

# Laboratory Rules and Regulations

## NETZ Research Building

2020 Dez 02

### *Contents*

1	Rules and Regulations .....	2
1.1	Scope .....	2
1.2	General Rules .....	2
1.3	General Rules of Conduct, Collegial Behaviour .....	2
1.4	Supplement to the University of Duisburg-Essen Rules and Regulations, Section §5.5.....	2
2	Laboratory Rules and Regulations.....	3
2.1	General Rules for the Laboratories .....	3
2.2	Basic Principles for Laboratory Operation.....	4
2.3	What to Do in an Emergency .....	5
2.4	Handling Hazardous Substances .....	6
2.5	Handling Other Chemicals.....	7
2.6	Handling Compressed Gases .....	7
2.7	Technical Facilities.....	9
2.8	Contacts and Responsibilities.....	11
3	Other Applicable Documents .....	12

# 1 Rules and Regulations

---

The NETZ Research Building is subject to the Rules and Regulations of the University of Duisburg-Essen (UDE) in the currently applicable version (available on the UDE website).

## 1.1 Scope

---

These Laboratory Rules and Regulations apply to all areas of the NanoEnergieTechnikZentrum (NETZ). They form the basis of proper research operations and in particular are intended to ensure that NETZ is able to meet its duties and responsibilities. The Laboratory Rules and Regulations are binding for everyone in the NETZ building and on its premises.

## 1.2 General Rules

---

An effective and pleasant working atmosphere for everyone in the NETZ Research Building can only be achieved if all employees are committed to a fair and collegial way of working. Although many of the rules contained in the following passages may appear self-explanatory, experience shows that they are often disregarded. We therefore ask all employees to familiarise themselves with the following points and to speak to the laboratory manager, operations manager or the managing director if they have any questions (it is better to ask questions often than risk causing injury or expensive mistakes!).

The NETZ Research Building is a technically highly sophisticated building with ultramodern and cost-intensive facilities and installations. In order to uphold this standard and for the aforementioned reasons, the following regulations and instructions must be observed by everyone.

Important technical and administrative information is available in the secure area of the NETZ website ([www.uni-due.de/cenide/netz\\_intern](http://www.uni-due.de/cenide/netz_intern)). Access data can be obtained from the NETZ organisational team.

## 1.3 General Rules of Conduct, Collegial Behaviour

---

Please behave towards colleagues in the same way you expect them to behave towards you.

Make sure that your workspace in the laboratory and in the office is tidy, clean and safe. This applies to *all* employees. It is not the primary responsibility of the technical staff to remedy shortcomings of this nature.

## 1.4 Supplement to the University of Duisburg-Essen Rules and Regulations, Section §5.5

---

An electronic locking system is installed in the NETZ Research Building. Access is gained with transponders/transponder cards. Transponders/transponder cards with the appropriate time limits are only issued to members of the University and external users if absolutely necessary on account of their work at NETZ. Access authorisation is the responsibility of the directors/operations management in agreement with the group leaders and/or laboratory managers.

The transponders/transponder cards are issued by the NETZ organisational team, which also holds the documentation of their issuing (list, signed by the card holders). Issued transponders/transponder cards must not be given to third parties.

Transponders/transponder cards must be kept safe. Any loss must be reported to the NETZ organisational team immediately. The holder of a lost transponder/transponder card can be held liable.

As soon as the grounds for issuing a transponder/transponder card cease to apply and/or when the service/employment relationship comes to an end, notification of which must be given immediately, transponders/transponder cards must be returned without prior request. The group leaders or laboratory managers are responsible for their return.

The parking bays on the south side of the NETZ Research Building may only be used by those with special authorisation, guests and suppliers. The directors and the NETZ organisational team are responsible for authorisations.

