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Micro-step Control of the Position of Oil Droplets Floating in an Aqueous Solution KYUYONG LEE, CHAEYEON SONG, JONG KYUN MOON, HYUK KYU PAK, Dept. of Physics, Pusan National University — We experimentally investigated the controlled movement of micro-liter oil droplets on the surface of an aqueous solution induced by laser heating. When heated by laser on one side for a short time, the droplet moves toward the laser with a finite micron-scale step, which can be determined by the intensity of the laser and the duration of heating. Thus, the position of droplets can be precisely controlled by applying a series of laser heating. We show that this stepwise movement of the droplet is due to the contact line advance caused by laser heating and the following capillary flow induced by the imbalance in the Laplace pressure.

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