

PROTOCOL 0.1 – Protocol of Access to the Clean Room

Version 19_08_ENG

- *The reading and assimilation 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 will be followed as far they don't interfere with affected CSIC official regulations and rules.*

Document Drafting and Adoption

This document was written by Eduard Figueras and the GICORG Commission of the IMB-CNM Institute Board and reviewed by the Cleanroom staff.

DOCUMENTARY INFORMATION

This document and subsequent revisions will be kept by the Director of Operations of the ICTS (see ICTS directory in the Annex III of the document).

This document is approved by the Institute Board at its meeting on Bellaterra, on 15th of May, 2009

This document is effective from the following day of approval.

Documentary control

Version	Date	Changes introduced	Section
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
19_8	August 2019	Actualization and amendment of reported errors	All

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INITIAL CONSIDERATIONS

1. Initial considerations

The ICTS-Clean Room is a CNM scientific facility with controlled environment used for the fabrication of micro and nanoelectronic devices. This requires a vast reduction of elements that may create environmental pollution, such as dust, aerosol particles, chemical fumes or particles coming from the body or dress of people working inside (such as cells skin makeup, hair, sweat ions or body fat, fiber fabrics, etc.). These risks require a proper behavior and way of dressing that must be strictly respected by all personnel who need to work in the facility.

Paper, pencils and pens, packaging materials and many other products can be also sources of unwanted contamination within the CR and consequently they are not allowed. Therefore, to enter the clean room it is necessary to observe the necessary precautions and personal hygiene to avoid introducing particles and contamination inside.

There is not a single type of Clean Room for Micro-nanofabrication, so it is mandatory to become familiar with the rules and policies of the installation of the CNM, even though you have already gained experience in other similar facilities.

1.1 Main purposes of this document

This document exposes the rules and instructions to follow to get in and out of the Clean Room, and the basic behaviour and safety rules that must follow everyone who access the ICTS IMB –CNM Clean Room.

The access to Clean Room is restricted only to people demonstrating the basics of procedure, following the conduct norms and safety protocols that are described herein.

Having the "Qualification 0.1" implies knowing the rules and instructions contained in this document and consequently accepting and following them. It also means to be included in the "Register of Persons Authorized to Access cleanroom" list (REPAS). Submission of Annex IV of this document to the Director of Operations of the ICTS is mandatory. The signature is absolutely required to guaranty that you will act as attest accordingly.

This is an informative document with an educational nature line. The procedure for obtaining the "Qualification 0.1", which provides access to the Clean Room of the ICTS, is detailed in Note GICORG 0.

It is advisable to supplement the information provided in this document with any of the available videos on the web and/or IMB-CNM intranet, or by attending a specific course on clean room conduct procedures.

1.2 Application of this document

1.2.1 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.

1.2.2 Knowledge of this document does not allow using any Clean Room machine except optical microscopes and basic inspection or measurement systems.

1.2.3 Any amendment to the rules contained in this document, cancellation or addition of new ones will lead to a new version. In any case this new version will be announced in the SAS and eventually will be communicated by e-mail to people on the REPAS list.

1.3 Clean Room map and Common Terminology

Clean Room Map



- | | | |
|---------------------------------|---------------------------|-------------------------------------|
| 1. Pre-SAS | 8. Atmospheric Furnaces | 16. MNC Photolithography |
| 2. SAS | 9. Photolithography-CMOS | 17. RIE-Sputtering Area |
| 3. Confocal lab | 10. Low Pressure Furnaces | 18. RIE-Sputtering Service Corridor |
| 4. Microsystems Lab. | 11. Steppers Area | 19. Gases Warehouse |
| 5. Perimeter Corridor | 12. Planning/Wafers | 20. Chemical Warehouse |
| 6. Ion Implanter Area | 13. Wet Etching | |
| 7. Inspection Area / Annex Area | 14. Mixt Zone | |
| | 15. Nanotechnology Area | |

Fig. 01. CR General Plane

CLEAN ROOM ACCESS

2. Clean Room Access

2.1 Clean Room Timetable and Calendar

2.1.1 The timetable and calendar of the Clean Room is available on the web and /or on intranet of IMB-CNM. In general the common opening time is Monday-Friday from 8:30 to 19:30

2.1.2 Out of the stated opening periods it will be necessary a specific authorization from the Director of Operations of the ICTS to gain access to Clean Room and its annexes, except in emergency interventions.

2.2 Access Rules

2.2.1 The "Qualification 0.1" is required to be included in the list of people with authorization to enter the Clean Room (REPAS) and for the activation of the control card that provides the access to the Clean Room.

