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Experiment Safety Review Form
Review Number: PS-ESR-1-102-2012

PRINCIPAL INVESTIGATOR: Cherno Jaye
GROUP: NIST
EXT: 5958 **E-MAIL: cjaye@bnl.gov** **LIFE NUMBER: O6156**

Project Title: U7A Sample Mounting	
Location(s): 0725	
Area(s): 0725-FIRST-1-102	
Proposed Start Date and Duration: 3/15/2011 - 1 years	

SIGNATURES:

Principal Investigator: Cherno Jaye	**Date: 3/22/2011**
Experiment Review Coordinator: Lori Stiegler	**Date: 3/23/2011**
Reviewer: Christopher Weilandics	**Date: 3/15/2011**
Reviewer: Frank Zafonte	**Date: 3/15/2011**
Reviewer: Deborah Bauer	**Date: 3/16/2011**
Reviewer: Brian Heneveld	**Date: 3/15/2011**
Approval: Lori Stiegler	**Date: 3/23/2011**
Review/Approval (ERC) Comments: 03/14/2012 11:01 AM Performed annual review. No changes in work or hazards. Renewed for one year. 03/23/2011 3:48 PM	
Walkthrough Signature:	**Date:**
Expiration Date (max 1 yr.): 3/23/2013	
FUA Change Required? No	
Fire Rescue Run Card Changes Required? No	
Has a NEPA Review been Performed for this Project? No	
Required Approvals (i.e., IACUC, IBC, etc.):	
Project Termination Acceptance Signature: **Comments:**	**Date:**

I. Define the Scope of the Work

A. Description

Users bring in sample wafers (Si) already coated with polymer thin films. These wafers are cut to pieces to mount unto a sample bar (to be loaded into the vacuum chamber for x-ray analysis). A double sided Cu adhesive tape is first mounted unto the bar using disposable nitrile gloves and the wafers are then affixed unto the adhesive. The bar (with samples) is then blown with nitrogen gas and loaded into a vacuum sub-chamber for outgassing or directly into a beamline chamber for x-ray analysis. Occasionally the sample bar needs to be wiped off (cleaned) with ethyl alcohol before applying the adhesive tape.

Equipment manuals or procedures that are controlled documents:

N/A

B. Human Performance Factors

N/A

C. Waste Minimization/Pollution Prevention

Use of very small amount of solvents (ethyl alcohol) for cleaning the bar with the emphasis of absolutely no wet chemistry especially during BLOSA training.

Use of only necessary amount of Cu adhesive tape for mounting the samples.

Already analyzed or left over samples to be shipped back to home institutions.

D. Materials Used /Waste Generated

Materials Used	Disposal Method	Amount per Use	Amount per Year	Comments
Cu adhesive	Industrial	0.00 g	20.00 g	
Ethanol	Fugitive	20.00 ml	150.00 ml	
Ethanol	Sanitary	10.00 ml	150.00 ml	
Ethanol	Other	0.00 ml	2.00 ltr	Stored in lab

II. Identify and Analyze Hazards Associated with the Work

The following hazards were identified:

Physical Hazards:

- Sharps (non medical)
- Compressed gases (lecture bottles, cylinders, gas lines) (Area: 0725-FIRST-1-102)
- Flammable liquids
- vacuum pump (Other)

Chemical Hazards:

- Flammable liquids (Area: 0725-FIRST-1-102)

Ionizing and Non-ionizing Radiation Hazards:

- None

Biological Hazards:

- None

Offsite Work:

- None

Other Issues (Security, Notifications, Community, etc.):

- None

Significant Environmental Aspects

- Any amount of industrial waste generation (e.g., oils, vacuum pump oil)

