

## The world of electrons is explored with the shortest of light pulses

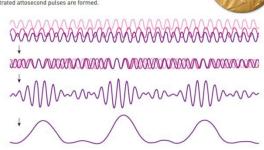




OVERTONES ARE SUPERIMPOSED

REINFORCE OR CANCEL EACH OTHER

ATTOSECOND PULSES

































**C**HERENT













4 photonics



















|     | Name   | Company  | Info   |  |  |
|-----|--|--|--|--|--|
|     | Keynotes - Industrial  | 1  |  |  |  |
| Yes | Per Nordlund Lead Optical Designer at Victor Hasselblad AB                             | Victor Hasselblad AB www.hasselblad.com  | Victor Hasselblad AB is a Swedish manufacturer of medium format cameras, photographic equipment and image scanners based in Gothenburg, Sweden. The company originally became known for its classic analog medium-format cameras that used a waist-level viewfin der. In 1948, Victor Hasselblad travelled to New York and presented at a press conference the very first Hasselblad camera for civilian use. It was the world's first single lens mirror reflex camera in the medium format (6×6 cm) with interchangeable lenses, film magazines and viewfinders. In 1957, the Hasselblad 500C entered the market. This was a model of exceptional quality. It was also the camera that astronaut Wally Schirra, on his own initiative, introduced to NASA and took in the Mercury capsule Sigma 7 in 1962. NASA would later use a modified Hasselblad 500C on five space missions, before the Hasselblad company noticed.  Per Nordlund is Lead Optical Designer at Hasselblad, and will present the history of Hasselblad lenses, and development process today in modern optics.  https://www.linkedin.com/in/pernordlund -99199a4/  |  |  |
| Yes | Ödgärd Andersson Chief Executive Officer at Zenseact / TRATON Supervisory Board member | Zenseact AB (a Volvo Cars AB company) https://zenseact.com/                      | "The quickest path to road safety is through high-performing AI. As cars become robots, we create software to make sure they behave".  Zenseact is an applied automotive AI company developing world-leading safety software for AD and ADAS. Our technology encompasses every aspect of automation, from sensor fusion, computer vision, and object detection to positioning and actuation, using a combination of rule-based code and deep learning algorithms. Our ultimate vision is to help make car accidents a thing of the past — to create a day when all roads are safe, and lives are no longer lost to preventable accidents.  Ödgärd Andersson is CEO and global leader and change driver, specifically focused on transformations powered by software, data and AI. Domain knowledge in autonomous vehicles, software defined vehicles, connected vehicles, AI, complex embedded SW systems, scaled software development, SaaS, Telecom, IoT and data. Passion for creating positive change via collaboration and for building strong diverse teams. <a href="https://www.linkedin.com/in/%C3%B6dg%C3%A4rd-andersson-0529201/?originalSubdomain=se">https://www.linkedin.com/in/%C3%B6dg%C3%A4rd-andersson-0529201/?originalSubdomain=se</a> |  |  |
|     | Speakers - Industrial  |  |  |  |  |
| Yes | Alexis Bohlin Principal Research Engineer  | GKN Aerospace Sweden AB  | A global multi-technology leader in the aerospace industry  His research interest cover the development and application of frequency- and time-domain spectroscopic imaging techniques for probing temperature and species in harsh environments, and non-destructive testing / evaluation (neutron-, *Yay -, and ultrasound-based) to characterize various aerospace materials and processes.  https://www.linkedin.com/in/alexisbohlin -93181480/  |  |  |
| Yes | Magnus Pålsson Sales and Marketing Manager   | Optoskand AB (a Coherent company) Exhibitor at OPS-2024                          | Optoskand-Coherent design and manufacture fiber optic beam delivery components for high power laser sources.  https://www.linkedin.com/in/magnusp%C3%A5lsson -35970515/  |  |  |
| Yes | Åsa Lindström Chief Executive Officer  | Profundus AB <a href="https://www.profundus.com/">https://www.profundus.com/</a> | Advancing Adaptive Optics - Entering a new universe of retinal diagnostics and retinal imaging technology  Profundus is a life science start-up company that specializes in the development of a ground-breaking camera and software system for advanced retinal imaging, utilizing adaptive optics. Our primary mission is to facilitate the early detection, prevention, and therefore treatment of various diseases by enabling the identification of changes in retinal microstructures. With a strong vision to make a significant difference in retinal imaging diagnostics, we aim to benefit patients worldwide.   |  |  |
| Yes | Reinhard Windemuth Sales Director SMT&ME Solutions for EU                              | Panasonic Connect Europe GmbH http://PFSE.panasonic.eu/                          | Evaluation of microlens arrays using UA3P profilometer  Microlens arrays, which consist of a grid of small lenses, show promise as a useful solution for XR optical elements. Measurement and evaluation are important for the production of microlens arrays. Tactile profilometers are suitable for measurement of microlens arrays in terms of accuracy measurable range, measurable shape, and measurable maximum surface slope. Measuring the entire surface of a microlens array with tactile profilometers allows us to acquire measurement data that includes multiple lenses instead of just one lens, but the convenience is limited by the time and effort required to analyze each lens. We introduce a method for evaluating the shape and relative positions of multiple lenses in a microlens array arranged in a square grid, using a tactile profilometer called UA3P. <a href="https://www.linkedin.com/in/reinhard-windemuth-32496712/?originalSubdomain=de">https://www.linkedin.com/in/reinhard-windemuth-32496712/?originalSubdomain=de</a>  |  |  |