2.2.2 It is not allowed the access into CR to anyone who does not have the "Qualification 0.1" updated. Visitors could in any case access the Clean Room with the proper authorization of the Director of Operations of the ICTS and always being accompanied by a member of the IMB-CNM staff (who must be already registered in the REPAS list).

2.2.3 The Director of Operations of the ICTS may temporarily deny access if he considers that there is an over occupancy, depending on the conditions and workload of every moment.

2.2.4 The entrance to the Clean Room is exclusively done through the door that connects the Clean Room with the IMB-CNM main building, as depicted in figure 02.

2.3 Using the SAS to enter the Clean Room Access and Gowning Procedure

2.3.1 Take a pair of 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 SAS in two areas and put the shoe covers. Once you have put them, be careful to step only on the blue carpet that is on the clean side of the bench/SAS.



- | | |
|---|----------------------------|
| 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. 02. SAS: Components of the Dressing Room Area.

2.3.2 Step the blue carpet only after having the shoe-covers put, never with your bare shoes.

2.3.3 The engineering, maintenance or process staff of the Clean Room uses the white work suits and the rest of Clean Room users must clothe the green ones.

Dressing instructions can be found in the SAS. To identify which pieces of cloth and sizes must be used, follow those instructions in the SAS, or ask to the clothing responsible (see Annex III) in the case of any doubt.

Get dressed according to the established sequence: hood, coverall, booties, mask and gloves as shown in Figure 06.

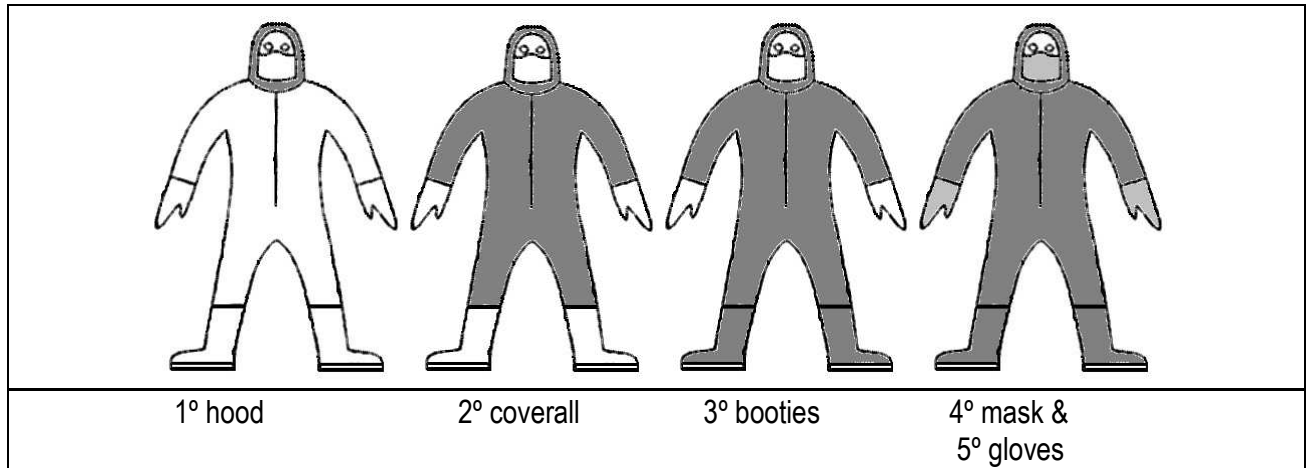


Fig. 03. Proper dressing sequence.

Verify that the neck of the hood is completely inside the work suit. The booties should cover legs of the coverall. 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).

2.3.4 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.

2.3.5 The entrance to the Clean Room from the SAS is exclusively done through the air shower (num. 7). Note that the door that connects the SAS with the Clean Room is only to get out (from CR to SAS). Thus, if you got out to the SAS, and want to get back into the Clean Room, you must go through the air shower again.

2.3.6 Pull out the door to access to the air shower space. 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.

2.3.7 The air shower is intended 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.

2.3.8 Once the airflow 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.

2.3.9 Once the shower stops, push the opposite door and enter into the Clean Room.

2.4 Using SAS to go out of the Clean Room.

2.4.1 Leave the Clean Room exclusively going through the SAS except in emergencies.

2.4.2 Please, go out to the SAS only through the door on your right, not through the air shower.

2.4.3 See detailed information about how to un-dress and leave the clothes, in the SAS.

For undressing, act in the opposite sequence of dressing (see fig.07). Please do not remove your hood before taking out your coverall work suit, to avoid that the retained loosen hair and residues between the hood and your head go to your coverall work suit and gets dirty as a result.

