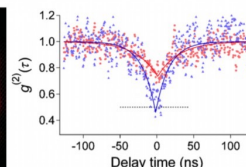
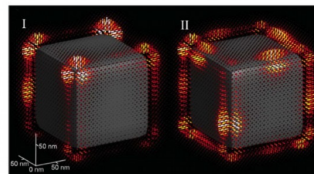
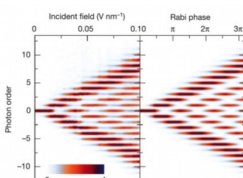
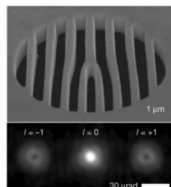
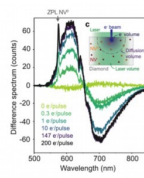



<http://eBEAM2022.org>


Topics

Electron optics and spectroscopy instrumentation developments in the last 20 years have considerably widened the range of applicability of electron beam techniques to nano-optics: meV beam energy spread, single atoms imaging capabilities, electron wavefunction shaping, fs pump probe experiments, and efficient light coupling to and from samples are a reality. This has enabled the study of a variety of excitations (plasmons, phonons, excitons...) at extreme spatial, temporal and spectral resolutions. Therefore, new theories have blossomed to explain exciting results coming from electron energy-loss spectroscopy (EELS), cathodoluminescence (CL) and photon induced near-field electron microscopy (PINEM), and central concepts of nanooptics or quantum optics have been shown to be applicable to electron-based spectroscopies.

For this reason, it is high time for a school aiming at spreading knowledge about these new concepts and techniques and at fomenting the interest of a new generation of academics in this blooming field. That is the object of the eBEAM school, focused 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 ...



Venue & fees

The school will be organized at the Island of Porquerolles, in the french mediterranean sea. All participants will be accommodated at IGeSA.

The fees will include a single room, all meals (from dinner on Sunday 11th night to lunch on Friday 16th), gala dinner, and boat trip to and from the island.

School style

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 8 lectures lasting 2 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.

2 posters sessions will be organized.



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 Netherlands), J. Garcia de Abajo (ICFO, Spain), A. Feist (Univ. Göttingen, Germany), C. Ropers (Univ. Göttingen, Germany), W. Albrecht (AMOLF, the Netherlands), T. T. Coenen (DELMIC, the Netherlands), J. Verbeeck (EMAT, Belgium)

Local organization: L. Tizei, M. Kociak (chairmen), S. Hoarau, Y. Auad, JD Blazit
Contact : contact@ebeam2022.org

Important dates

First circular: November 10th, 2021

Second circular: March 1st, 2022

Pre-registration start: 1st February

Pre-registration end: 14th April

Acceptance notification: 1st May

Registration end: 1st July

Time	Sunday - 11	Monday - 12	Tuesday - 13	Wednesday - 14	Thursday - 15	Friday - 16
9:00		Course 1 - EM basics	Course 3 - electron matter interaction	Course 5 - time and quantum coherence	Course 6 - space coherence	Course 8 - LEEM, PEEM
9:30						
10:00		Break	Break	Break	Break	Break
10:30		Course 1 - EM basics	Course 3 - electron matter interaction	Course 5 - time and quantum coherence	Course 6 - space coherence	Course 8 - LEEM, PEEM
11:00						
11:30		Course 1 - Seminar	Course 3 - seminar	Course 5 - seminar	Course 6 - seminar	Course 8 - seminar
12:00						
12:30		Lunch break	Lunch break	Lunch break	Lunch break	Conclusions of school
13:00						
13:30						
14:00						
14:30						
15:00		Course 2 - Spect basics	Course 4 - spectroscopy of materials		Course 7 - advanced EELS-CL	
15:30		Break	Break		Break	
16:00		Course 2 - Spect basics	Course 4 - spectroscopy of materials		Course 7 - advanced EELS-CL	
16:30						
17:00		Course 2 - seminar	Course 4 - seminar		Course 7 - seminar	
17:30						
18:00						
18:30						
19:00						
19:30						
20:00						
20:30						
21:00						
21:30						
22:00						

Course 1: EM instrumentation basics - **Peter Kruit**, Delft University of Technology, the Netherlands

Electron optics, guns, vacuum, detectors, blankers ...

Course 2: Electron microscopy and spectroscopy basics - **Gerald Kothleiner**, Graz Technical University, Austria

Elastic scattering and applications, inelastic scattering and applications, EELS and CL basics

Course 3: Electron spectroscopies of coherent excitations - **Andrea Konečná**, CEIT, Czech Republic

Theory/fondation of EELS/CL/PINEM for photonic and plasmonic excitations & applications

Course 4: electron spectroscopies of incoherent excitations optical materials – **Sean Collins**, University of Leeds, UK

Theory/fondation of EELS/CL/PINEM for excions and other excitations in semiconductors and applications

Course 5: Time and quantum coherence in electron spectroscopy – **Hugo Lourenço-Martins**, CNRS, France

Theory, technologies and applications of time-resolved PINEM and CL

Course 6: Space coherence in electron spectroscopy – **Axel Lubk**, IFW, Germany
Theory, technologies and applications of spatially coherent spectroscopies, including phase shaping and holography

Course 7: Advanced EELS – **Demie Kepaptsoglou**, Superstem, UK
vibrational EELS, q-resolved EELS

Course 8: LEEM/PEEM – **Walter Pfeiffer**, Bielefeld University, Germany

Optics excitations, ultrafast processes