

# Optics & Photonics in Sweden 2024 (OPS) 5 - 8 November 2024

Chalmers University of Technology, Lindholmen



## GENERAL INFORMATION

The Optics & Photonics in Sweden conference (OPS 2024) will be held on 5 - 8 November 2024 at Chalmers University of Technology, Lindholmen in Gothenburg. The conference is organised by PhotonicSweden (PS). More information: [photonicsweden.org](http://photonicsweden.org)

### LOCAL ORGANIZING COMMITTEE

- Peter Andrekson, Victor Torres Company and Magnus Karlsson

### PROGRAMME COMMITTEE

- Peter Andrekson, Chalmers
  - Cord Arnold, Lund University
  - Petra Bindig, PhotonicSweden
  - Joakim Bood, LTH
  - Mohamed Bourennane, SU
  - Åsa Claesson, RISE, Acreo Swedish ICT AB
  - Kenneth Järrendahl, LiU
  - Magnus Karlsson, Chalmers
  - Dietmar Letalick, FOI
  - Sergei Popov, KTH
  - Victor Torres Company Chalmers
  - Laszlo Veisz, Umeå University
- 
- Petra Hardtke, Thorlabs AB
  - Per Olof Hedekvist, RISE
  - Ewa Orłowska, Hamamatsu Photonics Norden AB
  - Lars Rymell, Eclipse Optics
  - Carl Sundström, AFRY
  - Fredrik Wikfledt, Laser Components
  - Mikael Winters, Coherent
  - Elisabeth Österlund, Svensk Elektronik
  - Lennart BM Svensson, PhotonicSweden

### KEYNOTE SPEAKERS

will highlight European research and developments.

### INVITED TALKS

will cover a variety of topics in Optics and Photonics, reflecting current Swedish research and development at universities, institutes and industry.

### A POSTER SESSION

will provide an additional opportunity to display to the most recent developments and achievements. It will also give an overview of Optics and Photonics in Sweden and offer a good platform for creating new collaborations.

### BEST POSTER AWARDS

The best poster will be awarded with 3,000 SEK  
The second and third prize will be awarded with 1,000 SEK. The poster awards are sponsored by:



### AN EXHIBITION AND A SESSION WITH COMPANY PRESENTATIONS

will be held in parallel to the technical sessions to provide industry, institutes, and associations an opportunity to display their products and services and bridge the gap between science and industry.

Contact: [lennart@photonicsweden.org](mailto:lennart@photonicsweden.org)

### ABSTRACT SUBMISSION FOR POSTER PRESENTATIONS

Authors are requested to submit an abstract of a half to one page (font 11, including figures and references). Contributions will be accepted for poster presentation. All authors are requested to register for the meeting separately from abstract submission.

Required poster size: The posters should have a maximum size of DIN A0 (841 x 1189 mm) preferably in a portrait format (not landscape format). Pins and similar pads will be provided by the organizer.

Abstracts shall be sent to [petra@photonicsweden.org](mailto:petra@photonicsweden.org)

**Deadline for abstracts: 15 October 2024**

### SPONSORING OPPORTUNITIES

Please contact Lennart BM Svensson if you are interested in our exhibition and sponsor opportunities:

Contact: [lennart@photonicsweden.org](mailto:lennart@photonicsweden.org)

### FURTHER INFORMATION

For further information please go to [photonicsweden.org](http://photonicsweden.org)

### CONFERENCE VENUE

Chalmers University of Technology, Lindholmen  
Hörselgängen 4, 417 56 Göteborg

### JOB FAIR AT EXHIBITION

We will arrange a matchmaking between companies and job seekers at the conference Optics and Photonics in Sweden 2024. It will take place on 18 and 19 October in the exhibition area. All exhibiting companies welcome students (graduates, undergraduates and PhD students) to discuss jobs, internships, etc.

### APPLICATION FOR STUDENT FREE ADMISSION

Up to 13 students in a Bachelor's degree or Master's degree program can apply for free admission for OPS-2024. 10 are sponsored by ThorLabs Sweden AB, and 3 by Yokogawa Europe B.V.



**REGISTRATION FOR PARTICIPANTS**

The registration deadline for online-registration is at 1<sup>st</sup> of November.

