

PROTOCOL 0.1 – Protocol of Access to the Clean Room

Version 23_1_ENG

- *The reading and understanding of this document is a requirement for achieving the “Qualification 0.1” to access the Clean Room*
- *The rules and regulations contained in this document apply as long as they don't interfere with any related CSIC official regulations and rules.*

Document Drafting and Adoption

First version of this document was written by Eduard Figueras and the GICORG Commission of the IMB-CNM Institute Board and reviewed by the Cleanroom staff. It was approved by the Institute Board at its meeting on Bellaterra, on 15th of May, 2009.

This document and subsequent revisions will be responsibility of the clean room direction (see clean room directory in the Annex III of the document).

This document is effective from the day after its approval.

Documentary control

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9_5	May 2009	First version	All
11_5	May 2011	Complete revision due to reorganization of the ICTS	All
14_6	June 2014	English translation and general actualization	All
17_8	August 2017	Reorganisation of the SAS and actualization	All
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23_1	Marzo 2024	Figures on gowning procedure	2.3 & 2.4

INDEX

1	Initial considerations	3
1.1	Main purposes of this document.....	3
1.2	Application of this document	3
2	Clean Room Access	5
2.1	Clean Room Timetable and Calendar.....	5
2.2	General Access Rules	5
2.3	Gowning Procedure and access to the clean room	6
2.4	Leaving the Clean Room.	8
2.5	Things to consider before leaving the dressing room.....	9
2.6	Access to the perimeter corridor.....	9
2.7	Specific regulations about entering products and tools inside the cleanroom.....	10
3	Behavioral rules and cleanliness	12
3.1	Behavioral rules for a clean clean-room: particle generation.....	12
3.2	Cleanliness and Contamination	12
3.3	Specific rules for sample inspection.....	14
3.4	Specific safety rules related to processes	15
4	About safety	16
4.1	Potential risks in the clean room.....	16
4.2	Gas leak system and alarm	18
4.3	Fire system and alarm.....	19
4.4	Other safety systems.....	20
	ANNEX I: EMERGENCY SUMMARY	23
	ANNEX II: SB BANNERS	25
	ACCESS TO THE PERIMETER CORRIDOR.....	25
	GOWNING SAS BANNER	25
	ANNEX III: ICTS Directory.....	26
	ANNEX IV: Cleanroom Areas and Telephone extensions.....	27
	ANNEX V: Qualification 0.1 Application Form.....	28

1 Initial considerations

1.1 Main purposes of this document

This document presents the rules and instructions for entering and leaving the clean room of the Institute of Microelectronics of Barcelona (IMB-CNM, CSIC), as well as the basic behaviour and safety rules to be followed in the clean room.

The clean room of the Institute of Microelectronics of Barcelona (IMB-CNM, CSIC) is a scientific facility with controlled environment used for the fabrication of micro- and nano-electronic devices. Manufacturing of such devices requires stray contaminant (dust particles, ions from human body, metals...) to be held below determined levels, which imply a proper behavior and way of dressing that must be strictly respected by all the persons who access the facility. The present document describes these rules.

To get access to the IMB-CNM clean room, the applicant must obtain the "Qualification 0.1" by submitting a signed and scanned version of the annex V of this document to the email address icts-acces@imb-cnm.csic.es. The access to Clean Room is restricted only to those acting in accordance with the standards of behaviour and safety protocols described in this document. Any infringement of these standards and protocols may lead to exclusion from the clean room.

Basic data of the applicant (name, email, and institution) will then be included in the "Register of Persons Authorized to Access cleanroom" (REPAS). After confirmation, access to the clean room will be granted to the applicant. Persons external to IMB-CNM will be delivered at the reception a visitor card any time they need access to the clean room. More details of the procedure are available in Note GICORG 0.

Each clean room may have specific rules, so it is mandatory to become familiar with the rules and policies of the clean room at IMB-CNM, even though you have already gained experience in other similar facilities.

1.2 Application of this document

- This document is applicable to all staff that has the "Qualification 0.1" and therefore are accredited for accessing the Clean Room and registered in the REPAS list.
- "Qualification 0.1" does not allow using any clean room equipment except optical microscopes. It is strictly forbidden to handle wafers or samples, operate process machines, manipulate service keys and controls and make use of chemicals, process precursors or tools without the proper authorization.
- Any amendment to the rules contained in this document, cancellation or addition of new

ones will lead to a new version. The new version will be announced in the SAS and eventually will be communicated by e-mail to people on the REPAS list.

2 Clean Room Access

2.1 Clean Room Timetable and Calendar

The clean room of the Institute of Microelectronics of Barcelona (IMB-CNM, CSIC) is open from Monday to Friday from 8.30 am to 7.30 pm, except on public holidays and days when the institute is closed. It is usually closed two weeks in August and one week in Christmas for maintenance activities.

Any changes to the schedule will be communicated to users in due time.

