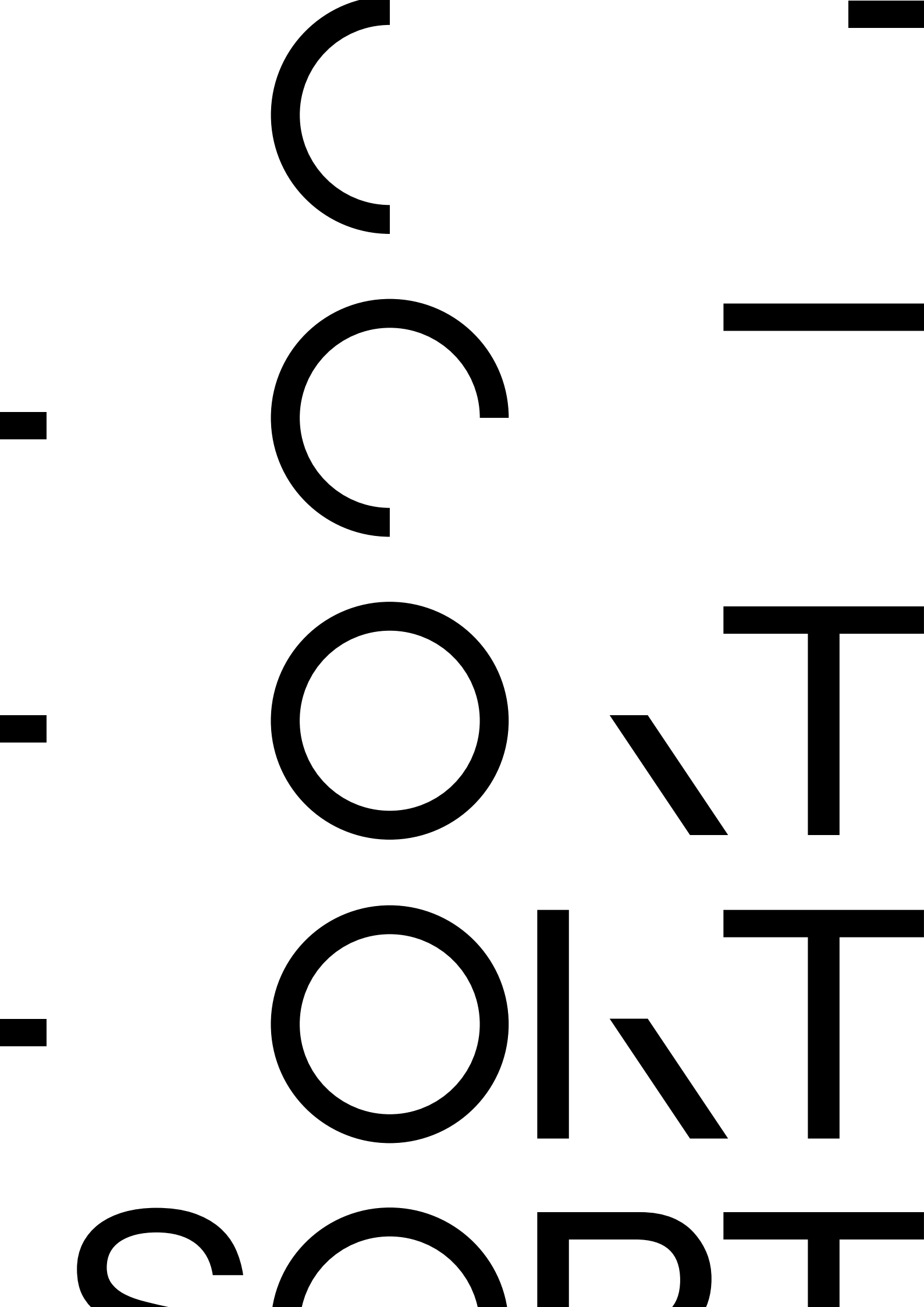


Conference programme



Sunday 27 May

PGI, Building 04.8, 1st Floor,
Room 142-143
Forschungszentrum Jülich
Wilhelm-Johnen-Strasse
52428 Jülich