**REGISTRATION FEES**

4.100 kr +25% VAT	Non Members
3.100 kr + 25% VAT	Personal Members of PhotonicSweden and/or European Optical Society (EOS)
1.800 kr + 25% VAT	Student Members & Pensioner Members of PhotonicSweden and/or European Optical Society (EOS)
1.800 kr +25% VAT	Invited Speakers

Observe that all Swedish participants must pay 25% VAT (Moms). The option without VAT is only for VAT-registered companies outside Sweden.

All fees includes one person conference fee and all lunches & coffee breaks and dinner.

Personal annual member fee is 350 SEK/Year and student & pensioner annual member fee is 110 SEK/Year. Personal membership includes membership in PhotonicSweden, Svenska OptikSällskapet and European Optical Society.

*\* New EU VAT rules for courses and conferences In March 2019, the European Court of Justice rejected Sweden's interpretation of the part of the VAT directive relating to access to events. The ruling means that payments to gain physical access to courses and conferences are to be seen as access to events and must therefore always be made in the country where the event is held. The change also means that foreign companies attending courses in Sweden will receive invoices issued with Swedish VAT. Participants from companies and organizations within the EU with a VAT number have the opportunity to claim back the VAT on the participation fee via their local tax authority. The UK left the EU (Brexit) in 2020 and is thus no longer an EU country. Now the same rules regarding VAT apply to the UK as to other countries outside the EU.*

**REGISTRATION FOR EXHIBITORS**

The registration deadline for online-registration is at 10<sup>h</sup> of October.

**EXHIBITION FEES**

19.900 kr + 25% VAT	Non Members (incl. one person participation fee)
15.600 kr + 25% VAT	Company Members of PhotonicSweden (incl. one person participation fee)
3.100 kr + 25% VAT	additional exhibitors colleagues (incl. one person participation fee)

Observe that all Swedish exhibitors must pay 25% VAT (Moms). The option without VAT is only for VAT-registered companies outside Sweden.

All fees includes one person conference fee and all lunches & coffee breaks and dinner. Exhibition stand will be selected based on registration order. Map of exhibition floor will later be sent out to exhibitors.



**ANNE L'HUILLIER**

**Biography**

**Anne L'Huillier** is a Swedish/French researcher in attosecond science. During the first part of her career, she worked at the Commissariat à l'Energie Atomique, in Saclay, France, first as a PhD student until 1986, then as a permanent researcher until 1995. She was postdoc at Chalmers Institute of Technology, Gothenburg, Sweden in 1986, and at the University of Southern California, Los Angeles, USA in 1988. In 1995, she moved to Lund University, Sweden and became full professor in 1997. Her research, both theoretical and experimental, is centered around high-order harmonic generation in gases and its applications, in particular in attosecond science. She was awarded the Nobel Prize in Physics 2023 together with Pierre Agostini and Ferenc Krausz for “for experimental methods that generate attosecond pulses of light for the study of electron dynamics in matter”.

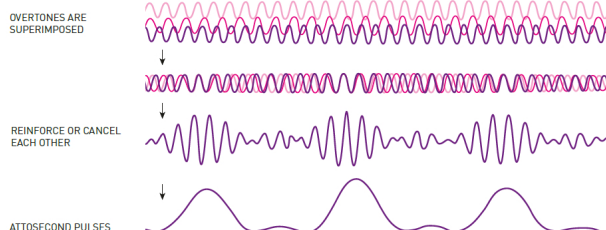
**Abstract**

**The route to attosecond light pulses**

When an intense laser interacts with a gas of atoms, high-order harmonics are generated. In the time domain, this radiation forms a train of extremely short light pulses, of the order of 100 attoseconds. Attosecond pulses allow the study of the dynamics of electrons in atoms and molecules, using pump-probe techniques. This presentation will highlight some of the key steps of the field of attosecond science.

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

When laser light is transmitted through a gas, ultraviolet overtones arise from the atoms in the gas. In the right conditions, these overtones may be in phase. When their cycles coincide, concentrated attosecond pulses are formed.



**FRANCESCO POLETTI**

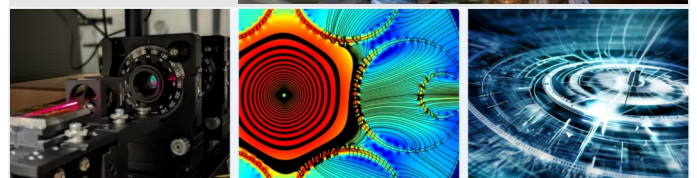
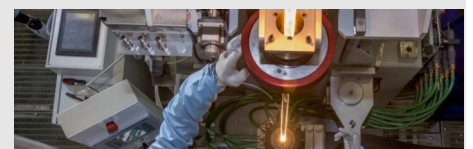
**Biography**

**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 Fiber. He has co-authored more than 500 peer-reviewed publications and over 20 patents in the area of fiber optics, amongst which seminal works introducing the nested antiresonant nodeless HCF concept (NANF) and using it to demonstrate lower loss than fundamentally possible with silica fibres in the near-infrared. He held research fellowships from the Royal Society and the ERC. His pioneering work on HCFs led to the creation of the ORC startup Lumenicity, which in 2022 was acquired by Microsoft Azure, where he is currently Partner Researcher.