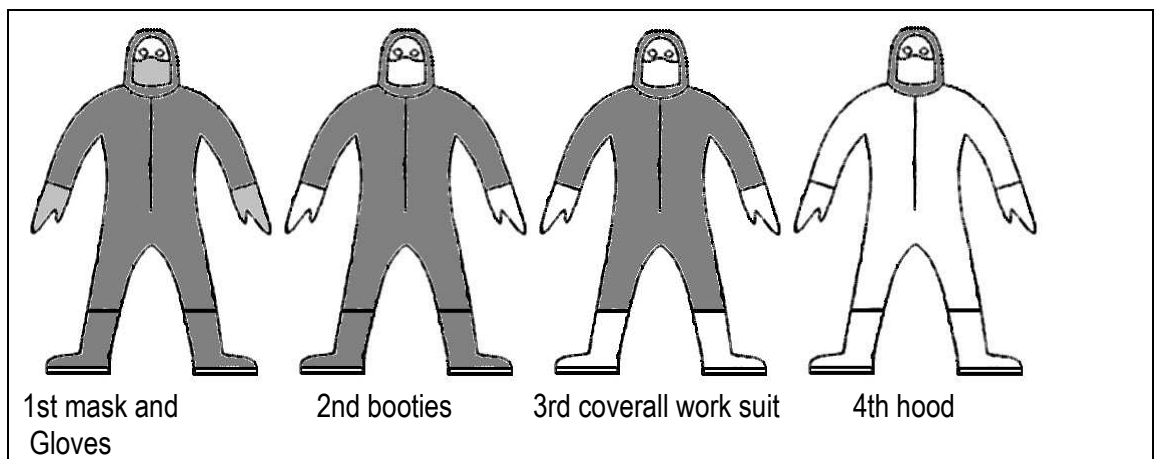


Fig. 04. Sequence to properly undress

The gloves and mask are non-recyclable. Please throw them to the dustbin of the SAS 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 figure 05. Keep the plastic shoe covers on while you are standing on the clean carpet area.



Fig. 05. How to put the booties and the coverall work suit and hood on the hanger properly

2.4.4 Once being outside the blue carpet area, take off your shoe covers, throw them in a dustbin and go out to the pre-SAS.



Fig. 06. Improperly way of leaving the booties.

2.5 Things to consider before leaving the pre-SAS

2.5.1 Remember to pick your objects back from the lockers and/or wardrobe and restore the key to the locker.

2.5.2 Verify that the access doors of the perimeter corridors are closed.

2.5.3 Take your shoe-covers off.

2.5.4 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 a second for the door unlocking. Keep in mind, nevertheless, that for security reasons you could go out simply pulling the handle.

2.6 Access to the perimeter corridor.

2.6.1 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 and the pre-SAS.

2.6.2 First, follow the instructions to access to Access the Clean Room and the Pre-SAS (see point 2.2).

2.6.3 Go through the corresponding door on the left or right corridor and take a pair of shoe-covers and put them on.

You cannot go into any of the maintenance corridors (nor, of course, into process areas) from the perimeter corridor, unless you are properly dressed with the green maintenance coats and caps and you have explicit permission.

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

2.7.1 It is not allowed to enter any kind of machine, material and/or consumable products without specific authorization of the Head of the ICTS.

2.7.2 The Clean Room provides you of any writing material that you may need to take notes, like special Clean Room paper or pens, so in principle it is forbidden to enter any similar material for that purpose.

2.7.3 It is not allowed to enter and store cardboard boxes or any type of packaging which are not specifically made for a Clean Room, although it could be allowed for maintenance reasons under the CR staff approval and supervision. Remember that in any case such actions should always be performed away from clean process workplaces.

2.7.4 It is not allowed to introduce food or drinks, candies or chewing gums, etc.

2.7.5 All material (previously authorized) must be wiped and vacuum cleaned in the SAS area before being introduced into the CR.

2.7.6 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 figure 07).

