* + Appendix A:

# Task Hazard Analysis Worksheet

Date 11/4/2008 Page 1 of 1 Frequency of use: routine

|  |
| --- |
| **Complete all information. Use as many sheets as necessary** |
| Task location: EEL 118 | Task Title: Operation of Micro Mott Polarimeter |
| Division: ACC | Prepared by: Marcy Stutzman |
| Department: Source | Reviewed by: |
| Supervisor: M. Poelker | Approved by  |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sequence of Job Steps** | **Potential Hazards** | **Safe Procedures/Practices/Controls** | **Risk Code: Unmitigated** | **Risk Code mitigated** |
| Align low power laser | Laser eye injury | Using low power (<2 mW) class 3a marginally unsafe lasers | II:B = 1 | I:B = 0 |
| Tune electrostatic optics | Voltages up to ‑360V applied | All electrical connectors are connected while de‑energized, insulated when powered  | III:C = 3 | I:B = 0 |
| Apply high voltage from 30 kV supply: electrical risk | High voltage shock potential  | High voltage leads are isolated, current on power supply limited to less than 0.33 mA making it a class 1 electrical system | IV:B = 3 | I:B = 0 |
| Apply high voltage: radiation risk | 30 kV electrons will cause x-ray non-ionizing radiation | Rad Con surveys indicated that at the maximum possible voltage of 32 kV and currents up to 14 nA, no radiation was detectable. If higher currents are needed, another survey will be requested.  | II:C = 2 | I:B = 0 |
| Count electrons with channeltrons | High voltage applied to channeltrons | All electrical connections with SHV connectors at supply, into high voltage rated connector at vacuum chamber | III:C = 3 | I:B = 0 |

### Appendix B

###  ENVIRONMENTAL ASPECTS CHECKLIST

**ASPECTS: The environmental aspects associated with this project are:**

| **Aspect Category** (air, wastewater, haz waste, solid waste, spill potential energy/nat. resources, other) | **Aspect** | **Significant? (Y/N)** | **Engineering Control (if needed)** |
| --- | --- | --- | --- |
| Discharge to air | Roughing pump | N | Dry roughing pumps are used. No oil or vapor discharge. |
| Discharge to sewer | none |  |  |
| Hazardous material transport , use, storage | none |  |  |
| radioactivity | Prompt radiation | n | admin control: rad con survey has been conducted |
| signficant power /utility use | none |  |  |