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**Optical Manipulation of Oil Droplets Floating in an Aqueous Solution** CHAEYEON SONG, JONG KYUN MOON, KYUYONG LEE, HYUK KYU PAK, Dept. of Physics, Pusan National University — We experimentally investigated the motion of micro-liter oil droplets on the surface of an aqueous solution induced by laser heating. The droplets exhibit two types of motion, directed movement parallel to the laser beam and periodic pumping – oscillation of the contact line. The directed movement of the droplet can be switched between forward and backward by changing the optical path of the laser through the droplet. We can also control the onset of the pumping and its frequency by changing the laser intensity and the heating point on the droplet. We show that the mechanism of both types of motion can be explained in terms of the contact angle adjustment, the resulting force imbalance at the contact line of the droplet, and the convective flow in the droplet.

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