2.2 General Access Rules

- Access to the clean room is restricted to the persons who passed the “Qualification 0.1” process and are duly registered in REPAS list.
- Visitors can get access to the clean room with the proper authorization of the clean room direction and must always be accompanied by another authorized user.
- The clean room direction may temporarily deny access for any motivated reason, such as safety issues, over occupancy (depending on the conditions and workload at each moment), maintenance activities...
- The entrance to the clean room is exclusively done through the door that connects the clean room with the IMB-CNM main building, through the pre-SAS (see clean room map in annex).
- Before entering the clean room, make sure there is at least another person inside or accompanying you. In case of doubt, ask the reception staff.
- Before leaving the clean room, make sure there is at least two other persons inside. If there is only another person, you must inform this person of the situation. If this person is not part of the clean room staff, she/he must leave the clean room.
- For safety reasons:
 - It is recommended to wear closed footwear appropriate to the work in a lab. Dressing with skirts or shorts is discouraged to access the clean room.
 - Use of contact lens is highly discouraged as it can represent some safety risk and difficulties for the eye washing.
- Do not access to the service corridors without permission. Their access is restricted to clean room authorised staff.

2.3 Gowning Procedure and access to the clean room

- 1) Take a pair of blue plastic shoe covers from the metallic container on the left, besides the benches (numbered 4, see Fig 2). Sit down on one of the benches that divide the dressing room (“sas”) in two areas and put the shoe covers. Step the blue carpet on the clean side of the bench only after having the shoe covers put over your shoes, never with your bare shoes.
- 2) Get dressed according to the established sequence: hood, coverall, booties, mask and gloves as shown in the following figure. Dressing instructions can also be found in the dressing room. The clean room staff uses the white work suits and the rest of clean room users must use the green work suits. To identify which pieces of cloth and sizes you must use, follow the instructions in the dressing room, or ask to the clothing responsible (see Annex III) in the case of any doubt.
 - Check that the neck of the hood lay completely inside the coverall. The booties should cover the coverall legs. The hood should fit the head. Check this by turning your head; it should not rotate within the hood.
 - Put the mask on first and gloves after. The mask should completely cover the mouth and nose, and mustache and beard if any. Both the mask and the gloves can be found in the cabinets in front of the shower entry (num. 6).
 - Look at yourself in the mirror and check that you wear your cuffs inside the gloves and the neck of your clothes properly closed before entering the air shower.