15:00 – 15:15

Welcome





15:15 – 18:00











Pre-Conference Wikipedia Edit-a-Thon

Monday 28 May

Zentralbibliothek
(Building 04.7)
Forschungszentrum Jülich
Wilhelm-Johnen-Strasse
52428 Jülich

- 08:30 – 09:30 Registration
- 09:30 – 09:45 Welcome and Institutional Delegates
- 09:45 – 10:45  Session A. *Low Dose Methods*
Chair: Rafal Dunin-Borkowski, Forschungszentrum Jülich (Germany)
- 09:45 – 10:00 A1 *Low-dose cryo electron ptychography via non-convex Bayesian optimization*
Philipp Pelz, Max Planck Institute (Germany)
- 10:00 – 10:15 A2 *Production of arbitrary phase apertures for electron ptychography beams*
Wouter Van den Broek, Humboldt University of Berlin (Germany)
- 10:15 – 10:30 A3 *Next generation sample preparation for fully automated cryo-EM analysis of macromolecular structures and cells*
Peter Peters, Maastricht University (The Netherlands)
- 10:30 – 10:45  Remote demonstration from the microscope
- 10:45 – 11:15  Coffee Break
- 11:15 – 12:45  Session B. *EMCD, Plasmons and Quantum Phenomena*
Chair: Stefano Frabboni, University of Modena and Reggio Emilia (Italy)
- 11:15 – 11:30 B1 *Measuring the phase and transverse fields of plasmonic excitations*
Giulio Guzzinati, University of Antwerp (Belgium)
- 11:30 – 11:45 B2 *Atomic scale imaging of magnetic circular dichroism by achromatic spatially-resolved electron energy-loss magnetic chiral dichroism*
Xiaoyan Zhong, Tsinghua University (PRC)
- 11:45 – 12:00 B3 *Theoretical study of the interaction between phase-shaped electrons and surface plasmon modes*
Hugo Lourenço-Martins, University of Paris-Sud (France)
- 12:00 – 12:15 B4 *Investigating the proximity of magnetic dichroic signal by atomic sized electron vortex and aberrated beam.*
Devendra Negi, Uppsala University (Sweden)
- 12:15 – 12:30 B5 *The cubic phase in quantum mechanics and hydrodynamics*
Matthias Zimmermann, Ulm University (Germany)

- 12:30 – 12:45 B6 *The Cubic Phases of Wave packets in Linear Potential*
Georgi Gary Rozenman, Tel Aviv University (Israel)
- 12:45 – 13:45  Lunch Break
- 13:45 – 14:00  Invited Speaker - Q-SORT Webinar
Chair: Wolfgang Schleich, Ulm University (Germany)
- 13:45 – 14:45  *Low-damage multi-pass electron microscopy*
Mark Kasevich, Stanford University (USA)
- 14:45 – 16:00  Session C. *QEM and quantum phenomena*
Chair: Wolfgang Schleich, Ulm University (Germany)
- 14:45 – 15:00 C1 *Optical multi-pass microscopy*
Thomas Juffmann, University of Vienna (Austria)
- 15:00 – 15:15 C2 *A 10keV Multi-Pass Electron Microscope*
Stewart Koppell, Stanford University (USA)
- 15:15 – 15:30 C3 *Aberration-Corrected Quantum Electron Microscopy*
Marco Turchetti, Massachusetts Institute of Technology (USA)
- 15:30 – 15:45 C4 *Simulated Quantum Electron Microscope Images*
Yuri Van Staaden, Delft University of Technology (The Netherlands)
- 15:45 – 16:00 C5 *A design for combining multi-pass and OAM sorter for dose effective magnetic measurements*
Vincenzo Grillo, National Research Council (Italy)
- 16:00 – 16:30  Coffee Break
- 16:30 – 18:15  Round Table: *Quantum concepts in electron microscopy*
Chair: Vincenzo Grillo, National Research Council (Italy)
-  Special Seminar: Wolfgang Schleich, Ulm University (Germany)
- 19:00  Social Dinner
Steakhaus El Toro, Große Rurstraße 34, 52428 Jülich

