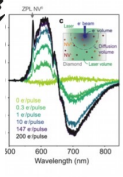
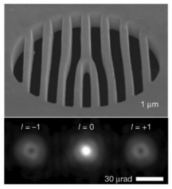
eBEAM2024

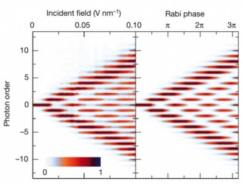
Nano-optics with electrons school

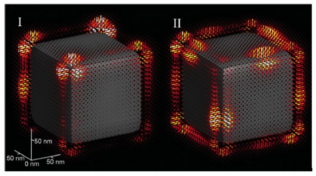
http://ebeam2024.org

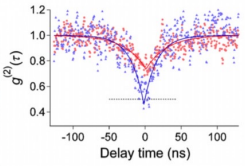
September 1st-13th 2024, Aussois, France











Pre-registration is open!

Pre-registration is open from 15/03/2024 until 15/05/2022. The candidates will provide a CV, a motivation letter and, for Ph D students and Post Docs, a recommendation letter from their supervisor. Candidatures will be examined shortly and decision will be sent by June 1st, to allow enough time for candidates to prepare their travel. More on:

http://ebeam2024.org/

Topics & school styles

The eBEAM school focuses on electron spectroscopies for nano-optics.

Courses will cover: the basics of electron instrumentation and spectroscopies; electron-matter-light interaction; electron spectroscopies of optical material; time, space, and quantum coherence in electron spectroscopy; advanced EELS, CL and PINEM; photoemission … The school is aimed at Ph. Ds, Post Docs and any researchers willing to dive in this new field. Due to the limited number of places (80), applicants will be selected with a CV and motivation letter at pre-registration time.

A series of 11 lectures lasting 3 hours (broken by a 30 min. pause) will be given. Each lecturer is asked to give a 30 min. seminar on their own research topic in addition to the lecture. Simulations and data analysis hands on tutorials are organized in small groups.

Pre-recorded demos on advanced electron microscopy techniques will be given. 2 posters sessions will be organized.

Venue & fees

The school will be organized in Aussois, in the french Alps. All participants will be accommodated in the Paul Langevin CNRS site.

The fees will be 1500 €; this includes a double room, all meals (from dinner on Sunday 1st night to lunch on Friday 13rd) and two gala dinners. Extra fee of 200 € applies for single rooms

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Organization

The school is organized in the framework of the **eBEAM – Electron Beams Enhancing Analytical Microscopy FET Proactive programme**

Programme committee: A. Polmann (AMOLF, the Netherland), J. Garcia de Abajo (ICFO, Spain), O. Stéphan (Univ. Paris-Saclay, France), A. Feist (Univ. Göttingen, Germany), C. Ropers (Univ. Göttingen, Germany), W. Albrecht (AMOLF, the Netherland), T. T. Coenen (DELMIC, the Netherland), J. Verbeeck (EMAT, Belgium)

Local organization: L. Tizei, M. Kociak (chairmen), S. Hoarau, Y. Auad, JD Blazit, X. Li

Contact : contact@ebeam2024.org

Important dates

Pre-registration start: 15th April
Pre-registration end: 15th May
Acceptance notification: 1st June
Registration end: 7th August
School start: 1st September
School end: 13th September

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FIRST WEEK	Sunday 1st	Monday 2nd	Tuesday 3rd	Wednesday 4th	Thursday 5th	Friday 6th
9:00-10:30		Lecture I *R. Grange*	Lecture II *Daniel Ugarte*	Lecture III *Gerald Kothleitner*	Lecture IV *S. Collins*	Lecture VI *A. Konečná*
10:30-11:00		Pause	Pause	Pause	Pause	Pause
11:00-12:30		Lecture I *R. Grange*	Lecture II *D. Ugarte*	Lecture III *G. Kothleitner*	Lecture V *D. Kepaptsoglou*	Lecture VI *A. Konečná*
12:30-14:00		Lunch	Lunch	Lunch	Lunch	Lunch
14:00-16:00		Free time	Free time	Free time	Free time	Free time
16:00-16:45	**Arrival**	Talk I *R. Grange*	Talk II *D. Ugarte*	Talk III *G. Kothleitner*	Talk IV *S. Collins*	Talk VI *A. Konečná*
16:45-17:30	**Arrival**	Demo I *S. Fiedler*	Demo II *G. Kothleitner*	Lecture D. *J. Laehnemann*	Talk V *D. Kepaptsoglou*	Demo IV *D. Kepaptsoglou*
17:30-18:00	**Arrival**	Pause	Pause	Pause	Pause	Pause
18:00-19:00	**Arrival**	Lecture S. *A. Konečná*	Demo III *A. Yankovich*	Tutorials g1, g2	Tutorials g3, g4	Tutorials g5, g6
19:00-20:30	Dinner	Dinner	Dinner	Dinner (Special I)	Dinner	Dinner
20:30-22:30		Poster I	Poster II			