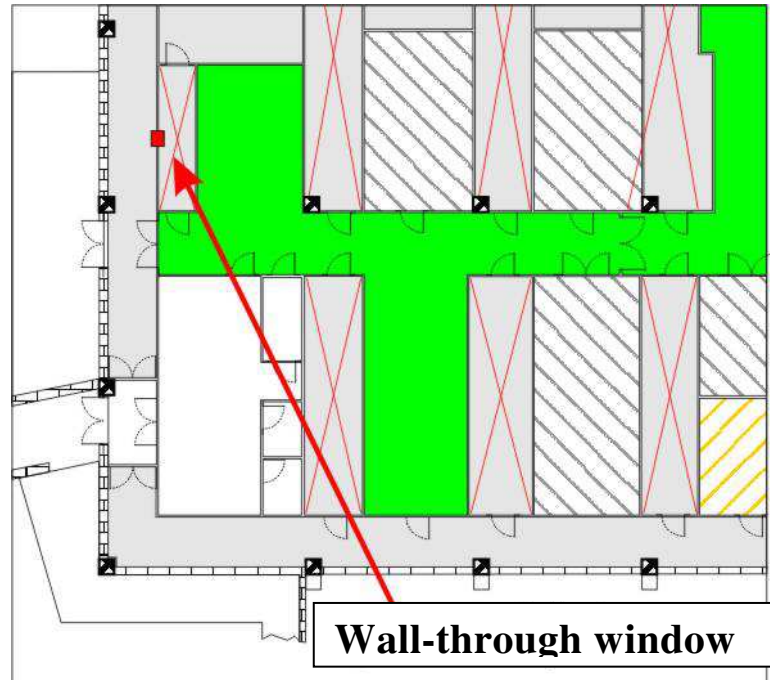


Fig. 07. Location of the wall-through window

BEHAVIOURAL RULES

3. Behavioural rules

3.1 Behaviour in the Clean Room

3.1.1 The behavioral rules are aimed to avoid or reduce particles in the ambient and wafers/samples pollution or contamination and also to ensure safety of processes and clean room users.

3.1.2 For security and cleanliness/contamination reasons, wearing gloves and mask is mandatory inside the Clean Room. Only some maintenance works can be done without gloves, whenever parts to be replaced or repaired are not going to be in direct or indirect contact with wafers or process samples.

3.1.3 Do not touch your face with the gloves to prevent they become dirty with fat from the skin and also to avoid contamination of your skin with dangerous substances (chemicals, nanoparticles...) that can be present in the gloves coming from process.

3.1.4 Do not touch the clothing with the gloves as far as possible. Despite clothing is special and clean, it is still the largest source of pollution that exists in the Clean Room. Gloves are also an important cause of pollution, specially as they use to be close to process and samples.

3.1.5 Replace your gloves with new ones if at any time you touch your face, the ground or any machine part which is not perfectly clean.

3.1.6 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.

3.1.7 When working in wet chemical benches, you should remain at least 5 or 10 cm away from the edge of the benches and rinse cuvettes. Notice that any person who is working in a chemical bench must be authorized following the established qualification process and must observe the security rules and protocols for handling chemicals.

3.1.8 During wafer inspection, keep a straight body posture and keep the samples, wafers and their transport or storage boxes at a certain distance away from the body so to assure the cleanliness.

3.1.9 Do not run and avoid sudden or violent movements within the Clean Room in order to reduce air turbulences and spreading of particles.

3.2 Cleanliness and Contamination

The CMOS and compatible technologies are the back-bone of the Clean Room, and thus, special restrictions are 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 basically of two types:

- a) Alkali ions (Na⁺, K⁺), which can produce mobile charges inside the gate oxide of a transistor and the corresponding instabilities in threshold voltage.
- b) Metal contaminants, which can produce 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 CR. The most critical systems/area at this concerning are the oxidation - diffusion furnaces, because of the high temperatures involved which 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 machines because of the manipulation of samples using wrong tools or because of their process in wrong machines. With this objective, the following classification of process machines and inspection tools is stated and must be kept:

3.2.1 "Clean 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.

3.2.2 "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.

3.2.3 "Mixt unit": clean and MNC samples can be processed with those machines, as far as some specific accessories for each type of samples are used.

Also, for easy identification and differentiation of samples, they are stored in two types of boxes:

- (1) Blue and White (transparent) boxes for clean/CMOS samples/wafers.
- (2) 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.

3.3 Specific Rules for inspection of samples

3.3.1 The users of the Clean Room (except for people of CR staff) are authorized to inspect ONLY the samples of the "runs" for which they are responsible.

3.3.2 Process wafers/samples are stored in a cabinet under a nitrogen flow. No one except people of CR staff is allowed to remove samples from there. Please ask the responsible of the Standard Production to locate and deliver them to you if necessary.

3.3.3 Once the inspection is finished, please place the wafers in the same box with the same distribution and position as they were found.

3.3.4 Note that the wafers deposited in a black box are contaminated or MNC. In that case and for inspection you must use the appropriated tweezers and holders and put a piece of CR wipe on the microscope stage to prevent cross contamination. Please ask to the Standard Production Responsible in case of any doubt.

3.3.5 After the inspection, please return the box with the samples to the Responsible who will take care of them. Don't return the box to the nitrogen cabinet by your own.

3.3.6 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.