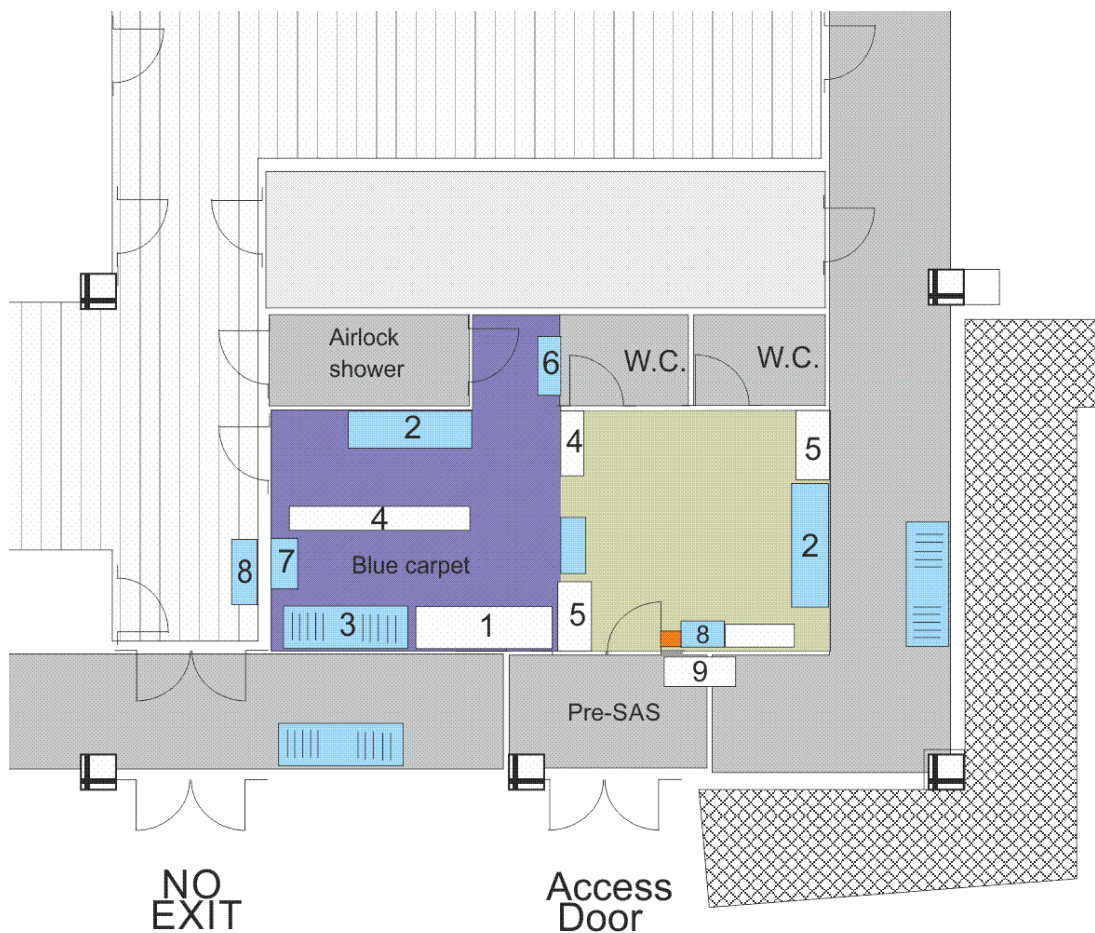


- 3) Pull out the door to access to the air shower. The air shower will start automatically once you close the door. If it does not start, please re-open and close the door again. Note that the air shower system has on/off controls outside, in addition to an emergency stop button inside.
 - The air shower is designed for a maximum usage of four people at the same time.

Please stand in line, each person should remain located in a different section of the air shower.

- 4) Once the air flow of the shower starts, separate your arms slightly from your body and rotate slowly so that the air jets of the shower can act on the entire surface of your clean room clothing and face.
- 5) Once the air flow stops, push the opposite door and enter into the clean room.

Caution: The entrance to the clean room from the dressing room (“sas”) is exclusively done through the air shower. Note that the door that connects the dressing room with the clean room is only to get out, from the clean room to the dressing room. Thus, if you leave the clean room to the dressing room, and want to get back into the clean room, you must go through the air shower again.



- | | |
|-------------------------------------------|----------------------------|
| 1. Cabinet with clothing for CR staff | 6. Mask & gloves dispenser |
| 2. Shelves with clean CR clothing | 7. Shelves for CR booties |
| 3. Clothes hangers for users and visitors | 8. General use Lockers |
| 4. Benches and seats | 9. General use wardrobe |

5. Wardrobe ,Warehouse for CR exclusive use

10. Reserved dressing room

Fig. 01. Components of the dressing room area ("sas").

2.4 Leaving the Clean Room.

- 1) Leave the clean room exclusively going through the dressing room ("sas"), except in emergencies, using the exit door placed at the right of the air shower.
- 2) To undress, proceed in the opposite sequence of dressing (see next figure). Please do not remove your hood before taking out your coverall, to avoid that any retained loosen hair and residues between the hood and your head fall onto your coverall and make it dirty as a result.
 - The gloves and mask are non-recyclable. Please dispose them into the dedicated dustbin of the dressing room in the blue carpet area.
 - Carefully hang the coverall work suit and the hood up on the hanger. Place the booties on the bottom shelf as shown in the next figure. Keep the plastic shoe covers on while you are standing on the clean carpet area.



How to put the booties and the coverall work suit and hood on the hanger properly



Improperly way of leaving the booties.

- 3) Once being outside the blue carpet area, take off your shoe covers, dispose them to the dedicated dustbin and go out to the pre-SAS.

2.5 Things to consider before leaving the dressing room

- Remember to pick your objects back from the lockers and/or wardrobe and restore the key to the locker.
- Take your shoe covers off.
- Your exit (like the entrance) has to be recorded for security reasons. Please slide the card through the reader on the right of the door and wait for the door to unlock.
 - Keep in mind that in case of emergency you would not have to check out and would be able to go out simply pulling the handle.

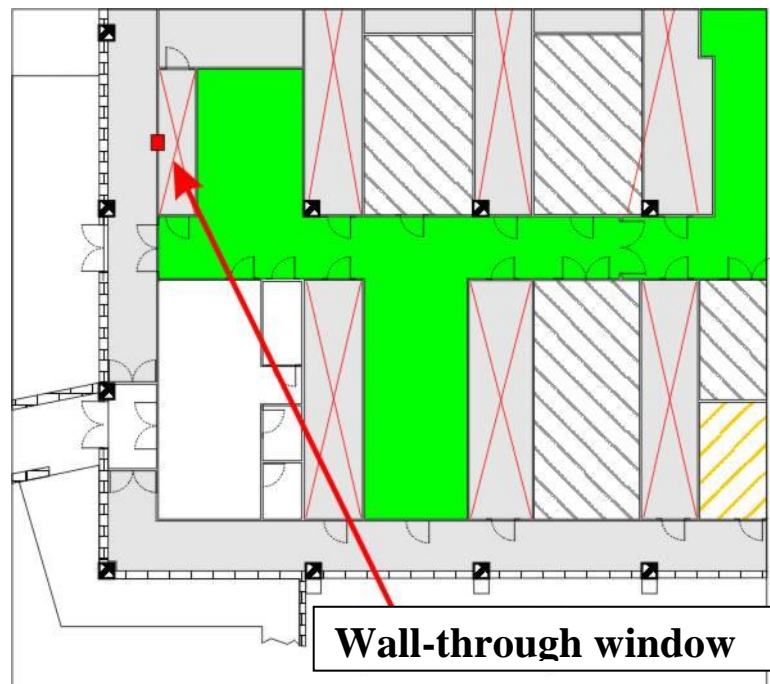
2.6 Access to the perimeter corridor.