**Abstract**

**Hollow core fibres: when less is more**

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. Recently though, thanks to nested antiresonant designs, the loss of these fibres has reached lower values than fundamentally achievable in conventional glass-guiding telecoms fibres, opening exploitation opportunities in data-transmission systems. This, added to negligible nonlinearity, very high damage threshold and ultimately low latency, has dramatically increased global interest in the technology for numerous applications involving the transmission and delivery of light.





## PER NORDLUND

### Biography

**Per Nordlund** is Lead Optical Designer at Hasselblad with several decades in optical design at Hasselblad, and will present the history of Hasselblad lenses, and development process today in modern optics.

### Abstract

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 viewfinder. 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.



## ÖDGÄRD ANDERSSON

### Biography

**Ödgård Andersson** is CEO at Zenseact AB 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.

### Abstract

“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.



**TUESDAY, 05 NOVEMBER 2024**

15:00-20:00

**Exhibition set-up**

Room: **Foajén**

13:00-18:00

**Nordic Photonics Forum Meeting**

Room: **Konferens Hallen**

**Why is Gothenburg a Hotspot for Innovation, Master of Collaboration and a Frontrunner in Sustainability?**

*Kent Jellmund, Investment advisor ICT, Business Region Göteborg,*

**The new face for Grafen Flagship - twelve new projects and one including Photonics**

*Lilei Ye, PhD, Business developer, Chalmers Industriteknik*

**Chips JU and Sweden's status in the semiconductor issue & how can photonics get involved?**

*Elisabet Österlund, President, Svensk Elektronik*

**Flagship for Photonics Research and Innovation (PREIN) a joint national program for Photonics multi-disciplinary science and technology development in Finland**

*Goery Genty, Professor and leader of the Ultrafast Photonics research group*

**Advancing Optics and Photonics Worldwide**

*Claus Roll, Director, Europe, OPTICA (formerly OSA)*

**Women in Technology**

*Ellen Andreasson, Co-founder & CEO, Envue Technologies AB*

**PhotonHub Europe - training and innovation support in photonics**

*Åsa Claesson, Senior Scientist, Business Development Fiber Optics*

**PhotonHub Success Story - Experience in applying for and participating in a PhotonHub project**

*Zoran Popovic, Founder & Chief Scientific Officer, Profundus AB*

18:00-19:00

**Networking with refreshments and finger food**

Room: **Foajén**

WEDNESDAY, 06 NOVEMBER 2024

09:00 - 10:00 Room: Foajén  
**On-side registration and welcome coffee**

10:00-10:15 Room: Konferens Hallen  
**Opening Remarks**  
*Åsa Claesson, PhotonicSweden and RISE; Magnus Karlsson, Chalmers Technical University*

10:15-10:45 Room: Konferens Hallen  
**Keynote Talk** Session Chair: Lennart BM Svensson  
*Per Nordlund, Lead Optical Designer, Victor Hasselblad AB*  
 The history of Hasselblad lenses, and development process today in modern optics

10:45-12:00 Room: Konferens Hallen  
**Exhibitor presentations** Session Chair: Lennart BM Svensson

12:00-13:30 Room: Foajén  
**Lunch & Poster Session & Exhibition** Restaurant

13:30-14:00 Room : Konferens Hallen  
**Keynote Talk** Session Chair: Lennart BM Svensson  
*Ödgård Andersson, Chief Executive Officer Zenseact AB / TRATON Supervisory Board member (a Volvo Cars AB company)*  
 The quickest path to road safety is through high-performing AI. As cars become robots, we create software to make sure they behave

14:00-14:15 Room: Foajén  
**Coffee break**

Room: **Konferens Hallen**

Room: **Pascal**

14:15-15:35  
**Session A1 | Quantum Technology**  
 Session Chair: Magnus Karlsson