ABOUT SECURITY

4. About security

4.1 Security systems

The CR has the following security services and systems (see figure 08):

4.1.1 Leak detectors of toxic and explosive gases.

The leak detector status indicator consists of a set of 3 lights. Don't confuse them with the ON/OFF lights that some process machines have installed. According to the map in figure 08, there are 4 of those leak detector indicators: One is located in the central corridor of the Clean Room, in front of the photolithography area; another one is in the central corridor in front of the wet benches room; the third one is in the RIE-Sputtering area and the fourth above the Nanolithography access door.

The meaning of each colour is:

Green (on): 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 red light next to the gas leak detection lights is aimed only to indicate that any process gas in the corresponding gas bottle is finished, so it does not represent a dangerous situation).

4.1.2 Air/vapor extraction systems, which are usually individualized for each gas cabin, chemical bench, solvent bench, furnace/oven or any other unit that may require their use.

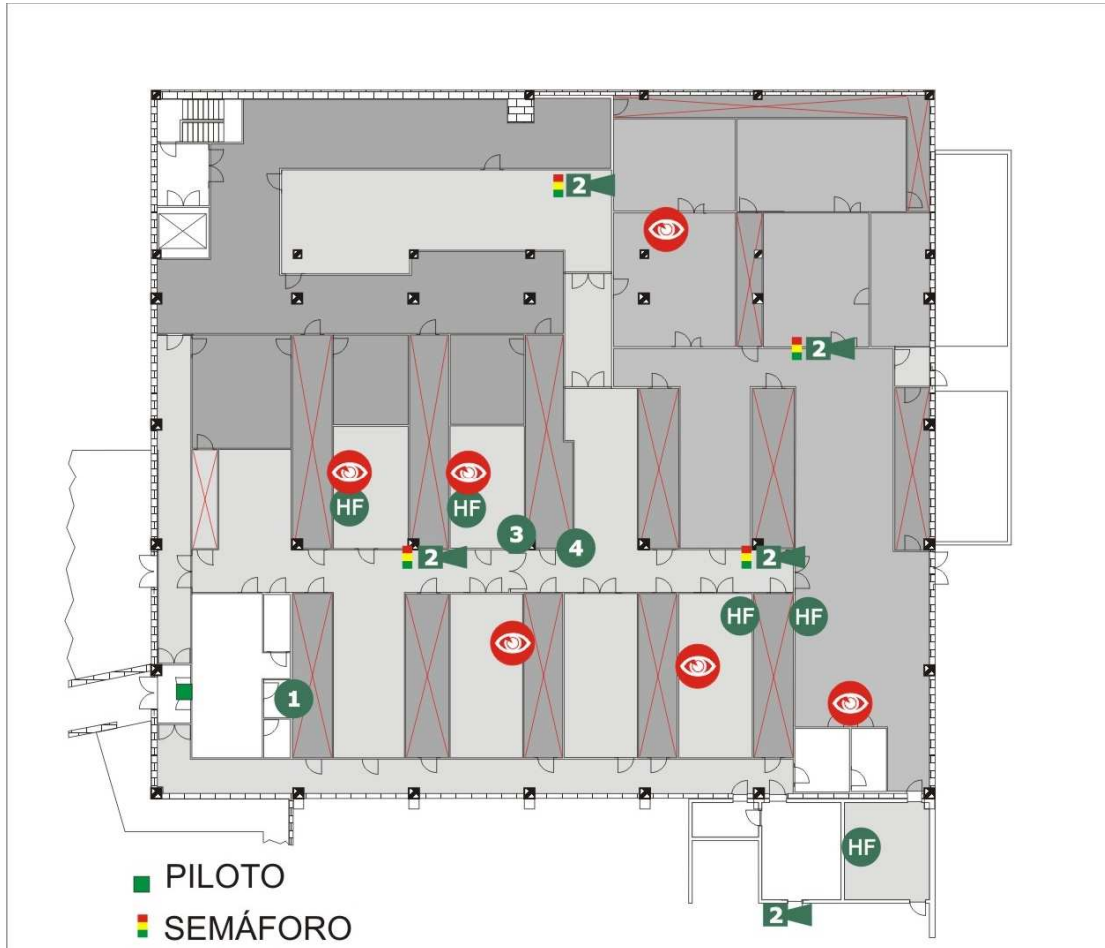
There are independent circuits of extraction by risk areas/vapors:

- Acids / Solvents / Explosives / Toxics / Hot Air

Smoke detection system (fire system) with automatic "Inergen" gas discharge. The Inergen gas is a mixture of inert gases which reduces the oxygen concentration in the airborne, so you can safely breathe for a time, while avoiding combustion. The detection and firefighting is done in CR by compartments or areas of risk. In case of detection of a fire, an alarm will sound with an acute noise, before the discharge or activation 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).



