

NATIONAL UNIVERSITY OF SINGAPORE

Doc no: CIBA/RA/Exp/001 Experiment-Based Risk Assessment Form

Name of Department PHYSICS Location of Lab S11-02-09
 Name of Laboratory CIBA Optical Materials & Devices Lab Name of PI Asst Prof Andrew Bettiol
 Name of Researcher/LO Xiong Bo Qian Name of Activity/Experiment Optical Trapping; Micro-Photoluminescence measurements; Light coupling into fiber

No	Description/Details of Steps in Activity	Hazards	Possible Accident / Ill Health & Persons-at-Risk	Existing Risk Control (Mitigation)	Severity	Likelihood (Probability)	Risk Level	Additional Risk Control	Person Responsible	By (Date)
1	Optical fiber insertion	1. Fiber breaking	1. injure skin	1. All users to wear gloves	1	1	1			
2	Laser alignment (all wavelengths)	1. Laser light	1. Laser light shining directly into eyes can cause permanent blindness. (burning of corneas)	1. All users to wear laser goggles of appropriate wavelength, microscope eyepiece permanently blocked. 2. Black non-reflective boards barricading areas where laser beams are aligned.	2	1	2			
		2. Reflected laser light	2. Reflected laser light can cause permanent blindness.	3. No jewellery allowed when working with lasers. 4. 'LASER IN USE' sign lighted when laser work is carried out.						
		3. Overloading of laser power source	3. Electrical short circuit, power outage.	5. Label stating maximum allowed current allowed for each power supply. 6. Areas in path of laser beam kept clear of reflective items.						
3	Small Samples cleaning with minimal amount of chemicals (IPA/Ethanol/Acetone)	1. Skin irritant	1. Spillage onto skin	1. Gloves, goggles, full pants and covered shoes to be worn when working with chemicals. (PPE)	1	1	1			
		2. Eye Irritant	2. Chemical splash	2. Goggles to be worn when refilling bottles						
		3. Breakage of stock bottles/Spillage	3. Chemical spill / glass cuts	3. Keep area around stock cupboard clutter free to prevent trips. 4. Presence of first-aid box nearby						
4	using optical microscope	1. fire hazard	1. Overheating of illuminator/mercury lamp which may cause fire	1. make sure illuminator/mercury lamp not cover by anything for ventilation 2. double check to make sure power off before leaving	2	1	2			
		2. strong UV or laser light reflected from sample and directed to eyepiece	2. Reflected strong UV or laser light can cause permanent blindness.	1. avoid using eyepiece when laser or uv lamp is on. Use camera and tv screen for imaging 2. cover eyepiece with something when laser or UV lamp is on. Close the light source aperture before removing the eyepiece for subsequent use of eyepiece.	2	1	2			

Conducted By Hoi Siew Kit
Sureerat Homhuan
Chan Sook Fun

Approved By Asst Prof Andrew Bettiol
 Name Asst Prof Andrew Bettiol
 Signature _____
 Approval date 12-Apr-10 Next Revision date 11-Apr-13
 (Maximum 3 years)