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Vaksis Vacuum Systems Bulletin
Year: 5, No: 15, December 2015

PVD AND CVD COATING SYSTEMS FOR VARIOUS APPLICATIONS

www.vaksis.com



vacuum furnace

high temperature
vacuum furnace

MiDAS-VF 1500

activities

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

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Vacuum Furnace

Heating under vacuum is an essential treatment for materials susceptible to reactive gases. Some important physical conditions determine the type of the vacuum system. It is best to categorize these systems based on the vacuum level and the temperature. As a general practice, if the work piece temperature is restricted to around 200°C the heating systems operating under vacuum are usually named as vacuum “Drying Ovens”, “Sterilizers” or “Incubators”. Drying ovens are mostly used for heat treatment of plastic materials. It may also be used to degas high surface area materials particularly when the oven pressure is in 10^{-6} Torr range. The other applications find their places in the fields of food and biological research and treatment labs. If the temperature level is over 200°C, and the pressure level lower than $1E-3$ Torr, it is usually named as “Vacuum Furnace”.

The vacuum furnace temperatures may go as high as 3000°C which requires limited volume and a special heating methods (e-beam or LASER). They are usually used for heat treatment (max T~1600°C) and vacuum melting (max T>1600°C) purposes.



Dr. Baybars ORAL
COMPANY MANAGER

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Vaksis recently designed and built a special vacuum furnace for the heat treatment of Inconel materials. The max temperature in this furnace (for a max work piece size of diameter 100 mm and height 100 mm) was 1300°C while maintaining 1E-6 Torr pressure at this temperature. The furnace was also equipped with very rapid cooling (gas quenching) system to systematically study the mechanical and corrosion (oxidation) behavior of the Inconel.

The same system can be configured to reach temperature up to 1600°C and be fed with various reactive gases (e.g., CH₄, NH₃, H₂, or etc.) to make carburizing, nitriding, or carbo-nitriding for surface treatment purposes. Moreover, this system can be configured to make single layer graphene on single crystal SiC surfaces.

As you see from this particular product, Vaksis continues to create new generation of vacuum systems for advanced materials applications. We thank you for your support and encouragement.



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new product

High Temperature Vacuum Furnace MiDAS VF 1500



Technical Specifications

Ultimate Vacuum Pressure: $\approx 10^{-6}$ Torr
Max. Sample Size: 100 mm diameter, 100 mm height
Max. Temperature: 1500 °C
Continuous Working Temperature: 1450 °C
Temperature Control System: PID method
Cooling: Rapid cooling with lifting mechanism
Loading: From front door
Control: Fully automatic (Semi-Automatic is Optional)
Number of MFC's for different Gas Types: Max. 4

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activities

We attended...

1st International Conference on Perovskite Solar Cells and Optoelectronics (PSCO-2015)
Lausanne, Switzerland (September 27-29, 2015)

www.pSCO-conference.org/

1st International Conference on Perovskite Solar Cells and Optoelectronics (PSCO-2015) was held in Lausanne, Switzerland from September 27th to 29th. 2015.

Vaksis was a participator of the exhibition and inform about Vaksis Perovskite system.



2nd Graphene and Related Technologies:
from Laboratory to Industry
Istanbul, Turkey (November 15-16, 2015)

<http://www.grapheneturkey.com/>

Vaksis was a sponsor of the "2nd Graphene and Related Technologies: from Laboratory to Industry - 2015" event which was held in Istanbul between October 15- 16, 2015.



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activities

We attended...

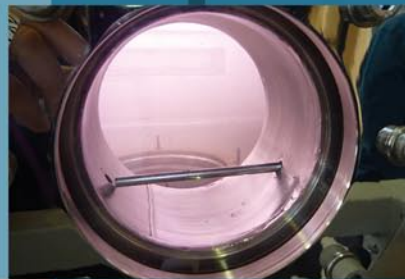
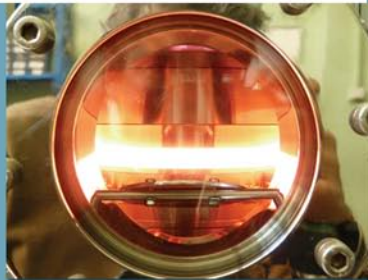
MRS 2015 Fall Meeting and Exhibition
(Material Research Society)

Boston, Massachusetts, USA
(November 29 - December 4, 2015)

<http://www.mrs.org/fall2015/>

"MRS 2015 Fall Meeting" was held in Boston, Massachusetts, USA between 29 November - 4 December, 2015.

Vaksis was at booth 820.



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