If necessary, the access to the perimeter corridor is free to all staff that has the "Qualification 0.1" and it is accessible exclusively through the main door of the clean room building.

- 1) Follow the instructions to access the clean room building (see 2.2 above).
- 2) Go through to the left or to the right corridor, take a pair of shoe covers from the trays, and put them on.
- 3) You may not enter any of the maintenance corridors from the perimeter corridor, unless you have explicit permission and are properly dressed with the green maintenance coats and caps.
 - Access to process areas is prohibited from the perimeter corridor and the maintenance areas

2.7 Specific regulations about entering products and tools inside the cleanroom.

- It is strictly forbidden to bring any kind of equipment, material and/or consumable products into the clean room without specific authorization of the clean room direction.
- The clean room provides you with any writing material (paper, pens...) you may need to take notes; so in principle it is forbidden to enter any similar material for that purpose.
- It is not allowed to bring and store cardboard boxes or any type of packaging, which are not specifically made for a clean room.
 - Such packaging may exceptionally be introduced for maintenance reasons under the clean room staff approval and supervision. Remember that in any case such actions should always be performed away from clean process workplaces.
- It is strictly forbidden to introduce food or drinks, candies or chewing gums, etc. in the clean room
- All material (previously authorized) must be wiped and vacuum cleaned in the dressing room before being brought into the clean room.
- If you need to enter small size material (previously authorized) without going outside, you can use the wall-through window of the perimeter corridor (see next figure).



Location of the wall-through window

3 Behavioral rules and cleanliness

3.1 Behavioral rules for a clean clean-room: particle generation

These behavioral rules aimed at minimizing particle generation inside the clean room. Particles in the air in a clean room generally come from several main sources. One of the main source is the personal working in the clean room. People typically emit several hundred particles per minute each cm² of surface area in normal conditions (outside the clean room), for a typical net results of 5-10 million particles per minute. Therefore:

- Proper use of the complete clean room clothing is mandatory, including gloves and facemasks.
 - Routinely, check if your gloves are undamaged
- Eating in the clean room or drinking inside the process areas is strictly forbidden
- Do not run in the clean room, nor in the perimeter corridor, in order to reduce air turbulences and spreading of particles. Avoid violent movement.
- Do not lean on the walls.
- Groups of more than four people together should be prevented.
- Respect the occupancy limit of each clean room area (see annex)
- Order and cleanliness are key: do not leave personal objects or tools on working tables or benches.

3.2 Cleanliness and Contamination

The CMOS and compatible technologies are the backbone of the clean room, and thus, special restrictions should be taken to ensure appropriate conditions for keeping its performance. For this reason, potential contamination risks on equipment and other objects must be avoided. These risks are of two types:

- Alkali ions (Na⁺, K⁺), which can produce mobile charges inside the gate oxide of a transistor and the corresponding instabilities in threshold voltage. They are typically produced by the human skin.
- Metal contaminants, which can form deep levels in the band gap of silicon, and may produce a reduction of the lifetime of the minority carriers within silicon wafers.
 - Some noble metals (Au, Pt, Pd, Ag...) are especially problematic because they are almost impossible to be removed by the conventional cleaning processes used in a clean room. The most critical systems/area is the oxidation - diffusion

furnaces, because high temperatures facilitates the diffusion of metals inside the semiconductors.

Thus, a special effort is put in the clean room operation to avoid contamination of samples and process tools. Such contamination may occur by the manipulation of samples using wrong tools or by processing in wrong machines. With this objective, the following classification of process machines and inspection tools is stated and must be respected:

- **“CMOS-compatible unit”**: Machine or system not contaminated with undesired ions or metals. It can only process samples that are of a contamination/cleanliness level compatible with CMOS technologies.
 - This unit is again divided into two sub-units: Front-end and back-end of line, depending if PECVD and/or metals were previously used (Back-end) or not (Front end). The front-end-of-line tools are the cleanest tools in the clean room in terms of contamination.
- **“MNC unit”**: Machine or system that can process "contaminated" samples, for example those containing layers or traces of noble metals or that have previously processed in units or foundries without contamination concern or control. MNC means, in Spanish, Contaminant and Noble Metals.
- **“Mixed unit”**: CMOS-compatible and MNC samples can be processed with those machines, as far as some specific accessories for each type of samples are used.

In addition, for easy identification and differentiation, samples are stored in two types of boxes:

- Blue and White (transparent) boxes for CMOS-compatible samples/wafers.
- Black (or white with a red asterisk marked on the plastic) for MNC wafers.

In order to identify tools or accessories of MNC machines and systems, they are marked with a red asterisk or with the MNC letters. This is very common, for instance, with the tweezers used to handle wafers. The basic rule to avoid crossed-contamination is to identify and respect the boxes and tools associated with each machine/process.

Note: in case of error or mishandling, please do not hesitate to inform the clean room staff. They will know what to do. Think of yourself and the others: do not ruin your processes and theirs!

