課題番号 :F-21-TU-0050
利用形態 :機器利用
利用課題名（日本語） :
Program Title (English) :Silicon wafers making
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1. 概要（Summary）

Under ensuring the same pore area ratio, in order to study the effect of pore size on the diffusion of substances, it is necessary to fabricate membranes with micropores of different diameters for experiments.

2. 実験（Experimental）

【利用した主な装置】

Spin coater, Draft chamber for development（両面アライナ露光装置一式）
Maskless Aligner（マスクレスアライナ）
DeepRIE #1（DeepRIE 装置#1）
Plasma cleaner（プラズマクリーナー）

【実験方法】

The membrane with micron level holes are made by two time's etching. First, a groove is etched on one side of the wafer, and then the hole and outer contour are etched from the other side.

Each etching is mainly divided into 4 steps:

1. Phototesist spin coating and baking
2. Exposure, development, and baking
3. Another side's photoresist spin coating and baking
4. Etching
5. Photoresist removing

3. 結果と考察（Results and Discussion）

Two kinds of membranes with diameters of 150 and 50 microns were successfully fabricated, and follow-up experimental observations were carried out using these two membranes.

Figure 1 is the image of two different sizes membrane. The membrane on the left is a 150 μm pore size membrane and the one on the right is a 50 μm pore size.

Fig. 1 Two different sizes membrane. The left is a 150 μm pore size membrane, the right is a 50 μm pore size.

4. その他・特記事項（Others）

なし。

5. 論文・学会発表（Publication/Presentation）

なし。

6. 関連特許（Patent）

なし。