



Elettra Sincrotrone Trieste

Opening research infrastructures to industry

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Head of Industrial Liaison Office @Elettra

Elettra Sincrotrone Trieste is a multidisciplinary international centre of research, specialized in synchrotron and free-electron laser light for materials and life science.



Elettra
Synchrotron Light Source

FERMI
Free-electron Laser

- 400 employees
- 34 beamlines
- 12 support lab
- 5000 hours / year
- more than 1000 Users from more than 50 countries

No profit shareholder company recognized of national interest.

Shareholders:

Area Science Park, Friuli Venezia Giulia Region, CNR, Invitalia.

**Basic and
Applied Research**

**Technical and
scientific training**

**Transfer of
technology and
know-how**

Elettra is in



Elettra is part of

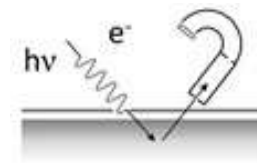


- multidisciplinary and multiprobe
- Materials, Biomaterials and Nanotechnology.
- single entry point to 9 European Countries.



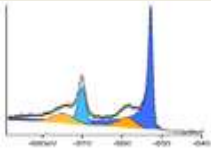
Elettra
Sincrotrone
Trieste

Analytical Techniques available @Elettra

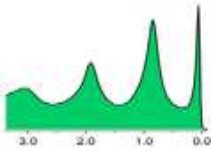


Photoelectron emission

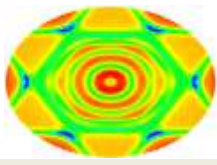
XPS



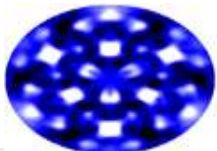
UPS



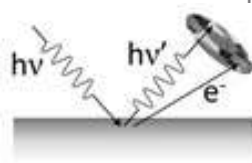
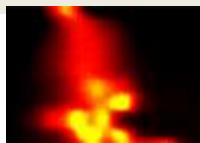
ARPES



XPD

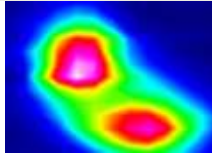


TR



Imaging

IR Microscopy



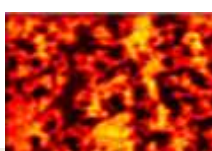
X-Ray Microscopy



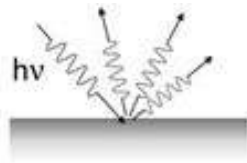
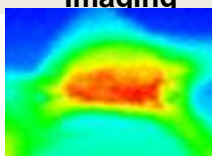
X-Ray Tomography



Photoelectr Microsc

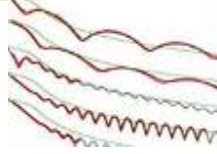


Fluorescent Imaging

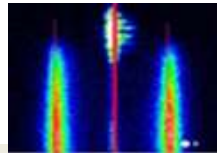


Scattering

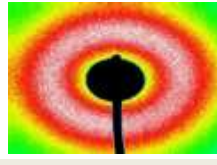
Elastic



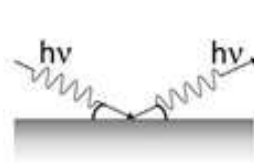
Inelastic



Magnetic

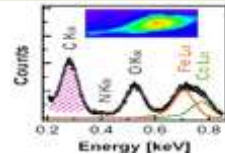


SAXS / WAXS



Reflection/Emission

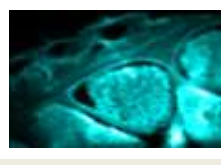
X ray fluorescence



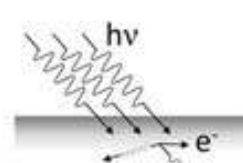
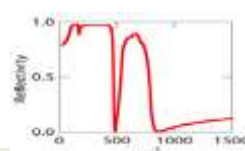
Reflectometry



