**Manchester Institute of Biotechnology - Risk Assessment**



| Date: 13 Nov 2015 | Assessed by:  | Validated by:  | Location: MIB  |  | Review date:  |
| --- | --- | --- | --- | --- | --- |
| Task/Premises:

|  |
| --- |
| Public engagement activity: "MIB Open Day" Interactive Science Stands - Stand Name: PhotobiologyDemonstration of fluorescence using *Spirulina* extract prepared in Acetone – Uzma and Kang-Cheng Liu will conduct demonstration.Demonstration of Bioluminescence using Fireflies. Sealed petri dishes of cultured bioluminescent bacteria on Agar. For viewing only.Light activated protein – photoconversion. No student involvement required.Uzma Choudry and Kang-Cheng Liu in overall charge. Volunteers involved in the session are ‘facilitators’ only. All accidents to be reported to a First Aider and reported accordingly.  |

 |

| **Activity**  | **Hazard**  | **Person(s) in danger**  | **Existing measures to control risk**  | **Risk rating**  | **Result**  |
| --- | --- | --- | --- | --- | --- |
| Demonstration of fluorescence using *Spirulina* extract prepared in Acetone | Solvents: |  | Solvent will be disposed of in non-halogenated chemical waste |  |  |
| **Acetone –**Highly flammable, irritating to eyes, repeated exposure may cause skin dryness or cracking, vapour may cause drowsiness and dizziness**Projector / Source of white light:**Source of light may heat up over time (depending on what source is used). This may result in a burn | Demonstrators in charge of solvent chamberDemonstrator only | No ignition source in proximitySealed volume; 2 x 100ml volumes sealed in lab (duran bottles 250ml). Prepared and sealed in lab, transported in a secondary containment to the MIB Atrium.PPE worn by demonstrators: Howie-style lab coat, Nitrile gloves, chemical splash proof safety glassesOpen well ventilated areaInform demonstrators to be cautious when handling the projector/light source.Projector - electrical : PAT Tested (annual)No trailing cables (trip hazard) | High Low | AA |
| Bioluminescence in Fireflies | **Fireflies****Potential Health Effects:**Inhalation – maybe harmful if inhaled. May cause respiratory tract inflammation.Skin – Maybe harmful if absorbed through skin. May cause skin irritation.Eyes – May cause eye irritation.Ingestion – Maybe harmful if swallowed. | Demonstrators and Participants. | Fireflies enclosed in a box with small cut-outs for viewing and applying ATP.Gloves must be used when handling the fireflies.Inform participants to not eat the fireflies. | Low | A |
| Bioluminescent Bacteria | **Bacterial culture – liquid and agar plates – Biohazard****HG1 – Please find attached BioCOSHH form** | Demonstrators and Participants | Plates will be sealed using nescofilm and tape. Liquid cultures will be in a sealed bottle.BioCOSHH form NSC 1509B details the biological hazards and control measures. | Low | A |
| Light Activated protein photoconversion | **Biological material**Maybe harmful if absorbed through skin, eyes or if swallowed.**Electrical:**LEDs components may heat up slightly. | Demonstrators | Protein prep will be handled using gloves and enclosed in screw-top 10ml vials and sealed with Nescofilm. This will prevent any contact with the material. The protein prep will be sealed in lab and transported in a containerParticipants will not handle LEDs and demonstrators will be informed to be cautious when handling the LEDs. Ensure the LED intensity is low. | Low | A |

|  |
| --- |
| **Authorisation by PI** **I confirm that I have considered and understand the experiment and the associated hazards. I am satisfied that all of the hazards have been identified and that the control measures to be followed will reduce the risks to acceptable levels.** **Print name: Signed:****Date:** |

**Declaration by researcher**

**I confirm that I have read this Risk Assessment and that I understand the hazards and risks involved and will follow all of the safety procedures stated. Where PPE has been identified as a control measure, I will ensure that it is worn.**

**Declaration by PI**

**I confirm that the researcher who has signed below is competent to undertake the work. My counter-signature indicates that I am happy for the work to proceed.**

|  |  |  |  |
| --- | --- | --- | --- |
| **Name (please print)** | **signed** | **PI countersignature** | **date** |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |