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Vaksis Vacuum Systems Bulletin
Year: 5, No: 13, April 2015

PVD AND CVD COATING SYSTEMS FOR VARIOUS APPLICATIONS

www.vaksis.com

- multi element thin films
- new product
  MiDAS PVD-MT/4F1M
- activities

- PVD: Physical Vapor Deposition
- CVD: Chemical Vapor Deposition

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Multi Elements Thin Films

Solar photovoltaic cells (Photovoltaic: PV), organic light emitting diodes (OLEDs), organic FETs and other similar products are finding more applications every day. Furthermore, thin films which used for such purposes are directed towards from the single-element semiconductor materials (e.g., Si) to multi-element semiconductor materials.

CIGS (Cu, In, Ga and Se) semiconductor materials are the most important thin film samples for these kinds of applications. Researchers, who want to work with this type of PV materials, firstly produce consecutive layers and then apply heat treatment, finally get thin films which have PV characteristics. However, during optimization studies, it has begun to discussed widely that doing multi-element coating simultaneously could accelerate the process, because of the accelerating the process, the product can be produced at lower cost commercially.

VAKSİS has begun to offer special-design products for researchers who want to work on this issue and also delivered the new product to the customer last year. Our system includes four pieces of effusion cells and 1 magnetron sputtering source. With this system, after the Mo thin layer deposition on the substrate, Cu, In, Ga and Se metals can be deposited simultaneously and in any desired ratios.

Dr. Baybars ORAL
COMPANY MANAGER

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As is known, to grow at the same time is not only to check the growth rates on the substrate, but to know and control the ratio of each element in the substrate and the layer that it grows on. Hence substrate temperature optimization and uniformity is very important. Another important factor is to control the impingement rate of the residual gases (usually water vapor) to the growing film in connection with reaction rate with the elements which constituting the film. VAKSİS system has given attention to this important detail, and can reach the low pressure ($<5x10^{-8}$ torr) before the process to decrease the adverse effects of water vapor to the lowest level.

To increase our customers R&D speed, VAKSiS engineers add a load lock chamber and a transfer mechanism to the system, and thus the substrate with 100 mm diameter have been able to carry from the atmospheric pressure to the 10^{-8} torr the pressure level in less than 15 minutes.

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new product

MiDAS PVD-MT/4F1M

System includes:

a) one pc of magnetron sputtering source and one RF one DC power source for the magnetron sputtering technique

b) four pcs of effusion cell type evaporation sources for the thermal evaporation technique and four pcs of AC power sources

Technical Specifications

Base Pressure $<10^{-8}$ Torr
Leak Rate $< 10^{-8}$ Torr.l/s
Substrate Size: 10 cmx10cm
Loading: from load lock or front door
LN Trap: 1 pc
Turbomolecular pump: Min.1200 l/s
Scroll Pump: Min. 15m³/h
Magnetron Sputtering Source: 1 pc
Effusion Cell Type Evaporation Source: 4 pcs
Mass Flow Controller: 3 pcs
Quartz X-tal Thickness Monitor: 5 pcs
Control: Full automation on PC

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activities

We attended...

2nd International Winterschool of Bioelectronics (BioEL 2015)
Tirol, Austria (February 28, March 7, 2015)

http://www.jku.at/conferences/content/e216103

2nd International Winterschool of Bioelectronics (BioEL 2015) was held in Tirol, Austria from February 28 to March 7, 2015.

Vaksis was the participator and the main sponsor of the exhibition.

We are planning to attend...

2015 SVC TechCon Exhibit
Santa Clara, CA USA (April 28-29, 2015)

http://www.svc.org/ConferencesExhibits/2015/2015-TechCon.cfm

2015 SVC TechCon Exhibit will be held in Santa Clara CA USA between April 28-29, 2015.

Vaksis will be the participant of the conference. You can meet with us at booth #1412.

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activities

We are planning to attend...

SOLAR TR-3
3rd Turkish Solar Electricity Conference and Exhibition
Ankara, Turkey (April 27-28, 2015)

www.solartr.org

SOLAR TR-3 will be held in Ankara, Turkey between April 27-28, 2015.

Vaksis will be the exhibitor of the event. You can meet with the Vaksis' experts at booth #3.

E-MRS 2015 Spring Meeting
(Europian Material Research Society)
Lille, France (May, 12-14, 2015)

http://www.emrs-strasbourg.com/index.php?option=com_content&task=view&id=96&Itemid=1626

E-MRS 2015 Spring meeting will be held in Lille, France between May 12-14, 2015.

VAKSiS will be the participant of the exhibition. Meet us at booth #61.

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