

課題番号 : F-19-BA-0009
利用形態 : 機器利用
利用課題名(日本語) : バクテリア培養のためのマイクロ流路デバイスの作製
Program Title (English) : Microfluidic channel fabrication for applications in microbiology
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キーワード/Keyword : リソグラフィ・露光・描画装置、microfluidics、bacteria、microbiology、trapping

1. 概要(Summary)

I have been trained on using the Heidelberg mask writer in the clean room facilities at Univ. of Tsukuba to fabricate the molds for microfluidic devices. I used the spin coaters and plasma cleaner to fabricate PDMS devices. We are still gathering data to understand the phenomena that we are observing.

2. 実験(Experimental)

【利用した主な装置】

パターン投影リソグラフィシステム

【実験方法】

I have tried to use the Mask Writer.

3. 結果と考察(Results and Discussion)

We were unsuccessful in using the Heidelberg mask writer. We had technical difficulties and weren't able to proceed. Thus, we have no results yet but we wanted to make chrome masks to generate microfluidic devices. Chrome masks have a much larger resolution.

We wanted to make a mask that could generate a pattern after we do photolithography that could trap bacteria such as that shown in Fig. 1 (see top). However, we had problems with the software and are currently working on how to solve them. We plan to resume tests in January 2020.

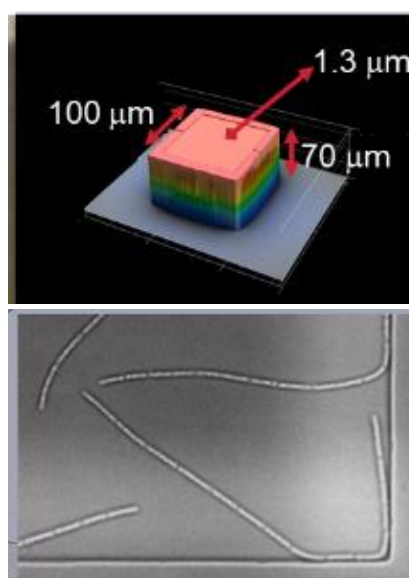


Fig. 1 *V. cholerae* bacteria growing in a polydimethyl siloxane device that was replicated from an SU-8 mold generated in my laboratory. The bacteria are inoculated into the device and are fed with nutrient medium to cause the bacteria to grow. Bacteria growing in a PDMS device replicated.

5. 論文・学会発表(Publication/Presentation)

なし。

6. 関連特許(Patent)

なし。