## 2 Laboratory Rules and Regulations

---

### 2.1 General Rules for the Laboratories

---

#### Laboratory Equipment

The laboratories in the NETZ Research Building are designed according to a uniform concept. Standardised connections for diverse media are located in ceiling canopies and on benches. Experiments can be supplied from these connections. This ensures that equipment can also be moved and used in different laboratories. Technical details are provided in the lab information on central facilities in the NETZ Research Building ("Kurzbeschreibung zentraler Anlagen im NETZ-Forschungsbau (Laborinfo)"). **Modification of the supply lines or the infrastructure ahead of the transfer points to the ceiling canopy and benches is not permitted under any circumstances.**

#### Corridors and Elevator Lobbies

Items must not be stowed in the corridors/hallways or elevator lobbies. It is not permitted to stand cabinets or tables in these areas.

#### Personal Protective Equipment

Personal protective equipment in accordance with the instructions issued by the group leader must be used. If disposable gloves are worn in the laboratory as personal protective equipment, they must without exception be removed before the wearer leaves the laboratory. This is to prevent contamination of objects that are in general use, such as switches, handrails, etc.

#### Scientific Instrumentation and Equipment

Scientific equipment is extremely sensitive to improper operation and contamination. Minor errors can quickly result in tens of thousands of euros in costs. For that reason, instruments always have a primary contact person. If the designated person is not available, the group leader, operations manager or building services technician can be contacted. Make sure that you are fully familiar with the equipment and procedures in question and that operating instructions are present. Only inspected/tested equipment may be used. Instructions are issued by the laboratory managers.

#### Faulty Equipment

Faulty apparatus must be labelled as such ("Reject"). It must under no circumstances be put away without comment. Please contact the group leader, operations manager or building services technician and/or the primary contact person for the equipment in question for details of further procedure (repair/withdrawal from service).

Cables and electronic devices suspected of being faulty must be presented to the building services technician or another suitable person for inspection and testing.

#### Compression Fittings

Installation is only permitted after prior instruction and must be performed by experienced and qualified personnel (technical staff). Different makes must not be mixed on account of the risk of leaks. Always ask if you are in any doubt!

#### Waste

Paper, cardboard and domestic waste are disposed of together at external storage area 0.70. Please fold boxes. Uncontaminated laboratory glassware can be disposed of in the non-recyclable waste: because its high melting point makes it unsuitable for conventional glass recycling, it cannot be disposed of in the glass recycling bins.

The following types of waste are the responsibility of the working groups and must be collected by them in special bins:

- Cleaning cloths and components containing oil

- Used oil
- Solvent waste (belongs in the bin for halogenated solvents)
- Acids
- Alkaline solutions
- Inorganic and organic solids (residual chemicals)
- Glass waste (contaminated)

If a bin is full, please take to chemical store MF 096. Further information on waste disposal is available from the University's waste management officer, Torsten Werner, Tel.: DU-2837.

### **Cranes**

The crane in Lab 0.46 of the NETZ Research Building may only be operated by persons who have successfully completed training and have been designated as overhead crane operators. A list of designated overhead crane operators is displayed on the main switch of the crane.

### **Doors**

**Corridor doors** can be arrested to stay open temporarily by building services. They are equipped with an arresting device that responds to smoke and automatically closes the door if smoke is detected. This function must not be inhibited in any way (e.g. by wedging or blocking the doors).

**Laboratory doors** similarly must not be held open with wedges.

The **wall openings** in U2.45, U2.46, U2.47 and 0.45 are equipped with shutters that close automatically in the event of a fire alarm. The openings must not be obstructed by objects.

