

# Thin Film Growth Newsletter

New Materials MBE

October 2017

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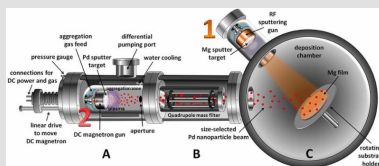
Focus on Nanoparticle Research

NEW: M400 MBE

SPECIAL OFFER: QUAD-EV

## FOCUS on Research

The NanoGen range of nanoparticle sources have been used by scientists globally for almost 14 years to develop a wide range of new device technologies. At the Nanoparticles By Design Unit in Okinawa Institute of Technology (OIST), Japan, Mukhles Sowwan's research group, have recently published their latest research on Hydrogen Flux through Size Selected Pd Nanoparticles into Underlying Mg Nanofilms.



The unique nanoportal configuration of Pd-nanoparticle decorated Mg films, has allowed direct measurement of hydride domain sizes, thus forming a model system for the experimental investigation of hydrogenation in any material.

An Early View of the Article can be viewed [HERE](#)

**SIGMA PULSE for Dynamic XPS is selected as a 2017 R&D 100 Finalist!**

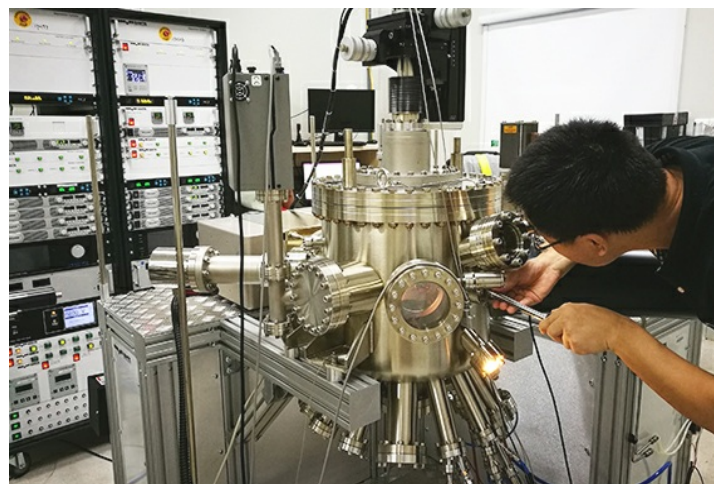
## Welcome

We continue to develop our premium thin film research tools. We have recently delivered our new generation of MBE tools based around the new M400 platform, to research groups in China and USA. If you are interested to find out more about our tools for New Materials research, please try to meet with our team at a future exhibition.

## M400: New Materials MBE

Our new generation of M Series MBE tools based around the integrated bench concept of the M400 has allowed university researchers the opportunity to develop new MBE materials. The first tools are being used to research Topological Insulators such as Bi<sub>2</sub>Se<sub>3</sub> and Be<sub>2</sub>Te<sub>3</sub>, Heusler Alloys for fast-switching memory applications and Chalcogenide's for semiconductors.

The M400 can be attached to a wide range of secondary analysis systems from SIGMA such as our LT-SPMs and XPS instruments. In addition its transfer height is designed to allow easy integration with an existing ARPES system and is based on a compact footprint for modern space-critical laboratories, yet offers a full height cryopanel and larger 400mm chamber compared with older tools. Whether your process requires high or low temperature K-Cells, electron beam



evaporation or our range of MATS atom sources for Nitride or Oxide growth, the M400 utilises our proven advanced source technology and trusted suppliers such as MBE Komponenten. Every M400 and M600 MBE system is delivered with our class-leading TITANIUM-10 control suite, offering a unique recipe control module which is both intuitive and designed for advanced multi-materials research rather than processing a singular repetitive routine.



## **SPECIAL OFFER: QUAD-EV Mini E-beam Evaporator**

The QUAD-EV range of UHV mini e-beam evaporators are designed to meet a unique range of systems from thin film platforms to Surface Science instruments such as STM/AFMs. All evaporators can be equipped with either rods or crucibles interchangeably allowing controlled evaporation of a wide variety of materials.



### See us at



NAMBE 2017 - North American MBE meeting, Galveston, USA



ISSS-8 - International Symposium on Surface Science, Tsukuba, Japan



AVS-64 - American Vacuum Society symposium, Tampa, USA

**Example M-EV package price: £12,210**

**\$16,980**

**€15.120**

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