| Yes | Jörgen Thaung Head of the optics lab at Smart eye                 | Smart Eye AB www.smarteye.se/  | Smart Eye is the global leader in Human Insight AI, technology that understands, supports and predicts human behavior in complex environments.  Sensor technologies have become more accessible and are easier and more cost effective to deploy. Combined with advanced computer processing power, new machine learning methodologies and access to massive amounts of data, we are entering a new era of intelligent systems – systems that assess complex human behaviors and states, and enable us to lead safer, healthier, happier and more connected lives. We call this Human Insight AI: technology that understands, supports and predicts human behavior in complex environments. <a href="https://www.linkedin.com/in/martin-krantz6819a79/">https://www.linkedin.com/in/martin-krantz6819a79/</a>  |
|-----|---|--|---|
| Yes | Mahan Haddad Engineering Manager at Driving Product Innovation    | Terranet AB <a href="https://terranet.se/">https://terranet.se/</a>  | Terranet is on a mission to save lives in urban traffic. We develop breakthrough tech solutions for Advanced Driver Assistance Systems (ADAS) and Autonomous Vehicles (AV) that improve safety for everyone who moves on the road. With a unique patented vision technology, Terranet's anticollision system BlincVision scans and detects road objects ten times faster and with higher accuracy than any other ADAS technology available today.   |
| Yes | Virpi Korpelainen<br>Senior Scientist                             | National Metrology Institute - VTT MIKES  Helsinki https://www.vttresearch.com/en/industries/metrolog wtt -mikes | Traceable measurement techniques for characterization of photonic components  Optical components for Augmented Reality see-through glasses are an example of applications requiring extremely accurate measurements. The measurements for quality control should be traceable to the SI units to enable reproducibility and commensurability. Dimensional properties of the diffractive optical elements (DOE) set the functionality of the components. Characterization of the structures are needed in research, development, and manufacture. Deviation from the design causes deviation in the operation. There are several typical measurands, pitch and pitch homogeneity, as well as other grating parameters and angular position for DOE. Thickness, flatness and parallelism are important for wave guides. <a href="https://www.linkedin.com/in/virpi-korpelainen-1343044/">https://www.linkedin.com/in/virpi-korpelainen-1343044/</a>   |
| Yes | Konstantinas Zakalskis Sales Engineer                             | Light Conversion www.lightcon.com Exhibitor at OPS-2024  | Femtosecond Laser Systems for Industry & Science: Precision Micromachining using a Novel Femtosecond Flat-Top UV-Laser With proven competence in laser design and manufacturing, state-of-the -art R&D facilities, and close ties to research programs, LIGHT CONVERSION offers unique solutions for today's industrial, scientific, and medical challenges. The reliability of our femtosecond lasers has been proven by hundreds of systems operating 24/7 for more than 10 years in the industrial market. Using our knowledge, experience, and highly motivated professional team, we focus on quality and customer satisfaction. Industrial: Automotive, consumer electronics, semiconductor, and other industries <a href="https://www.linkedin.com/in/konstantinaszakalskis/">https://www.linkedin.com/in/konstantinaszakalskis/</a>   |
| TBD | Stuart Campell Research And Development Specialist at Tyri Lights | TYRI Sweden AB https://tyrilights.com/   | Optimum light distribution by providing high-quality lighting to the toughest environments and working conditions in e.g. heavy vehicles Tyri provides high-quality lighting to the harshest environments and working conditions. Tyri develops its own products and concepts, and work closely with its customers in developing customized work lights for today and for the future. Tyri has developed the INTELLilight®, this state-of- the-art smart lighting solution has taken work lights to a whole new dimension by improving the operators' working conditions while enhancing safety. Stuart Campell is a Research and Development specialist with expertise in optics and lasers. Ph.D. in Femtosecond Laser Material Processing from Heriot-Watt University in Edinburgh, with many years of experience in opto-electronic device design and development. Experience in a wide range of different systems ranging from device design for multi-kW lasers and their use in industrial applications through to industrial illumination and vehicle headlight design. <a href="https://www.linkedin.com/in/stuartcampbell-2b978013/">https://www.linkedin.com/in/stuartcampbell-2b978013/</a> |
| TBD | Pending   | TBD - Volvo Trucks AB?   | Laser applications in manufacturing   |
| TBD |   |  | The core of fiber optic load sensing bearings technology  |

