



Instrument User Information Sheet

FT-NMR 400 MHz Nuclear Magnetic Resonance Spectrometer

General Information

Instrument: FT-NMR 400 MHz Nuclear Magnetic Resonance Spectrometer

Manufacturer: Bruker Avance I

Location:

- CRIETT
- Via Castelnuovo 7, Como, Italy
- Floor: Ground Floor, Room 0027.0

Instrument Manager:

Prof. Angelo MASPERO

Email: angelo.maspero@uninsubria.it

Phone: +39 031 238 6472

Authorized Users:

Angelo Maspero (RIPU; ERGAS)

Training Required: Yes

Independent operation of the instrument is permitted. The practical training consists of individual instruction, the duration of which will be determined by the instrument manager. Medical clearance and occupational health surveillance are mandatory. For the theoretical part, the instrument manager will provide training material covering the operating principles of the instrument.

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



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Chiaramente Insubria!

Acknowledgement in Scientific Publications (See CRIETT Regulations, Article 11): Users are required to acknowledge the use of CRIETT major research equipment in the acknowledgements section of any scientific publication resulting from work performed with the instrument, using the following wording:

"The scientific support from CRIETT Centre of the University of Insubria (instrument code: XXX) is greatly acknowledged."

Instrument code: MAC01

Access Policy

1. Direct Access (Self-Service)

Eligible users: Research groups or users who routinely operate the instrument and have successfully completed the required training.

Access procedure:

Trained users may independently access and operate the instrument after booking it through the online reservation system.

2. Occasional/Temporary Users

Occasional or temporary users may access the instrument only under the supervision of the Instrument Manager or an Authorized User.

Description and Applications

Nuclear Magnetic Resonance (NMR) spectroscopy is a non-destructive qualitative and quantitative analytical technique that provides valuable information on the structural and dynamic properties of the sample under investigation.

NMR spectroscopy is widely used in several fields, including:

- **Pharmaceutical and chemical sciences:** reaction monitoring, structural characterization of molecules, and identification of synthetic impurities.
- **Materials science:** structural and compositional studies of polymers.

Technical Specifications

The instrument consists of:

- 9.4 T superconducting magnet
- Broadband BBO probe covering ^{19}F and all nuclei in the ^{31}P – ^{109}Ag frequency range
- Z-axis gradients up to **50 G/cm**
- Variable-temperature measurements in solution from **–150 °C to +150 °C**
- 16-position automatic sample changer
- Bruker **TopSpin 2.8** software

Safety Information

In case of any doubts, malfunctions, or abnormal operating conditions, immediately contact the Instrument Manager.

Operating Notes

- Instrument booking through the internal reservation system is mandatory.
- Self-service operation is permitted only for trained and registered (authorized) users.
- Any malfunction or technical issue must be promptly reported to the Instrument Manager.

Materials and Accessories Provided by CRIETT

- Sample spinners
- Tube adapters



Materials and Accessories to Be Provided by the User

- NMR tubes (5 mm and 3 mm)
- Deuterated solvents