14:15-15:35  
**Session B1 | Photonics Metrology Applications**  
 Session Chair:

14:15-14:35  
*Raphael van Laer, Chalmers Technical University*

14:15-14:35  
**Traceable measurement techniques for characterization of photonic components**  
*Virpi Korpelainen, Senior Scientist, National Metrology Institute - VTT MIKES, Finland*

14:35-14:55  
 Dynamic manipulation of transverse spatial photonic quantum states to experimentally test the connection between Wave-Particle Duality and Entropic Uncertainty  
*Daniel Spiegel-Lexne, Linköping University*

14:35-14:55  
**Evaluation of microlens arrays using UA3P profilometer**  
*Reinhard Windemuth, Sales Director SMT&ME Solutions for EU, Panasonic Connect Europe GmbH, Germany*

14:55-15:15  
 Non-Classical Light Generation in Subwavelength Semiconductor Waveguides  
*Albert Peralta Amores, Royal Institute of Technology (KTH)*

14:55-15:15  
**Advancing Adaptive Optics - Entering a new universe of retinal diagnostics and retinal imaging technology**  
*Åsa Lindström, Chief Executive Officer, Profundus AB, Sweden*

15:15-15:35  
*Val Zwiller, Royal Institute of Technology (KTH)*

15:15-15:35  
 TBD  
*Alexis Bohlin, Principal Research Engineer, GKN Aerospace Sweden AB*

# CONFERENCE SCHEDULE

WEDNESDAY, 06 NOVEMBER 2024

Room: **Konferens Hallen**

15:40-17:00  
**Session A2 | Photonics for Medicine Technology**

*Session Chair:*

15:40-16:00  
Medical applications of laser acceleration  
*Olle Lundh, Lund University*

16:00-16:20  
Modeling of laser speckles to predict healing potential of diabetic foot ulcers  
*Ingemar Fredriksson, Linköping University, Perimed*

16:20-17:00  
*Illaria Testa, Royal Institute of Technology (KTH)*

Room: **Pascal**

15:40-17:00  
**Session B2 | Photonics for Automotive**

*Session Chair:*

15:40-16:00  
**Development of a faster automotive anti-collision system with use of event cameras**  
Mahan Haddad, Engineering Manager at Driving Product Innovation, Terranet AB, Sweden

16:00-16:20  
**Human Insight AI, technology that understands, supports and predicts human behavior in complex environments**  
Jörgen Thaug, Head of the optics lab, Smart Eye AB, Sweden

16:20-17:00  
**Tyri's progress in sustainability: Recyclable and climate neutral industrial lighting**  
Stuart Campell, Research And Development Specialist, TYRI Sweden AB

17:00-19:00 **Poster Session & Exhibition**

Room: **Foajén**

19:00-22:30 **Conference dinner**

Location: **Restaurant**



08:30  
Welcome coffee

Room: Foajén

09:30-10:15  
**Keynote Talk**  
The route to attosecond light pulses  
*Anne l'Huillier, Professor at Lund University*

Room: Konferens Hallen  
Session Chair: Magnus Karlsson

10:30-12:00  
**PhotonicSweden Awards and Poster Prize**  
Session Chairs: Maria Nilsson Tengelin, RISE, and Peter Strömberg, Acoem AB

Room: Konferens Hallen

12:00-13:30  
**Lunch break and exhibition**

13:30-14:00  
**Keynote Talk**  
Hollow core fibres: when less is more  
*Francesco Poletti, Professor at University of Southampton, Microsoft Azure Fiber*

Room: Konferens Hallen  
Session Chair: Peter Andrekson

14:00-14:20  
**Break**

Room: Konferens Hallen

Room: Pascal

14:20-15:40  
**Session A3 | Photonics Applications**

Session Chair: Peter Andrekson

14:20-15:40  
**Session B3 | Photonics Industrial Applications**

Session Chair:

14:20-14:40  
Ultra-low-power Programmable Silicon Photonic Circuits  
Leveraging Integrated Nanomechanics  
*Kristinn Gylfason, Royal Institute of Technology (KTH)*

14:20-14:40  
**SmartQD fiber optic cable with integrated sensors for manufacturing process monitoring**  
Andreas Hessel, Product Line Manager, ptoस्कand AB (a Coherent company), Sweden

14:40-15:00  
Optical levitation  
*Dag Hanstorp, University of Gothenburg*

14:40-15:00  
**Femtosecond Laser Systems for Industry & Science: Precision Micromachining using a Novel Femtosecond Flat-Top UV-Laser**  
*Konstantinas Zakalskis, Sales Engineer, Light Conversion, Lithuania*

