

Instructions and Information for Students Using the TEL-X-OMETER X-Ray Facility

The Tel-X-Ometer X-ray Facility is designed for student use and when operated correctly is a safe instrument for performing experiments involving x-rays. However, as with any facility producing radiation, certain precautions need to be carefully followed.

1. Be sure to follow carefully all instructions found in the Teltron Instruction Manual and those that might be handed out by the course instructor describing the procedure for use of the x-ray facility and performance of any particular experimental study. Do not try to be "creative" with the equipment.
2. The facility has several safety switches that prevent x-rays from being produced if the cover is open. Under no circumstances are any of these switches to be tampered with.
3. The best shielding from radiation is distance. Although the radiation level at any point external to the facility is "safe", the best policy is to keep any body surface at least 25 cm (10 in) away from any surface of the facility while x-rays are being produced. Do not place a hand on any portion of the facility or lean over the facility while the x-rays are turned on. In particular, do not place a hand behind the facility (where the highest level of radiation exists) while it is in use.
4. Remember that ionizing radiation (such as x-rays) cannot be smelled or felt. However, because it can ionize atoms and molecules (remove electrons from them) this radiation can break molecular bonds. Thus, excessive radiation can damage molecular structures of the human body which the body can not repair. This is why it is important to insure that no portion of the body is exposed to high radiation levels. Such exposure will not occur as long as the above instructions are followed.
5. Acute localized exposure to x-rays of 200-300 rad can result in reddening of the skin (similar to sunburn) and hair loss in the exposed area. More extreme exposure (1000-5000 rad) can result in blistering of the skin. These effects may not show up until two to three weeks after the exposure. If you suspect that you have experienced acute exposure report it immediately to the course instructor and, if appropriate, visit the health center.
6. If at any time any unusual behavior of the facility is observed or it does not function as the instructions indicate it should, turn the facility off and immediately inform the course instructor.

I have read and understand the above information and instructions and agree to use the TEL-X-OMETER X-Ray Facility in accordance with them.

Signed _____

Date _____

Print Name _____