



# e-bulletin

Vaksis Vacuum Systems Bulletin  
Year: 4, No: 11, November 2014



## ***SPECIAL ISSUE FOR VAKSIS' 10th BIRTHDAY***

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



- Vaksis' 10th Anniversary of Foundation
- Workshop program
- Workshop Presentations



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## Vaksis' 10th Anniversary of Foundation

We have happily celebrated our company's 10th Anniversary of Foundation with your kind participation. I sincerely thank to all participants for their precious time and contributions. I would like to say that we would be very happy to have our guests who could not find a chance to join us for this time, for the next time.

During the workshop, we have proudly listened the 5 distinguished researchers' studies and their valuable contributions to the scientific and technological developments by using the Vaksis' systems. Although these studies are a small part of the whole that have been done by using Vaksis' systems, they have motivated and encouraged us to develop more comprehensive systems. I would like to take this opportunity to thank all of our partners (customers, suppliers, employees and the management of Cyberpark).



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

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programme

## VAKSİS 10. YIL ETKİNLİĞİ

ANKARA, 20 Ekim 2014

Tarih:	20 Ekim 2014 Pazartesi
Saat:	13:15 – 18:15
Yer:	Cyberplaza Konferans Salonu Bilkent Üniversitesi Merkez Kampüs Cyberplaza B Blok 1. Kat 06800 Bilkent Çankaya Ankara

### PROGRAM

13:15 – 13:30	Kayıt
13:30 – 14:00	<b>Doç. Dr. Baybars Oral – Vaksis</b> Açılış Konuşması
14:00 – 14:30	<b>Prof. Dr. Raşit Turan – ODTÜ GÜNAM</b> Nanoteknoloji ve Enerji Yalculuğumuzda Vakum Sistemlerinin Rolü
14:30 – 15:00	<b>Dr. Eric Daniel Glowacki – Johannes Kepler University LIOS</b> Fabrication of Organic Semiconductor Devices by PVD Using a Vaksis Multisource Organic Evaporator
15:00 – 15:30	Kahve Arası
15:30 – 16:00	<b>Doç. Dr. Nurdan D. Sankır – TOBB Ekonomi ve Teknoloji Üniversitesi</b> Yenilenebilir Enerji Araştırmalarında Fiziksel Buhar Depolama Yönteminin Kullanımı: Vaksis ile 5 Yıl
16:00 – 16:30	<b>Hüseyin Ateş Parlar - ŞİŞECAM</b> Micks, Mimari Cam Kaplama Sistemi ve Çok Katmanlı Isı ve Güneş Kontrol Camlarının Geliştirilmesi
16:30 – 17:00	<b>Doç. Dr. Mustafa Karaman – Selçuk Üniversitesi</b> Kimyasal Buhar Biriktirme (CVD) Yöntemi ile Fonksiyonel Polimerik İnce Filmlerin Üretimi
17:00 – 17:15	<b>Doç. Dr. Müzeyyen Oral – Vaksis</b> Kapanış Konuşması
17:15 – 18:15	Kapanış Resepsiyonu



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## workshop presentations



**PRESENTATION TITLE : VAKSIS – 10th YEAR / 2004 - TODAY**

**ASSOC. PROF. DR. BAYBARS ORAL**

1996-2004 TEKNOPLAZMA CORP.

2004-2014 VAKSIS R&D and ENGINEERING

Vaksis has provide very important contributions to vacuum and thin film technologies in the first 10 year. The most important contribution is producing the sub-items of the systems and become a "system designer and creator" rather than a "system integrator". As some of the sub-items that we design and produce are vacuum valves, vacuum fittings, substrate holder/heater, electronic control cards and automation software, sputtering magnetrons, thermal evaporation sources and their power supplies, plasma (micro-wave, inductive and capacitive rf plasma, etc.) electrodes, robotized substrate carriage units working units under vacuum, roll-to-roll units working under vacuum, rapid thermal annealing furnaces etc.

In the end of those work, Vaksis has contributed to the technologies from nano tubes to graphene structures, from OPVs, OLED thin films to other inorganic PV thin films, from TCOs to low-e coatings, from super hydrophobic surfaces to superconducting thin films, from super hard thin films to super lubricous thin films, bio compatible surfaces etc. With this approach, Vaksis has sold its systems that has been designed and produced by itself, not only in Turkey, but also in European countries such as Lithuania, Finland, Spain and Austria as a Turkish brand.

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## workshop presentations



**PRESENTATION TITLE: THE VALUES WHICH HAS BEEN CREATED FROM VACUUM**  
**PROF. DR. MEHMET PARLAK, PROF. DR. RAŞIT TURAN, ASSIST. DR. SELÇUK YERCI**  
**CENTER FOR SOLAR ENERGY RESEARCH AND APPLICATIONS (GUNAM), METU**

Middle East Technical University (METU), Center for Solar Energy Research and Applications (GUNAM) is an excellence center which has been found with the contributions of the academicians and researchers from METU. The main aim of founding this center is developing the technology of converting the solar energy into the electrical energy in our country and bringing a competitive level around the World and doing research according to this aim. Besides studying on production of solar cells, GUNAM has been doing research on the almost all existing technologies with its expert staff and experience. Prof. Dr. Mehmet Parlak's research topics under the title of experimental solid state physics are preparation of the semi-conductor thin films by using thermal evaporation, e-beam, sputtering techniques and electrical, optical and structural characterization of these thin films. Also, his other research areas are thin film diode and heterojunction by using various noble metals and alloys.