SECOND WEEK	Monday 9th	Tuesday 10th	Wednesday 11th	Thursday 12th	Friday 13rd
9:00-10:30	Lecture VII *L. Reining*	Lecture VIII *G. Jacopin*	Lecture IX *A. Lubk*	Lecture X *H. Lourenço-Martins*	Lecture XI *W. Pfeifer*
10:30-11:00	Pause	Pause	Pause	Pause	Pause
11:00-12:30	Lecture VII *L. Reining*	Lecture VIII *G. Jacopin*	Lecture IX *A. Lubk*	Lecture X *H. Lourenço-Martins*	Lecture XI *W. Pfeifer*
12:30-14:00	Lunch	Lunch	Lunch	Lunch	Lunch
14:00-16:00	Free time	Free time	Free time	Free time	**Departure**
16:00-16:45	Talk VII *L. Reining*	Talk VIII *G. Jacopin*	Talk IX *A. Lubk*	Talk X *H. Lourenço-Martins*	
16:45-17:30	Demo V *F. Castioni/Y. Auad*	Demo VI *J. Verbeeck*	Demo VII *A. Feist*	Demo VIII *A. Lubk*	
17:30-18:00	Pause	Pause	Pause	Pause	
18:00-19:00	Tutorials g2, g1	Tutorials g4, g3	Tutorials g6, g5	Talk XI *W. Pfeifer*	
19:00-20:30	Dinner	Dinner	Dinner	Dinner (Special II)	

Lectures	***Title***	***Lecturer***
I	**Introduction to nanophotonics**	*Rachel Grange (ETH, Switzerland)*
II	**Transmission Electron Microscope: basic instrumentation concepts**	*Daniel Ugarte (Unicamp, Brazil)*
III	**Electron microscopy and spectroscopy basics**	*Gerald Kothleitner (TU Graz, Austria)*
IV	**Energy loss spectroscopy of absorption processes I: Visible and UV**	*Sean Collins (Leeds University, UK)*
V	**Energy loss spectroscopy of absorption processes II: Infrared**	*Demie Kepaptsoglou (Superstem, UK)*
VI	**Optical excitations in the TEM**	*Andrea Konečná (CEIT, Czech Republic)*
VII	**Electronic structure calculations: from first principles to the spectroscopy of materials**	*Lucia Reining (CNRS, France)*
VIII	**Optical emission spectroscopy in semiconductors by electron excitations**	*Gwénolé Jacopin (CNRS, France)*
IX	**Spatial coherence in the TEM**	*Axel Lubk (IFW, Germany)*
X	**Time and Quantum coherence in the TEM**	*Hugo Lourenço-Martins (CNRS, France)*
XI	**Ultrafast PEEM**	*Walter Pfeiffer (Bielefeld University, Germany)*
S	**Simulations**	*Andrea Konečná (CEIT, Czech Republic)*
D	**Data analysis**	*J. Laehnemann (PDI, Germany)*
Tutorials	***Title***	***Lecturer***
S	**Electromagnetic simulations for EELS, CL and PINEM using MNPBEM**	*Andrea Konečná (CEIT, Czech Republic)* *& Hugo Lourenço-Martins (CNRS, France)*
D	**Data analysis for EELS, CL and PINEM using Hyperspy**	*J. Laehnemann (PDI, Germany) & Sean Collins (Leeds University, UK)*
Demos	***Title***	***Demonstrator***
I	**Continuous and time-resolved cathodoluminescence in a SEM**	*Saskia Fiedler (AMOLF, the Netherlands)*
II	**Alignment, aberration correction, monochromated EELS and direct detection I**	*Gerald Kothleitner (TU Graz, Austria)*
III	**Alignment, aberration correction, monochromated EELS and direct detection II**	*Andy Yankovich (Chalmers uni. Sweden)*
IV	**Alignment, aberration correction, monochromated EELS and direct detection III**	*Demie Kepaptsoglou (Superstem, UK)*
V	**ns Coincident EELS and CL in a STEM**	*Florian Castioni & Yves Auad (CNRS, France)*
VI	**Phase shaping in a TEM**	*Johan Verbeeck (EMAT, Belgium)*
VII	**Holography**	*Axel Lubk (IFW, Germany)*
VIII	**TR-EM and PINEM**	*Armin Feist (Göttingen univ., Germany)*