| OP: | OPS-2024 Academic Sessions   |   |  |  |
|-----|--|---|--|--|
|     | Keynotes - Academic  |   |  |  |
| Yes | Anne L'Huillier Professor  | Lund University Division of Atomic Physics https://www.atomic.physics.lu.se/                          | Anne L'Huillier, Nobel Prize in Physics 2023  The Nobel Prize in Physics 2023 was awarded to Pierre Agostini, Ferenc Krausz and Anne L'Huillier "for experimental methods that generate attosecond pulses of light for the study of electron dynamics in matter". Professor Anne L'Huillier is a French physicist. She is a professor of atomic physics at Lund University in Sweden. She leads an attosecond physics group which studies the movements of electrons in real time, which is used to understand the chemical reactions on the atomic level.  https://www.youtube.com/watch?v=QFYyduL9WZA https://www.youtube.com/watch?v=2x1H8UnlYhI https://www.atomic.physics.lu.se/research/attosecond-physicsfrom -lasersto -applications/group-members/anne-lhuillier/ https://www.linkedin.com/in/anne-l-huillier-ba06a078/   |  |
| Yes | Francesco Poletti Professor  | University of Southampton https://www.southampton.ac.uk/research/institutes centres/hollow-core-fibre | Hollow core fibres: when less is more  Prof Francesco Poletti is one of the pioneers of hollow core fibre technology. He leads the Hollow Core Fibre (HCF) group at the ORC, University of Southampton, as well as the research activities on HCFs for optical data communications at Microsoft Azure Flber. He has co-authored more than 500 peer-reviewed publications and over 20 patents in the area of fiber optics.  For decades, hollow core fibres have been a fascinating tool for scientists, enabling long distance light guidance in any gas, as well as innovative experiments exploiting the long light:gas interaction length. For a long time, their optical performance fell much shorter than the requirements of optical communications.  https://www.southampton.ac.uk/people/5x59mp/professor-francesco-poletti https://www.linkedin.com/in/francesco-poletti-88285426/ |  |
|     | Speakers - Academic  |   |  |  |
|     | Quantum technology 6   | 1   |  |  |
| Yes | Raphaël van Laer   | Chalmers University of Technology Photonics and Quantum Technology, Microtechnology and Nanoscience   | Raphaël Van Laer leads an interdisciplinary research team in photonics and quantum technologies at Chalmers University of Technology. He explores the flow of and interactions between light, sound, and microwaves for quantum information processing. <a href="https://research.chalmers.se/en/person/laer">https://research.chalmers.se/en/person/laer</a> <a href="https://www.linkedin.com/in/rvanlaer/">https://www.linkedin.com/in/rvanlaer/</a>  |  |
| Yes | Alarcon Alvaro PhD in Electrical Engineering - Experimental Scientist of Quantum Information Over Optical Fibers | LiU Linköping University  | Improved quantum cryptography with optical circuit  An optical circuit capable of ensuring the security of so-called quantum cryptography – that was an idea that researchers Alvaro Alarcón and Guilherme B. Xavier had five years ago. Now, the idea has finally been tested in an international collaboration, and the results could pave the way for the future of secure communication.  https://liu.se/en/newsitem/improved -quantum-cryptography-with-optical-circuit https://www.linkedin.com/in/alvaro-alarc%C3%B3n-cuevas42117192/   |  |
| Yes | Albert Peralta Amores PhD student  | KTH Royal Institute of Technology Department of Light and the Physics of Matter                       | Non-Classical Light Generation in Subwavelength Semiconductor Waveguides  Albert is working on design and implementation of non-classical light sources for quantum communications applications under the supervision of Marcin Swillo.  https://www.kth.se/profile/aperalta   |  |
|     |  |   |  |  |