- 1- Medicine Fist-aid kit (SAS)
- 2- Traffic Light gases.
- 3- "Fire break" Doors

- 4- Emergency Shower
- HF- Calcium Gluconate
- 👁- Eye-wash

Fig. 08. Location of Security elements inside the CR.

4.1.3 Personal Safety Elements.

- **Medicine first aid kit** (in the toilet in the main SAS),
- **Face masks and 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.

4.1.4 Other Safety elements

- **Emergency Shower, eye-wash 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.

4.2 Basic CR behaviour and safety rules

4.2.1 Do not access the CR if there is not at least another person inside or accompanying you. Please ask the reception staff to be sure that there is another person inside.

4.2.2 In the case that there are only two people in the CR and one of them has finished his/her work and decides to leave, this person should alert the other one about this situation before leaving the CR in order to prevent that the other person stays left alone.

4.2.3 The CR staff may not follow the previous 2 rules if they consider that it is strictly necessary for the work and as far as they have informed somebody else about this situation (for instance to the entrance concierge, the Director of operations of Clean Room, the Facilities and Maintenance Responsible or the Standard Production Responsible).

4.2.4 Do not run in the Clean Room or perimeter corridor.

4.2.5 It is strictly forbidden to handle wafers or samples, operate process machines, manipulate service keys and controls and make use of chemicals or process precursors and tools without the proper authorization.

4.2.6 Do not access to the service corridors without permission. Only CR and maintenance personnel are authorized.

4.2.7 Use face screen or safety glasses in the occasions when there is a high risk of breakage of the wafers or chemical splash.

4.2.8 Please, always use the gloves and keep them in good conditions.

4.2.9 Please, be careful and do not touch your eyes or your face with the gloves.

4.2.10 If you are inside the CR as an observer of chemical etching procedures, whereas the staff is working on a chemical bench, you should use a facial protection screen, too.

4.2.11 If you think there is any chance that you have been in contact with acid, rinse the suspicious area abundantly during several minutes. There are emergency water rinse pistols and fountains close to all chemical benches. Take into account that there is also a

shower with the same purpose for the cases of wider affected areas.

4.2.12 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 attacks Room (to the right of the door), in the Mixt Room (on the Quimipol 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.

4.3 Gas leak alarm

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

Gas detectors are generally placed at the event of:

- Gas pressure regulators panels
- Flow meter cabinets of the process machines
- The gas supplying cabinets.

In this situation, the automatic security system will close the bottle and, through the extractions, the gas will be removed directly outside.

4.3.2 If a gas leak alarm occurs, start evacuation without running. Leave what you are doing quickly but in a safe way and obtain information about the incident from the Responsible of Standard Production or any other member of staff of CR Maintenance.

Look at the Gas System indicator lights:

- If the **yellow light** is 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 CR within very few minutes. Exit through the SAS if it is possible and inform to the maintenance and emergency phone numbers listed in Annex I.
- If the **red light** is ON, you must evacuate immediately CR. Take the nearest emergency door to go outside according to the map enclosed in figure 09.

4.3.3 Do not open in this situation any gas pressure regulators panel, vapor extraction cabin or flow meters cupboard. The system automatically closes the affected bottles.

4.3.4 Do not run nor open in this situation any machine which works with toxic or explosive gases.

4.4 Fire alarm

4.4.1 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 SAS to evacuate, nor to take off your CR clothes.

