Combining rails and anchors with laser forcing for selective manipulation within 2D droplet arrays - Supplementary movie captions

Etienne Fradet\(^1\), Craig McDougall\(^2\), Paul Abdyad\(^{1,3}\), Rémi Dangla\(^1\), David McGloin\(^2\) and Charles N. Baroud\(^1\) *

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\(^1\)Laboratoire d’Hydrodynamique (LadHyX) and Department of Mechanics, Ecole Polytechnique, CNRS, 91128 Palaiseau, France.
\(^2\)Electronic Engineering and Physics Division, University of Dundee, Nethergate, Dundee, DD1 4HN UK.
\(^3\)Laboratoire d’Optique et Biosciences (LOB), Ecole Polytechnique, INSERM U696, CNRS, 91128 Palaiseau, France.

Movie S1 - Selectively extracting drops. An array of holes with a diameter of 50 µm is initially filled with water drops with a radius of 200 µm. A laser with a power of 200 mW is focused on the water-oil interface, pushing the drops one-by-one out of the anchor sites. An X is patterned with the remaining droplets. The movie is in real time.

Movie S2 - Selectively filling an array. Droplets are derailed from their default path onto a storage rail using a laser. The movie shows the complete filling of the first line and the first three droplets of the five remaining lines. The movie is in real time.

Movie S3 - Filling an array with two droplet populations. Water droplets with a radius of 100 µm containing KSCN are first flushed in a test section patterned with two rows of anchors of 200 µm in

*email: baroud@ladhyx.polytechnique.fr
diameter. The oil flow rate is then increased to leave one drop per trap. Water droplets containing $FeCl_3$ are finally brought at low flow rates, from a second inlet, and fill the gaps in the array. The movie is in real time.

Movie S4 - Laser induced merging of droplets in anchor sites. Each hole traps two droplets which contain different chemical reagents, $KSCN$ and $FeCl_3$ respectively. The laser is placed on the interface between two drops to trigger their fusion. A chemical reaction inducing a red color then takes place. The laser completes its path leaving five anchor points with a reaction product and all other droplets undisturbed forming a W pattern. The movie is in real time.