| Ye | Val Zwiller Professor                          | KTH Royal Institute of Technology | Prof. Val Zwiller heads the Quantum Nano Photonics group in the Applied Physics department of KTH, the Royal Institute of Technology in Stockholm, Sweden and has extensive experience in the field of quantum nano photonics with a h-index of 69. In addition, Val co-founded Single Quantum in 2012, a company that develops and produces high-performance single photon detectors and has steadily grown into a leading quantum tech company.  https://www.linkedin.com/in/val-zwiller4960434/ |
|----|--|-----------------------------------|--|
|    | Photonics Application                          | ns 7th nov                        |  |
| Ye |  | KTH Royal Institute of Technology | https://www.linkedin.com/in/gylfason/  |
| Ye | Dag Hanstorp Professor                         | GU - University of Gothenburg     | https://sannarp.nu/blog/2023/12/22/nobelprisen-professordag -hanstorp-berattaroch -inspirerar/ https://www.gu.se/om-universitetet/hitta-person/daghanstorp   |
| Ye | Xiaodan Pang                                   | KTH Royal Institute of Technology | https://www.linkedin.com/in/xiapan/  |
| Ye | Senior Researcher  Andreas Ehn Senior lecturer | Lund University                   | https://www.linkedin.com/in/andreasehn -00443a5/ https://www.lunduniversity.lu.se/lucat/user/981bc72ec812849dc2215aaef0d95d11  |
|    | <b>Photonics for Medicine</b>                  | Technology 7th nov                |  |
| Ye |  | Lund University                   | Medical applications of laser acceleration https://www.lunduniversity.lu.se/lucat/user/7abebf5cc869c639ef17c9ff1a8907ff https://www.atomic.physics.lu.se/staff/seniorlecturers/olle -lundh/ https://www.linkedin.com/in/olle-lundh-1982484/  |

| Yes | Ingemar Fredriksson Adjunct Associate Professor                           | LiU Linköping University / Perimed https://www.perimed-instruments.com/ | https://www.linkedin.com/in/ingemarfredriksson -74a8813/  |
|-----|---|---|---|
| Yes | Illaria Testa Associate Professor at KTH, Applied Physics, SciLife Fellow | KTH Royal Institute of Technology                                       | My research interest is to develop novel paradigms and concepts based on super-resolution microscopy or nanoscopy to address contemporary challenges within the life sciences. To achieve these goals I will push forward the quantitative aspect of live cell imaging by setting-up and applying concept based on single molecule and targeted switching (STED/RESOLFT/SIM). These next generation microscopes will allow the precise identification of populations of biomolecules depending on their localization, abundance and dynamics inside their native cellular and tissues environment.  https://www.linkedin.com/in/ilaria-testa-4b286a115/ |

| Yes |   | Business Region Göteborg   | ICT competence and opportunities in Gothenburg region   |
|-----|---|--|---|
|     |   | www.businessregiongoteborg.se  | Business Region Gothenburg is responsible for business development in the City of Gothenburg and represents 13 municipalities in the region. We create the conditions for sustainable entrepreneurship and more jobs. Get help from us regardless of whether you have just started your company, want to progress with your idea or are considering investing or establishing operations in the region.  Kent will spread the word about our region's ICT competence and opportunities, both nationally and internationally. If you are an ICT company, he  |
|     | Kent Jellmund                           |  | can introduce you to a multitude of opportunities and help you establish a business in the Gothenburg region. <a href="https://www.linkedin.com/in/kentjellmund/">https://www.linkedin.com/in/kentjellmund/</a>   |
|     |   |  |   |
| Yes | Investment advisor ICT                  | Chalmers Industriteknik https://chalmersindustriteknik.se/en/expertise/applied | The new face for Grafen Flagship - twelve new projects and one including Photonics  Chalmers Industriteknik is an organization that focuses on innovative research and development for a sustainable society. We work closely with  |
|     |   | ai/computervision/   | research institutions, academia, and industry to create research-based solutions to future challenges.  Lilei will introduce what happened in the last ten years of Graphene Flagship, and what is the new face for Graphene Flagship now with twelve new projects, in which include one related to Photonics.  Lilei has been involved in technical project management at the interface between academia and industry with business development, product   |
|     | <b>Lilei Ye</b> Business developer, PhD |  | development and technology transfer.  https://www.linkedin.com/in/lilei-ye-5955502a/  |
| Yes | Elisabet Österlund                      | Svensk Elektronik https://www.svenskelektronik.se/                             | Chips JU and Sweden's status in the semiconductor issue & how can photonics get involved?  The component shortage and the EU's Chips Act have meant that the area has received a lot of media space and the word semiconductor has been drummed into the public. There is more focus on the area now, because you can't have software without hardware. The strategic innovation programs, the SIPs funded by Vinnova, Formas and Energimyndigheten started in 2013, are temporary organizations, while Svensk Elektronik is a membership organization that will exist over time. The association Svensk Elektronik has become a reference body for government investigations and is involved in influencing upper secondary education. Elisabet has a long career in the distribution industry behind her but is today a tech entrepreneur and investor, but is also involved in the industry association. |
|     | President                               |  |   |
| Yes |   | Tampere University https://www.tuni.fi/en/goerygenty                           | Director of the <b>Flagship for Photonics Research and Innovation (PREIN)</b> awarded in 2019 by the Academy of Finland. The Flagship is a joint national program for Photonics multi-disciplinary science and technology development, including Tampere University, Aalto University, University of Eastern Finland and VTT and involving more than 50 professors and 400 researchers.  Leader of the <b>Ultrafast Photonics research group</b> . Our group carries out experimental, numerical, and theoretical research on <b>ultrafast photonics and applications</b> . We also combine <b>artifical intelligence</b> with <b>fibre-optics technology</b> to design smart laser sources and for improved ultrafast light diagnostics. We apply our research for <b>better understanding of light-matter interactions and nonlinear science as well as to the development of</b>                         |
|     | Goory Conty                             |  | novel sensing and imaging approaches and in parrticular in the mid-infrared. Our group is always happy to   |
|     | Goery Genty Professor                   |  | collaborate. https://www.linkedin.com/in/qo%C3%ABry-qenty-2068831b/   |

| Yes | Dr. Claus Roll Director, Europe                                  | OPTICA https://www.optica.org/about/  | Optica (formerly OSA), Advancing Optics and Photonics Worldwide, is the society dedicated to promoting the generation, application, archiving and dissemination of knowledge in the field. Founded in 1916, it is the leading organization for scientists, engineers, business professionals, students and others interested in the science of light. Optica's renowned publications, meetings, online resources and in-person activities fuel discoveries, shape real-life applications and accelerate scientific, technical and educational achievement.   |
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| Yes | Ellen Andreasson Co-founder & CEO                                | Envue Technologies AB https://www.envue-technologies.com/   | Women in Technology  Envue was started as a spinout company from the Langhammer group at Chalmers university of Technology. The method was developed by combining expertise in the fields of nano fabrication, nano optics and bio physics and resulted in one of the most sensitive label free optical bio sensing methods available today. Envue have received the WomenTechEU grant of €75,000 on April-2023, along with mentoring and coaching through the European Innovation Council (EIC) Women Leadership Programme.  Ellen was awarded Student of The Year, the Anniversary Fund Scholarship by Chalmers Alumni Association, second place in Tech Girl of The Year by Microsoft, and a certified member of the Nova Network.  https://www.linkedin.com/in/ellenandreasson/?originalSubdomain=se |
| Yes | Asa Claesson Senior Scientist, Business Development Fiber Optics | RISE - Research Institutes of Sweden https://www.ri.se/en/whatwe - do/projects/photonhub-europe-training-and- innovation-supportin -photonics | PhotonHub Europe - training and innovation support in photonics  https://www.linkedin.com/in/asaclaesson/  |
| Yes | Zoran Popovic Founder & Chief Scientific Officer                 | Profundus AB https://www.profundus.com/   | PhotonHub Success Story - Experience in applying for and participating in a PhotonHub project Profundus AB was founded on the basis of the research and development of a unique proof-of-concept prototype for wide -field high-resolution adaptive optics retinal imaging by the adaptive optics research team at the University of Gothenburg. The prototype features a 7x7 deg corrected field-of-view that enables the user to quickly cover larger retinal areas.  https://www.linkedin.com/in/zoranpopovic/?originalSubdomain=se   |

## **Optics & Photonics in Sweden 2024**