4.4.2 It is important to CLOSE all the doors behind to reduce the spread of fire.

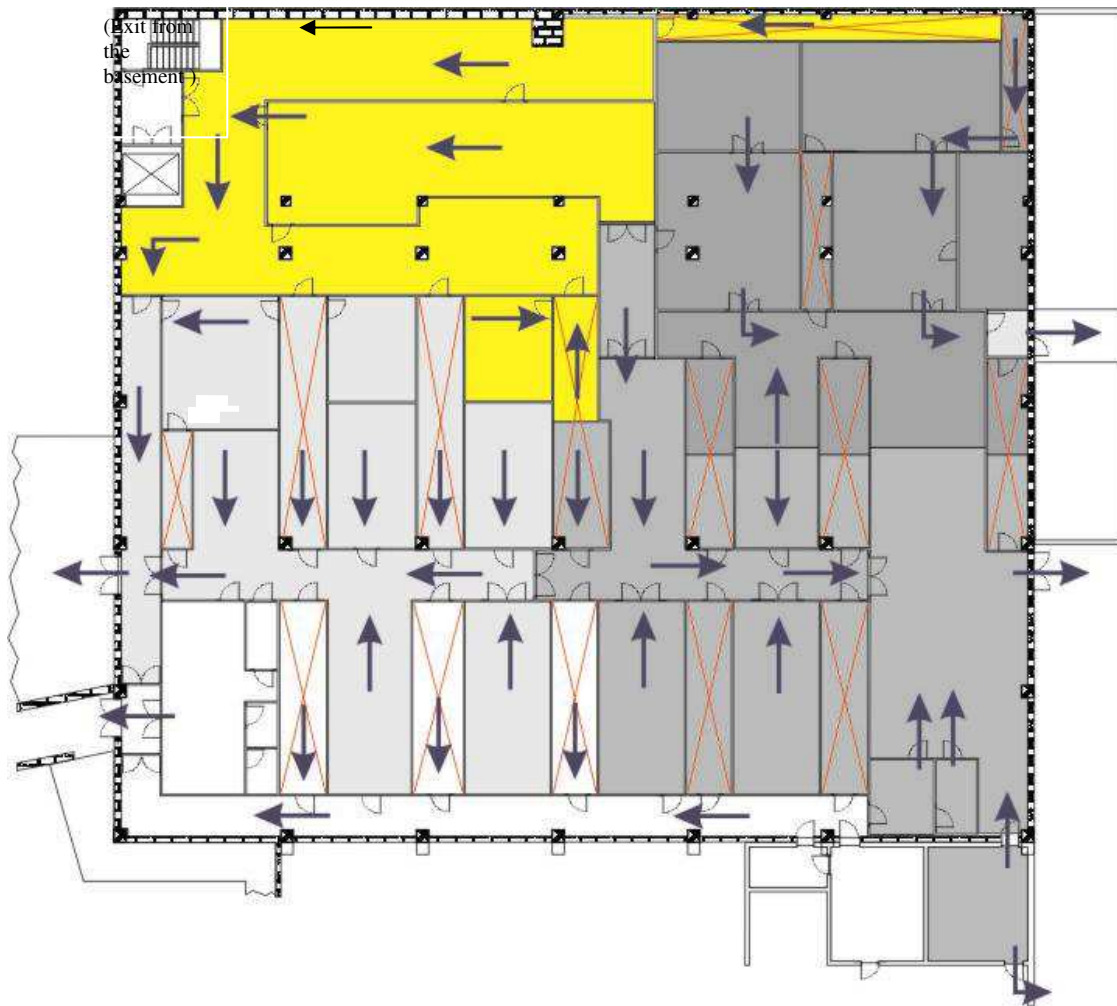


Fig. 09. Evacuation routes.

4.4.3 You can only take your CR clothing off once you are safe outside from the CR enclosure.

4.4.4 The meeting point is at the entrance of MATGAS building, next to Cerdanyola - Bellaterra road.

4.4.5 Please wait at the meeting point until the evacuation or security responsible has verified if all the people that were inside the CR are present and in safe condition.

ANNEX I: EMERGENCY SUMMARY

INSIDE OF SB

Continuous Siren: EVACUATE

Discontinuous Hooter: ALERT

Please follow the instructions of the closest Responsible person

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 the gas state pilot repeater at the entrance of SAS is not lighting in green, please do NOT ENTER. Please notify and wait for the Facilities Maintenance Responsible instructions, or in his absence, to the ones of the CR Coordinator Manager.

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

Emergency telephones

IMB-CNM Management _____	Ext. 2478 / 2468
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

REMIND BEFORE ENTRY

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: Manuel Lozano Fantoba	2478
- Clean Room Manager: Miguel Zabala García	1060
- Facilities and Maintenance Responsible: Xavier Mas Pla	1068
- Clean Room Facilities	
Mornings: Xavier Mas	1068
Afternoons: Antonio Sáenz	1061
- Mechanical Workshop	
Jorge Morales	1051
- Electronic Workshop	
Antonio Garzón	1055
Javier Bermúdez	1054
- Clean Room Costume Responsible	
Mornings: Elena Chica	1056
Afternoons: Luis Rull	1402