## 2.2 Basic Principles for Laboratory Operation

- These Laboratory Rules and Regulations are binding for all laboratory users.
- More detailed information on the technical systems can be found in the lab information ("Laborinfo"), see NETZ INTERN on the NETZ homepage.
- Systems and experimental facilities may only be operated after consultation with and authorisation by the laboratory manager or a person authorised by the laboratory manager.
- Before handling hazardous substances, laboratory users must consult safety data sheets to familiarise themselves with potential risks and hazards. If possible, hazardous substances should be replaced by less dangerous substances.
- Experimental work with hazardous substances or dangerous machinery in laboratories is prohibited, unless at least one other competent person is present in the laboratory or its immediate vicinity. Hazardous work alone is not permitted (for more details see Appendix 1).
- Where potentially particularly hazardous experiments are to be conducted, the other occupants of the laboratory must be informed to ensure that everyone is able to provide appropriate assistance in an emergency.
- The use of lasers, radioactive sources and x-ray equipment is subject to the appointment of a respective safety officer. The operations manager and the building services technician must be notified of the establishment of laser controlled areas, the use of radioactive materials and the use of x-ray radiation. All related personnel must then be instructed by the respective safety officer
- Safety-relevant information must be available in the laboratory. In laboratories with a laser interlock, the information should be filed in a folder on the appropriate shelf. In laboratories without a laser interlock, a cabinet close to the door should be used. In both cases a "Lab Safety Folder" ("Laborsicherheitsordner") label should be posted visibly at its location. Safety-relevant information includes:
  - Safety data sheets for the hazardous substances/materials in use.
  - Identification of the compressed gas cylinders available for removal in a plastic pouch on the outside of the gas cylinder cabinet. This information must also be provided to the fire control

centre. The building services technician must be informed of the available compressed gases so that he/she can update the records with the fire control centre.

- A layout plan of the experimental facilities, which must be posted additionally in a display specifically for this purpose next to the entrance door. The laboratory manager is responsible for ensuring that this layout plan is correct and up to date. Firefighters should be able to use this plan in an emergency for orientation in a smoke-filled lab.
- Before laboratory operation commences, the laboratory manager must ensure that a risk assessment adjusted to the current situation is performed for every experimental setup and combined with the safety concept of the building, where necessary that operating instructions are drawn up on that basis, and employees are instructed.

## 2.3 What to Do in an Emergency

---

### Raising the Alarm

- The NETZ Research Building has an automatic fire alarm system. In the event of a fire, a rising and falling siren is emitted and has the same meaning as an evacuation alarm. The alarm is also announced over the public address system. In case of a fire alarm front doors and floor doors could still be opened with the transponder.
- The fire service should be alerted where necessary from the nearest fire alarm or on emergency number 112 (no dialling code).
- Emergency information and action in the event of fire are posted on the escape route plans on every level of the stairs.
- The fire alarm system activates the following features:

The siren will be switched on

The public address system announces the evacuation alarm

The green flash lamp at the north front door will be switched on

Fire alarm will be sent to the central building control system

Inner sliding doors will be opened

Door catching devices will be deactivated, front doors will be closed

All escape doors will be unlocked

Sun protection and room darkening will be opened

Elevators will move to the ground floor and stop there

Supply and exhaust air systems will be switched off

Fire brigade radio communication is switched on

Barriers will be opened

Laser hatches in room 0.46 and U2.46 will be closed

Fire brigade key deposit will be unlocked

Pneumatic valves of the pressure regulators will be closed

### First Aid

- If possible, remove anyone who is unconscious and/or unable to help themselves from the danger zone while taking care of your own safety.

### Exposure to Toxic and/or Aggressive Gases/Chemicals/Solvents

In the event of

- Nausea or unconsciousness: call for emergency medical assistance (s. emergency plan displayed in every laboratory and in the kitchen areas).
- Contact with clothing: remove immediately and air thoroughly.
- Skin contact: rinse with plenty of water, seek medical attention if skin irritation occurs, use the emergency shower if necessary, but activate the emergency stop switch first to prevent splashes of water causing a short-circuit.
- Eye contact: rinse for ten minutes in running water with the eyelids open and consult an eye doctor immediately.
- Inhalation: move into fresh air, take deep breaths, seek immediate medical attention; take the safety data sheet for the gas in use with you.

Specific measures can be found in the operating instructions for the individual or groups of hazardous substances in use and/or the safety data sheets available in the entrance area to the laboratories.

