

A Furnace for Producing Chalcogenide-Based Alloy

TECHNOLOGY DESCRIPTION

This technology is a method of producing chalcogenide-based alloy using starting material in powder form up to 35 nm powder size.

TECHNOLOGY FEATURES

This technology can be used not only for binary compound but also to produce new ternary and quaternary semiconductor compound. This technology can evacuate starting material up to 35nm powder size without being sucked by vacuum pump. This technology can maintain homogenous mixing of constituent elements while avoiding contamination. The synthesized compound can be transformed into ingot, pellet, nano-powder and source material for thin film and single crystal compound.

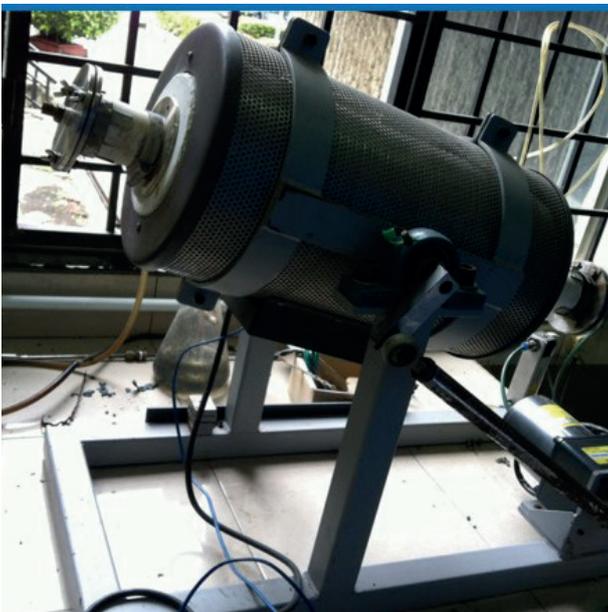
ADVANTAGES

- Does not require further process
- No participation of other atoms/molecules
- Maintain homogenous mixing

INDUSTRY OVERVIEW

Prospect: Thin film photovoltaic producers, Photovoltaic industries

Thin film module production is projected to grow at the rate of 24% from 2009 to reach 22,214 MW production by 2020. Thin Film PV technology has seen a major development leap from - only being associated with the little strip of PV cells that power calculators to sophisticated BIPV or solar charges for mobile devices. From a mere 14 MW production in 2001 the market has grown to reach 2141 MW in 2009, at a CAGR of 58%. Thin film solar PV, is set to increase its share to ~38% by 2020. Expectations are that in the long-term, thin film solar PV technology would surpass dominating conventional solar PV technology, thus enabling the long sought-after grid parity objective. The global photovoltaic market is expected to grow at a CAGR of 18.30% between 2014 and 2020 and the overall market is estimated to be worth \$89.52 billion in 2013 to \$345.59 billion by 2020. In terms of application, the utility application accounted for the largest market size in 2013 at 57%. The utility application is expected to hold the major market share and is also likely to grow at the highest CAGR during the forecast period. The main reason behind this would be the growing usage of photovoltaics in power plants, military applications, and other utility applications such as space & defence, and industrial projects. The major players in global photovoltaics market are Kaneka Corporation (Japan), Kyocera Corporation (Japan), Mitsubishi Electric Corporation (Japan), Panasonic Corporation (Japan), Sharp Corporation (Japan), JA solar Co. Ltd (China), Jinko Solar (China), ReneSola Co. Ltd (China), Suntech Power Holdings Co. Ltd (China), Trina Solar (China), Yingli Green (China), and Canadian Solar (Canada) among others.



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