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Development of functional microbubble generator using a microchannel AKIKO FUJIWARA, SHU TAKAGI, YOICHIRO MATSUMOTO, The University of Tokyo — Recently, microbubbles with the diameter of less than several um are utilized in medical field such as contrast agents to ultrasound diagnostics and micro capsules for drag delivery systems. These microbubbles have been already used as contrast agents, although the knowledge of the suitable combination of constituents of bubbles, which are the shells and gas component for a stable bubble in liquid, and generating techniques of microbubbles have not been established yet. We propose a simple microbubbles generator using a microchannel. A microchannel is constructed with main- and sub- channel. Sub-channel is connected perpendicular to the main channel, both of which have the width and the depth of several tens of um. Liquid phase flows in a main channel and the gas does in a sub-channel. Microbubbles are chopped off from the gas phase by the liquid flow at the T-junction of microchannel. By changing the channel size and the flow rates, diameter of micro bubbles were tried to be controlled. The preliminary results will be discussed.

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