Tuesday 29 May

Zentralbibliothek
(Building 04.7)
Forschungszentrum Jülich
Wilhelm-Johnen-Strasse
52428 Jülich

08:30 – 09:30

Registration

09:00 – 10:15



Session D. *UTEM-Time shaping*

Chair: Avraham Gover, Tel Aviv University (Israel)

09:00 – 09:15

D1 *Ultrafast Transmission Electron Microscopy with High-Coherence Electron Pulses*
Tyler Harvey, University of Göttingen (Germany)

09:15 – 09:30

D2 *meV Resolution in Laser-Assisted Energy-Filtered Transmission Electron Microscopy*
Enrico Pomarico, École polytechnique fédérale de Lausanne (Switzerland)

09:30 – 09:45

D3 *Temporal manipulation of sub-relativistic electron beams using light and matter*
Roy Shiloh, Friedrich-Alexander University (Germany)

09:45 – 10:00

D4 *Attosecond coherent control of a free-electron wave-function via semi-infinite light fields and plasmon polaritons*
Giovanni Maria Vanacore, École polytechnique fédérale de Lausanne (Switzerland)

10:00 – 10:15

D5 *The ultrafast and ultracold electron source*
Jim Franssen, Eindhoven University (The Netherlands)

10:15 – 10:45



Coffee Break

10:45 – 12:00



Session E. *Light-electron interaction*

Chair: Ido Kaminer, Technion – Israel Institute of Technology (Israel)

10:45 – 11:15

E1 *History-Dependent Radiative Interaction of Single Electron Quantum Wavepacket*
Avraham Gover, Tel Aviv University (Israel)

11:15 – 11:30

E2 *Tailoring the Spectral and Angular Response of Smith-Purcell Radiation*
Roei Remez, Tel Aviv University (Israel)

11:30 – 11:45

E3 *Spontaneous and Stimulated Radiative emission of modulated free-electron quantum wavepackets - QED Analysis*
Yiming Pan, Tel Aviv University (Israel)

11:45 – 12:00

E4 *Electron-light interaction in Wigner phase space*
Peter Kling, Ulm University (Germany)

12:00 – 13:30



Lunch Break

13:15 – 14:15



Q-SORT Science Bash
Schlosskapelle

Gymnasium Zitadelle
In der Zitadelle, 52428 Jülich

Speaker: Peter Peters
Title: *Beauty and benefits of nanobiology*

13:30 – 14:45



Session F. *Phase plates and beam shaping*
Chair: Ady Arie, Tel Aviv University (Israel)

13:30 – 13:45

F1 *Experimental realization of a cylindrical quantum basis set for bandwidth-limited two dimensional electron wavefronts*
Jun Yuan, University of York (United Kingdom)

13:45 – 14:00

F2 *Analysis of non-diffractive electron Bessel beams for potential application in electron microscopy*
Simon Hettler, Karlsruhe Institute of Technology (Germany)

14:00 – 14:15

F3 *Refractive wavefront shaping with a sculpted thin film enables aberration-corrected imaging on uncorrected electron microscopes*
Peng-Han Lu, Forschungszentrum Jülich (Germany)

14:15 – 14:30

F4 *Diffractive Guiding Using Slits*
Moritz Carmesin, Helmholtz-Zentrum Dresden-Rossendorf (Germany)

14:30 – 14:45

F5 *Generation of non-diffracting Bessel beams with amorphous carbon phase masks*
Lukas Grünewald, Karlsruhe Institute of Technology (Germany)

14:45 – 15:45



Invited Speaker - Q-SORT Webinar
Chair: Ady Arie, Tel Aviv University (Israel)

Shaping electron wavepackets with light; Shaping light with electron wavepackets
Ido Kaminer, Technion – Israel Institute of Technology (Israel)