## 2.4 Handling Hazardous Substances

---

### **Chemicals and Gases**

Before handling or working with hazardous substances, users must consult safety data sheets to familiarise themselves with the potential risks. Hazardous substances should be replaced by less dangerous substances wherever possible.

Glass vessels should be placed in a bucket or comparable container with a handle for transportation.

Chemicals must only be stored and gas cylinders operated in suitable cabinets provided in the laboratory:

- Chemicals refrigerator
- Safety cabinets for solvents
- Cabinets for acids and alkaline solutions  
**Acids and alkaline solutions** are stored in the ventilated storage cabinets.
- Gas cylinder cabinets

### **Safety Cabinets for Solvents**

The safety cabinet is only designed for storage of flammable liquids and solvents. The quantity of solvents stored in laboratory space must not exceed the required daily amount (max. 10 litres). Wherever possible, storage should be in 0.5 litre containers. The container size must not exceed 2.5 litres.

- The following must not be stored in safety cabinets:
  - Inorganic acids and alkaline solutions.
  - Spontaneously combustible or unstable substances.
  - Substances with an ignition temperature below 100°C (e.g. carbon disulphide), unless they are stored in packaging which prevents ignition (e.g. original packaging).
- Solvents in round-bottom flasks on cork rings or in Erlenmeyer flasks must not be stored in the solvent cabinet unless they are additionally kept in a breakproof vessel.
- The solvent containers must be marked clearly and legibly with the name of the substance, hazard symbol and relevant H and P-statements. Containers with the same marking should be stored together on a shelf wherever possible. Bottles always stand upright.
- Substances must only be transferred to smaller containers in the fume hood. Metal containers must be earthed before solvents are filled from them.
- The doors of the safety cabinet must not be held open by objects, wedges or similar means.
- The manufacturer's operating instructions must be followed.

## Malfunctions

- The safety cabinet may only be opened if the ventilation system is working properly. If the ventilation fails or malfunctions, all work on the cabinet must cease immediately, the cabinet must be closed and the lab manager and building services technician notified.
- If solvents are spilled in the cabinet, the spilled liquid must be absorbed immediately with a binding material and the cabinet subsequently cleaned. A sufficient quantity of suitable binding material, a dustpan, etc., and disposal containers must be available.

## 2.5 Handling Other Chemicals

---

**Acids and alkaline solutions** are stored in the ventilated storage cabinets.

When handling **liquid nitrogen**, the safety instructions liquid nitrogen which are displayed on the fence of the tank, must be observed. Liquid nitrogen may only be transported in the goods elevator unaccompanied in independent service mode ("Sonderfahrt"). The operating instructions for elevator independent service mode are available in the internal section of the NETZ website. Authorised persons are instructed accordingly. The building services technician must be notified by email of withdrawal from the tank system with the date and quantity of liquid removed. The occupational health and safety specialist Mr Becker accepts the liquid being transported in person via the stairs in a jug with a handle and lid. Safety gloves and safety eyewear must be worn in this case. Transport by hand in Dewar flasks with no handle and an open outlet is not permitted. Dewars with no handle may be placed in a padded bucket. They should be covered with a loose-fitting lid. Bottles always stand upright.

## 2.6 Handling Compressed Gases

---

**The technical rules for compressed gases TRG 280 must be observed (although they are no longer in force, they correspond to the technical standard at the present time).**

Compressed gas cylinders can explode if exposed to heat (fire). Pressure regulators may break off if the cylinder falls over, turning the cylinder into a projectile. Leaking cylinders allow highly flammable or toxic substances to escape or explosive gas mixtures to be formed. If large quantities of inert gases are released, in enclosed spaces the oxygen needed to breathe can be displaced.

### Safety Cabinets for Compressed Gas Cylinders

- Compressed gas cylinders must be stored in dedicated outdoor areas or in a compressed gas cylinder cabinet.
- Toxic gases may only be stored/operated in safety cabinets with 120 air changes per hour. The safety cabinets for compressed gases in the NETZ Research Building operate at a rate of 120 air changes per hour in failure-free operation.
- Flammable and toxic gases must always be supplied to the workspaces through permanently installed pipes. Exceptions must be cleared with the lab manager.
- Compressed gas cylinders must always be secured with chains or suitable straps to prevent them from falling over.

