



INSTRUMENT USAGE SHEET

TRANSMISSION ELECTRON MICROSCOPE – JEOL JEM-1400 Flash

General Information

Instrument: Transmission Electron Microscope – JEOL JEM-1400 Flash

Manufacturer: JEOL

Location:

- CRIETT – Bassani Building
- Via J.H. Dunant No. 5, Varese, Italy
- Floor: -1 (VA.BASSANI PS.004.0)

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Chiaramente Insubria!

Training Requirements: Yes*

* Independent use of the instrument is permitted. Practical training consists of individual instruction (minimum one-week training period). For the theoretical component, the instrument manager will provide educational material covering the operating principles. At the end of the training program, users must pass a knowledge assessment.

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: MIC01

Access Procedures

1. Direct Access (Self-Service)

Who: Authorized users who operate the instrument regularly and have completed the required training.

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

2. Access to 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 users may access the instrument under the supervision of the Instrument Manager or an Authorized User.

Description and Applications

The JEOL JEM-1400 Flash Transmission Electron Microscope (TEM) is designed for morphological and ultrastructural analysis of biological specimens and materials and is widely used in both research and diagnostic applications.

Technical Specifications

- Model: JEM-1400 Flash
- Type: Transmission Electron Microscope (TEM)
- Accelerating Voltage: Up to 120 kV
- Electron Source: Tungsten filament
- Spatial Resolution: Up to approximately 0.38 nm
- Magnification: Up to 1,200,000×
- Vacuum System: Automatic, multi-stage
- Operating Modes: TEM Bright Field / Dark Field
- Detectors: Morada digital camera and high-sensitivity Flash digital camera
- Control Software: JEOL TEM Control Software
- Sample Preparation: Standard TEM grids (copper, nickel, gold, carbon-film supports, or Formvar-coated grids)

⚠ Safety Precautions

- The instrument may only be operated by trained and authorized personnel.

- The microscope operates at high voltages; do not open panels or access internal components during operation.
- Ensure that the specimen holder is properly closed, securely locked, and inserted according to the standard operating procedure.
- Do not introduce unsuitable or contaminated samples that could compromise the vacuum system.
- Avoid impacts and vibrations during operation and sample loading.
- In the event of malfunctions, error messages, unusual noises, or vacuum loss, immediately stop the analysis.
- If any doubts or abnormalities arise, contact the technician or instrument manager.

Operating Notes

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

Materials and Accessories Provided by CRIETT

- Tweezers (forceps)