

課題番号(Number of project) : F-18-TU-0051
利用形態(Type of user support) : 機器利用
利用課題名(日本語) :
Program Title (English) : Fabrication technology development
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検索キーワード : 成膜・膜堆積:Sputtering, 膜加工・エッチング : RIE, MEMS process

1. 概要 (Summary)

To support the development of certain process steps needed for MEMS devices specific processes have been done using special equipment suitable for 100 mm diameter silicon wafers, such as sputtering, reactive ion etching and silicon dioxide formation.

2. 実験 (Experimental)

【利用した主な装置】 Used equipment:

Laser mask writer (Heidelberg Instruments DWL2000CE) : レーザ描画装置

Plasma enhanced chemical vapor deposition (Sumitomo MPX-CVD) : 住友精密 PECVD装置

Thin film sputtering equipment (Shibaura !-Miller CFS-4EP-LL, CFS-4ESII) : 芝浦スパッタ装置, 自動搬送芝浦スパッタ装置

Silicon dioxide reactive ion etching (Ulvac NE-550) : アルバック ICP-RIE

【実験方法】Experiment:

Emulsion photo masks for lithography of 100 mm wafers were prepared by laser beam writer and checked. 300 μm thick silicon wafers have been coated by CVD process under TEOS to grow silicon dioxide of about 1000 nm thickness. RF sputter equipment was used to create 1-3 μm thick layers of germanium and gold as well as about 50nm titanium on 100 mm diameter wafers. By reactive ion etching a 1000 nm thin silicon dioxide layer was etched on 100 mm wafers.

3. 結果と考察 (Results and Discussion)

All process could be done successfully within expected outcomes.

4. その他・特記事項 (Others)

Not applicable なし

5. 論文・学会発表 (Publication/Presentation)

Not applicable なし

6. 関連特許 (Patent)

Not applicable なし