



INSTRUMENT USE SHEET
LASER ABLATION - NEW WAVE UP-266

General Information

Instrument: Laser ablation - NEW WAVE UP-266

Brand: New Wave Research

Location:

- CRIETT – Cubo Building
- Via Valleggio No. 9, Como
- Floor: 0

Contact person:

- Dr. Davide SPANU
- Email: davide.spanu@uninsubria.it
- Phone: +39 031 2386428
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List of users:

Prof. Damiano Monticelli

Prof. Sandro Recchia

Dr. Davide Spanu

Training path: Yes*

* Autonomous use of the instrument is possible. Practical training involves individual instruction (at least two days of training, the duration of which will be defined by the instrument contact person). Use is subject to the user being authorized and able to independently operate the ICP-MS instrumentation to which the system is connected (instrument code: MAC10). For the theoretical part, the contact person will provide lecture notes on operating principles.



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

Traceability of CRIETT services in scientific publications (see CRIETT Regulation Art. 11): It is mandatory to acknowledge in the acknowledgements section of scientific publications the CRIETT Large Instrumentation used, according to the following formula:

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

Instrument code: MAC07

Access Mode

1. Direct Access (Self-Service)

Who: Only users who use the instrument continuously and have received specific training, authorized by the instrument contact person.

Mode: The trained user can independently access and operate the instrument, booking it online.

2. Occasional/Temporary user:

May access the instrument through the contact person or through an authorized user.

Description and Functionality

New Wave Research UP-266 laser ablation system, based on a 266 nm Nd:YAG laser, used for direct sampling of solid materials through controlled ablation. The instrument enables elemental analysis and spatial mapping of solid samples and is typically used in

combination with mass spectrometers (e.g. LA-ICP-MS) for qualitative and quantitative determination of trace and ultra-trace elements.

The system is suitable for the analysis of:

- Environmental and geological materials
- Polymers and plastic materials
- Solid biological samples
- Advanced materials and coatings

The instrument is connected to an inductively coupled plasma mass spectrometer (ICP-MS) Thermo Fisher Scientific iCAP Q (instrument code: MAC10).

Technical features:

- Nd:YAG laser operating at 266 nm (UV wavelength)
- Pulsed ablation system with adjustable energy and frequency
- Solid sample ablation chamber
- Optical focusing system for crater diameter control (down to 10 microns)
- Motorized stage for precise sample movement
- Dedicated software for laser control, ablation parameters, and scan mapping

⚠ Safety Warnings (add any warnings if applicable)

In case of doubts or malfunctions, contact the technician/contact person.

Operational Notes

- Instrument booking is mandatory via the internal management system (Google Calendar)
- Self-service use is allowed only to trained and registered (or authorized) users



- Any malfunctions must be reported promptly to CRIETT staff

Materials and accessories for analysis provided by CRIETT

- Ultrapure water
- Sample holder cell
- Fittings for ICP-MS connection
- Paper

Materials and accessories to be provided by the user

- Certified reference materials
- Other materials and accessories are not specified in the sections above