### Transporting Compressed Gas Cylinders

- Compressed gas cylinders may only be transported on three-wheeled cylinder trolleys intended for this purpose, with the protective cap fitted, and secured with a chain or fixing strap.
- The heavy weight of the cylinders means that handling and transport carry a high risk of injury. Large (50 l) compressed gas cylinders must be handled and transported with special care, and a second person may be needed to assist.
- Wear safety shoes and gloves.
- If compressed gas cylinders are transported in the goods elevator, unaccompanied independent service mode must be used. The cylinder trolley must be positioned in the centre of the elevator.

### Pressure Regulators

- Selected laboratories are equipped with gas cylinder cabinets with relief systems. The relevant operating instructions can be found in the data collections on the internal NETZ website. Toxic and/or flammable gases have a pneumatic shut-off valve which can be activated via the gas detection system or the gas emergency stop switch (in the laboratory hallway next to the entrance door). In the event of membrane failure, toxic and flammable gases are exhausted in separate pipelines through the roof.
- Before a pressure regulator is connected to the main valve of the cylinder, the seal must be checked to ensure that it is in place and undamaged (look for score marks and cracks).
- Protective eyewear must be worn when connecting or removing a pressure regulator (or any other components under pressure).
- **Pressure regulators must not be greased or oiled!**
- When installing additional pressure regulators, ensure that they are compatible with the existing system. Only pneumatic shut-off valves and connections to the exhaust pipe must be used in this case for toxic and/or flammable gases. Before installation, permission must be obtained from the operations manager or building services technician and all installations documented. The shut-off valves are triggered by the gas detection system and/or gas emergency stop switch.

### Handling Pressure Regulators

- To withdraw gases, the main valve is initially opened with the pressure regulator closed and under no pressure. Only then is the required withdrawal pressure set and the outlet valve opened.
- When work has finished, the pressure on the pressure regulator must be relieved.
- Tools must not be used to open or close the main valves on cylinders. If the valve cannot be opened or closed tightly by hand, the gas cylinder must be classed as damaged, removed from service and returned.
- Compressed gas hoses must be secured properly (hose clips, binders).
- Hose connections and glands must be checked before operation to ensure that the seal is tight.

### General Information on Handling Compressed Gases

- Pay attention to inspection/test intervals for compressed gas cylinders. Return cylinders in good time before the inspection/test interval expires.
- Do not empty gas cylinders completely; a slight overpressure in relation to the atmospheric pressure should always remain in the cylinder. Empty gas cylinders must be marked clearly as such and returned to the gas cylinder store for collection.
- For highly toxic, toxic and carcinogenic gases, the compressed gas cylinders should be as small as possible.
- Separate operating instructions based on the manufacturers' safety data sheets must be drawn up for compressed gas cylinders with hazardous contents and kept *in the handling area*, e.g. the shelves in the door area. If a cylinder has a leaking shut-off valve, take the cylinder into the open air if this is possible safely at ground level. Never transport leaking cylinders in the elevator.
- In the event of uncontrolled leakage of a larger quantity of gas, where possible close the cylinder valve, leave the room immediately and press the gas emergency stop in the hallway. As far as possible avoid using electrical switches. The room may only be entered after a toxic gas leak if suitable respiratory protection is worn. Inform the fire service in such cases.
- The suitability of the respirator masks must be checked before use.

### Gas Detection System

When using toxic, flammable or otherwise hazardous gases, the gas detection alarm in the NETZ Research Building must be in use. For the operating instructions see the lab information ("Laborinfo"). The laboratory manager records in writing what is to be done by whom in the event of a gas alarm.

#### Important Note:

The building must be evacuated in the event of a fire alarm or a main gas alarm.

