Title	**Multipoint Holographic Optical Velocimetry in Microfluidic Systems**
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Abstract	We show how holographic optical trapping can be used for the multipoint measurement of fluid flow in microscopic geometries. An array of microprobes can be simultaneously trapped and used to map out the fluid flow in a microfluidic device. The optical traps are alternately turned on and off such that the probe particles are displaced by the flow of the surrounding fluid and then retrapped. The particles' displacements are monitored by digital video microscopy and directly converted into velocity field values. This technique enables the measurement of a two-dimensional flow field at points arbitrarily distributed in a three-dimensional volume. The validity of the technique is demonstrated for the case of the flow around a spinning sphere and the flow at the outlet of a microchannel.
Laser Quantum Product	Excel 532nm
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