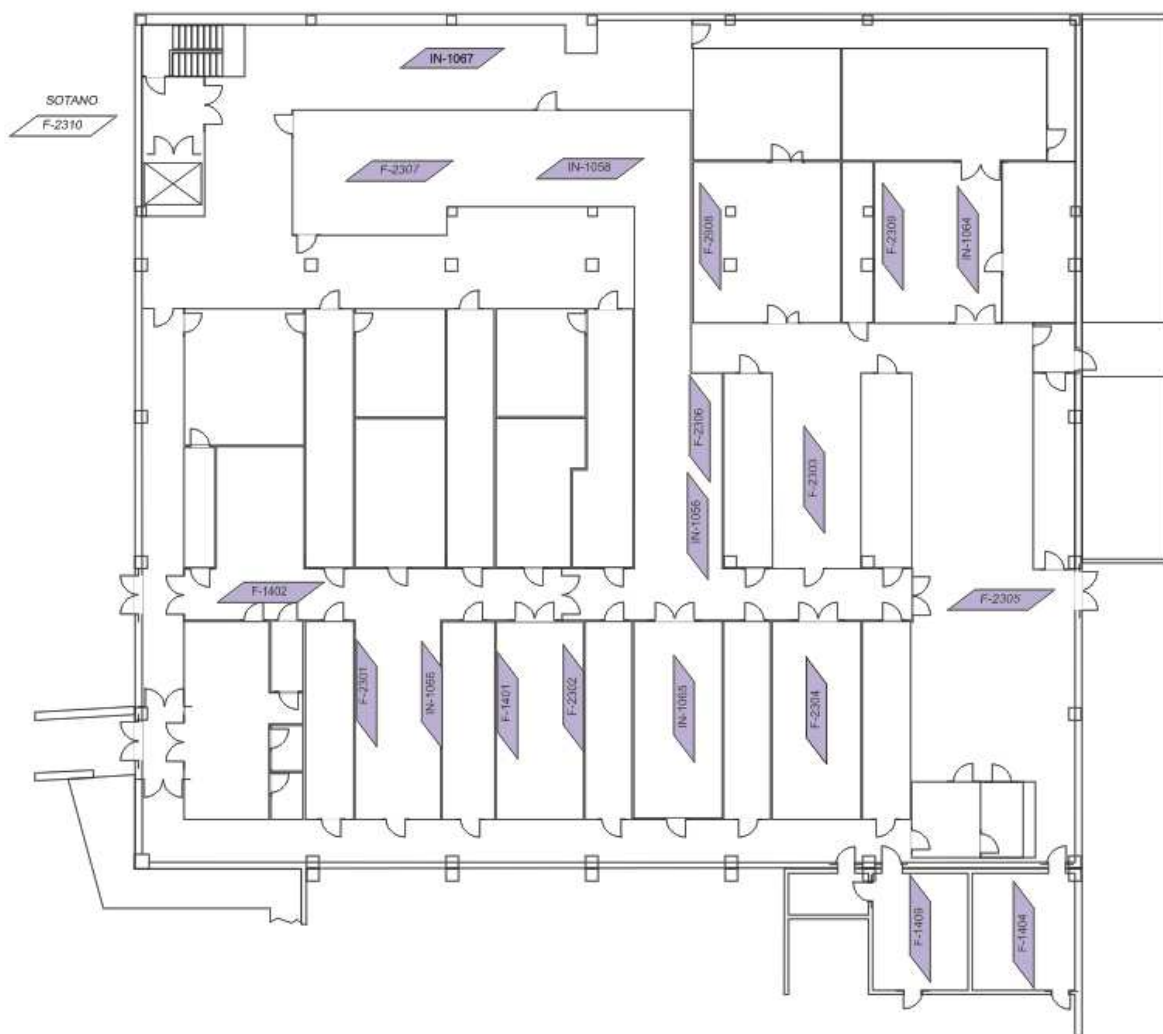
- **Clean Room staff** (Alphabetical list)

Ayesta Urquiza, Xabier	Mas Pla, Xavier
Azambuja Rebollar, Andrea	Mas Colomina, Roser
Bermúdez García, Javier	Mateu Mañé, Carles
Borrisé Nogué, Xavier	Montserrat Martí, Josep
Calvo Angós, José	Morales Guerrero, Jorge
Capell Solsona, Xavier	Muñoz López, David
Castillo Espinosa, M ^a Encarnación	Noy Orcau, Ricard
Céspedes Montoya, Eva	Rull Camacho, Luis
Cirera Perich, Josep Maria	Sáenz Gacía, Antonio
Cot Borràs, Roger	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	Zabala García, Miguel
Martínez de Olcoz, Leyre	

PROTOCOL 0.1 – Protocol of Access to the Clean Room

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Clean Room telephones



Showers output from SAS	1402
Inspection Area	2301/1056
Photolitho CMOS Area	2302
Steppers Area	1065
Wafers Area	2306
Photolitho MNC Area	2308
RIE Area	1058
Metal Area	2307
RIE/Sputt. Srvc. Corridor	1067
CMOS Baths Area	2304
Microsystems Laboratory	2238/1404
Basement (Pumps)	2310
Nanotechnology Area	2309/1064
MNC/Mixt Area	2305
Electroplating/CVD-MNC	2303
Control Room	1409

PROTOCOL 0.1 – Protocol of Access to the Clean Room**Version 19_08_ENG****ANNEX IV: 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 stablished 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__