## 2.7 Technical Facilities

---

### Laser Systems

- Lasers up to Class 4 are operated in the laboratories. Some laboratories are built as designated laser controlled areas.
- The laser safety officer must be consulted before a laser is operated for the first time. He/she decides on the necessity for a laser control area and the requisite safety measures and personal protective equipment.
- If a laser with power that is dangerous to the eyes is used, suitable protective eyewear must always be worn.
- First-time users must have read and understood the laser safety instructions (internal section of NETZ website). They must confirm this in writing to the laboratory manager with their signature.
- The laser warning lights above the entrance doors must be activated when a laser in the laser controlled area is switched on and deactivated when the last laser in the room is switched off. The laser warning lights are not activated automatically.
- The window blinds must be closed for laser operation. This helps both to restrict the laser control area (where radiation can penetrate glass) and prevent reflective surfaces in the laboratory.
- The laser laboratories have protective curtains directly behind the entrance doors. These curtains must be closed when working with laser radiation so that the laboratory door can be opened safely. It is possible to communicate verbally with the people inside the laboratory. Laser safety eyewear must be provided on the shelf next to the entrance door. Entry to the hazardous areas of the laboratory is then only permitted with protective eyewear.
- The exhaust pipes from excimer lasers must be connected to the corresponding exhaust ducts.

### Vacuum Pumps

Vacuum pumps are operated as a basic principle in the dedicated pump rooms and connected to the exhaust ducts provided there. Exceptions are dealt with by the lab manager. Where pumps are set up in the laboratory, the pump exhaust must be connected to the laser exhaust. An oil retaining system must be used with oil-operated vacuum pumps. If ignitable substances are introduced in the exhaust pipes, suitable measures, such as inerting or diluting to below ignition limits, must be taken to prevent an ignitable mixture forming in the exhaust pipes.

### Blinds

- The laboratory space is fitted with black-out blinds. If they are used without other orientation lighting, a torch must be carried and tested before work commences.
- No objects must be placed on the window sills, as this obstructs and damages the blinds.
- When the blinds are down, it is important that the outside sun shade is also lowered. Otherwise the space between the glass pane and the black-out blind can become overheated.

### Exhaust Systems

Four different exhaust systems are installed in the laboratories:

- The room extraction system collects exhaust air centrally from gas cylinder cabinets, safety cabinets, local extractors, and separate ceiling extractors. The system operates at a reduced rate in

night mode between the hours of 5 p.m. and 7 a.m. It can be switched off on the key switch at the entrance door. Individual solutions for laboratories are possible after agreement with the University's staff of the control, communication and safety system (ZLT).

Separate ventilation systems have the following exhaust air units:

- Sniffer exhaust (in the ceiling canopies and workbenches)
- Laser extraction (in the laboratory ceiling)
- Pump extraction (in the pump rooms only)

With the exception of laser extraction (stainless steel spiral lockseam duct max. 110°C), the exhaust systems are made of PPS (max. 90°C). If they are to carry aggressive media, compatibility must be checked prior to use.

### **Failure**

- In the event of failure, the control centre Tel.: 2211, the laboratory manager and the building services technician must be notified, and experiments which require the affected ventilation system for safe operation must be discontinued.

### **Cooling Water**

There are two different cooling water systems:

- Non-pressurised cooling water, 15/22°C (flow/return): on levels U1 and U2 the non-pressurised cooling water is not recirculated but discharged directly with the wastewater.
- Pressurised cooling water, 15/22°C and 8/14°C (flow/return): 15/22°C cooling water is present in the ceiling canopies. The operations management must be informed in advance of any new connection of equipment with a cooling water volume exceeding 50 litres or if water is not recharged during flushing, as these procedures can cause problems with the automatic cooling water replenishment.

Water returned from other supply units must not be fed into the cooling water return, otherwise the system will overflow.

