

EBSN 2019

Monday, September 16th

9:00 - Welcome/coffee

9:45 - Foreword

10:00 - **Fabrizio Carbone, EPFL, Switzerland (Invited)**

Patterning the electron wavefunction to achieve control of matter down to the nucleus

10:30 - **Arnaud Arbouet, CNRS, France (Invited)**

High brightness ultrafast Transmission Electron Microscope based on a laser-driven cold field emission source: development and application to nanospectroscopy

11:00 - **Coffee break**

11:30 - **Pieter Kruit, TU Delft, The Netherlands (Invited)**

Creating contrast in electron microscopy using the quantum Zeno effect

12:00 - **Thomas Juffmann, MPFL, Austria (Invited)**

Design of a 10keV Multi-pass Microscope

12:30 - **Ori Reinhardt, Technion, Israel**

Free Electron Qubits

12:45 - **T. Liu, University of South Hampton, United Kingdom**

High-Frequency Nano-motion Electron Imaging for Artificial Nanostructures

13:00 - **Group photo/Lunch**

14:00 - **Posters - in the amphitheater hall**

14:30 - Hikaru Saito, Kyushu University, Japan (Invited)

Momentum-Resolved Electron Beam Spectroscopy for Plasmonic Bandgap Materials

15:00 - Naomi Ginsberg, Berkley, USA (Invited)

Elucidating the mechanisms of phase transitions in semiconducting nanostructures via low- exposure, dynamical, in situ cathodoluminescence

15:30 - Michale Shentcis, Technion, Israel

Observation of Tunable Free-Electron X-Ray Radiation from van der Waals Materials

15:45 - Amr Saleh, Stanford, USA

Subwavelength Raman molecular mapping with Electron and Light induced Stimulated Raman Scattering (ELISR)

16:00 - Coffee break

16:30 - Maureen Lagos, McMaster University, Canada (Invited)

Phonon Scattering Mapping and Temperature Measurement in Nanostructures

17:00 - Quentin Ramasse, Superstem, United Kingdom (Invited)

Phonon Spectroscopy at Atomic Resolution in the STEM

17:30 - Vahagn Mkhitarian, ICFO, Spain

Optimum coupling between beam electrons and optical modes

17:45 - Andrew Yankovich, Chalmers University, Sweden

Measuring Plasmon-Exciton Hybridization at the Nanoscale using STEM EELS

18:00 - Posters (List at the end of the program)

20:00 - Dinner - at the amphitheater hall

Tuesday September 17th

9:00 - **Welcome/Coffee**

9:30 - **Claus Ropers, Göttingen University, Germany (Invited)**
Imaging Chiral Near-Fields with Inelastic Electron-Light Scattering

10:00 - **Nahid Talebi, Max Planck Institute, Germany (Invited)**
Photon-Induced Time Resolved Electron Spectroscopy and Holography with Slow Electrons

10:30 - **Giovanni Maria Vanacore, EPFL, Switzerland**
Ultrafast coherent manipulation of the orbital angular momentum of a free-electron wave function via chiral plasmonic near fields

10:45 - **Valerio Di Giuio, ICFO, Spain**
Probing Quantum Optical Excitations with Fast Electrons

11:00 - **Coffee break**

11:30 - **Holger Muller, Berkley, USA (Invited)**
Laser-based phase contrast and coherent manipulation of electrons

12:00 - **Round table discussion**
New quantum phenomena in e-beam/light interactions

13:00 - **Lunch** - at the amphitheater hall

14:00 - **Posters**

16:00 - **Coffee break**

16:30 - **Arthur Barnard, Stanford, USA (Invited)**
Making and Using Beams of Electrons in Graphene

17:00 - **Jennifer Dionne, Stanford, USA (Invited)**
The Light Years: Combined optical and environmental electron microscopy to visualize dynamic photochemical processes with atomic-scale resolution

17:30 - **Nick Schilder, Amolf, The Netherlands**

Phase-resolved surface plasmon scattering probed by cathodoluminescence holography

17h45 - **Mathijs Garming, TU Delft, The Netherlands**

Ultrafast laser-pump electron-probe microscopy for imaging semiconductor carrier dynamics

18:00 - **Hao Li, University of Southampton, United Kingdom**

Decay rate statistics of NV centres in diamond on plasmonic and dielectric substrates

