

Topics for presentation by students

Applications of Synchrotron Radiation in Nanotechnology and Bio-Medical Science.

Use various “search engines on internet” and obtain information about the ESRF or other synchrotron facilities. Prepare a short talk, in English, and discuss in details about the following topics. (Each talk should be about 30 minutes, and discuss one of the following subjects.

- 1. The system aspects of ESRF or other synchrotron facilities. (General information about the main features of the system, the operation modes, the energy, accelerators etc.)**
- 2. Application of SR in nano-technology. (Surface and Interface study at molecular level).**
- 3. X-ray imaging using synchrotron Radiation. (micro fluorescence imaging).**
- 4. X-ray imaging using synchrotron Radiation. (Topography and x-ray microscopy).**
- 5. Micro focusing in ESRF (Techniques and equipments).**
- 6. Application of SR in material science I.**
Key words:
Materials under high pressure
Time-resolved studies
- 7. Application of SR in material science II.**
Key words:
High-energy scattering
High pressure
- 8. Application of SR in material science III.**
Key word:
Powder diffraction
- 9. X-ray Absorption Spectroscopy**
- 10. X-ray optics studies in ESRF**
- 11. Applications of SR in surface micro machining and lithography.**

超精密加工（修士課程）

- 1. High Precision Fabrication and Evaluation**
- 2. Write a comprehensive report on one of the following problems.**
- 3. Application of high intensity X-rays and X-ray micro beams to surface nano-structure.**
- 4. Application of high intensity photonic or particle micro beams to various processes in fabrication of micro machines.**
- 5. Application of high intensity photonic or particle micro beams to various processes in fabrication of VLSI.**