

WORKPLACE RISK ASSESSMENT SYSTEM

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Risk Assessment Details ID: RA_SCELSE_133823 Rev No: 1 Draft ID: 0			
User's School/ Department/ Student Activity Group:	Singapore Centre for Environmental Life Sciences Engineering	Project Title:	Use of Raman and Brillouin confocal microscope
Workplace:	Singapore Centre for Environmental Life Sciences Engineering	Other workplace:	-
Location:	Advanced Biofilm Imaging Facility	Conducted By:	Radek Machan(RADEK.MACHAN);Foo Yong Hwee(YHFOO)
Approved By:	Peter Torok (PETER.TOROK@ntu.edu.sg)	Submitted By/Submitted Date:	Radek Machan/09-Oct-24
Approved Date:	09-Oct-24	Next Review Date:	08-Oct-27
Status:	Approved	Comments:	-

1. Hazard Identification					2. Risk Evaluation
1a.	1b.	1c.	1d.	1e.	2a.
No.	Work Activity	Hazard	Sub Hazard	Possible Accident/III Health & Person-at-Risk	Existing Risk Control
1	Use of Raman and Brillouin confocal microscope	Biological	Contact with or infection by bacteria, virus, fungal spores or toxin	Others:Depending on the properties of the chemicals or biological materials, contact may cytotoxic to user, cause irritations, infections or other injuries.	Wear the appropriate PPE ; Lab coat, nitrile gloves & covered shoes. Additional PPE may include safety eyewear & thicker gloves. Wear mask whenever appropriate. Dispose specimen in the sharps bin immediately after use. User shall inform the person-in-charge of the imaging facility beforehand should any toxic substances or any Schedule 1 or 2 biological agents (not allowed in

			<p>SCElse) are used.</p> <p>Users are expected to submit a detailed risk assessment (with approval from supervisor and/or cluster head) of their activities involving the substance/agents.</p>
Chemical	<p>Others:Chemical hazard.</p> <p>Fluorescent dye used may be cytotoxic.</p>	<p>Others:Fluorescent dye used may cause skin irritation or may be mildly cytotoxic when in contact.</p>	<p>User shall read the SDS of the fluorescent dye used and wear the appropriate PPE : Lab coat & covered shoes. Nitrile gloves must be used when handling the specimen.</p> <p>Additional PPE may include safety eyewear, thicker gloves, and mask, whenever appropriate.</p> <p>Staining procedures shall be conducted in the designated SCElse main laboratory modules and not in the imaging facility, which is meant to be a dry lab facility.</p>
Mechanical	Cut	<p>Others::Cuts, lacerations or puncture from sharp edges of coverslips and slides</p>	<p>Wear the appropriate PPE ; Lab coat, nitrile gloves & covered shoes. Additional PPE may include safety eyewear & thicker gloves.</p> <p>Dispose specimen in sharps bin immediately after use.</p>
Physical	Non-ionisation radiation	Eye injury	<p>The microscope is provided with a laser blocking filter which prevents the laser beam from entering the eyepieces of the microscope.</p> <p>A black opaque cover is provided to be placed on top of the sample stage when the laser illuminates the sample.</p> <p>Appropriate warning signs are in place to warn users of laser hazard. All</p>

			users are required to hold a valid NEA N3 license, which ensures that they have familiarised themselves with fundamentals of non-ionising radiation safety and undergone an eye checkup before being allowed to operate the microscope. Besides that, users are required to take every 3 years an online non-ionising radiation safety module (Working with Non-Ionising Radiation - OHS2NIR01).
Ergonomic	Awkward posture	Sprains, strains	Maintain good posture at all times while working at the CLSM. Ensure that the chair is adjusted to a comfortable height. Take breaks in between the long sessions on the CLSM. Do not work at the microscope/computer for more than two hours without taking a break (SCELSE recommends users to take a 10 mins break with every 50 mins of microscopy time).
Electrical	Contact with electrical energy	Others:Potential for electric shock from electrical components of the equipment	Conduct visual inspection of electrical plugs, wires & cables before use. Use approved & suitable electrical plugs with the `SAFETY MARK` logo. User shall ensure that the area surrounding the equipment is kept dry.
Chemical	Sensitizer or irritant	Others:Skin irritation from Immersion oil for using oil Objectives.	Users are advised to read the SDS and abide by the precautions documented. Wear the appropriate PPE ; Lab coat & covered shoes. Use nitrile gloves when handling specimen. Apply BSL2 hygiene standards, wash hands at

the end of the
experiment.