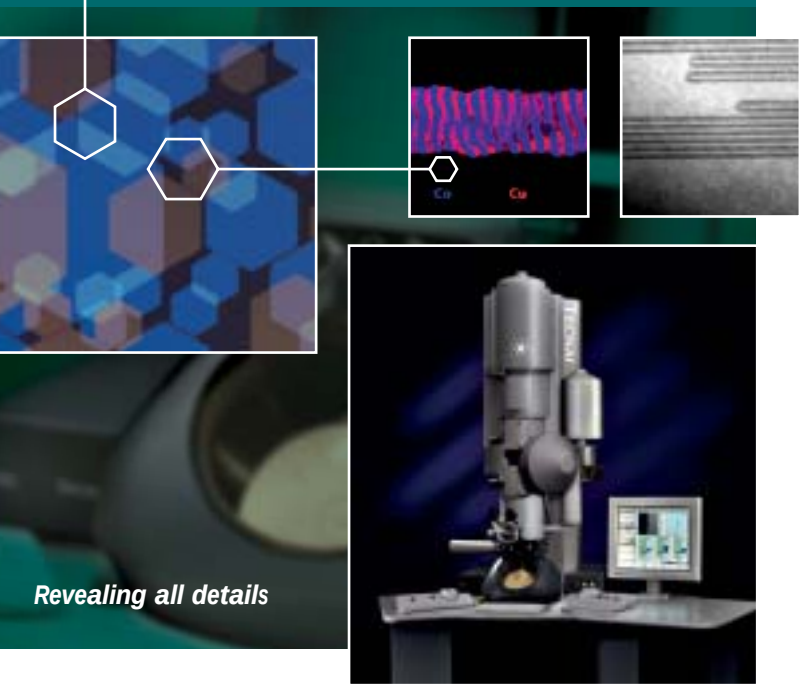
PRODUCT DATA

FEI COMPANY™



Revealing all details

Tecnai G² F20 S-TWIN

The versatile multi-purpose 200 kV STEM/TEM/Nano-Analysis system

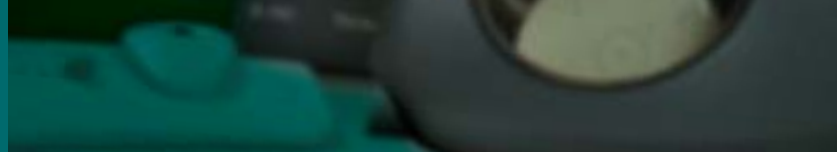
Modern society is changing at an increasingly rapid pace. As a professional, researcher or development engineer, this forces you to generate information even faster. The challenges you face today in your work form the basis of our society's future. To address these challenges, you need top quality results; results that can only be generated by top quality tools. FEI is The Structural Process Management Company™, with a mission to help you better understand the advanced materials that surround us and the processes that create them.

- ***High performance in TEM imaging, STEM imaging and Nano-Analysis***
- ***All techniques on one system: TEM, HR-TEM, STEM, HR-STEM, Diffraction, EFTEM, EDS and EELS Spectrum Imaging, Holography and Lorentz microscopy***
- ***Easy and secure operation in a multi-user environment***
- ***High Sample throughput***
- ***Ready for the future***

At the core of FEI's proven and comprehensive suite of solutions is our powerful combination of (S)TEM, FIB and SEM tools designed specifically to meet the stringent demands of today's Materials Research and Physical Characterisation laboratories. FEI now launches the Tecnai G² F20 S-TWIN, enabling you to solve a wide variety of Materials Science challenges in an easy and fast way.

In order to fully understand the properties of materials and to subsequently improve them, it is often needed to use a variety of TEM, STEM and Nano-Analytical techniques. Grain boundary structure, chemistry and electronic state all determine the physical properties of ceramics and metal alloys. The stability of small magnetic domains on hard discs is influenced by their shape and chemical composition. Furthermore, in a multi-user facility, research topics vary and therefore imaging and analysis techniques will differ between projects.

The new Tecnai G² F20 S-TWIN is a true multi-purpose, multi-user 200 kV instrument. It excels in versatility and flexibility by combining high performance in all TEM, EFTEM, Lorentz, STEM and EDX / EELS spectrum imaging modes. The task oriented user interface and automated data acquisition free users from being microscope experts and let them concentrate on being scientists, researchers and engineers. The "All In One" concept of the Tecnai G² allows fast switching of operating modes and data acquisition techniques with automatic recall of all operating settings. The Tecnai G² F20 S-TWIN is built with your laboratory in mind: many users at various skill levels with various analytical requirements. This STEM/TEM system is ready for the future as it can be upgraded with new functionality that will make advanced data acquisition easier and faster.



Essential specifications

Point resolution (nm)	0.24
Information limit (nm)	≤ 0.15
HR STEM resolution (nm)	0.2
Cs objective (mm)	1.2
Cc objective (mm)	1.2
Focal length (mm)	1.7
Maximum eucentric tilt	± 40°

Electron Source

- Schottky Field emitter with high maximum beam current (> 100 nA)
- High probe current (> 0.6 nA in a 1 nm spot)
- Small energy spread (0.7 eV@200kV or less)
- Spot drift < 1 nm/minute
- High short and long term stability

Imaging

- Patented S-TWIN objective lens
- Excellent information limit (< 0.15 nm)
- Coma-free alignment for high-resolution objective-lens centring
- Magnification reproducible within 1.5 %
- Magnification range (EF)TEM: 25x – 1 Mx
- Embedded CCD and Energy filter available
- Lorentz lens available
- Holography package available

STEM

- Fully embedded digital scan system available
- Bright Field and Annular Dark Field mode
- High sensitivity HAADF STEM detector available
- Magnification range 200 x - 100 Mx

Micro-analysis

- Embedded EDX and EELS spectrum imaging available
- Small probes (< 0.3 nm)
- No spurious / system peaks

Specimen stage

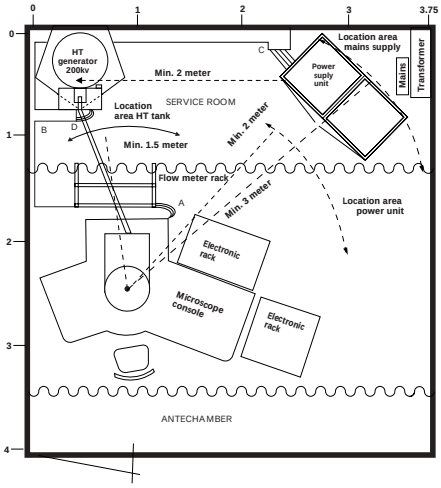
- Fully computer-controlled, eucentric side-entry, high stability CompuStage
- Maximized tilts for any X, Y, Z, α, ß combination
- X, Y movement 2 mm, specimen size 3 mm
- Specimen recall reproducibility: ≤ 0.5 µm (x, y) and ≤ 0.5° (α tilt)
- Drift < 0.5 nm/minute

Vacuum

- 100 l/s Ion Getter Pump on specimen area for contamination-free observation and analysis
- Turbo molecular pump for pre-pumping column, gun and specimen airlock
- Vacuum levels: specimen chamber 1 x 10^{-5} Pa; gun 1 x 10^{-6} Pa
- Automatic overnight degassing of anti-contaminator

Operation / automation

- Advanced user interface: new Tecnai G² series
- Operating system: Industry standard Windows 2000.
- Remote Operation available
- Motorized apertures available
- Scripting SW module available
- Advanced filtering SW available
- Ready for LAN networking
- 2nd Data Monitor available



Floorplan

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THE STRUCTURAL PROCESS MANAGEMENT COMPANY

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