

CASE REPORT

Method for Depositing a Film onto a Substrate

This project is implemented through the CENTRAL EUROPE Programme co-financed by the ERDF.



METHOD FOR DEPOSITING A FILM ONTO A SUBSTRATE

Summary

Tin sulphide (SnS) thin films can be prepared by a variety of methods (spray pyrolysis, chemical deposition, or thermal evaporation) with the purpose of manufacturing thin films suitable for use as a solar absorber in optoelectronic devices and photovoltaic applications. An object of the invention is to provide an alternative process to prepare a crystalline film of an inorganic material by direct deposition without the necessity of a subsequent treatment step.

Technology

The invention meets the objects by providing a method for depositing a film onto a substrate, with a sputter deposition process and an electrical device manufactured with such a process. With the direct current sputter deposition inorganic materials which with prior art techniques could not be directly deposited as crystalline structures now could be deposited and crystalline structures were achieved. This leads to the advantage that a subsequent step like annealing at elevated temperatures may be omitted. This brings the advantage that even substrates, which would melt, decompose or deform at elevated temperatures can be coated with such inorganic materials. If the temperature is kept below 100°C, even polymeric materials like polypropylene, polystyrene or polyethylene can be coated. The method is especially for SnS advantageous.

Development stage

Laboratory tested.

Market/Opportunity

Thin-film technology will significantly take over from the established crystalline technology, more than doubling in market share by 2013. The value chain research and advisory services company claims that by this time, thin-film will account for 31% of the market, up from 14% in 2008.

Thin-film will grow to account for 31% of the global solar panel market in terms of watts by 2013, up from 14% in 2008.

IP

European and international patent application, priority date June 4, 2002.

Licensing and joint further development.

Contact Details

Innovations- und Technologietransfer Salzburg GmbH

Thomas Reisinger

Südtiroler Platz 11, 5020 Salzburg

Tel.: 043-662-8042-3153

e-mail: thomas.reisinger@itg-salzburg.ac.at