



INSTRUMENT USAGE SHEET

SCANNING ELECTRON MICROSCOPE – ZEISS GEMINI 360

General Information

Instrument: Scanning Electron Microscope – Zeiss Gemini 360

Manufacturer: Zeiss

Location:

- CRIETT – Bassani Building
- Via J.H. Dunant No. 5, Varese, Italy
- Floor: -1 (VA.BASSANI PS.013.0)

Instrument Managers

Prof. Mario RASPANTI

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Authorized Users

- Dr. Daniele Bruno
- Dr. Marina Borgese
- Dr. Maristella Mastore
- Dr. Aurora Montali
- Prof. Marina Protasoni
- Prof. Mario Raspanti
- Prof. Sandro Recchia



- Dr. Marcella Reguzzoni
- Dr. Piero Antonio Zecca

Training Requirements

No. The instrument may only be operated by the designated technical staff or authorized users. Direct user access is not provided.

Internal tickets can be viewed on the intranet page (access with university credentials): <https://intranet.uninsubria.it/areadocumenti/ticket-strumenti-criett-utenti-interni>

The fee schedule for external users can be viewed on the website:
www.uninsubria.it/criett

CRIETT Acknowledgment in Scientific Publications (See CRIETT Regulations, Article 11): Users must acknowledge the CRIETT major equipment used in scientific publications according to the following wording:

“The scientific support from CRIETT centre of University of Insubria (instrument code: XXX) is greatly acknowledged”.

Instrument Code: MIC02

Access Procedures

1. Direct Access (Self-Service)

Who: Authorized users who regularly use the instrument and have received specific training from the instrument manager.

Procedure: Authorized users may independently access and operate the instrument after making an online reservation.

2. Access with Technical Support (Full-Service)

Who: Research groups that use the instrument occasionally, external users, or users without qualified personnel.

Procedure: Access is provided with the assistance of dedicated technical staff, who manage both the booking and operation of the instrument.

3. Occasional/Temporary User

Occasional or temporary users may access the instrument through the Instrument Manager or an Authorized User.

Description and Applications

High-resolution scanning electron microscope equipped with a field-emission electron source.

The instrument includes five detectors for:

- Secondary electrons (in-chamber and in-column)
- Backscattered electrons (in-chamber and in-column)
- Transmitted electrons

The microscope is also equipped with an **EDAX Octane Elect Energy-Dispersive X-ray Spectroscopy (EDS) system** for elemental analysis.

Technical Specifications

- Operates exclusively under **high-vacuum conditions** (no ESEM mode available)
- Resolution:
 - 1.2 nm at 1 kV
 - 0.7 nm at 15 kV
 - Performance achieved in both SE and BSE imaging modes
- Multi-sample specimen stage:
 - Accommodates up to nine samples mounted on standard 1/2-inch stubs
 - Fully motorized five-axis stage
 - Accepts samples up to 120 × 120 × 40 mm

⚠ Safety Precautions

- In the event of any doubts, irregularities, or operational issues, contact the technician or instrument manager immediately.

Operating Notes

- Instrument reservation through the internal management system is mandatory.
- Self-service operation is permitted only for trained, registered, and authorized users.
- Any malfunction must be promptly reported to CRIETT personnel.

Materials and Accessories Provided by CRIETT

- Sputter coater for Au/Pd metallization
- Carbon-fiber flash coater
- Related consumables
- Tweezers for handling samples mounted on standard stubs

Materials and Accessories Provided by the User

The user is responsible for:

- Complete sample preparation (dehydration, mounting, etc.), excluding metallization
- All reagents and materials required for sample preparation prior to metallization.