

## ABSTRACT

Development of a Two-Layer Vibration Technique for  
Determination of Some Mechanical Properties of Thin  
Films

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with the project in some way:

1. Mr. Yohane and other technical staff of the Physics

A two-layer vibrating reed system was developed for  
investigating the Young's modulus and damping of thin  
films. Computerisation of the test procedure, data  
collection and data analysis enabled greater accuracy to  
be achieved (improvement by 10%), and also extended the  
versatility of the method by enabling smaller frequency  
shifts to be determined and hence more film/substrate  
combinations to be investigated.

Representative data on Young's modulus of various  
metallic (silver, aluminium and copper) films as well as  
different factors affecting the modulus such as thickness  
dependence, effect of different substrates, adhesion,  
annealing and damping are given to show applications of  
the system to thin films.