Center for Nanoscale Science and Engineering

**Standard Operating Procedure for Working Alone**

(PI): ALL Laboratory: CNSE Cleanroom Bourns B121, Sputtering

Building: Bourns Hal and MSE Room(s): MSE 0055 and 0071

SCOPE: This document provides a Standard Operating Procedure for working alone in the above-noted laboratory space.

 If this box is checked, NO WORKING ALONE IS ALLOWED IN THIS LAB.

X

 If this box is checked, NO WORKING ALONE IS ALLOWED IN THIS LAB WITHOUT A BUDDY SYSTEM. BUDDY SYSTEM is defined below

**Chemical Hazards: Working with any materials in these hazard classes requires a "Buddy System"**

**Pyrophoric Chemicals** or listed as OSHA Hazard Class "substances which, in contact with water, emit flammable gasses" or listed as OSHA Hazard Class Pyrophoric are **not allowed** inside the cleanroom.

**Water Reactive Chemicals** (ex: Aluminum Carbide, Calcium, Calcium carbide, Lithium aluminum hydride, Potassium, Sodium), or listed as OSHA Hazard Class "substances which, in contact with water, emit flammable gasses" Are **not allowed** inside the cleanroom.

**Potentially Explosive Chemicals** (ex: Azide Metal (M-N3), Nitrate (-ONO2), Nitro (-NO2), Nitrite (-ONO), Peroxide (-O-O-), Ammonium nitrate, Ammonium perchlorate, Benzoyl peroxide, Dinitrophenol, Nitrocellulose, Picric Acid (trinitrophenol), Urea nitrate), or listed as OSHA Hazard Class Explosive or Self-reactive are **not allowed** inside the cleanroom.

**Explosive Salts** (ex: Perchlorate salts (ClO4-)), or listed as OSHA Hazard Class Explosive or Self-reactive are **not allowed** inside the cleanroom.

**Acutely Toxic Chemicals** (ex: Carbon Monoxide, Cyanide salts, Digoxin, 2.4-Dinitrophenol, Methyl mercaptan, Nitric oxide, Phosgene, Potassium cyanide, Sodium Azide, Sodium cyanide, any chemical with LD50 (oral)< 50 mg/kg) or listed as OSHA Hazard Class Acutely Toxic Category 1 or 2.

**Peroxide Forming Chemicals** (ex: Isopropyl Ether, Methyl Isobutyl Ketone, Tetrahydrofuran, Acrylonitrite, Methyl Methacrylate, Styrene), or listed as OSHA Hazard Class Peroxide.

**Strong Corrosives** (ex., Hydrochloric acid, Nitric acid, Perchloric acid, Phenol, Sulfuric acid, Potassium hydroxide, Sodium hydroxide), or listed as OSHA Hazard Class Corrosive.

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**Strong Oxidizing Agent** (ex: Ammonium perchlorate, Ammonium permanganate, Bromine, Calcium chlorate, Calcium hypochlorite, Chronic acid, Hydrogen peroxide, Oxygen), or listed as OSHA Hazard Class Oxidizer

**Strong Reducing Agents** (ex: Lithium, Lithium aluminum hydride, Magnesium, Potassium, Sodium, Sodium borohydride)

**Regulated Carcinogens** (ex: Acrylonitrile, Benzene, Formaldehyde, Gallium Arsenide, Inorganic Arsenic, Paraformaldehyde), or listed as OSHA Hazard Class Carcinogen are **not allowed** inside the cleanroom

**Biological Hazards:** Of any kind are **not allowed** inside the cleanroom.

**Select Agents**  (ex: Botulinum neurotoxin, Tetrodotoxin, Yersinia pestis) <http://www.selectagents.gov/Select%20Agents%20and%20Toxins%20List.html> are not allowed inside the cleanroom

**Process Hazards: Specify source when necessary**

Procedures involving high-pressure equipment (identify specific equipment)

Transferring large quantities (e.g., 10 liters or more) of hazardous materials

High voltage, high current, Other

**PROTOCOL/PROCEDURE:**

Working alone inside the cleanroom is allowed at all times for all trained personnel, however, requirements 1-2 below must be followed.

Undergraduate students may never work alone in the laboratory without written permission from the Cleanroom Manager.

Written permission may include or exclude specific procedures or experiments depending upon the skill level of the student.

Graduate students with less than 6 months of experience in this lab may NOT work alone except as noted above.

All personnel must have read the standard operating procedure, received applicable training, and executed the select, approved procedure or experiment successfully no less than 3-5 times before completing the specified procedure while working alone.

**Chemicals of any kind must never be handled or used when working alone**.

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**HEALTH AND SAFETY REQUIREMENTS FOR ALL LABORATORY PERSONNEL WHEN WORKING ALONE:**

1. Be sure that someone knows your location on campus at all times including building name, floor number, and room/lab number.

2. Have a cell phone on your person with the UCR Police Department phone number programmed into it (951-827-5222). If no cell service is available, each laboratory and laboratory office area has a phone to use with emergency numbers posted nearby.

3. **BUDDY SYSTEM**: When working with any chemicals inside the cleanroom another trained lab user must be present in the cleanroom.

4. **The laboratory emergency plan** is posted at the lab entrance, and near the laboratory phone. The campus police department phone number is 951-827-5222.

**ENGINEERING CONTROLS:**

A hazard assessment must have been completed for the work being performed and all necessary controls must be in place prior to working.

Use of the fume hood is required for all chemical handling inside the cleanroom.

**PERSONAL PROTECTIVE EQUIPMENT:**

At a minimum, all workers shall wear long pants, closed-toed shoes, socks covering the ankles, a cleanroom smock, and safety glasses.

Additional PPE appropriate for the materials or process being used should be added as noted in the SOP for that material/process.

PI Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

PI Signature \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Acknowledgement

**Standard Operating Procedure**

**Title: Working alone policy**

By my signature I acknowledge the contents, requirements, and responsibilities outlined in this Standard Operating

Procedure (SOP):

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***\*Identification:*** *Enter your Student ID, Employee ID, UCR NetID, UCR Email, or Date of Birth.*