X-RAY SCIENCE DIVISION

401/L0109 Facility Hazard Analysis

The purpose of this form is to serve as a summary of facility characteristics, recognized hazards, implemented hazard controls, pertinent sources of information, and incident reporting contacts.

Scope of work conducted in this facility: Surface analysis using x-ray photoelectron spectroscopy and Auger electron spectroscopy. Preparation of samples for surface analysis. Clean assembly of instrumentation.

Hazardous materials/equipment associated with this facility:

Compressed Argon gas	Ultrasonic cleaner	Cryogenic instrumentation
Low energy (<1.5 keV) x-ray generation	Spot welder	Vacuum systems
Medium energy (<10 keV) electron gun	2 surface analysis systems	Motorized hoist
Organic solvents		

Hazards associated with this facility:

Compressed gases	Low energy x-rays	Electrical hazards
Chemical exposure		

Hazard controls implemented within this facility:

Engineered Controls	**Procedural Controls**	**PPE**
Lead glass protected viewports	Authorized users for hoist	safety glasses
Vacuum required for x-ray source		cryogenic gloves

Relevant ESH manual chapters that may be associated with this facility:

1) 4.1 – Hazard Communication
2) 4.3 - Laboratory and Chemical Safety
3) 7.12 - Safe use of tools
4) 9.1 - Electrical safety
5) 13.1 - Pressure systems safety
6) 13.2 - Compressed gas cylinders

Pertinent safety training courses that may be associated with this facility:

1) ESH 115: Laboratory hazard communication
2) ESH 119 Pressure safety orientation
3) ESH 145 Cryogenic safety
4) ESH 574 Chemical waste generator
5) ESH 377 Electrical safety
6) DIV 816 Compressed gas
7) ESH 195 Personal protective equipment

Note: This is not intended to be an all-inclusive list of training that is required to work within this facility. The authoritative record of required training is depicted by the individual's JHQ.

Incident reporting contacts :	******Dial 911 in an emergency******	
Lab Safety Captain:	Richard Rosenberg	2-6112
Group Leader:	Daniel Haskel	2-7758
ES&H Coordinator:	Paul Rossi	2-4192

Facility hazard analysis completed by: _____ _____
Lab Safety Captain or designee — Date

Reviewed and approved by:

_____ _____
ES&H Coordinator — Date

_____ _____
Line Management — Date

This hazard analysis must be reviewed and updated whenever conditions change. Once approved, this hazard analysis must then be posted in a conspicuous space within the facility.