Contamination issues add some behavioral rules to the previous ones related to particle generation. Gloves are an important cause of contamination, for their proximity to process and samples, therefore:

- Direct contact of gloves with wafers or process samples is forbidden.

- Do not touch your face or any part of your skin with your gloves.
 - It also avoids potential contact of your skin with dangerous substances (chemicals, nanoparticles...) that can be present on the gloves from previous processes.
- Routinely, check if your gloves are clean and undamaged. Do not touch door handles with dirty gloves or with bare hands to avoid contamination through transfer.
- Replace your gloves with new ones any time they touch your face, the ground or any machine part that is not perfectly clean.
- Do not touch clothing with the gloves as far as possible. Despite clothing is adapted to clean room environment, it is still the largest source of contamination in the clean room.

3.3 Specific rules for sample inspection

- The external users of the clean room are authorized to inspect ONLY the samples of the "runs" for which they are responsible.
 - Clean room staff is allowed to inspect samples from any run within the scope of their task and duties.
- Process wafers/samples are stored in a cabinet under a nitrogen flow. Only clean room staff is allowed to remove samples from these cabinets. External users should ask clean room staff to give them their samples.
- Remember that wafers deposited in a black box are MNC (not CMOS-compatible). In that case, you must use the appropriated tweezers and holders and put a piece of clean room wipe on the microscope stage to prevent cross contamination. Please ask the clean room staff in case of any doubt.
- Each process machine and inspection system has its own tweezers, utensils and tools with their specific use. It is important to avoid use this utensils for another task, or machine, and should not be moved to other locations under any circumstance.
- During wafer/sample inspection, keep a straight body posture and keep the samples, wafers and their transport or storage boxes at a certain distance away from your body to avoid any particle fall or contamination.
- Once the inspection is finished, please place the wafers in the same box with the same distribution and position as you found them. Return the box with the samples to the clean room staff who will take care of them. Do not return the box to the nitrogen cabinet by your own.

3.4 Specific safety rules related to processes

- It is strictly forbidden to operate process machines, manipulate service keys and controls and to make use of chemicals or process precursors and tools without the proper authorization.
- Never touch your eyes or your face with your gloves.
- Use the personal protective equipment (PPE; EPI in Spanish) adapted to the workstation. For example:
 - Use face screen, safety glasses whenever there can be a high risk of breakage of the wafers or a chemical splash.
 - If you are inside the clean room as an observer of chemical etching procedures, you should use a facial protection screen, too, while the staff is working on a chemical bench.
- In case of any chance of having been in contact with acid or other harmful chemicals, rinse the body exposed area abundantly during several minutes. There are small emergency water rinse showers and eye-washers close to all chemical benches. Take into account that there is also an emergency shower for the cases of wider affected areas.
- In case of small splashes of HF, rinse the affected area thoroughly with water and apply a powder or gel composed of calcium gluconate. This compound can be found in the Wet etching Bay, in the Area Mixta Room (on the chemical benches) and in the Diffusion Furnaces Room (on top of the chemical bench). For HF splashes into the eyes and/or on wider body areas use IMMEDIATELY the Hexafluorine solution located in the central corridor.

4 About safety

4.1 Potential risks in the clean room

Your safety and the safety of others must always be your priority. The micro and nano fabrication processes carried out inside the IMB-CNM clean room entail several potential risks that must be taken into account by the users. There are chemical and physical risks:

- Physical risks:

Electrical shock risk

Several of the process tools of the clean room make use of high electric voltages and/or high currents that can be dangerous and cause serious injuries or even the death. Some of the equipment tools can still accumulate dangerous levels of voltage even after having the power source switched off. Lateral panels and doors of the tools should not be detached without specific knowledge and a previous discharge.



RF radiation emission

Several of the process tools of the clean room make use of radiofrequency (RF) power sources that produce electromagnetic radiation at different frequency bands. Without the protective panels, that radiation can develop electromagnetic fields strong enough to cause severe injuries or burnings.



The use of portable telephones or similar tools close to the process equipment (at less than 2 meters) can lead to unexpected behaviours of the tools and to dangerous situations.

Users or visitors with implanted pacemakers or defibrillators should avoid being close to those tools which emit non-ionizing electromagnetic radiation.

Burning by hot surfaces and high temperature processes

There are several furnaces and ovens in the cleanroom working at high temperatures. In addition, a good number of reaction chambers and chemical tanks can also reach temperatures high enough to represent a risk. Contact with the hot surfaces of all those systems can cause serious injuries and burns.



Body entrapment risks

Users must pay special attention during the mechanical opening and closing of the process chambers and tools with moving lids, robots or other components, since arms, fingers, or other part of extremities can get caught during these operations, resulting in severe injuries.



UV radiation and laser exposition risks

A good number of the process tools make use of laser or UV lights, especially at the photolithography areas. Although they have their specific shields against UV radiation and laser, users should avoid look directly those light sources without appropriate protective glasses or filters.