The laboratories are equipped with water detectors, identifiable from the green cable and sensing head with two electrodes. The sensing heads are placed with the electrodes face down on the floor, if possible close to any potential water leak. If the electrodes are lying in water, a central solenoid valve is switched to stop the supply to the two cooling systems in the entire laboratory, without the power supply being interrupted. The cooling water is switched back on automatically once the water has disappeared from the electrodes.

### **Fume Cupboards**

- Fume cupboards are installed in the laboratories. The fume cupboard is an important safety feature of the laboratory. Work in which a dangerous concentration or quantity of gases, vapours, aerosols or particulate matter may occur must only be conducted in a fume cupboard. The front sash of the fume cupboard additionally protects against sprays and splinters.
- The sash must be kept closed as a basic principle and may only be opened as far as is absolutely necessary.
- The fume cupboard is not a place for storing solvents and hazardous substances. When such substances are not in use, they must be stored in the solvent or the acid/alkaline solution cabinets.
- The function of the fume cupboard is tested annually by technical staff. The user must nevertheless run the following checks before every use: check whether the green pilot lamp is lit; feel with your hand or a loose strip of paper whether air is being extracted; close the sash as far as possible – this is the only way to ensure that nothing can escape from the fume cupboard.
- It is only possible to work cleanly if the fume cupboard is cleared up and tidy.

## Gas Supply

The laboratories are equipped with connections to the central gas supply system for compressed air, nitrogen 5.0 and argon 5.0.

The static pressure in the lines is:

- Compressed air: 6 bar
- Nitrogen: 7 bar
- Argon: 6 bar

## Maintenance Work

The responsible laboratory manager must be notified of all maintenance work in the laboratory area by the maintenance firm. During maintenance work, the lab manager or a competent member of staff instructed by the lab manager must be in the immediate vicinity.

If maintenance work is carried out on the roof, all experiments introducing toxic or flammable gases into the exhaust system must cease. However, the maintenance firms are required to make appropriate arrangements with the relevant laboratory managers before accessing the roof. A sign announcing maintenance work is posted on the laboratory door.

## 2.8 Contacts and Responsibilities

---

### Group Leader

Every working group at NETZ must appoint its own group leader. The group leader's name and mobile number must be given to the operations manager. The group leader is responsible for work safety and the prevention of occupational accidents, occupational diseases and work-related health hazards. He/she is responsible for establishing and/or using and maintaining safety equipment and facilities, giving instructions and taking action. This especially includes:

1. Instructing employees on general behaviour in the laboratory, handling special substances/materials, equipment and experimental facilities, use of personal protective equipment.
2. Regular review for necessary occupational health and safety measures.
3. Compiling and updating operating instructions, laboratory rules and regulations, operational documentation, safety documents and risk assessments in accordance with the Hazardous Substances Ordinance (*GefStoffV*), the Occupational Health and Safety Act (*Arbeitsschutzgesetz*), and the Industrial Safety and Health Ordinance (*BetrSichV*).
4. Providing the necessary personal protective equipment, e.g. protective eyewear, masks, gloves, clothing.
5. Providing suitable tools and equipment.
6. Necessary inspections of tools and equipment, e.g. inspection of movable electrical devices, pressure vessels.
7. Appointing a safety officer, who does not have to be a member of the group leader's own group.
8. Appointing a laser safety officer where lasers are in use and a radiation safety officer and deputy where radioactive material is in use.

### Laboratory Manager

A laboratory manager and deputy must be appointed for every laboratory. The laboratory manager represents the group leader. The laboratory manager's name and mobile number must be given to the operations manager. If laboratories are used by different groups, the choice of laboratory manager and deputy must ensure that the contact persons are able to provide information in an emergency.

### Safety Officer

Every group must appoint a safety officer, who does not have to be a member of the appointing group. He or she provides support to the group in preventing accidents, occupational diseases and health hazards. The safety officers are responsible for identifying accident and health hazards in their area of

operation, responding adequately to them and monitoring whether the prescribed safety facilities and equipment are in place. The safety officers provide support at their relevant operational level, act as multipliers for the employees and through their presence, role model function and peer influence ensure that employees comply with safety standards.