III. Develop and Implement Hazard Controls and Assess Risk

A. Physical Hazards, Tasks and Controls

Hazard, Default Controls, Task Specific Info	Risk Level
Hazard: **Sharps (non medical)** **Default Controls:** Sharps including needles, razor blades and syringes (plastic and glass) must be disposed of in sturdy, rigid, sharps containers. Sharps containers cannot be more than 2/3 full.	**Negligible (0-20)**
Hazard: **Compressed gases (lecture bottles, cylinders, gas lines)** **Default Controls:** • Any systems >15psi must be SME Approved • Transport cylinders using a cylinder cart • Secure cylinders to a fixed object/wall • Use regulator, hoses, and components compatible with gas • Use hoses and clamps rated for maximum regulator output or use pressure relief device • Wear safety glasses with side shields when installing/removing/or adjusting regulator • Label piping/tubing	**Negligible (0-20)**
Hazard: **Flammable liquids** **Default Controls:** As for chemicals, plus Store large quantities in Flam. cabinets as required	**Negligible (0-20)**
Hazard: **vacuum pump (Other)** **Default Controls:**	**Negligible (0-20)**

B. Chemical Hazards, Tasks and Controls

Hazard, Default Controls, Task Specific Info	Risk Level
Hazard: **Flammable liquids** **Default Controls:** Use hazardous chemicals controls. Review large quantity storage with Fire Protection Engineer Note location on fire run card and hazard info. placard for storage of solids, greater than 40 pounds; liquids, greater than 5 gallons; gases, greater than 10 pounds	**Negligible (0-20)**

Task Specific Info: Glass container size limited to 1L	

C. Environmental Hazards, Tasks and Controls (include on/off site transportation and products/services)

Hazard, Default Controls, Task Specific Info	Risk Level
Hazard: Any amount of industrial waste generation (e.g., oils, vacuum pump oil) **Default Controls:** Engineering Controls • Store only compatible wastes together, in suitable containers. • Provide secondary containment for liquid wastes if potential for environmental release exists. • Keep containers closed and secured unless adding waste to container. Administrative Controls • Use a green industrial waste label, with generator's name and chemical contents (trade name/formula NOT acceptable). Label oils "Used Oil". • When full, complete and submit a WCF for pick up. The waste may be stored in the 90-day area. Training: Hazardous Waste Generator (HP-RCRIGEN3) Comply with the SBMS Subject Area: "Industrial Waste".	**Negligible (0-20)**

D. Radiation Hazards, Tasks and Controls
None

E. Biological Hazards, Tasks and Controls
None

F. Offsite Work Hazards, Tasks and Controls
None

G. Other Issues (Security, Notifications to Other Organizations, Community Involvement, etc.)
None

H. Recommended Exposure Monitoring

- None

Description or comments:

I. EPHA Determination

Chemical Name	Quantity (lbs, gal)	Location (Bldg/Room#)

IV. Perform Work Within Controls

A. Recommended Training and Medical Surveillance Summary

- NSLS R2A2 for Lab Steward (LS-R2A2-LAB-STWD)
- Laboratory Standard (HP-IND-220)
- Hazardous Waste Generator (HP-RCRIGEN3)
- Compressed Gas Safety (TQ-COMPGAS1)

B. Personnel Training, Qualification, and Authorization List

Employee/Guest Name	Life/Guest#	Dept	Required Training Course(s)	Signed

Cherno Jaye	O6156	LU	Compressed Gas Safety (TQ-COMPGAS1) [EXPIRES: 8/4/2012] Laboratory Standard (HP-IND-220) [EXPIRES: 8/8/2013] Hazardous Waste Generator (HP-RCRIGEN3) [EXPIRES: 8/16/2012] NSLS R2A2 for Lab Steward (LS-R2A2-LAB-STWD) [EXPIRES: 8/16/2012]	3/14/2011 9:47:21 PM
Dan Fischer	F5613	LU	Compressed Gas Safety (TQ-COMPGAS1) [EXPIRES: 7/21/2012] Laboratory Standard (HP-IND-220) [EXPIRES: 8/24/2013]	

C. Emergency Procedures
Spill control supplies are located outside lab 1-100. Follow the Bldg 725 Local Emergency Plan.

D. Transportation
None

E. Logistical Interactions
None

F. Termination/Decommissioning

All equipment and chemicals will be dispositioned or transferred to new lab steward upon completion of work.

V. Provide Feedback

None

VI. Attachments

Attached Files: