

EUROPEAN

FEL



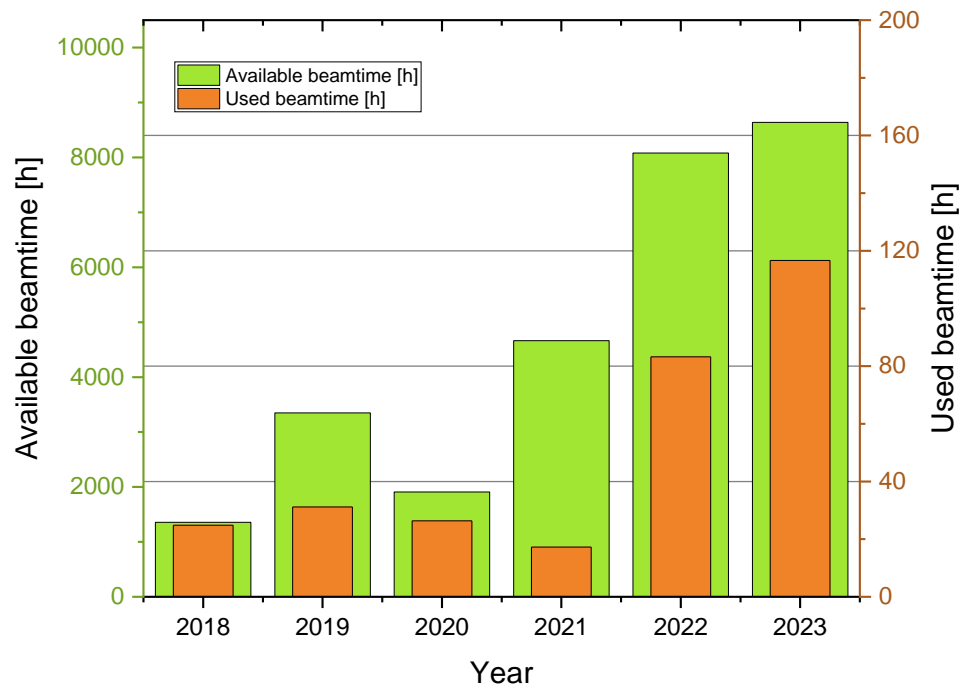
Support for Polish XFEL users

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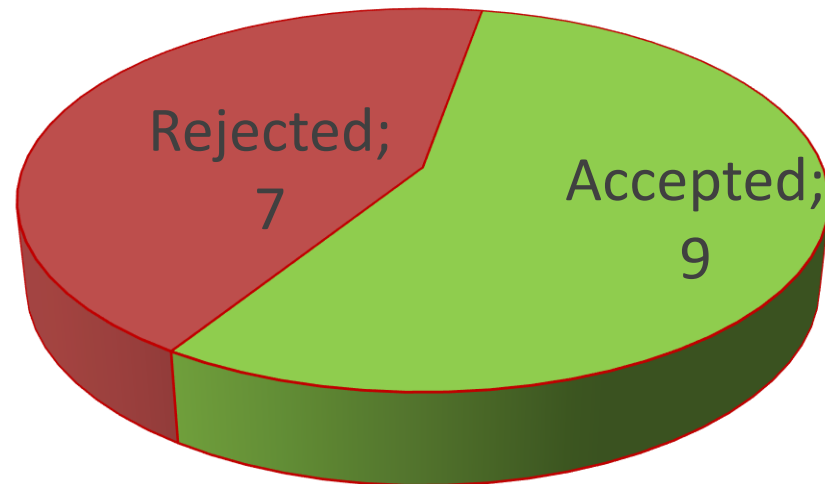
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Polish XFEL proposals



XFEL projects in 2023



**UW, AGH, UwB, UAM, UW, SOLARIS, IMIM PAN,
IFJ PAN, IChO PAN, PW, UAM, IF PAN**

Building XFEL users community in Poland – MNiSW support



- XFEL lectures for master and PhD students
- organization of schools, workshops, scientific sessions devoted to XFEL
- financial support for the participation of Polish scientists in foreign XFEL conferences
- organization of internships at EuXFEL for PhD students and PostDoc
- support in the preparation of research applications for EuXFEL – CD XFELs



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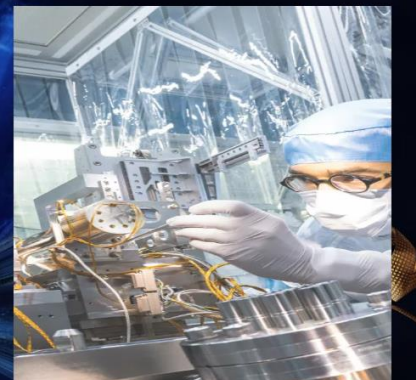
EVENTS