Micro XRF

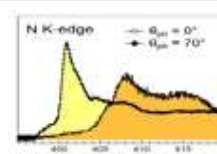


Reflectivity

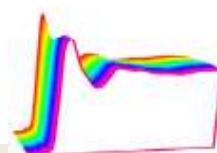


Absorption

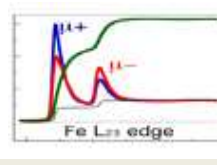
NEXAFS



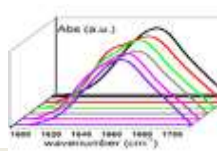
EXAFS



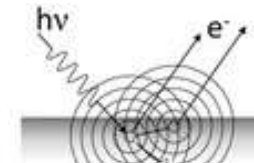
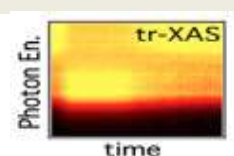
XMCD



Infrared



Time Resolved

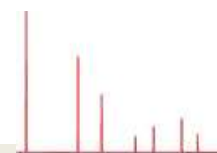


Diffraction

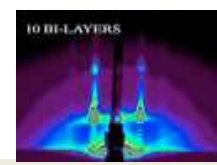
Crystallography



Powder Diffraction



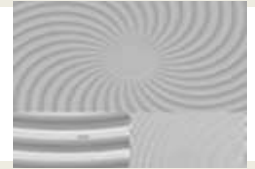
Surface Diffraction



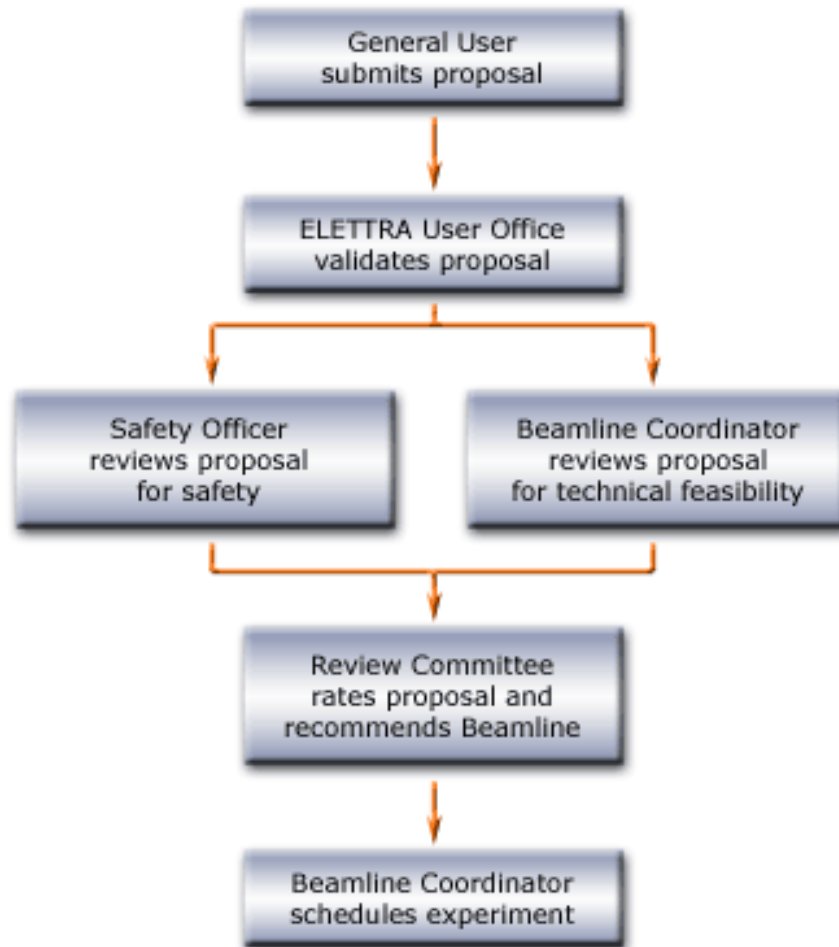
Time Resolved



Lithography



Public Research access to the facility



- Two calls for proposals per year
- The proposal to experiment delay is 3 – 9 months
- About 1000 requests of beamtime per year (Elettra + FERMI)
- Accepted requests:
 - 50% Elettra 30% FERMI
- Industrial collaboration 10%

- Feasibility Study is “free of charge”
- Quotations based on time, cost and performance
- Beamtime in 2 – 6 weeks
- Confidentiality is a must!
- Report of the activities



- Single Entry point for industrial application
- Manage industrial relations, commercial activities and IPR of Elettra Sincrotrone Trieste
- Main objective: Maximize the exploitation of know how for industrial application
- Quotations based on time, cost and performance
- Active since 2004
- Team of 6 people with scientific and business background