15:45 – 16:00



Coffee Break

16:00 – 18:00

Session P. Poster and Exhibitors

19:00



Social Dinner
Im Alten Zollhaus, Friedlandstraße 22, 52064 Aachen

Tuesday 29 May

Poster session

Zentralbibliothek
(Building 04.7)
Forschungszentrum Jülich
Wilhelm-Johnen-Strasse
52428 Jülich

- P1 *Holography in Scanning Transmission Electron Microscopy*
Harvey, T.R.; Ophus, C.; Yasin, F.S.; Chess, J.J.; Pierce, J.S.; McMorran, B.J.
- P2 *Maximizing contrast in cryo-transmission electron microscopy with physical phase plates*
Obermair, M.; Hettler, S.; Hsieh, C.; Marko, M., Gerthsen, D.
- P3 *The ultimate direct-electron detector and neural network*
van Schayck P.; van Genderen E.,; Boulanger E.M.H.; Roussel L., Peters P.; Ravelli R.
- P4 *Realization of the Feynman-Young thought experiment:
Controlled electron interference in Fraunhofer and image space*
Tavabi A.H.; Boothroyd C.B.; Yücelen E.; Frabboni S.; Gazzadi G.C.; Dunin-Borkowski R.E.; Pozzi G.
- P5 *MEMS fabrication processes for Tunable Amperometric Phase Plate devices*
Balboni, R.; Roncaglia, A.
- P6 *Fabrication of an e-beam OAM sorter via Electron Beam Lithography*
Rosi, P.; Medici, G.; Menozzi, C.; Venturi F.; Gazzadi, G.C.; Frabboni S.; Grillo, V.
- P7 *A Numerical Analysis of Interaction-Free Measurement for Low-Dose Imaging
Using Conditional Sample Re-illumination*
Agarwal, A.; Goyal, V.; Berggren, K. K.
- P8 TBD

Wednesday 30 May

Zentralbibliothek
(Building 04.7)
Forschungszentrum Jülich
Wilhelm-Johnen-Strasse
52428 Jülich

- 08:30 – 09:00 Registration
- 09:00 – 10:45  *Session H. Programmable phase plates and beam shaping*
Chair: Johan Verbeeck, University of Antwerp (Belgium)
- 09:00 – 09:15 H1 *Nanoelectromechanical systems on a Si-on-insulator chip to act on the phase of the electron wave-field inside a transmission electron microscope*
Martial Duchamp, Nanyang Technological University (Singapore)
- 09:15 – 09:30 H2 *Recent developments in the design and implementation of phase plates for electrons*
Marco Beleggia, Technical University of Denmark (Denmark)
- 09:30 – 09:45 H3 *Dynamic generation of electron vortices to probe magnetic information in a (S)TEM*
Armand Béché, University of Antwerp (Belgium)
- 09:45 – 10:00 H4 *Electron Mode Conversion and Vortex Generation*
Christian Kramberger, TU Wien (Austria)
- 10:00 – 10:15 H5 *Electrostatic Aharonov-Bohm effect: a tunable electron vortex beam generator*
Amir H. Tavabi, Forschungszentrum Jülich (Germany)
- 10:15 – 10:30 H6 *A setup for electron wave front manipulation using patterned electrostatic mirrors*
Maurice Krielaart, Delft University of Technology (The Netherlands)
- 10:30 – 10:45 H7 *Imaging through a multimode fibre using modal correction and time of flight to give 3D images*
Daan Stellinga, University of Glasgow (United Kingdom)
- 10:30 – 11:00  Coffee Break
- 11:00 – 12:00  *Invited Speaker - Q-SORT Webinar*
Chair: Ido Kaminer, Technion – Israel Institute of Technology (Israel)
- Programmable phase plates for electrons*
Johan Verbeeck, University of Antwerp (Belgium)
- 12:00 – 12:15  Concluding Remarks
- 12:15 – 13:00  Lunch