## Reversible Trapping of Colloids in Microgrooved Channels via Diffusiophoresis under Steady-State Solute Gradients

Naval Singh,<sup>1</sup> Goran T. Vladisavljević,<sup>1</sup> Franćois Nadal,<sup>2</sup> Cécile Cottin-Bizonne,<sup>3</sup> Christophe Pirat,<sup>3</sup> and Guido Bolognesi<sup>1, \*</sup>

<sup>1</sup>Department of Chemical Engineering, Loughborough University, Loughborough, LE11 3TU, United Kingdom <sup>2</sup>Wolfson School of Mechanical, Electrical and Manufacturing Engineering, Loughborough University, Loughborough, LE11 3TU, United Kingdom <sup>3</sup>Institut Lumière Matière, UMR5306 Université Claude Bernard Lyon 1 - CNRS, Université de Lyon, Villeurbanne Cedex, 69622, France (Dated: November 18, 2020)

## DATASET DESCRIPTION

The file "Simulated\_Particle\_Concentration\_Field.zip" contains the .txt file with the particle concentration field calculated via numerical simulations in Comsol. For the details on the numerical simulations, see the Supplementary Information file. In the .txt file, the spatial coordinates x, y, z are normalised with respect to the channel width w, and the particle concentration is normalised with respect to the concentration,  $n_0$ , of the colloidal solution injected in the inner channel of the device.

The file "no\_salt\_gradient.zip" contains the raw images acquired from the confocal microscope system during the z-scan across the channel's depth direction (y axis) in the absence of salt concentration gradients. The file "with\_salt\_gradient.zip" contains a similar scan but with a salt concentration gradient (0.1 mM / 10 mM LiCl) at steady state. See the Supplementary Information file for further details on the image acquisition procedures.