Risk Assessment Form

(This is an active document and must be maintained)

UNIVERSITY OF CAMBRIDGE

Materials Science and Metallurgy

Date: 7th April 2020

Supervisor of Room/Area: **Prof. Serena Best & Prof. Ruth Cameron**

Room or area: **2_014 (CCMM main lab)** (Describe location)

Name of Assessor(s): **Wayne Skelton-Hough**

Title of Activity / Experiment / Work Area:

Use of the Malvern Zetasizer Nano-ZS

Description of Activity / Experiment / Work Area:

Using the Malvern Zetasizer Nano-ZS to measure the molecular weight, zeta potential and particle size distribution of samples in a liquid medium. Control of the Zetasizer is achieved using Malvern software on the attached PC.

SECTION 1: Identify all significant hazards, who or what may be affected by each individual hazard and controls in place to reduce risk to a minimum.

Hazard Description	Hazard to whom or what	Controls in place to reduce risk to a minimum
Electricity	Operator	• Inspect all electrical equipment and power cables before use and do not use any equipment that shows any signs of damage. • Ensure electrical equipment carries an up to date PAT label before using it. • DO NOT switch on any electrical equipment that gets wet.
Hot cuvettes	Operator	• When making measurements at an elevated temperature ensure the cuvette has cooled down to room temperature before removing from the Zetasizer. • DO NOT use polystyrene cuvettes for measurements above 50 °C.
High voltage (>240 VAC)	Operator	• Do not remove any instrument covers.

Hazardous chemicals	All laboratory users	• Prepare a COSHH assessment and consult the MSDS **BEFORE** starting any analysis. • If using flammable or explosive samples ensure that there are no sources of ignition close by. • If the sample is toxic or noxious operate the Zetasizer in a fume cabinet. • Thoroughly clean the sample cell to remove any traces of any hazardous chemicals when measurements are completed. • Clean up any spills immediately following the instructions contained in the appropriate COSHH assessment form or MSDS.
Class 1 laser	Operator	• Instrument has built in laser shuttering that blocks the laser path when the cell cover is opened. • Do not remove the instrument cover or attempt to defeat the built in shuttering system.
Instrument overheating	All laboratory users	• Do not obstruct the ventilation slots underneath the instrument or the fans on the rear on the instrument.
Broken cuvette	Operator	• Handle any broken cuvettes with extreme care, carefully collecting up the broken cuvette and placing in the broken glass bin provided.

SECTION 2: Emergency **Procedures**

In the event of evacuation, the Zetasizer may safely be left unattended. In order to shut down, switch the Zetasizer and attached PC Off at the mains. If the operator or any other laboratory user starts to feel unwell, remove from the lab, allow to sit down and seek medical attention if the symptoms persist. For burns and cuts, run the affected area under cold water for at least 10 minutes, or until pain subsides. Seek medical attention if required.

Signature of Assessor(s)		**Date:**
Signature of Supervisor		**Date:**

SECTION 3: Review - This assessment must be reviewed every 12 months or earlier if the basis of the original assessment is altered.

Review Date	Reviewed by (Signature)

Review Date	Reviewed by (Signature)

Change log

Change	Date	Updated by	Description
1	07/04/2020	W. Skelton-Hough	Document issued.