

OPTICAL TESTING OF ALUMINIUM FILMS DEPOSITED BY VACUUM-TECHNICAL METHODS

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Abstract

Optical testing is important when a film must be processed (i. e. delineated) by photolithography. It means the measurement of the reflectivity with normal incidence white light. The reflectivity meter developed in our Institute directly indicates the reflection coefficient of any reflective film on a substrate not larger than 50 mm in dia.

The following films were investigated:

- pure aluminium evaporated from electron beam source;
- pure aluminium sputtered from a Penning-type source;
- silicon-alloyed aluminium sputtered from the same source.

The films were deposited at various rates and substrate temperatures.

Deposition rate and temperature, as well as the kind of source had different effects. The silicon content of the films significantly affected their reflectivity.