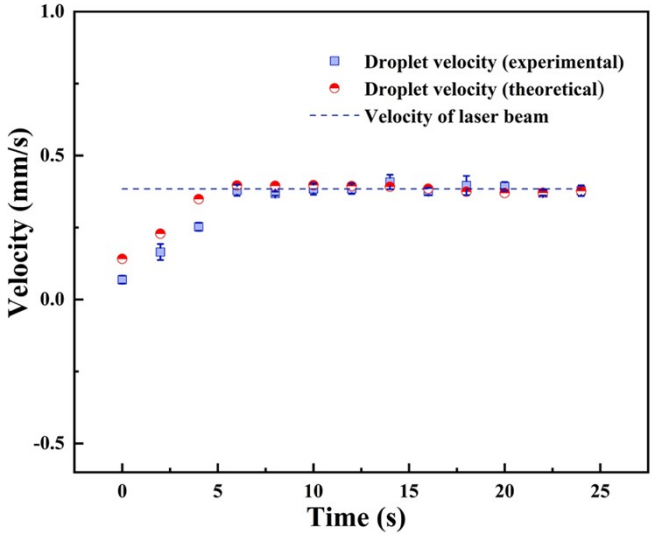
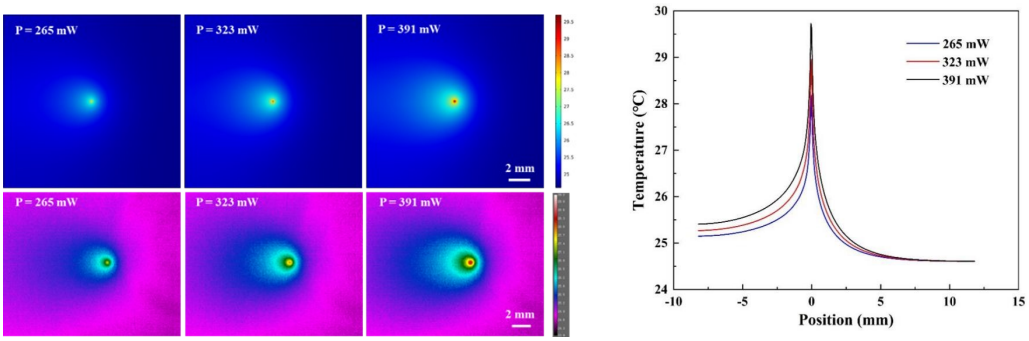


Fig. S3 Comparison in the droplet moving velocity *U* determined by experiments and theoretical model (the blue dotted line represents the laser beam moving velocity *u*=0.38 mm/s).



(A) (B)

Fig. S4 (A) Numerical and experimental results on comet-shaped thermal patterns under different laser powers (laser beam moving velocity *u*=0.29 mm/s). (B) One-plane temperature distributions at the central axis along the droplet motion direction under different laser powers.