15:00-15:20  
Periodic shadowing: improving the contrast of streak cameras and spectrometers  
*Andreas Ehn, Lund University*

15:00-15:20  
TBD

15:20-15:40  
Mid-IR Free-Space Optical Communications enabled by Unipolar Quantum Optoelectronics  
*Xiaodan Pang, Royal Institute of Technology (KTH)*

15:20-15:40  
TBD

## CONFERENCE SCHEDULE

**THURSDAY, 07 NOVEMBER 2024 STUDY VISITS 15.00-19.00**

Lab Visits: 2 groups travels by bus. Participant must choose Groupe 1 or 2,

### Group 1: Chalmers Physics Department at main Campus

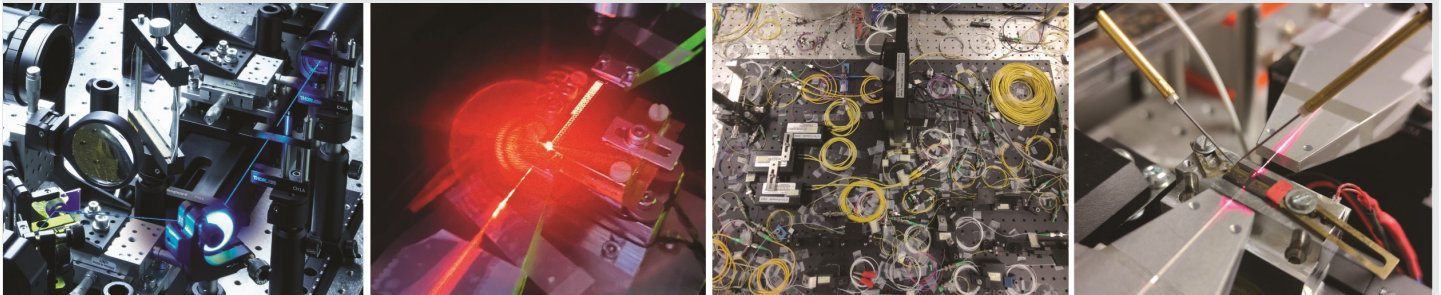
Kemivägen 9, 412 58 Göteborg



**CHALMERS**  
UNIVERSITY OF TECHNOLOGY

#### Chalmers 4 Lab-stations:

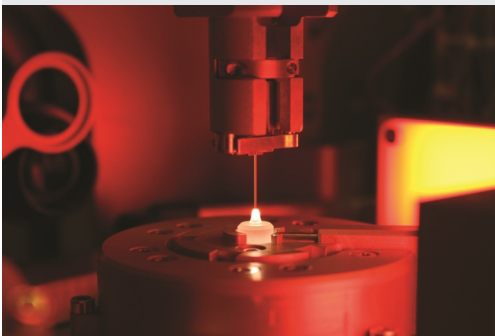
- Station 1: Clean room
- Station 2: Transmission lab
- Station 3: Ultrafast lab
- Station 4: UV emitter lab



### Group 2: Company visits

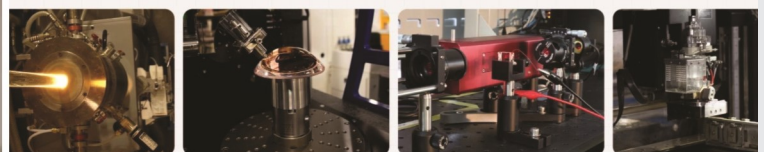
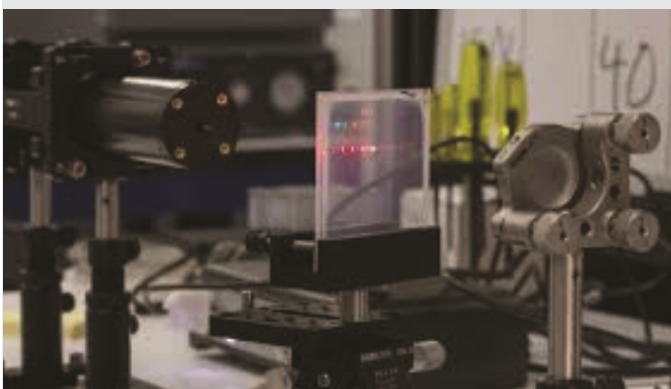
#### Optoskand AB

