

	SAFE WORK PROCEDURE:	Doc No		SWP-COE-01			
		Last Rev/Date		00	08 Apr 2010		
	Ebeam Evaporator		Current Rev/Date		00	08 Apr 2010	
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1. Application to:

All personnel working on the Ebeam Evaporator System.

2. Pre-requisite for Operation of the Ebeam Evaporation System:

- 2.1. Must have attended the operation and safety training.
- 2.2. Must be fully understand the system risk assessment
- 2.3. Must be fully qualified to operate the system by him/her self.

3. Hazards that may be present:

- 3.1. Implosion, because of high vacuum
- 3.2. Sharp glass from broken bell jar
- 3.3. Acid burn – during the bell jar cleaning
- 3.4. Spillage of LN2 – can cause cryogenic burn during collection and pouring into the system

4. Personal Protection Required:

- 4.1. Gloves
- 4.2. Cleanroom apparel (garment and shoes)
- 4.3. During bell jar cleaning – apron, goggles and acid gloves must be worn.
- 4.4. During LN2 collection – PPE must be worn

5. Procedures:

5.1. Operating the Ebeam Evaporator

- 5.1.1. Topping up of source materials
 - 5.1.1a Purging the chamber with N2 gas
 - 5.1.1b Filling up the crucibles with required source materials
- 5.1.2. Loading samples
 - 5.1.2.a Loading substrate holder into the chamber
- 5.1.3. Evaporation process
 - 5.1.3a Operating the Electron Beam Evaporator System
 - 5.1.3b Collection of Liquid Nitrogen (LN2) outside cleanroom
- 5.1.4. Unloading samples
 - 5.1.4a Taking out samples from the chamber
 - 5.1.4b Clean the bell jar using aqua regia mix (3 HCl + 1 HNO₃)

5.2 Maintenance of the Ebeam evaporation system

- 5.2.1 Once a month/as and when required lab tech will clean up the chamber.
- 5.2.2 Once a year preventive maintenance

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5.3 Specific Processes

5.3.1 Evaporate single/multi layers of metal(s) on substrates.

6. Communication Frequency:

The Lab Supervisor shall arrange for this Safe Work Procedure to be communicated every once a year and as & when required.

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Approved by: A/Prof Chor Eng Fong