- Chemical risks:

Work with dangerous gases

Many of the process tools, especially those of thermal processing (furnaces) and dry etching (RIE), work with gaseous precursors or agents, which have several hazards classified in different categories:

- Flammables: Flammable gases can ignite in the presence of heat or electrical discharge causing serious injury.
- Toxic: contact or inhalation can cause serious injury or death.
- Corrosive: contact or inhalation can cause burning and serious injury.



Solvents vapours.

Exposure or inhalation of vapours from resists, solvents and developers can cause dizziness, difficulties for breathing, skin and eye irritation. Users must work under fume hoods and check that the exhaust systems are ON.

Dangerous chemical agents and chemical reactions

Many of the chemical agents used in the wet etching phases of the clean room entail some chemical hazards and can lead to a damage of different organs depending on the route of penetration into the body: inhalation, ingestion, skin or eyes contact. They are classified in corrosives, irritants, toxics, asphyxiants, narcotics, carcinogenics and systemics.

Potentially dangerous samples

When using some less usual materials, special care should be taken to their physical and chemical behaviour, taking into account for instance which chemical species will be released after making a process, which can be present on the walls of the reaction chambers. In addition, some samples can contain nanoparticles or other pneumoconiotic products that could accumulate in the lungs.

Therefore, the necessary precautions must be taken and users must always consult with the cleanroom staff about the suitability of processing unusual or “exotic” materials.

4.2 Gas leak system and alarm

There are 4 leak indicators for toxic and explosive gases in the clean room: one in the central corridor, another one at the end of the central corridor; the third one in the RIE-Sputtering area and the fourth above the Nanolithography access door (in red on the map). The leak detector status indicator consists of a set of 3 lights. Do not confuse them with the ON/OFF lights installed on some process machines.

The meaning of each colour is:

Green (on): the system is working correctly.

(off): a failure in the system is detected.

Yellow (on): gas is detected above a certain concentration, but below the level of risk (half of the TLV).

Red (on): gas is detected above the level of risk. At the same time a loud and discontinuous horn alarm will be audible.

Note: The larger blinking **BLUE** light next to the gas leak lights in the central corridor only indicates the depletion of any process gas in its cylinder. Do not confuse it with a hazard alarm.

There is a gas leakage detection system based on a net of electrochemical sensors distributed throughout the whole cleanroom. Those gas detectors are generally placed on:

- Gas pressure regulators panels

- Flow meter cabinets of the process machines
- The gas supplying cabinets.

Whenever presence of a toxic or explosive gas is detected in the air above the predefined level of alert, a discontinuous Horn sound alarm is activated.

- The automatic security system will close the affected gas cylinder and, through the exhaust net, the remaining gas will be removed directly outside the clean room.
- Start evacuation without running. Leave what you are doing quickly but in a safe way and obtain information about the incident from the clean room staff or any other member of the maintenance team.
- Do not open any gas pressure regulators panel, vapor extraction cabin or flow meters cupboard. The system automatically closes the affected bottles.
- Do not run any machine that works with toxic or explosive gases.

Remember the Gas leaking indicator lights meaning:

- **yellow light** ON: you can wait for a responsible to check the alarm and to quickly give you the appropriate instructions. If the alarm remains or in case of doubt it is advisable to leave clean room. Exit through the dressing room if it is possible and inform to the maintenance and emergency phone numbers listed in Annex I.
- **red light** ON: you must evacuate the clean room immediately. Take the nearest emergency door to go outside according to the evacuation map (at the end of the section).

4.3 Fire system and alarm

There is a smoke detection system installed in all the areas of the cleanroom, with automatic "Inergen" gas discharge, which reduces the oxygen concentration in the air. The detection and fire fighting in the clean room is divided into different areas. In case of detection of a fire, an alarm will sound with an acute noise, before the discharge of the extinguishing gas.

It should be noted that activation of the Inergen produces a notable noise, due to the sudden expansion of the compressed gas. Take into account that there is a delay between the alarm activation and the activation of Inergen (about 20 seconds).

- When the Fire alarm (a continuous strident tone) is activated, please stop immediately what you are doing and leave the CR. Take the nearest emergency door to go outside according to the map enclosed in figure 09. It is no necessary to use the exit through the dressing room to evacuate, nor to take off your clean room clothes.

- It is important to CLOSE all the doors behind to reduce the spread of fire.
- You can only take your clean room clothing off once you are safe outside from the clean room enclosure.
- The meeting point is at the entrance of MATGAS building, next to Cerdanyola - Bellaterra road.
- Please wait at the meeting point for further instructions of the evacuation or security team.

4.4 Other safety systems

The clean room has the following additional safety systems (see the map at the end of this section):

▪ Air/vapor event systems

There is a net of ducts and exhaust motors that provide the exhaust of each gas cabin, chemical bench, solvent bench, furnace/oven or any other unit that may require the evacuation of fumes.

