

SAFETY for HIGH-FIELD USERS at LNCMI Grenoble

Safety is everyone's business, and as a user of the EMFL high magnetic field facilities, you have a part to play in this collective effort and need to incorporate safety into everything you do.

This document will inform you about general safety and safety practices at LNCMI Grenoble that everyone conducting experiments on site must follow.

General Emergency Procedures

<p>MAJOR INCIDENT, FIRE, ACCIDENT :</p> <p>Call 1515 (internal phone) – 04 38 78 48 58</p> <p>Specify :</p> <ul style="list-style-type: none"> ✓ Who is calling ✓ The exact location ✓ The type of incident ✓ Do not hang-up first 	<p>MINOR INCIDENT :</p> <p>Call the operator 07 78 26 49 53 or a first aider or staff member</p>
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FIRE ALARM :

- ✓ Close windows
- ✓ Leave the building calmly
- ✓ Do not take the elevator
- ✓ Join the meeting point on the CNRS campus and wait for instructions



High Magnetic Field

In the area of a high field laboratory, you can be exposed to electromagnetic stray fields.

Please note these prohibition / warning signs :



**Access to LNCMI Grenoble is prohibited to persons wearing pacemakers or active implants.
Pregnant women must stay away from the magnet sites in the laboratory.**

Working on High Field DC Magnets

Your high-field experiments are supported by local staff.

Operation of technical installations such as power supplies and cooling water installations is restricted to LNCMI staff members only. The access to the technical installations is strictly prohibited for non authorized persons.

BE AWARE :

- ✓ Electronic systems, magnetic data carriers and scientific equipment must be placed behind the 50 Gauss mark, this material can be affected by magnetic field.
- ✓ Metallic objects must be put away or attached, they can be set into motion by the magnetic field, transforming them into projectiles and thus causing damage to persons and material.
- ✓ Follow the instructions of the operator.
- ✓ In case of an emergency hit the Magnet Emergency Stop button.



Electrical Risk

Electricity is everywhere in our working environment and exposes personnel to risks that can have some very serious consequences.

PREVENTIVE MEASURES :

- ✓ Work on electrical components can only be performed by qualified personnel.
- ✓ In case of a breakdown, do not try to repair provisionally. Call the user support.
- ✓ Verify your instrumental setup.
- ✓ Check protective earthing.
- ✓ Do not leave multi-sockets on the floor.
- ✓ Ask for help if needed.



Cryogenic Risk

Many experiments are run under low temperatures and need cryogenic liquids as nitrogen or helium. Cryogenic liquids are always potentially dangerous and must be handled with care. As an example, liquid nitrogen increases in volume 695 times when vaporized. Risks are cold burn, anoxia, overpressure with part projections.

PREVENTIVE MEASURES :

- ✓ For use of cryogenic liquids, untrained users will be assisted by the local user support.
- ✓ Filling liquid helium or nitrogen must never be done alone !
- ✓ Never store or handle cryogenic liquids in a poor ventilated room !
- ✓ Use special cryogenic gloves, protecting glasses and wear closed shoes !
- ✓ Never take the elevator with a vessel or gas cylinder containing nitrogen or helium !
- ✓ Ask for help if needed.



Laser Risk

Laser light can be dangerous. The radiation emitted by lasers is highly concentrated and interaction between the beam and body tissues (eyes and skin) presents a risk. Accidental interruption of the beam such as with a watch, ring or bracelet, can modify the beam's path and become dangerous.

PREVENTIVE MEASURES FOR ALL – laser user or not :

- ✓ Optical labs or magnet sites are equipped with light-signaling devices « Laser » or « Laser on » that are turned on during operation of the laser.
- ✓ When the laser warning light is switched on, do not enter the room without permission of the person working in the room and without appropriate protective equipment !

PREVENTIVE MEASURES FOR LASER USERS :

- ✓ Wear protection glasses (certified for chosen wave length range) !
- ✓ Turn on laser warning light during the operation of the laser !
- ✓ Keep the door closed when operating the laser !
- ✓ Ask for help if needed.



CERTIFICATE

Acknowledgement of the Safety measures
of the Laboratoire National des Champs Magnétiques Intenses (LNCMI) Grenoble

Name:

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Forename:

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By signing this form, I certify (please tick):

- having read the safety measures of the Laboratory LNCMI Grenoble which I commit myself to respect and apply,
- that I'm not wearing a pacemaker or metallic implants which are incompatible with magnetic fields.

Date:

(Signature)

CERTIFICATE TO BE RETURNED TO THE USERS OFFICE BEFORE ARRIVAL.