Call for applications for a research internship at EuXFEL

We are organizing internships at European XFEL research stations for PhD students and young scientists. Application deadline: 15.09.2024

Show more +

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Lectures for Msc and PhD students: „Science with X-ray Free Electron Lasers”



Current Science Education Seminars Institute Intranet



Homepage > Education > PhD School

Warsaw PhD School in Natural and BioMedical Sciences

Winter semester
2024/25

- the **principles of operation and properties of radiation** produced by XFELs,
- interaction of x-ray with matter**
- basic x-ray research techniques**
- **examples of XFEL applications** in fields such as protein crystallography, photochemistry, studies of atomic and electronic structure dynamics, magnetism, matter under extreme pressure and temperature conditions, non-linear x-ray optics

Interested students will have the opportunity, under guidance of experts, to prepare **XFEL research projects related to their field of research** or another selected topic.

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XFEL sessions



65th Polish Crystallographic Meeting

June 26 - 28, 2024, Wrocław

Joint Meeting of PSRS Members and SOLARIS Centre Users 2024

11-13.09.2024, Kraków

66th Polish Chemical Society Meeting

15-20.09.2024, Poznań

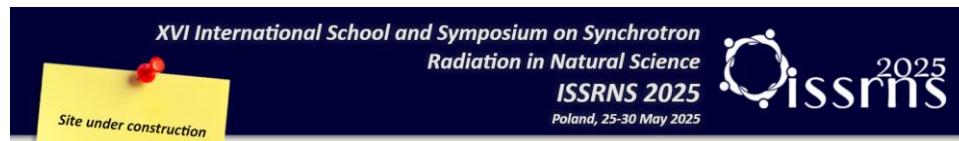
The 15th International School and Symposium on Synchrotron Radiation in Natural Science (ISSRNS)

25-30.05.2025, Szczyrk

Zakopane School of Physics

05.2025

Joint Meeting of PSRS Members
and SOLARIS Centre Users
11-13 SEP. 2024



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Workshops



On the 12th – 13th of October 2023, the Institute of Nuclear Physics PAN in Krakow together with the Institute of Physics PAN in Warsaw will organize a workshop entitled: "XFELs for beginners", with the aim to familiarize young scientists with the subject of research and measurement methods at X-ray Free Electron Lasers. This will be the third edition of these workshops.

The planned workshop will include lectures given by scientists working directly with XFEL facilities. During the workshop, we also plan to conduct a short course on the preparation of experiments for XFEL research using the laboratories of the Department of Applied Spectroscopy at the Institute of Nuclear Physics Polish Academy of Sciences in Krakow.

„XFEL-Hubs Kick-off meeting”

14-15.09.2023, Institute of Physics PAS, Warsaw

12.09.2024

„XFEL for beginners”

12-13.10.2023, IFJ PAN, Kraków

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Joint Meeting of PSRS Members and SOLARIS Centre Users

Workshops



„XFEL Applications in Material Sciences and Nanotechnology”

During the workshop, world-class experts will present examples of XFEL research in the field of:

- **materials research at high pressures and temperatures,**
- **nanotechnology** and
- **magnetism.**

The workshop will also provide an opportunity for Polish scientists to present their current and/or planned XFEL research.

**5-6.12.2024,
Institute of Physics PAS,
Warsaw**

<https://events.ncbj.gov.pl/event/375/>
www.ifpan.edu.pl/cd-xfel

XFEL conferences, workshops, schools



„European XFEL Users’ Meeting 2024”

22-26.01.2024, Hamburg, Germany

„Ultrafast Phenomena 2024”,

14-19.07.2024, Barcelona, Hiszpania (deadline: 21.06.2024)

„X-ray Free Electron Lasers: A combined virtual lab and real-lab experience of EuXFEL”,

7-22.08.2024, Aarhus Danmark, Hamburg Germany, Lund Sweden

„School for XFEL and synchrotron radiation users (SFEL)”,

14-18.10.2024, Liptovský Ján, Slovakia

„European XFEL Users’ Meeting 2025”

21-24.01.2025, Hamburg, Germany

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cd-xfel@ifpan.edu.pl

Internships @ EuXFEL



First call for applications - until 15.09.2024

Time: 1.10.-15.12.2024

Topics:

1. Ultrafast Soft X-ray Spectroscopy of Coordination Complexes (SCS)
2. Work with the FXE laser experts on optical setups and measurements
3. X-ray spectroscopy setups and measurements for time-resolved experiments
4. X-ray scattering or diffraction techniques
5. Highly sophisticated X-ray detectors as used for X-ray scattering and spectroscopy experiments.
6. Ultrafast pump-probe studies of structural transformations at MID.