There exist five independent circuits of extraction by risk areas/vapors:

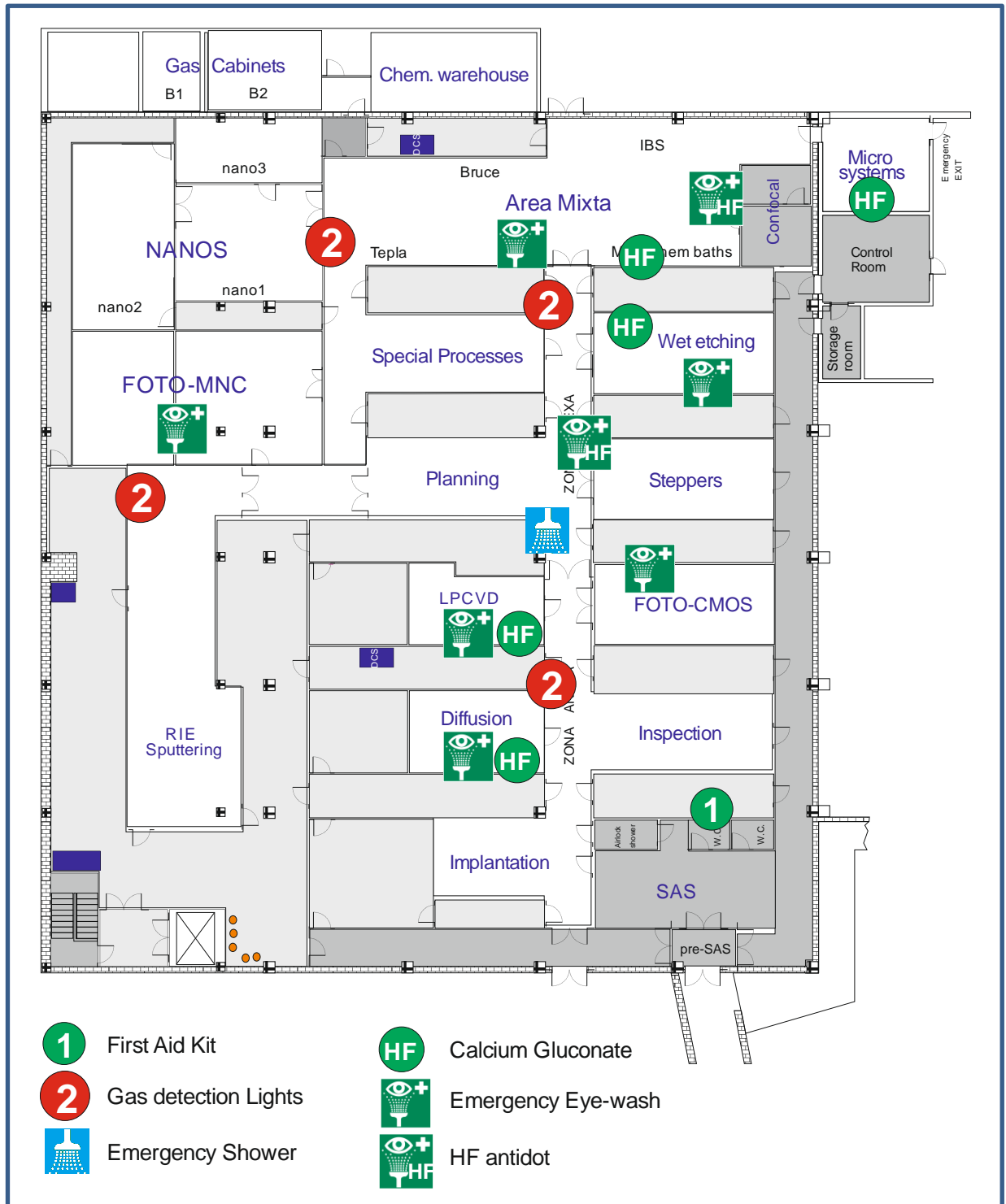
- Acids / Solvents / Explosives / Toxics / Hot Air

▪ Other Safety elements

- **Emergency Shower, eye-washers and water pistols** close to all chemical benches and rinsers.
- Hexafluorine and calcium gluconate for HF splashes into eyes or skin.
- **Fire extinguishers and hoses**, only in the perimeter corridor.

▪ Personal Safety Elements.

- **Medicine first aid kit** (in the toilet of the dressing room),
- **Personal protective equipment** (facemasks, anti-acid gloves...) available at several locations.
- **Filtering Masks for dangerous gases**, to be used for handling gas bottles and clean reaction chambers where these gases are processed, only by authorised staff having the necessary qualification accredited.







Location of Security elements inside the CR.




Evacuation routes

ANNEX I: EMERGENCY SUMMARY

INSIDE OF Cleanroom

Continuous Siren		EVACUATE
Discontinuous Hooter		ALERT
Please ask for instructions to the maintenance team		
Gas detector light in red		GET OUT
In case of doubt		GET OUT

WHEN ENTERING

Pilot light of Pre-SAS OFF  Keep OUT and warn

If this gas state pilot at the entrance of SAS is not ON (green), please do NOT ENTER. Please notify and wait for the Facilities Maintenance Responsible instructions, or someone of the facilities maintenance team.