19:00 - **Conference dinner** - buffet at the amphitheater hall

Wednesday September 18th

9:00 - Welcome/Coffee

9:30 - Round table discussion

Future of EBSN, next location, and scientific board. Discussion with all participants

10:00 - Luiz Tizei - CNRS, France

Tailored nanoscale plasmon-enhanced vibrational electron spectroscopy

10:15 - Eric Le Moal - Université Paris Sud, France

STM-induced excitonic luminescence of a 2D semiconductor

10:30 - Coffee break

11:00 - Jo Verbeeck, EMAT, Belgium (Invited)

Development of a spatial light modulator for electrons

11:30 - Ben McMorran, University of Oregon, USA (Invited)

Probing plasmons using structured electrons

12:00 - Guilio Guzzinati, EMAT, Belgium

Mapping the transverse plasmonic field with inelastic 4D STEM

12:15 - Enzo Rotunno, CRN, Italy

Electron spectroscopy with an orbital angular momentum sorter

12:30 - Lunch - buffet at the amphitheater hall

14:00 - Ido Kaminer, Technion, Israel (Invited)

Ultrastrong Coupling of Free Electrons in the Ultrafast Transmission Electron Microscope

14:30 - Jom Luiten, TU Eindhoven, The Netherlands (Invited)

Ponderomotive femtosecond laser manipulation of the free electron wavefunction

15:00 - **Ofer Kfir, University of Göttingen, Germany**

Entanglements of Free-Electrons and Photons in the Strong Coupling Regime

15:15 - **Daniel Angel, Stanford University, USA**

Visualizing plasmon photocatalysis on individual bimetallic AgPd nanoparticles with concurrent optical and electron spectroscopy

15:30 - **Conclusions**

Posters and presenters list

Electron beam lithography & spectroscopy for nanophotonics

Zackaria Mahfoud (IMRE-A*STAR, Singapour)

Study of the Stark Effect in AlN/GaN nanowires in Cathodoluminescence and Electron Holography

Sophie Meuret (CEMES-CNRS)

Optoelectronic Tailoring Of 2D Materials By Ultra Low Energy Ion Implantation

Mike Hennessy (University of Limerick, Ireland)

Charge conversion of Nitrogen-Vacancy centers in nanodiamonds using electrons and photons

Noémie Bonnet (LPS-CNRS/Université Paris Sud, France)

From ultracold electrons to coherent optical transition radiation

Jim Franssen (Eindhoven University of Technology, The Netherlands)

Planck's generalised law and incoherent luminescence

Buddhika Mendis (University of Cambridge, United Kingdom)

Babinet's Principle for Solid and Hollow Plasmonic Antennas

Michal Horak (CEITEC/Brno University of Technology, Czech Republic)

Cathodoluminescence spectroscopy of Aluminum nanostructures

Saskia Fiedler (University of Southern Denmark, Denmark)

Direct determination of quantum confinement in semiconductor nanocrystals by STEM-EELS

Rosaria Brescia (Istituto Italiano di Tecnologia, Italy)

Probing volume and surface modes in anisotropic materials using fast electrons

Carlos Alberto Maciel Escudero (CIC NanoGUNE, Spain)

Electron-induced state conversion in diamond NV centers measured with pump-probe cathodoluminescence spectroscopy

Magda Sola Garcia (AMOLF, The Netherlands)

Complementary cathodoluminescence lifetime imaging configurations in a scanning electron microscope

Magda Sola Garcia (AMOLF, The Netherlands)

Correlating cathodoluminescence, spontaneous electron energy loss and photon-induced electron gain and loss in nanoscale plasmonic near-fields

Matthias Liebtrau (AMOLF, The Netherlands)

Quantitative mapping of plasmonic near-fields in gold nanostars using PINEM and cathodoluminescence imaging spectroscopy

Murat Sivis (University of Goettingen, Germany)

Cathodoluminescence of nanospheres coupled to surface plasmon polaritons

Andrea Konecna (ICFO, Spain)

Energy-Momentum Cathodoluminescence Mapping for Nanophotonics

Toon Coenen (DELMIC, The Netherlands)

Plasmonic properties of silver amalgam nanoparticles studied by analytical transmission electron microscopy

Michal Horak (CEITEC/Brno University of Technology, Czech Republic)

