

### Journal

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### Title

Fabrication of Micro-Fluid-Channel Structures by Focused Ion Beam Technique

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### Abstract

One of the new applications of focused Ga ion beam (Ga FIB) techniques in the fabrication of micro-fluid-channels on plate glass was demonstrated. After discussing the features of the FIB-etched patterns, narrow or Y-shaped channels were fabricated by FIB etching on a patterned plate glass prepared by photolithography and wet etching. Micro-fluid devices were then constructed using a polydimethylsiloxane (PDMS) sheet and silicone rubber tubes, and the water (or ink) flow in the devices was observed under a microscope using a syringe pump. Although no discussion based on fluid mechanics has been carried out at present, the present results indicate the possibility of applying FIB techniques to fabricate micro-fluid devices that can be used in bio- and/or chemical-related fields.