#### NETZ Organisational Team (see also the notice and website)

Function	Name	Room	Tel (DU)	Mobile	Email
Building services	Stefan Behrensmeyer	3.05	8156	01601520604	stefan.behrensmeyer@uni-due.de
Coordination	Dr. Marion Franke	3.20	8182	01705633205	marion.franke@uni-due.de
Assistant	Melanie Daamen	3.19	8181		melanie.daamen@uni-due.de

#### Other Emergency Numbers

Other emergency numbers can be found in the other emergency information documents (“Notfallinformationen”), which are also displayed in the NETZ Research Building in all the laboratories and on the First Aid boxes in the tea kitchens.

In an emergency, the UDE control centre is available around the clock on 2211.

### 3 Other Applicable Documents

- Rules and Regulations of the University of Duisburg-Essen
- Fire safety concept in accordance with Section §9 of the Building Inspection Ordinance (*Bauprüfverordnung*) for the NETZ Research Building (3094 BDU)
- Fire safety report of 22.9.2009 (St 001)
- Emergency information
- Current version of the “Laborinfo” laboratory information (brief description of central facilities)

Further information on working in laboratories can be found in the booklet Working Safely in Laboratories <http://bgi850-0.vur.jedermann.de/index.jsp>

**These Laboratory Rules and Regulations were adopted by the NETZ Coordination Committee and must be read and complied with by all NETZ users. Users confirm with their signature below that they acknowledge the Laboratory Rules and Regulations.**

Duisburg, 2015 11 10




---

Prof. Dr. Christof Schulz  
Scientific Director of NETZ

---

**User's signature (name in block capitals, date, signature)**

## Appendix 1: Working Alone

Hazard level	Text in accordance with BGI 667	Summary	Hazards in the laboratory
<p><b>Low risk</b></p> <p><b>Working alone in the laboratory is permitted</b></p>	<p>Everyday hazards which correspond to life's general risks and are such that an individual can be expected to remain capable of taking action in an emergency.</p>	<p>The individual can help him/herself in an emergency, e.g.: a person slips but <b>is able</b> to phone for help.</p>	<p>Modifications/alterations (be aware of maximum equipment weights), connecting gas cylinders (non-hazardous gases), leak detection, conducting experiments on existing equipment, e.g.: making gas mixtures, operating laser systems, high-pressure cells, burners, reactors and experimental setups. Precautions must be taken – technically or organisationally – to ensure that conducting an experiment is not dangerous.</p>
<p><b>Increased risk</b></p> <p><b>A second person – possibly outside the laboratory – must be informed. Regular checks must be guaranteed</b></p>	<p>Any of a list of possible hazards which are such that an individual can be expected to remain capable to a limited extent of taking action in an emergency.</p>	<p>The individual is only able to help him/herself to a limited extent, e.g. during repairs, working with dangerous surfaces (cuts).</p>	<p>Clearing and cleaning up (cuts, tripping, carrying heavy equipment)  Maintenance work on pumps  Starting up dangerous experiments, modified or newly assembled system components for the first time  Transporting gas cylinders</p>
<p><b>Special (critical) risk</b></p> <p><b>Working alone is not permitted; this work may only be performed in the presence of another person. The second person must not be in the same hazardous situation and must remain capable of taking action in an emergency</b></p>	<p>More than one hazard or a single hazard and several risks according to the list of possible hazards and risks which are such that the individual cannot be expected to remain capable of taking action in an emergency.</p>	<p>The individual is incapable of helping him/herself in an emergency, e.g. checking samples in the laboratory after hours; handling of hazardous substances is likely.</p>	<p>Connecting gas cylinders (hazardous gases, also excimer lasers)  Transferring and transporting liquid nitrogen  Work on or in the fume cupboard, filling, transporting and connecting evaporators to the experiment, work with hazardous substances, live working</p>