Aminogatan 30, 431 53 Mölndal



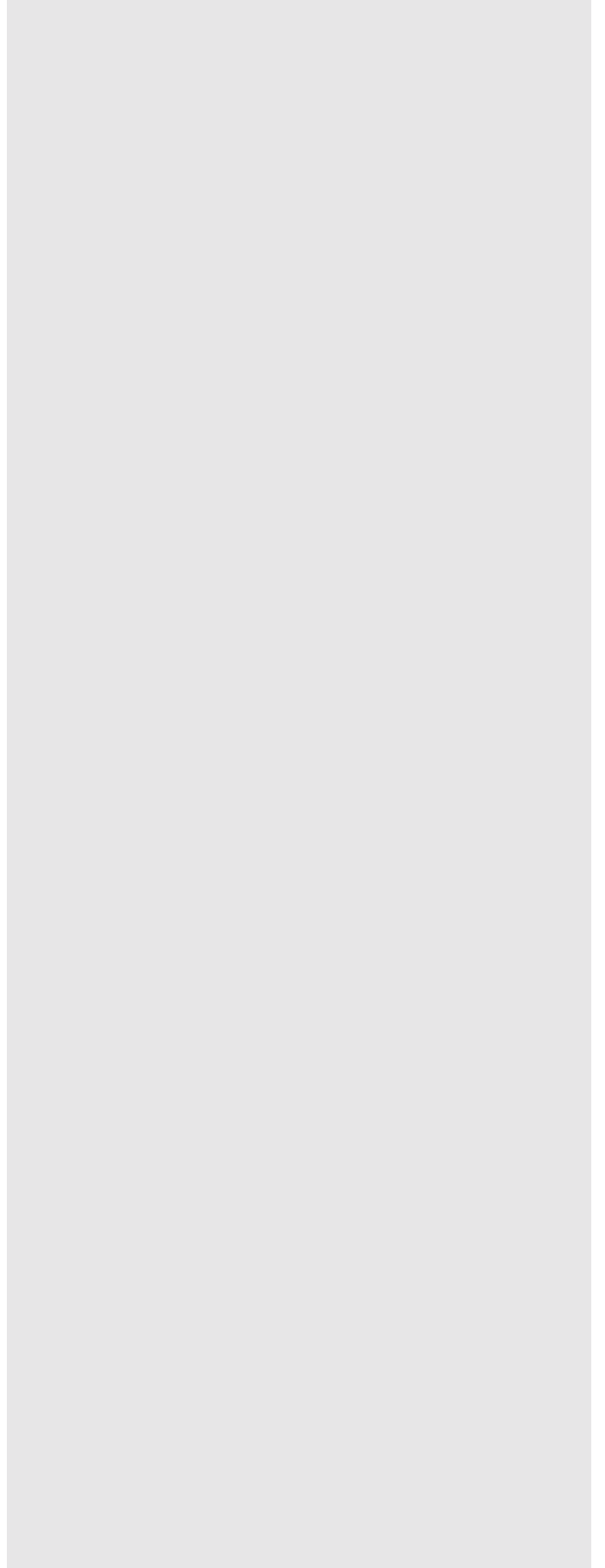
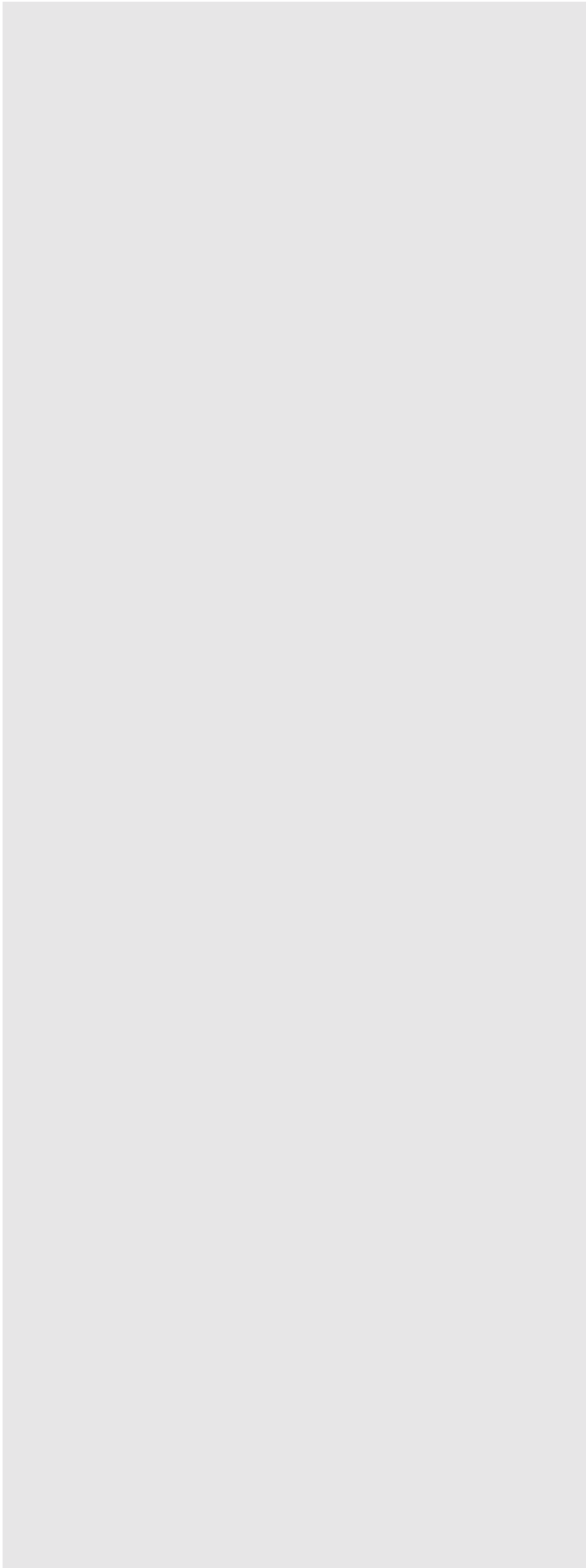
#### Thorlabs Sweden AB

