

# Clean room rules and regulation



**ASSIGN  
BUSTER**

nsCLEANROOM RULES AND REGULATION 1 PURPOSE 1. 1 This procedure is to provide the general accepted Cleanroom practices for N2FC Cleanroom 1 and Cleanroom 2 at School Electrical and Electronic Engineering, Nanyang Technological University. 2 SCOPE 2. 1 This procedure applies to all personnel entering N2FC Cleanrooms. When in doubt, please consult the staff on duty. 3 APPLICABLE DOCUMENTS 3. 1 3. 2 Federal Standard 209E IES-RP-CC018. 2 Cleanroom Housekeeping - Operating and monitoring proc 4 TERMS AND DEFINITIONS 4. Cleanroom An enclosed room in which the room conditioning especially the concentration of airborne particles is controlled to meet a specified cleanliness class for wafer fabrication. Changing Room Cleanroom adjacent to the main Cleanroom from where all personnel dress and undress Cleanroom garment before entering the Cleanroom. Sub-Fab Supporting Cleanroom operation and is located directly below the raised floor of the main Cleanroom, where most of the supporting equipment were located and supporting facilities for processing equipment are laid.

Buffer Room Enclosed partitions in the Grey room and Sub-Fab. Viewing Area Enclose partitions prior to Control room for visitors. This is not classified as Cleanroom. 4. 2 4. 3 4. 4 4. 5 4. 6 Control Room Enclose room prior to changing room for housing the remote monitoring facilities. This is not classified as Cleanroom. 5 POLICY 5. 1 The Cleanroom is a restricted area. Access to the Cleanroom is limited to authorize personnel only. All personnel, including visitors, entering the Cleanroom must comply with the rules and regulations as laid out in this procedure.

For safety reasons, no one is allowed to stay or work in the N2FC without the presence of the Laboratory staff. 5. 2 6 PROCEDURE 6. 1 General Cleanroom

concepts The floor is considered to be the dirtiest part. The bench top and process equipment are to be maintained as the cleanest part. Human factors are considered the highest possible source of particulate contamination other than the operating equipment. 6. 2 Restrict for Materials entering into Cleanroom The following are not allowed to be brought/used in the Cleanroom Comestic make-up. Non-Cleanroom or regular papers.

Non-Cleanroom compatible pen. Pencils, erasers, highlighter pen and correction fluid. Photocopied Cleanroom paper not contained in Cleanroom compatible cover. Carton material items, wood, stera-form, regular cloth and regular paper materials. Rusty tools or equipment. When in doubt of other materials which is not stated on the above, please consult the staff on duty. Only notes printed by inkjet printer is allowed to be brought in the Cleanroom. The Micro Fabrication is linked with network and user is strongly recommended to use digital storage and networking for recording and data retrieval. . 3 Discipline within the changing room Remove before entering the changing room , all make up such as lipstick, blusher, eyeshadow, mascara, eye liner, powder, foundation and any other cosmetic that is applied onto the face and neck area. No fixture or equipment can be brought into the Cleanroom through the changing room without the prior approval from the Lab Manager. No combing of hair is allowed in the changing room. No eating , drinking or smoking in the changing room. Carry out dressing and undressing sequence of the Cleanroom garment.

Follow the instruction as given in the Changing room. The upper half of the jumpsuit (waist line onward which include the sleeves) is not allowed to touch the floor during gowning or ungowning. No pinning of the any badge

onto the Cleanroom jumpsuit. No jewellery is to be expose after the Cleanroom garments is worn. After jumpsuit is worn, personnel are not allowed to lie on the bench or sit on the floor. No entering Cleanroom without a complete Cleanroom attire. No hanging of street clothing/jacket on the hanger racks, which are meant for hanging Cleanroom garments.

All jumpsuits must be hanged properly in the garment closure. Jumpsuit is not allowed to be brought out of the changing room except to be sent for laundry. No expose hair net, it must be covered with hood completely and properly before entering the Cleanroom. No wearing of jumpsuit, hood, glove and facemask that have dropped onto the floor. 6. 4 Discipline within the Cleanroom The following discipline is to be observed to minimize particulate and surface cleanlines contamination : No touching of the face with gloved hand. The glove is to be change immediately when this occurs.

No adjustment of hair is to be carried out in the Cleanroom. All personnel are required to go to the changing room to tuck their hair under the hair net, after which the glove is to be replaced. No torn glove, booties or jumpsuit is to be worn in the Cleanroom. They are to be changed immediately when they are found to be torn. No removing of items from underneath of the Cleanroom jumpsuit. No running, fast walking, pushing and shoving, smoking, eating or drinking in the Cleanroom. No makeup, jewellery, personal items are allowed in the Cleanroom. No expose of forearm bare skin.

Jumpsuit and glove must be fully covered while working in the Cleanroom. No scratching of head, combing of hairs. No torn or cut Cleanroom paper is to be used in the Cleanroom. No tearing or cutting of Cleanroom paper in the

Cleanroom. Where it is necessary to bring photocopied material into the Cleanroom, only Cleanroom paper is to be used and it is to be placed inside sealed folder. Sweeping of floor is not allow except for Buffer room and Changing room. No drilling and sawing of material in cleanroom without prior approval from Lab Manager. 7 Gowning & ungowning sequence 7. Entry to lab Streets Shoes - to be removed outside lab entrance. Place shoes in shoe rack. Put on slipper Entry to Viewing area Entry to changing room through control room. 7. 2 GOWNING SEQUENCE The gowning sequence proceeds from the top down. Remove slipper in changing room and place them on rack. Hair net - Take one piece of hair net from rack. Place hair net over head. Assure that all hair is tucked under hair net. Face mask - Take one piece of hair net from rack. Secure face mask with bands hook over ear. Crimp the face mask to bridge of nose.

Pull bottom of mask down and completely under chin. Hood - Remove from jumpsuit or plastic bag. Put on the hood with the opening facing the front of the face. Adjust Velcro such that the hood fit comfortably. Ensure no expose chin. Straighten out the rest of the hood ensuring that the shoulder is covered. Jumpsuit - Remove the jumpsuit from hanger or plastic bag. Assure the upper part of the jumpsuit does not drag on the floor. Put on the jumpsuit, feet first and finally arms. Ensure the hood is tucked underneath the jumpsuit before zipping up the jumpsuit.

Snap on the neck collar Booties - Take the booties from the bootie storage racks and slip the booties over the feet. Ensure the leggings of the jumpsuit is tucked into the booties. 7. 3 Check out - In Changing room Look into mirror and check on the following: No hair sticking out. Hair net tucked in hood.

Facemask covered the nose and chin. Hood is tucked underneath the jumpsuit. No expose chin or neck. Gloves - Remove one glove at a time from the glove bin/bag, handle gloves by cuffs only. Pull glove cuff toward upper arm. Cover glove cuff with jumpsuit sleeve. You may now enter the Cleanroom. 7. Ungowning sequence (in changing room only) Booties - Unfasten the booties snaps. Remove booties and put back in the bootie storage racks. Jumpsuit - Unsnap the neck collar snap. Unzip jumpsuit. Step out of jumpsuit taking care not to drag and NO sleeves touching on floor.. Hang jumpsuit on hanger and zip up jumpsuit Hood - Unfasten Velcro of hood. Pull hood off of head. Hang and snap the hood on the jumpsuit neck collar snap. Facemask - Remove and discard in designed trash bin. Hairnet - Remove discard in designed trash bin. Gloves - Remove the gloves and throw into the trash. Exit of Changing room.