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Support for XFEL-related research



1. Travel reimbursement for experiments e.g. at synchrotrons, laser labs
2. Materials for samples preparations
3. Electronic and atomic/molecular characteristion
4. Time-resolved studies
5. Support with XFEL beamtime proposals, experiments and data analysis

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Reimbursement applications

Application

- CV
- Research interest
- Event description and its relation to XFEL
- Expected cost

Evaluation

- Int'l Advisory Committee
- Main criteria: Polish XFEL community development
- New XFEL proposals
- Young scientist

Event

- Conference
- Workshop
- School
- Internship
- Pilot experiment (e.g. XFEL)
- Complementary experiment (e.g. synchrotron, laser)

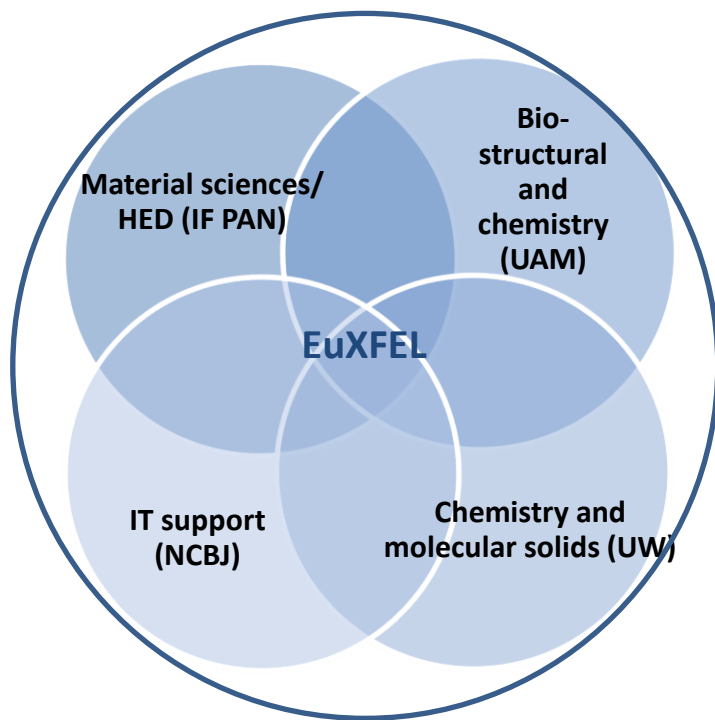
at institution

Reimbursement

- Reimbursement to the institution not person
- Cover all travel costs up to a given limit
- Copies of the travel documents are required

requires bilateral
agreement

XFEL Center of Excellence (Centra Doskonałości XFEL)



CD XFEL network consists of unique research laboratories using the experience and infrastructure of current Polish XFEL users. They bring together scientists who already have extensive experience in research using XFEL, whose knowledge and commitment will support new Polish users of this infrastructure.

Planned activities:

- reaching out to the Polish scientific community
- teaching XFEL techniques to the new users
- preliminary and complementary studies required for XFEL proposals
- support in the preparation of XFEL research applications
- support during XFEL experiments and in data analysis

XFEL-Polska

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XFEL-Hub – IF PAN

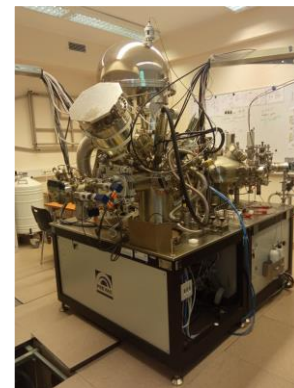
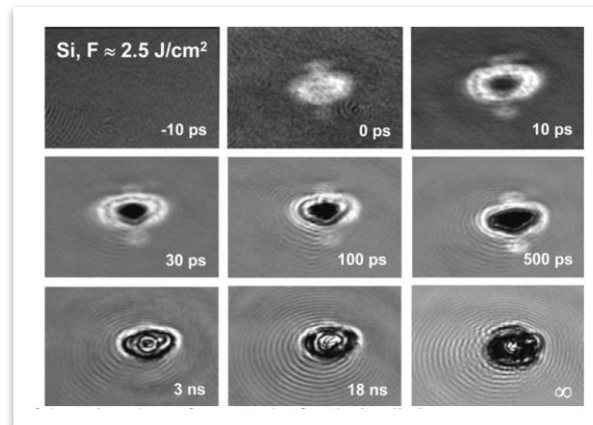
(Inst. of Physics, Polish Acad. of Sciences)



Studies of ultrafast structural transformations in condensed matter by means of time-resolved optical microscopy and interferometry (with sub-ps time- and a few micrometer spatial-resolution) ...