Technology Transfer Activities

Research and Development using synchrotron and FEL

- ✓ Collaboration with industry for
 - Process improvement
 - Product Development
- ✓ Co-developments

Transfer of Knowledge and Expertise

- ✓ Consultancy:
 - Use of Analytical Tools in products inspections
 - Training on Control Systems
 - Instrumentation Design, Free Electron Laser Applications
- ✓ Spin off creation and licensing

Development of Instrumentation

- ✓ Sales of Products to research facilities
- ✓ License of know how to suppliers of research facilities
- ✓ Co-development of instrumentation
- ✓ Design and Development of parts of the facilities under construction

Development of a New Method / Measurements @Facility

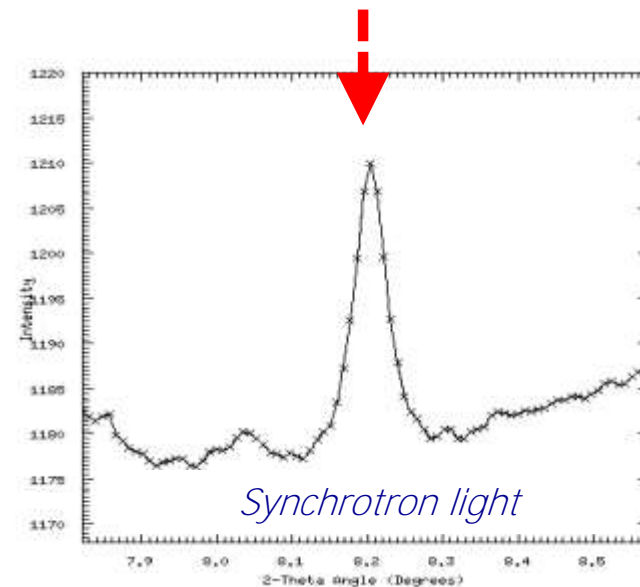
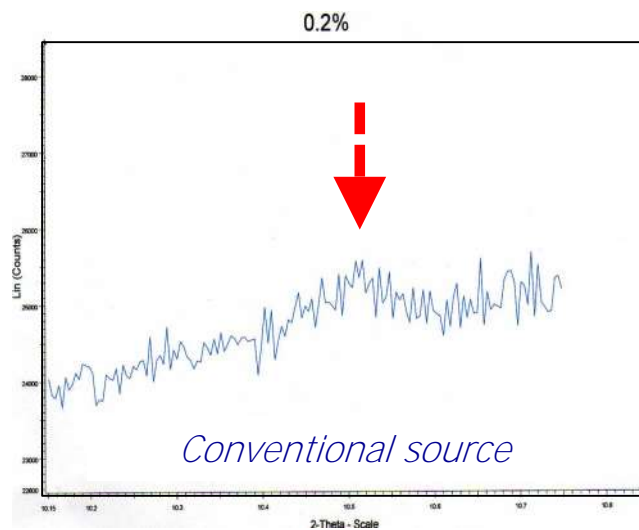
A chemical company has a problem in product formulation

Activity plan:

Analysis of the quality of the product using a technique with greater sensitivity
(Synchrotron light – X ray Diffraction)

Results:

New measuring method with synchrotron light to detect the presence of impurities in the ppm range, patent pending
CGmp Certification of the analysis at Elettra



Development of a New Method / New Tool

Tomographic analysis of products to reveal defects

- Activity plan:
 - Study of the possible applications of tomography for the of
 - Optimization of the measurement parameters
 - Design of a tomographic device for in-line measurements
- Results:
 - We designing a tomograph with ad hoc features and we tested critical components
 - The tomograph is now under construction at a manufacturer company.

Network of International Infrastructures

- Elettra is part of a network of international laser, synchrotron and neutron facilities for the study of materials and for bio and nano science.
- Elettra industrial Liaison Office is an entry point for specific industrial and technological projects.



Provide expertise in:

Design

Manage suppliers

Installation

Test and commissioning

**Bridge between Research
infrastructures and supply
companies**



SOLARIS: a synchrotron in Krakow (PL)



Applied Research





Elettra
Sincrotrone
Trieste



www.elettra.eu