Bergfotsgatan 7, 431 37 Mölndal



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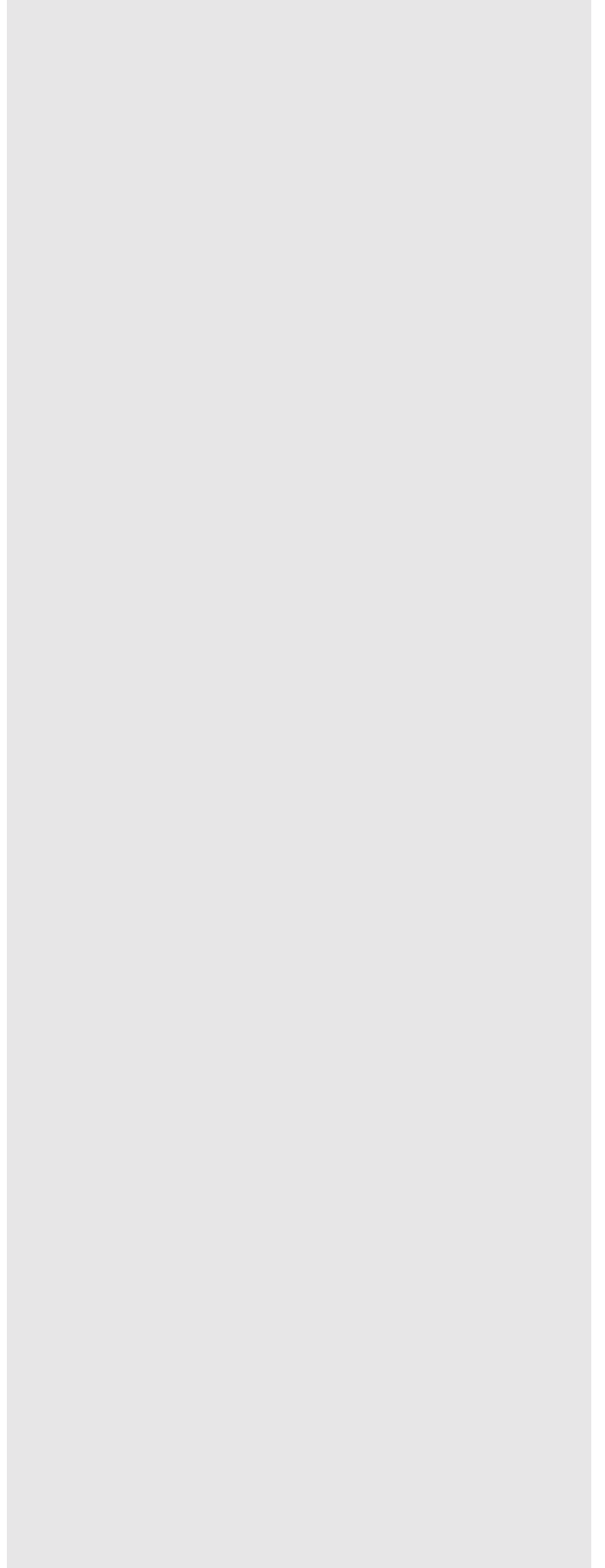
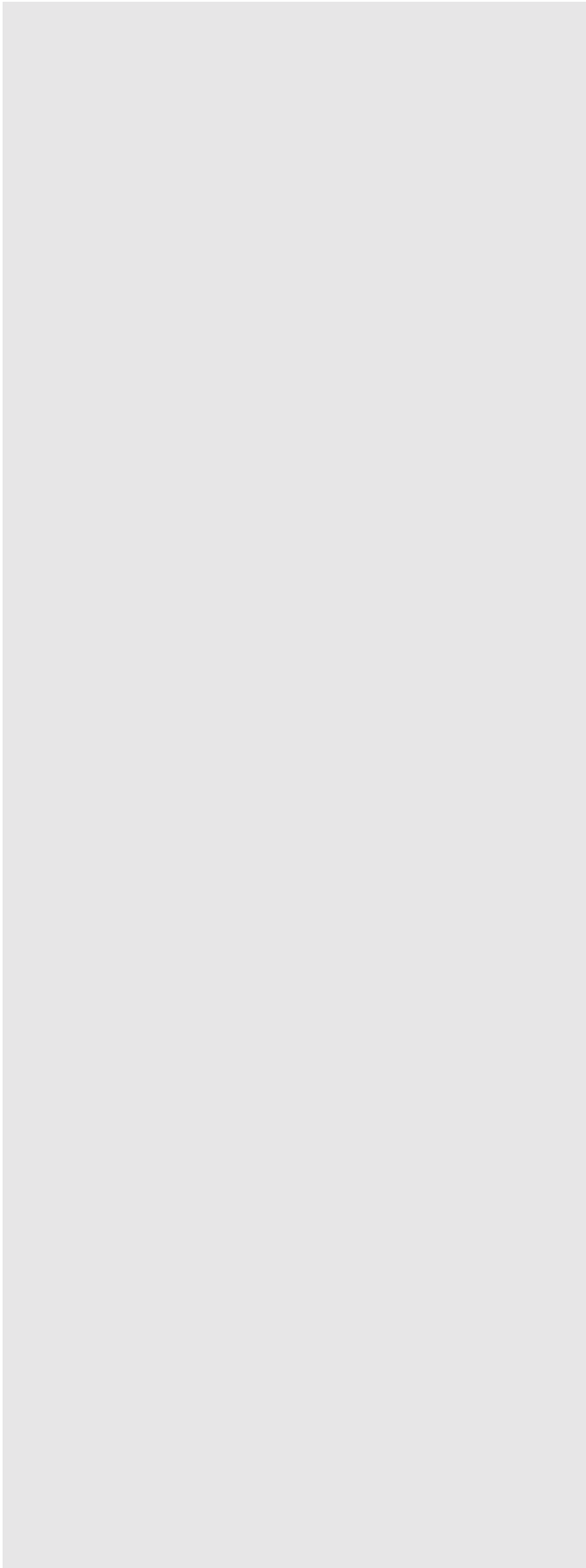


## Kickoff Metapix competence centre

Room: Pascal

Metapix is a cutting-edge competence center dedicated to pioneering research and education in integrated meta-photonics. Our work spans a wide range of applications, from enhancing optical connections in data centers to advancing quantum simulations. Join us at our kickoff event to discover more about our innovative center. You'll have the opportunity to hear from renowned speakers, including Roel Baets, Dan Blumenthal, Delphine Marris-Morini, Thomas Van Vaerenbergh, and Geun Ho Ahn. The kickoff is free of charge!

WHEN	WHAT
09.00	Welcome and introduction by Victor Torres Company, Metapix Centre Director
09.10	Roel Baets, Ghent University
10.10	Coffee
10.30	Dan Blumenthal, University of California
11.30	Delphine Marris-Morini, Université Paris Saclay
12.30	Lunch
13.30	Geunho Ahn, Stanford University
14.30	Thomas van Vaerenberg, Hewlett Packard Labs
15.30	Coffee
15.50	Panel discussion with all speakers
16.50	Closing remarks



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