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利用形態 :機器利用
利用課題名(日本語) :
Program Title (English) :MEMS device technology development
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1. 概要(Summary)

For MEMS with diaphragms, e.g. microphones, it is important to control the stress of the diaphragm material and evaluate the influence of process steps. This time we fabricated several test structures and evaluated the influence of certain process steps to the thin film stress.

2. 実験(Experimental)

【Main equipment used】

Vapor HF エッチング装置, DeepRIE 装置#1

【Experiment】

A 250 nm thin metallic film, that is a potential material for diaphragms, was sputtered on a SiO_2 layer, on a Si wafer in a different facility. Test structures to obtain the in-plane stress of the material were etched, and the structures released by vapor HF etching.

3. 結果と考察(Results and Discussion)

The test structures were observed by microscope and SEM, and measured (Fig. 1, 2). The stress could be controlled to <10 MPa.

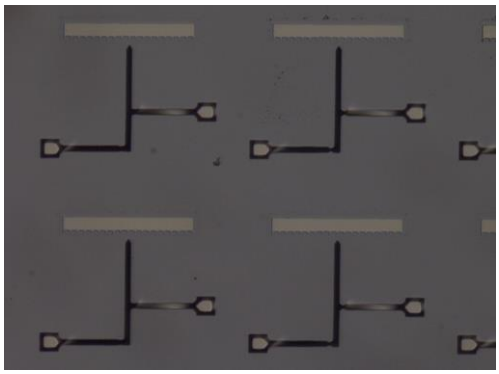

Fig. 1 Array of in-plane stress measurement test structures.

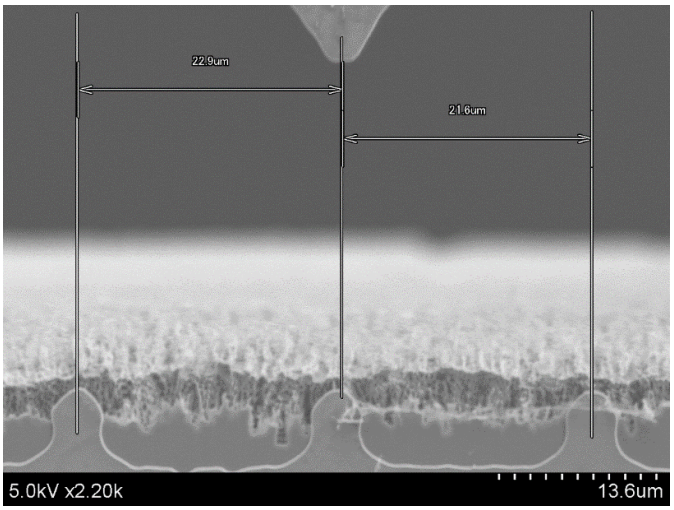

Fig. 2 Measurement of a test structure.

4. その他・特記事項(Others)

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5. 論文・学会発表(Publication/Presentation)

なし

6. 関連特許(Patent)

なし