

# FEI-Nova NanoSEM600

## Key Benefits

- World's only true high-resolution, low-vacuum FEG-SEM.
- The ultimate characterization solution for charging and/or contaminating nano-Materials or -devices.
- 1.8 nm imaging resolution at low kV in high vacuum and low vacuum.
- On-board pattern generation software with 4kx4k digital pattern generator.
- Optional gas chemistry solutions for direct electron beam writing of nanostructures.
- Piezo stage technology delivers -up to very high imaging magnifications- very high repeatability accuracy, very low stage drift and low jogging speed for sample navigation by stage move.

Following the successful introduction of the Nova NanoLab DualBeam SEM/FIB nanotechnology workstation FEI introduces the next Nova *Tools for Nanotech* family member: the Nova NanoSEM. This instrument is a dedicated FEG-SEM solution for ultra-high resolution characterization of charging and/or contaminating samples. NanoSEM brings unprecedented capabilities to researchers and developers in the nanotechnology laboratory working with non-conductive and contaminating nano-materials and/or -devices. It combines, for the first time in the history of Field Emission Scanning Electron Microscopy, magnetic immersion lens technology with Environmental SEM technology. Both these technologies have been FEI core technology competencies since the middle to late nineties. The combined effect yields unique ultra-high resolution, low-vacuum characterization possibilities in an environment that suppresses charge build-up on non-conductive materials or non-conductive components of nano-devices; in addition it suppresses electron-beam induced contamination resulting from previous sample processing steps.

System options include specific tools for Nanotech such as on-board software for pattern generation, a high-speed electrostatic beam blanker, as well as gas injection systems for direct electron beam writing of nanostructures. Impressive results have been obtained on common but challenging nanotechnology materials such as:

- Diamond films
- Carbon nanotubes
- GMR heads
- Nanoparticles
- Semiconductor Cross Sections /with low k content
- Plastic Electronics
- Porous materials (e.g. silicon)
- Glass substrates
- Organic materials