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**PRESENTATION TITLE: PRODUCTION OF ORGANIC SEMICONDUCTORS WITH PVD  
TECHNIQUE BY USING VAKSIS MULTIPLE SOURCES ORGANIC EVAPORATION SYSTEM**  
**ERIC DANIEL GLOWACKI, PROF. DR. SERDAR SARIÇİFTÇİ**  
JOHANNES KEPLER UNIVERSITY LINZ,  
AUSTRIA LINZ INSTITUTE FOR ORGANIC SOLAR CELLS

Dr. Eric Daniel Glowacki has been working on production of high quality organic thin films, mono-crystal organic molecular materials under vacuum and bioelectronics applications of organic semiconductors at Linz Institute For Organic Solar Cells. Approximately 30 researchers from 15 different countries has been working at the Institute. Silicon which is an inorganic semiconductor and is the bulding block of today's micro-electronics technology, still has been used as the raw material of more than 95% of the chips. However, due to the high infrastructure and communication costs, silicon can not reach the low-price markets. At this point, organic semiconductors demonstrate the properties such as low infrastructure cost, being applicable on wide and flexiable surfaces, easy and fast production methods, materials properties that can be synthesized special to the application, that can help them to penetrate into the market.

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## workshop presentations



**PRESENTATION TITLE: PHYSICAL VAPOR DEPOSITION TECHNIQUES USAGE ON RENEWABLE ENERGY RESEARCHES: 5 YEAR WITH VAKSIS**  
**ASSOC. PROF. DR. NURDAN DEMIRCI SANKIR**  
DEPARTMENT OF MATERIALS SCIENCE AND NANOTECHNOLOGY ENGINEERING  
TOBB ECONOMICS AND TECHNOLOGY UNIVERSITY (TOBB ETU)

Alternative materials for thin film solar cells and new production methods have been developing and bringing light to the advanced technologies with proton permeable membrane fuel cells at the TOBB-ETU University's laboratories. Assoc. Prof. Dr. Nurdan Demirci Sankir has continued her research actively at TOBB-ETU Energy Research and Solar Cells Laboratory and her main research areas are nanostructured materials and photovoltaic device applications, solution based new production methods, bendable devices and fuel cells.

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**PRESENTATION TITLE: MICKS ARCHITECTURAL GLASS COATING SYSTEM AND DEVELOPMENT OF MULTI-LAYERED HEAT AND LIGHT CONTROL GLASSES**  
HEAD OF RESEARCH AND ENGINEERING, VACUUM COATING TECHNOLOGIES  
MANAGEMENT, TURKEY ŞİŞECAM CORP.

Mr. Hüseyin Ateş Parlar has been working on spray pyrolysis, CVD and PVD methods. He is managing of Vacuum Coating Technologies at Şişecam Science and Technology Center.

Şişecam has been found with Mustafa Kemal Atatürk's directive in 1935. The company actively carrying on business in 13 countries on the areas of flat glass, glass packaging, glassware and chemicals (soda and chromium). The company exports its products to 150 countries. The coated glasses have gained importance so far with the sense of aesthetics bringing by the modern architecture, comfort expectations in the interiors of the houses, energy conversation need on the heating and cooling costs, increasing of CO<sub>2</sub> which causes the global warming and the restrictions on this issue. The main function of the coated glass products is the control of heat and light. Namely, on the hot areas, this light control glasses help the heating of the interiors by reflecting the sun light and therefore it lowers the air conditioner use. On the cold areas, low-e coated glasses help to decrease the heating costs.

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**PRESENTATION TITLE: FUNCTIONAL POLYMERIC THIN FILM SYNTHESIS BY USING CHEMICAL VAPOR DEPOSITION**

**ASSOC. PROF. DR. MUSTAFA KARAMAN**

**SELCUK UNIVERSITY, ENGINEERING FACULTY, CHEMICAL ENGINEERING DEPARTMENT, PROCESS AND REACTOR DESIGN**

Main research interest of Assoc. Prof. Dr. Mustafa Karaman is coating functional polymer compounds to carbonnanotube surfaces with fluidized bed CVD method and preparing super hydrophobic thin films. His latest study is producing solar cells on electrods which are 3D designed macropourus and modified with TiO<sub>2</sub> photonic crystals doped with gold nano-particles, cross bonded with ologo aniline dye/ iridium dioxide which completely separates the water.

Surface engineering interests in modifying the surfaces for preventing from future damages. Therefore, the surfaces become more durable to the outside effects. Physical, chemical and biological properties of the surface of the materials have been changed with the surface modification. This modification mostly has been made to solid materials surface. The properties such as hydrophobic, surface energy, biocompatibility, reactivity etc. have been changed with the surface modification. Nanocoating industry has been expected to reach 8 billion USD business volume by 2024. Nanocoating can improve the cost/benefit percentage of the final products and can offer low cost solutions to the developed products.

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**PRESENTATION TITLE: VAKSIS WORKSHOP OF 10TH YEAR / THIN FILM DEPOSITION SYSTEMS UNDER VACUUM**  
**ASSOC. PROF. DR. MUZEYYEN ORAL**

1996-2004 TEKNOPLAZMA CORP. VENTURE CAPITAL FIRM  
2004-2014 VAKSIS R&D AND ENGINEERING

Our aim is to continue working for creating difference in our country and the world like forests without the trees that we have plant is fading away.

We sincerely thank to our CUSTOMERS, EMPLOYEES, SUPPLIERS and the everybody that makes contribution to us with their valuable opinions so far.

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