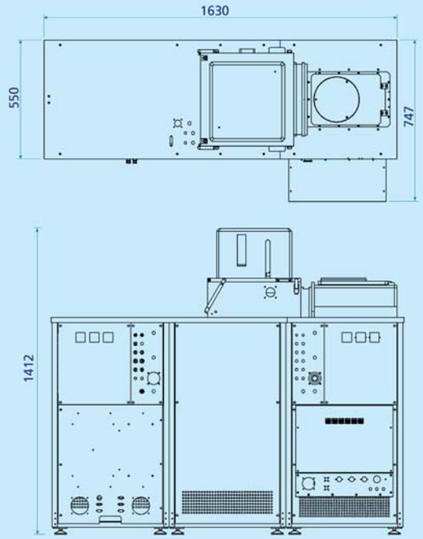
Technical specifications

Overall dimensions of the **Nanofab** product range



All dimensions in mm

Worldwide Service and Support

Oxford Instruments is committed to supporting our customers' success. We recognise that this requires world class products complemented by world class support. Our global service force is backed by regional offices, offering rapid support wherever you are in the world.

We can provide:

- Tailored service agreements to meet your needs
- Comprehensive range of structured training courses
- Immediate access to genuine spare parts and accessories
- System upgrades and refurbishments

click onto **www.oxford-instruments.com** for more information

Ref: OIPT/Nanofab/2009/01

- **Plasma Etch & Deposition**
- **Atomic Layer Deposition**
- **Ion Beam Etch & Deposition**
- **Nanoscale Growth Systems**
- **HVPE Tools & Substrates**

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Nanofab Systems

Nanofab700™ and **Nanofab**800Agile™
Part of the **System**100 range

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OXFORD INSTRUMENTS
The Business of Science®

Nanofab

Growth of nanotubes and nanowires
Plasma Enhanced Chemical Vapour Deposition (PECVD)

Flexible solutions

Nanofab700 and **Nanofab**800Agile

Oxford Instruments offers highly flexible tools and proven processes to deliver growth of nanotubes and nanowires, and produce a broad range of PECVD films.

The systems are suitable for the growth of nanostructures, and they can provide catalyst treatment and controllable growth of nanotubes and nanowires. Additionally they deliver standard and high temperature PECVD.

The systems are controlled using **PC**2000™ software renowned for its clarity and ease of use.

Key System features

- Aligned growth and control of film stress
- Excellent temperature uniformity, and flexible agility control
- Ability to process in high pressure and high flow regimes
- Optional liquid source delivery system
- Vacuum load lock to provide separate sample preparation and process operation
- Variable sample sizes up to maximum 200mm wafers

Process benefits

- Controllable growth of nanotubes and nanowires
- Plasma pre-treatment of the catalyst for enhanced growth
- Annealing capabilities up to 800°C
- Broad range of PECVD film deposition with excellent uniformity, high deposition rates and control of film properties such as refractive index, stress, electrical characteristics and wet chemical etch rates

Nanostructured materials:

C, Si, Ge, ZnO, Ga_2O_3, GaN, GaAs, GaP, InP, InN

PECVD Films:

SiO_2, SiN_x, a-Si, SiON, poly-Si, SiC

Nanofab700

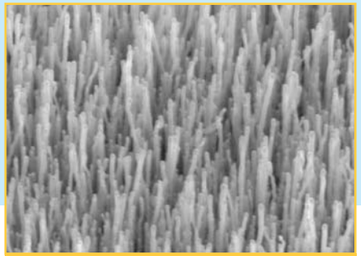
- Controllable growth of nanotubes and nanowires with flexible temperature up to 700°C
- Compatible with a wide range of process gases including oxygen
- Plasma pre-treatment of the catalyst and chamber cleaning capability
- PECVD – Standard and high temperature deposition

Nanofab800Agile

Development opportunities exist to incorporate additional magnetic or electrical fields, to influence the growth of the nanostructures.

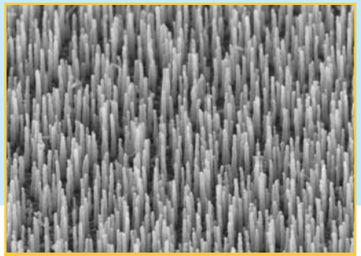
- Controllable growth of nanotubes and nanowires with flexible temperature up to 800°C
- Agile heating and cooling for rapid turnaround
- PECVD – Standard and high temperature deposition
- Electrode Features
  - Fast cycle times: ramp rates up to 130°C/min
  - Excellent temperature uniformity
  - Low thermal mass

Nanofab800Agile high temperature electrode

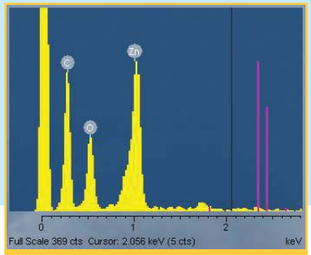


Carbon nanotubes

Si nanowires using Au nanoparticles as the catalyst



ZnO nanowires *Courtesy of Nanoscience Centre, University of Cambridge*



ZnO EDX Spectrum *Courtesy of Nanoscience Centre, University of Cambridge*

Plasma Etch & Deposition **Atomic Layer Deposition** **Ion Beam Etch & Deposition** **Nanoscale Growth Systems** **HVPE**