... supported with static structural and electronic characterisation techniques:

- Phillips powder and high-resolution powder diffractometers
- FEI Helios nanolab 600 scanning electron microscopy
- FEI Titan CUBED 80-300 - FEG transmission electron microscope
- X-ray photoelectron spectrometer
- Secondary-ion mass spectrometer



XFEL-Hub – AMU

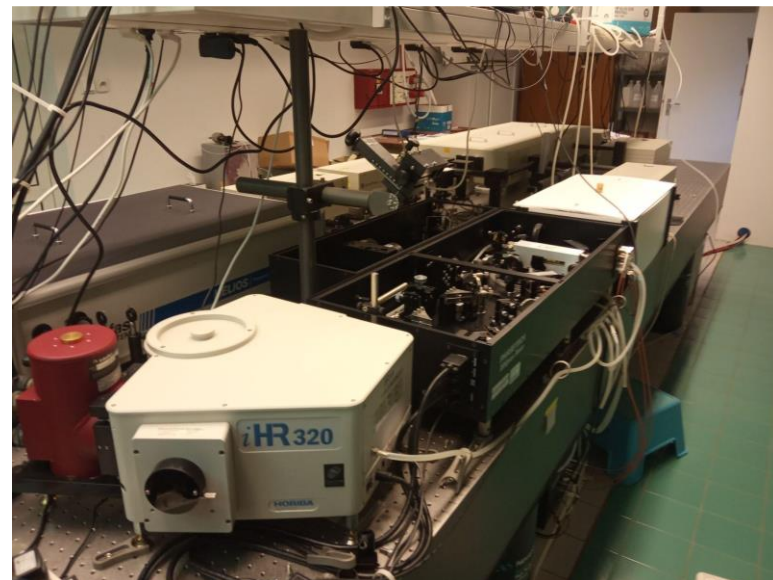
(Dept. of Physics, Adam Mickiewicz Univ.)

Ultrafast photophysical and photochemical processes in solutions and solid state samples using laser spectroscopy:

- **Transient absorption spectrometer with 200 fs** temporal resolution in UV-VIS, NIR and excitation within 235–1200 nm
- mid-IR Transient absorption spectrometer (detection within 3-10 μm)
- Time-correlated single photon counting emission spectrometer (ca. 10 ps temporal resolution)
- Stationary optical spectroscopy techniques (UV-VIS-NIR), FTIR



Towards experiments on FXE, MID and SFX/SPB beamlines at EuXFEL



XFEL-Hub – AMU

(Dept. of Physics, Adam Mickiewicz Univ.)



Structural studies on biological particles (proteins, nucleic acids, macromolecular complexes, lipid membranes, etc.) using **SAXS** (small-angle X-ray scattering) system with:

- MetalJet (liquid metal anode)
- semiconductor detector Pilatus3 1M
- Wide temperature range (from -196 to 300°C)

Towards experiments on FXE, MID and SFX/SPB beamlines at EuXFEL



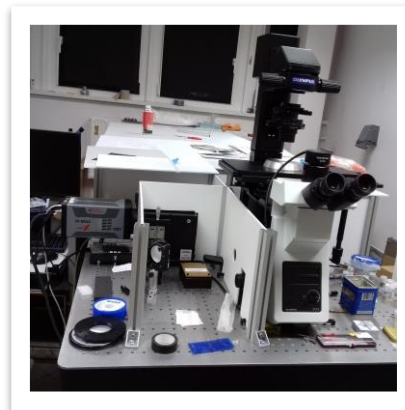
XFEL-Hub – UW

(Dept. of Chemistry, Univ. of Warsaw)

Combined structural and spectroscopic studies of molecular materials exhibiting photoactive properties (luminescence, photoswitchability) using:

- IR solid-state spectrometer (10 K – RT)
- Single-crystal diffractometers (100 K – RT, laser/LED assembly for *in situ* crystal irradiation, high-pressure equipment)
- Microscope setup for emission measurements of solid-state and solution samples with ns time resolution (100 K – RT)

+ additional synchrotron
photocrystallographic experiments



***Towards experiments
on FXE or SFX/SPB
beamlines at EuXFEL***

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Thank you for your attention

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2022/WK/13

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