

Dynamics of micro-rods in micro-fluidic channels

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Abstract

We study the dynamics of micro-rods advected in the laminar flow field of a micro-fluidic channel (cross-sectional area $400 \times 200 \text{ micron}^2$).

The micro-rods were produced by emulsification of a polymer solution under shear. Their lengths are of the order of 100 micrometer with aspect ratios typically 20. By means of a microscope we follow the orientational dynamics of individual rods.

We analyse their tumbling motion.