

流体MEMSに実装可能なマイクロフォトセンサの開発

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The Development of the Micro Photosensor Which Can Be Mounted on the Fluid MEMS

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Abstract

Recently, a fluid-micro electro mechanical system (fluid MEMS), composed of a micro pump, mixer, valve, reactor, sensor, an electric circuit, on a chip, is being applied to biotechnology or medical analysis. The authors have been proposed a micro chemical sensor which can be mounted on a fluid MEMS chip to measure the concentration of small liquid samples (1 nL–1 μ L). This paper reports on the development of the micro photosensor which can analyze the concentration of small biochemical sample. The micro photosensor formed on a chip consists of thin Cu electrodes in a comb shape. The electrical resistance of the micro-sensor is related to the concentration of the solution in contact with the electrodes. In addition, the electrical resistance of the micro-sensor in contact with the solution is related to the intensity of light irradiated on to the surface of the electrode. This micro photosensor can detect the light which penetrates colored biochemical sample such as blood.

Key Words: MEMS Sensor Chemical Sensor Photo Sensor