Caution: Do not confuse the gas detection lights with the traffic light signals of some of the process machines, which indicate their operational status.

Emergency telephones

IMB-CNM Management	ext 2478 / 2468
Reception Desk	ext 9
IMB-CNM General Services	ext 1053
Campus UAB Security	93 581 25 25
Emergency Service	112
Health Care Service	061
FREMAP (24h Insurance Co.)	900 61 00 61
UAB Health Care Service:	93 581 18 00 / 19 00
National Institute of Toxicology	91 562 04 20

ANNEX II: SB BANNERS

ACCESS TO THE PERIMETER CORRIDOR

**Abans de passar,
RECORDEU...!!!**



Antes de pasar

RECUERDA...!!!

Before to go in

REMEMBER...!!!

Institut de Microelectrónica de Barcelona. IMB-CNM. marzo de 2009

REMINDE BEFORE ENTRY

GOWNING SAS BANNER

Seqüència per vestir-se


Escolliu tipus i talla de vestuari que us pertorqui.

Col·locar el verdugo.

Col·locar el mono, per sobre el verdugo

Calceu les polaines

Col·loqueu mascareta i guants



EXTERIOR

DUTXA D'AIRE

Verificar que polaines i vestuari han quedat ben col·locats.

Treure el verdugo i penjar-lo amb el mono.

Treure el mono i penjar-lo

Descalceu les polaines

Treure mascareta i guants

Seqüència per desvestir-se

Institut de Microelectrónica de Barcelona. IMB-CNM. marzo de 2009

ANNEX III: ICTS Directory

Index of staff with specific responsibilities in this document (Protocol 0.1 access to Integrated Clean Room for Micro and Nanofabrication of ICTS) and their telephone extensions:

- CNM/ICTS Management: Luis Fonseca Chácharo	2478
- Clean Room Manager: David Quirion	2456
- Facilities and Maintenance Responsible: Xavier Mas Pla	1068
- Clean Room Facilities	
Mornings: Xavier Mas	1068
Afternoons: Jose Maria Villar	1061
- Mechanical Workshop	
Jorge Morales	1051
- Electronic Workshop	
Antonio Garzón	1055
Javier Bermúdez	1054
- Clean Room Costume Responsible	
Mornings: Elena Chica	2304
Afternoons: Luis Rull	2302

- **Clean Room staff** (Alphabetical list)

Ayesta Urquiza, Xabier	Mas Colomina, Roser
Azambuja Rebollar, Andrea	Mas Pla, Xavier
Bermúdez García, Javier	Mateu Mañé, Carles
Borrisé Nogué, Xavier	Montserrat Martí, Josep
Cabezas Martínez, Héctor	Morales Guerrero, Jorge
Capell Solsona, Xavier	Muñoz López, David
Castillo Espinosa, M ^a Encarnación	Noy Orcau, Ricard
Castro Peregrino, Evelyn	Rull Camacho, Luis
Cirera Perich, Josep Maria	Sáenz Gacía, Antonio
Cot Solsona, Esteve	Sánchez Amores, Ana M ^a
Chica Gordillo, Elena	Sánchez López, Javier
Dacunha Pazos, Samuel	Sarrión Romero, Mónica
Duch Llobera, Marta	Solé Díaz, Libertad
Durán Ibáñez, Sara	Suárez Narbona, Fernando
Garzón Rus, Antonio	Torres Herrero, Nuria
Guerrero Barbero, Albert	Villar Fagundez, José María
Isart Alemany, Marc	Zabala García, Miguel
Martínez de Olcoz, Leyre	

PROTOCOL 0.1 – Protocol of Access to the Clean Room

Version 22_3_ENG

ANNEX IV: Cleanroom Areas and Telephone extensions



ANNEX V: Qualification 0.1 Application Form

Separate the next sheet, the Application Form, or alternatively find it in the IMB-CNM ICTS web page. Fill it, deliver or send it to the Clean Room Manager, and he will send you the acceptance confirmation to be included in the REPAS list which allows you to access the CleanRoom.

Qualification 0.1 Application Form

Mr/Ms
With ID/Passport

Asks for “Qualification 0.1” that enables you to access to the IMB-CNM (CSIC) Micro&Nanofabrication Clean Room with the object of:

Admits that has read, understood and assimilated the document entitled “Protocol 0.1 of Access to Integrated Micro&Nanofabrication Clean Room (CSIC ICTS)”, and accepts the compromise of accomplishing the rules stated in the document.

In addition, you are committed to read and assimilate corrections, additions, or reissued versions, on documents produced in the future and follow the established rules and procedures. In particular accepts to attend meetings and courses of information concerning behaviour inside the Clean Room, whenever requested to do so.

WORK ADDRESS

Centre/Department:

Street :

Postcode , City , Country:

Telephone number:

e-mail:

Declares that financial charges arising from this access shall be assumed by (Project, Department, Center):

Bellaterra, on

of 20__

Responsible of economical charges Signature

Applicant Signature