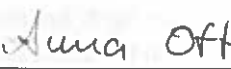






Title of project/experiment/activity			
Optical Lithography – Microtech laser writer/ Use of laser writer			
Location of activity		Start and end dates	
Cambridge Graphene Centre, Class 100 Cleanroom, EEDB Annexe, Gnd floor		1/7/2017 – open-ended	
Brief description (or attach procedure/protocol)			
The LaserWriter is a system for patterning planar structures on a mask or directly on the final substrate. Patterns pre-defined by the user are written with a focussed laser beam on a sample covered with a layer of photoresist. The write unit consists of a GaN laser with two optional wavelengths (405 nm and 375 nm).			
Hazard	Effect	Control measures	Residual risk
Laser light	skin/eye damage	The system is fully enclosed with an enclosure made of an aluminium frame and dark red acrylic walls which create a protected environment around the system and stop any scattered laser light. An interlock system shutting down the laser when the enclosure is removed during operation is in place, such that exposure to the laser beam is very unlikely. Users should not open enclosure lid while the writing is in progress.	Low risk
Pinch point	Skin damage, bruises	The motorised stage can move in x,y,z direction. Users should make sure to wait for the stage to finish moving before loading/unloading their samples to avoid their hand being caught.	Low risk
Electrical shock	Shock to user	The system is operating with electrical power (220 V). Users should not open any electrical parts while system is connected to electricity. All maintenance has to be done by the manufacturer.	Low risk
Personal Protective Equipment required [eye/face protection, respiratory protection, gloves, lab coat etc]			
Appropriate cleanroom clothing (gloves, eye protection, over-boots, and lab coat) must be worn during the process. No additional PPE is required.			
Emergency Instructions & First Aid			
Fire: In case of fire, the fire alarm should be activated and fire service called. Evacuate the building.			
Any special monitoring required [e.g. hearing test, vibration monitoring, health surveillance]			
N/A			

<p>Further control measures required? If yes, list with actions.</p> <p>N/A</p>
<p>Biological/Laser/Radiation Approval [requires relevant Specialist Safety Officer signature and date]</p> <p>N/A</p>
<p>Out of hours/Lone working</p> <p>Out of hours working must be authorized according to Engineering Department regulation. Permission from Head of Division and Facilities Manager must be sought.</p>

Signature to confirm that this is a suitable and sufficient assessment of risk and that stated control measures are in place. This risk assessment should be reviewed if additional risks not covered in this assessment are identified or if there is any reason to indicate that the control measures are insufficient.

<p>Name of Assessor Anna Ott Email: ako24@cam.ac.uk</p>	<p>Signature </p>	<p>Date 11/7/17</p>
<p>Name of Supervisor Prof. A.C. Ferrari Email: acf26@cam.ac.uk</p>	<p>Signature </p>	<p>Date</p>
<p>Facilities Manager Dr Yury Alaverdyan Email: facilities@graphene.cam.ac.uk</p>	<p>Counter-signature </p>	<p>Date 11/7/17</p>

<p>Local Safety Coordinator</p>	<p>Signature </p>	<p>Date 11/7/17</p>
<p>Departmental Safety Office IAN SLACK</p>	<p>Signature </p>	<p>Date 27 JUL 2017</p>