NanoCluster’s 4th Safety Briefing
Venue: South Spine, Level B2, LT22
Date & Time: 09 Jun 2006, @ 1.30pm
Why Lab Safety?

- Protect Yourself against Laboratory Hazards
- Protect Others against Laboratory Hazards
- Comply with Country’s regulation
1. General

The Cluster Manager has the authority to enforce the regulations and rules of the cluster. Violation of any Lab Regulations will be reported to the Cluster Manager.

The NanoCluster is composed of an office area and four laboratories (Labs). – (Refer next pg)

Office hours are from 8:30 am to 5:45 pm from Monday to Thursday and from 8:30 am to 5:15 pm for Friday except public holidays. All other time (evening, night, week-end, and public holiday) is considered to be after-office hours.
Contractors, visitors and other non-approved persons are allowed to access the office area during office hours. Access after office hours is authorized only after approval from the Cluster Manager.

Contractors, visitors and other non-approved persons are **not** allowed into the Labs at any time unless he/she is accompanied by our Centre staff or RF.

Before entering any of the Labs all users have to go through a **safety briefing** and obtain an approval from the Cluster Manager by filling the Authorization for lab Usage form (on page 5 of this document).

The **Lab’s users** are **given full responsibility** to maintain safety and cleanliness in the Labs.
All accidents and incidents need to be reported on the log book with full relevant details including time, date, name of persons involved, nature of the incident, equipment, safety implications etc. All Lab users should maintain good housekeeping practices when using equipment and tools in the Lab.
2. **SECURITY**

**Security access** to Nanoscience and Nanotechnology Cluster can be applied through the Centre Manager. The allocation of desk and workstation is also required approval from the Cluster Manager.

*Note: Get these application forms from NanoCluster Admin.*

Visitor, contractors and other non-approved persons can access the office area freely during office hour. They **can not** freely access the office area **after office hour** and **can not** freely access to the Labs at any time.
Only authorized users are allowed to enter the Labs at all time. – (Refer to the authorized user poster)

Visitor, contractors and other non-approved persons needing to enter the Labs are required to seek approval from the Cluster Manager before their visit.

FYP/DIP/MSc students are allowed to access the Labs after office hours with approval.

Authorized cluster’s users seeking to work after office hours are required to accompany by another Lab user (the ‘buddy’) throughout the activities in the Lab. Security camera will capture any inappropriate action of the lab users after office hours.
After office hours users should always remain in alert and users can not sleep, be drunk, etc in the Labs. Users that are sick are not allowed to come either.

Ensure that the main door is properly closed after office hours. Objects should not be used to prevent or obstruct the closure of the main door. Failure to close the door will result after 10 sec in activating an alarm at the Security Office.
3. HOUSEKEEPING IN OFFICE AREA

Please keep your cubicle clean and neat.

Do not bring in extra furniture or equipment to your cubicle without approval, only use the furniture provided.

No experiment is allowed to be performed inside the office area.
No left-over of food or drink should remain in the cubicles. When using cluster’s computers you accept to follow the rules below:
Please fill in the Computer Log Sheet (CLS form) for new and existing NTU computer users as required by the cluster management. You have to initialize software and hardware setup that you have installed in your computer. The form is required to be endorsed by your project’s supervisor before submitting it to the Cluster Manager. CITS will randomly come to audit your computer.

Do not insert passwords in the computer’s CMOS. Do not install any unlicensed software in any NTU computer. However, note that it is allowed to install freeware in NTU’s computer. Do not run any games and videos in the cluster’s computers.
4. **HOUSEKEEPING IN LAB**

All Lab users and authorized visitors must dress up in clean coveralls, when entering the Labs. Proceed via the air shower two at a time.

**Do not exit the Lab with your clean garment on – always remove it before leaving the Lab.**

Always unpack any material/chemical/equipment before bringing them into the Lab. **Equipment** inside the Labs **must not be moved** from their stipulated location.

**Only trained authorized users are allowed to operate equipment.** Authorization form is required to be completed by applicant and necessary approvals are required before a staff or student is allowed to be trained.
Please keep the working areas (e.g. the laminar flow hood and fume hood/chemical wet bench) clean and tidy. Return all used labware to their respective storage sites (in the drying cabinet).

