

# e-bulletin

Vaksis Vacuum Systems Bulletin  
Year: 1, No: 3, October 2011

## PVD AND CVD COATING SYSTEMS FOR VARIOUS APPLICATIONS

[www.vaksis.com](http://www.vaksis.com)

2 golden  
suggestions

new product  
*GünEr*

activities

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

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## For Vacuum Systems Users

### 2 golden suggestions!

1-You should request a measurement of total leak value with leak detection device before receiving the vacuum system. If there is no leak from the outside, the only obstacle of reaching the vacuum level that you want is the materials. But; if there is a leak from outside, you could not reach the low vacuum levels although you choose materials compatible with vacuum. If you request high vacuum levels (UHV), you should absolutely scan your system with residual gas analyzer (RGA). RGA will determine whether your gas environment is suitable for intended use (surface analysis, MBE, etc.) or not.

2-If you are not an experienced user (or if inexperienced people will use the vacuum coating system that you will buy), you should pay attention that your system can be pumped or its vacuum can be broken automatically on computer. Request that automation and control software (AC) of your system have protection for user's errors. Otherwise, you shorten life of your system's important part. AC software (coming with your system) also can make coatings on coating recipes that you will create. Software interface can keep prepared recipes on hard disk (logbook) and can be used by you for creating new recipe. Thus; as a project manager, changing of the research personnel do not affect you. Thanks to the recipes, there will be no problem about repeatability of old experiment by new research personnel.

- UHV: Ultra High Vacuum
- MBE: Molecular Beam Epitaxy
- RGA: Residual Gas Analyzer

*We will continue giving golden suggestions in the next bulletins...*



**Dr. Baybars ORAL**  
**COMPANY MANAGER**

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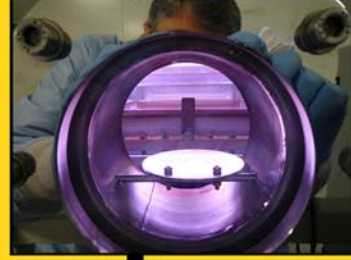
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## new product *GünEr*

GünEr designed and manufactured to produce photovoltaic solar cells. This system is used in research and development studies.

GünEr is composed of many thin film deposition vacuum chambers (3 pcs of PE-CVD CCP, 1 pcs of PE-CVD ICP, 1 pcs of magnetron sputtering vacuum chamber) and a loadlock-transfer chamber. In every vacuum chamber, different materials can be coated by different techniques on a glass surface of size 250 x 250 x 2 mm. By this system the glass surface which will produce photovoltaic cells, can be coated successively without any vacuum interruption by entering coating processes one after another and multi-layer thin film coatings can be achieved.

GünEr has a robotic arm, with this arm the sample passes the vacuum chambers in sequence. All those processes and applications are controlled by Vaksis Automation on PCs.



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## new product

### GünEr TECHNICAL SPECIFICATIONS

For deposition of  $\alpha$ -Si:H (i, p and n-types)

PE-CVD CCP Vacuum chambers

Base pressure:  $< 1 \times 10^{-6}$  Torr

Gas flow control: 9 MFC units

Substrate size: 250 mm x 250 mm x 2 mm

Control: Full automation by PC



For deposition of  $\mu$ c-Si:H (i, p and n-types)

PE-CVD ICP Vacuum chambers

Base pressure:  $< 1 \times 10^{-6}$  Torr

Gas flow control: 9 MFC units

Substrate size: 250 mm x 250 mm x 2 mm

Control: Full automation by PC



For TCO thin film deposition

Magnetron sputtering chamber

Base pressure:  $< 1 \times 10^{-6}$  Torr

Number of sources: 2 Magnetron

Gas flow control: 2 MFC units

Substrate size: 250 mm x 250 mm x 2 mm

Control: Full automation by PC



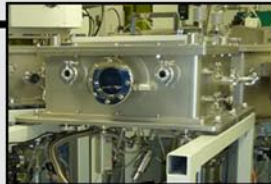
Loadlock and transfer chamber

Base pressure:  $< 5 \times 10^{-6}$  Torr

Loading: From top

Substrate transfer is provided by a robotic arm which rotates 360°

Control: Full automation by PC



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## activities

### Surface Treatment Symposium (15-18<sup>th</sup> June 2011)

International Surface Treatment Symposium was held at İstanbul Technical University Taşkışla Campus in partnership with UCTEA Chamber of Metallurgical Engineers and UCTEA Chamber of Chemical Engineers. Our company attended to this symposium with CSM Company.



### NanoTR VII (27<sup>th</sup> June 2011- 1<sup>st</sup> July 2011)

7<sup>th</sup> Nanoscience and Nanotechnology Conference (NanoTR VII-2011) was held at Sabancı University Campus between 27<sup>th</sup> June 2011 and 1<sup>st</sup> July 2011. Vaksis systems were introduced to many participants in the organization. Besides, it was informed about domestic production



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