Sputtering targets for solar cells

What are sputtering targets?

Sputtering targets are composed of various materials, depending on the specific application and desired thin-film properties. The choice of material can significantly affect the performance and characteristics of the final product. Below are the main types of sputtering targets used across industries:

Which sputtering targets are offered by SINGULUS TECHNOLOGIES?

SINGULUS TECHNOLOGIES offers targets for the different PVD sputtering systems like GENERIS PVD, HISTARIS PVD or VISTARIS PVD. We cooperate with the world's leading suppliers of advanced planar and rotary targets to provide you with high quality sputtering targets!

Why should a sputtering target be the correct size?

Ensuring that the sputtering target has the correct dimensions and shape is essential for proper integration into the sputtering system. Any deviation from the specified size can affect the uniformity of the sputtering process or even lead to equipment malfunction.

What is sputtering target in PVD?

In PVD,atoms are ejected from a solid target material due to the bombardment of high-energy ions,and these atoms then deposit onto a substrate,forming a thin film. The "target" in sputtering target refers to the material that is "hit" or bombarded during deposition.

What is a magnetic sputtering target?

Magnetic Materials: Magnetic sputtering targets,such as iron(Fe) and nickel-iron (NiFe),are commonly used in data storage applications,helping to create the magnetic layers used in hard drives and other memory devices.

Why is sputtering target maintenance important?

Proper maintenance,handling,and storage of sputtering targets are equally important to ensure longevity and consistent performance,minimizing the risk of contamination or damage. As a leading supplier of sputtering targets,Stanford Advanced Materials (SAM) offers a wide range of high-quality sputtering targets for various industries.

In the solar energy industry, sputtering targets are used extensively to produce thin-film solar cells, where they help form the various layers necessary for efficient energy conversion. Aluminum-molybdenum alloys, for instance, are applied ...

SOLAR is a world-class supplier of sputtering targets for storage media, providing sputtering targets for all media layers in this industry. SOLAR continuously improves product development capability to help customers pursue higher storage performance. MDS Sputtering Target ODS Sputtering Target

However, the sample with the color filter formed on the solar cell was darker than the simulated sample and exhibited a narrower color range in the color coordinates. Because the CIGS solar cell was not completely black, the color obtained was slightly different from that obtained in the simulation result. In addition, in the case of the solar ...

Our standard sputtering targets for thin-film are available monoblock or bonded with planar target dimensions and configurations up to 820 mm with hole drill locations and threading, beveling, grooves, and backing designed to work with both older sputtering devices as well as the latest process equipment, such as large-area coating for solar ...

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Stanford Advanced Materials offers various high purity sputtering targets. (949) 407-8904 Mon - Fri 08:00 - 17:00 23661 Birtcher Dr., Lake Forest, California, USA Home

This study explores the development and characterization of zinc oxide--silicon carbide (ZnO-SiC) composite materials fabricated using RF magnetron sputtering, with a focus on their potential application as electron transport layers (ETL) in perovskite solar cell. The ZnO-SiC composites were prepared by varying the SiC sputtering power from 10 to ...

1 INTRODUCTION. We have witnessed the exciting progress made in the increase in power conversion efficiency (PCE) of the perovskite solar cells (PSCs) from ~4% to 25.2%, [1, 2] comparable to the performance of crystalline silicon solar cells.The progress made in the PCE of PSCs benefits through the advances in film deposition method, controlled growth ...

In this work, we proposed a facile and versatile method of ball milling followed with spark plasma sintering (SPS) to prepare high-quality Sb2Se3sputtering target.

Advanced Sputter Targets for Solar Cell Production With a rich history in photovoltaic technologies, we bring unparalleled expertise to the production of sputter targets for solar cells. Our commitment to excellence, precision, and innovation ensures that your solar cell manufacturing processes benefit from the highest quality materials.

Solar Cells: In a solar cell manufacturing process, the sputtering targets deposit light-absorbing films and other functional films to increase the efficiency of the cell"s photoelectric conversion. Targets made from zinc aluminum oxide (AZO), for instance, are ...

Sputtering targets for solar cells

Solar energy is mainly used to convert solar energy into heat and electricity. Among them, the photoelectric conversion is realized by the solar cell which directly converts the light energy into electric energy through the photoelectric effect. At present, the solar cell has developed to the third generation. The first generation is monocrystalline silicon solar cells, the second ...

What is a Sputtering Target? A sputtering target is a raw material that helps produce thin films used in sputtering deposition/coating. It helps to coat different materials called the substrate. Substrates can be glass, displays, solar cells, etc. Sputter targets can be circular, like the one shown below. Similarly, they can come in powdered ...

Preparation of Cu 2 ZnSnS 4 Solar Cells by Sputtering Three Sulfide Targets at Different Sulfurization Annealing Temperatures Download PDF. Jie Guo 1, Shuaihui Sun 1, Ruiting Hao 1, Licun Sun 1, Lu Wang 1 & ... Bin Liu 1 Show authors. 303 Accesses. 2 Citations. Explore all metrics . Abstract. Cu 2 ZnSnS 4 (CZTS) thin films were prepared by sputtering ...

However, not all targets can be applied to solar cells. The following is a summary of three main sputtering targets used in the solar industry. Indium tin oxide (ITO) film is representative of a transparent conductive film.

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