Functional Films

Metallic Contact Films

Metallic contact films are produced at ZSW by sputtering or thermal evaporation. Thin films with thicknesses from a few nanometres to several micrometers can be produced with these vacuum deposition techniques. Two laboratory systems are available for coating substrates up to 10 cm x 10 cm by thermal evaporation and sputtering. Three in-line sputtering plants coat substrates up to 30 cm x 40 cm.

Specifications

Equipment:	In-line sputtering plants, Laboratory systems for sputtering and thermal (e-gun) evaporation
Materials:	Molybdenum, molybdenum alloys, copper, nickel, aluminium and other materials
Deposition parameter:	DC mode at sputtering plants
Substrate heating:	up to 300 °C
Substrate pre-treatment:	plasma etching
Film homogeneity:	+/- 5 %

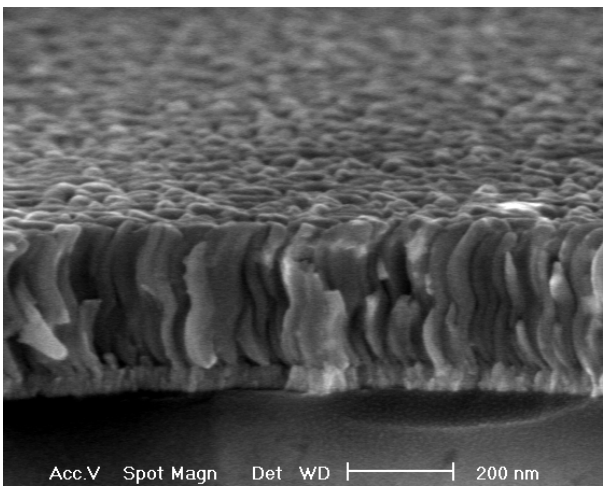
Options

Coating of glass substrates, metal and polymer foils
The film properties can be adjusted through the deposition parameters.

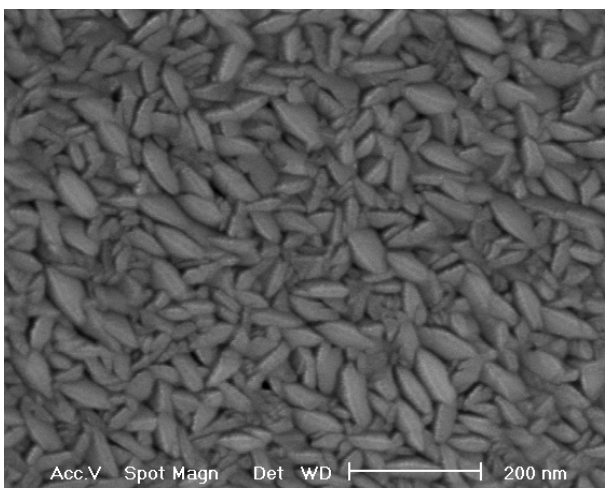
Requirements

Vacuum-capable substrates up to 30 cm x 40 cm.

SEM images of a metallic contact film



Cross-section:
Molybdenum back contact of a CIS solar cell



Top-view:
Molybdenum back contact of a CIS solar cell

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