**Take responsibility for your processed samples** and do not leave them all over the place. They should be disposed off if there is no longer any need to keep them. Note that samples, which do not require further processing, should be left in the Lab. They should also be properly labeled to facilitate storage/disposal.

**Switch-off/close** all the equipment/compress air/gases if they are not in used.

**Do not eat or drink in the Lab** and do not throw leftover food, as this will encourage the development of pests.
No study or meeting is allowed inside all the Labs. Bags and textbooks are not allowed in the Lab. All bags must be left outside the Lab. Whenever possible, folders with transparent plastic holders should be used to hold notes if they must be brought into the Lab.
5. **SAFETY IN LAB**

Before entering any of the Labs, all users have to go through a **safety briefing** and obtain an approval from the Cluster Manager by filling the Authorization for lab Usage form (on page 5 of this document).

**Once an alarm is activated, all Labs users must evacuate immediately.**
Inform the technicians and staff of the alarm as soon as possible.
Note: Refer to Emergency list.

Safety systems are installed in the Laboratory to monitor gases like oxygen, hydrogen, carbon tetra-fluoride, methane, silicon tetrachloride, etc. Panels are installed on the walls of the Common Area to monitor and activate alarms when there are gas leakages or deficiency of oxygen.
Students should make themselves aware of the positions of safety equipment available in the Lab, like fire extinguishers, first aid kit, safety goggles, gloves and aprons. **Equipment can only be operated by qualified users.** You are not allowed to operate any machine for which you have not been trained and obtained approval from the lecture-in-charge. The list of qualified users is affixed to each machine.

**Students are not allowed to change the settings** of the Gas Safety and Detection System and the Furnace Safety System. **No radio or walkman is allowed** in the Labs because it could prevent hearing any alarm sounding off.

If there is an air-condition failure, evacuate the Labs and inform the technical staff.
Chemical Safety
Student Safety
begins with respect and understanding
of chemicals used in the lab
Read the MSDS Before using any chemical.

**Always** put on **gloves & glasses** when working **in the Lab**. Do not touch any chemical, beaker, machine or tool with your naked hands!

**Always label beakers, bottles and containers clearly** (include the material contained, the date and the user’s name).

Any **beaker or petri dish** containing chemicals must be placed **in the wet bench** and not left anywhere else in the Lab.

**Perform all fume-generating processes in the fume hoods/chemical wet benches and keep the front sash as low as possible to the indicated level. Check the exhaust system is operational** before any experiment is to be carried out.
Hot plates and furnaces must not be left powered on when unattended to unless they are attended regularly throughout the night or other safety measures are in place.
EMERGENCY CONTACT NUMBERS
(Dial “9” for external call from NTU phones.
To call NTU extension number from non NTU phones dial “6790”.)

Fire (9) 995
Ambulance (9) 995
Police (9) 999
24 Hours Fault Reporting Centre 4777
Campus Warden 5200
NTU Medical Centre (9) 6793 6828
Singapore General Hospital (9) 6222 3322
National University Hospital (9) 6772 5000
IN CASE OF EMERGENCY

Please Contact:

Fire & Ambulance: (9) 995      Police: (9) 999

Campus Security: 6790 5200

24-hrs Fault Reporting Centre: 6790 4777

Lab Executive: 6790-6748 (Huifeng or Thomas)
A/P Subodh Mhaisalkar (Director)       4626

EMERGENCY RESPONSE TEAM:
A/P Yu Siu Fung                       4362
A/P Franck Chollet                    6399
Mr Thomas Ker & Ms Lee Hui Fen        6748

Note: Mr Thomas Ker & Ms Lee Hui Fen are both licensed First Aiders under Singapore Red Cross Society

Safety Room Representatives:

Cleanroom 5.1: Yoga & Mynn
Cleanroom 5.2: Keith Tan Cleanroom
Cleanroom 5.3: Yang Hui Ying
Cleanroom 5.4: Lu Zhison
“Don’t Monkey Around With Safety”

Safety is more important than getting any research results
Q & A