

PROPERTIES OF THIN FILMS OBTAINED BY A PENNING-TYPE SPUTTERING SOURCE

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Abstract

Some physical and technical properties of pure and silicon-alloyed aluminium films obtained by using a Penning-type sputtering source ("S-gun" or "magnetron" etc.) were tested. The source has been developed in our Institute.

The following properties of the films were investigated:

- a) microstructure — transmission electron microscope and electron diffraction;
- b) chemical composition (Si-content) — atomabsorption;
- c) specific resistance, calculated from the sheet resistivity measured with a four-point probe and from the film thickness measured with a stylus-type surface profilometer;
- d) optical reflectivity, detected with a simple, self-built instrument.

Besides aluminium also copper films were produced and investigated.