

News

6th Oct. 2009**MVS receives a two year SBIR grant from the National Science Foundation for high efficiency (>18%) thin film Si solar cell development**

Golden, Colorado, USA: MVSsystems, Inc. has received a two year grant (SBIR- phase 2) from the National Science Foundation to develop high efficiency solar cells (>18%) which would incorporate “ Low-band gap Nano-crystalline SiGeC Thin Films Using the Plasma Enhanced Chemical Vapor Deposition (PECVD) Technique”. This award is funded under the **American Recovery and Reinvestment Act of 2009**.

Solar to Hydrogen production – funded by **US Department of Energy:** MVS is conducting a multi-year (multi-million dollar) project with its subcontractors and partners (**University of Hawaii and National Renewable Energy Lab.**) for solar to hydrogen conversion using photo-electrochemical cells. The multi pronged R and D involves the use of numerous advanced technologies, such as amorphous and nano crystalline Si tandem photo-voltaic junctions, a-SiC and WO₃ photoelectrodes and CIGS solar cells to reduce bias voltages.



Cluster tool system delivery: MVS has recently shipped cluster tools (for rigid and flexible substrates **using reel to reel cassette** approach) to **The University of Toledo, Ohio** and **The University of Stuttgart, Germany:** to **Brigham Young University, Utah** for a high temperature (>1000C) PECVD system for Si nano-wire research and development. It is also making cluster tool systems for **Solar Energy Research Institute Singapore (SERIS)** and an in - line system, for a Silicon Valley company, to coat crystalline wafers with thin doped and un-doped amorphous Si for solar cell development.



Thin film coating service: MVS provides thin film coating service for a host of applications such as solar cells, TFT's, imaging, memory devices etc. using materials such as, undoped and doped amorphous silicon, nano- crystalline Si, a-SiC, SiNx, SiOx, ITO, ZnO etc. This is a cost effective entry into thin film Silicon technology.

MVS manufactures advanced **Cluster Tool** systems which allow integration of different process modules such as **PECVD, sputtering, Hot Wire CVD, rapid anneal etc.** The process modules are stationed around a central evacuated isolation and transfer zone (ITZ): a computerized robotic arm, situated within the ITZ, inserts and extracts the substrates from the process chambers. This versatile configuration permits the deposition of multi-layers in any sequence, thus allowing the fabrication of advanced electronic device structures, such as solar cells, thin film transistors, sensor arrays, etc.

MVS's patented (US patent number:6,258,408 B1) **Reel to Reel Cluster Tool** involves the use of a cassette, which houses a flexible material and the design enables elimination of cross contamination in the fabrication of advanced devices (solar cells or thin film transistors) on flexible substrates. The system also allows the use of planar substrates.

MVSsystems, Inc., a US based company, was founded by the leading authorities in the thin film semiconductor area. They have pioneered the expanding and versatile Amorphous Silicon technology from 1970 onwards. The principals involved have a long history of PECVD equipment development for research and production. MVS has delivered in excess of 70 systems which are located in 21 countries.