

# Northern Optics & Photonics 2018

## 12-14 September 2018

Lund University, Lund, Sweden



It is our great pleasure to announce the next edition in the series of Northern Optics conferences that brings together optical scientists from the Nordic and Baltic countries. The previous meetings were held in Uppsala (2000), Espoo (2003), Bergen (2006), Vilnius (2009), and Helsingør (2012) and Imatra/Lappeenranta region (2015). Northern Optics & Photonics 2018 (NOP 2018) will be arranged on 12-14 September 2018 in Lund, Sweden.

The conference is organised by the Swedish Optical Society and PhotonicSweden in conjunction with the Lund University and Lund Laser Centre and sponsored by optics/photonics societies of Sweden, Denmark, Finland, Norway, and Baltic countries.

There will be two parallel sessions one is devoted to presentations from academia and one to industry presentations.

More information: [www.photonicsweden.org](http://www.photonicsweden.org)

### PLENARY SPEAKERS

will highlight European research and developments.

### INVITED TALKS

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

### A POSTER SESSION

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 Scandinavia and the Baltic countries and offer a good platform for creating new collaborations.

### 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 can be submitted by sending to [nop2018@photonicsweden.org](mailto:nop2018@photonicsweden.org)

Abstracts shall be submitted in Microsoft Word or Adobe PDF format. Please provide your name, affiliation, telephone number and Email address on all submissions as well. The abstracts will be published in official conference proceedings.

### Deadline for poster abstracts: 12 August 2018

For questions and further information please contact Petra Bindig at: [petra@photonicsweden.org](mailto:petra@photonicsweden.org)

### 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.

For more information please visit [photonicsweden.org](http://photonicsweden.org) or contact Lennart BM Svensson: [lennart@photonicsweden.org](mailto:lennart@photonicsweden.org)

### SPONSORING OPPORTUNITIES

Please contact Lennart BM Svensson if you are interested in our exhibition and sponsor opportunities: [lennart@photonicsweden.org](mailto:lennart@photonicsweden.org)

### FURTHER INFORMATION

For further information please go to [www.photonicsweden.org/northern-optics-photonics-2018-conference-lund](http://www.photonicsweden.org/northern-optics-photonics-2018-conference-lund)

### MATCHMAKING

We will arrange matchmaking between companies and job seekers at the conference Northern Optics and Photonics in Sweden 2018 in Lund. It will take place on 13th and 14th September 2018 and interested companies can get 20 minutes slots to meet interested candidates. We have a private room where the discussions can take place.

If you are interested let us know beforehand, by sending a note to Petra Bindig ([petra@photonicsweden.org](mailto:petra@photonicsweden.org)).

The service is free for all participating companies and attendees.

More information on the conference can be found at [www.photonicsweden.org](http://www.photonicsweden.org)

The registration will be open in May 2018 and closes 24th of August 2018:

## REGISTRATION FOR PARTICIPANTS

4.625 SEK incl 25% VAT Non Members  
(3.700 SEK excl VAT)

3.750 SEK incl 25% VAT Personal Members of  
(3.000 SEK excl VAT) PhotonicSweden, Nordic/Baltic  
Optical Societies and/or  
European Optical Society  
(EOS)

2.000 SEK incl 25% VAT Student Members & Pensioner  
(1.600 SEK excl VAT) Members of PhotonicSweden,  
Nordic/Baltic Optical Societies  
and/or European Optical Society EOS)

2.000 SEK incl 25% VAT Speakers  
(1.600 SEK excl VAT)

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.

## REGISTRATION FOR EXHIBITORS

17.700 kr Non Members  
+ 25% VAT (incl. one person participation fee)

15.400 kr Company Members of  
+ 25% VAT PhotonicSweden, Nordic/Baltic  
Optical Societies and/or  
European Optical Society (EOS)  
(incl. one person participation fee)

3.000 kr additional exhibitors colleagues  
+ 25% VAT (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.

## VENUE & HOTEL

### How to get to Lund University:

[lunduniversity.lu.se/about/visit-lund-university](http://lunduniversity.lu.se/about/visit-lund-university)

Lund University  
Matteannexet  
Sölvegatan 20 A-D  
223 62 Lund

### maps and other information about Lund:

[visitlund.se/en/brochures-and-maps](http://visitlund.se/en/brochures-and-maps)

### Let's meet in Lund:

[youtube.com/watch?v=4zC797j5Jic](https://youtube.com/watch?v=4zC797j5Jic)

### Elite Hotel Ideon Lund

NOP2018 have negotiated a special hotel rate between 2018-09-11 and 2018-09-14 at Elite Hotel Ideon. We have reserved:

### Elite Hotel Ideon

Scheelevägen 27, SE-223 63 Lund  
Phone: +46-(0)46-287 1101  
E-mail: [reservation.lund@elite.se](mailto:reservation.lund@elite.se)  
Web: [elite.se/en/hotels/lund/hotel-ideon](http://elite.se/en/hotels/lund/hotel-ideon)  
Car parking is 40 SEK/day

- ⇒ 40 rooms reserved 2018-09-11
- ⇒ 100 rooms reserved between 2018-09-12 and 2018-09-14

Special room price: 1150 SEK/night including breakfast and VAT. **Reservation code: NOP2018**

*Don't forget to write the Elite Hotel Ideon in your e-mail and NOP2018!*

The Elite Hotel Ideon is 900 m from the conference site at Sölvegatan 20A, and it takes approx 11 min to walk.

**GENERAL CHAIR**

- Joakim Bood, Lund University, Sweden

**PROGRAMME COMMITTEE  
FOR THE ACADEMIC SESSIONS**

- Joakim Bood, Lund University, Sweden
- Christian Brackmann, Lund universitet, Sweden
- Carlota Canalias, KTH, Sweden
- Olav Gaute Hellesø, University of Tromsø, Norway,
- Åsa Haglund, Chalmers, Sweden
- Ole Bjarlin Jensen, Technical University of Denmark, DTU Fotonik, Denmark
- Kenneth Järrendahl, Linköping university, Sweden
- Jouko Korppi-Tommola, University of Jyväskylä, Finland
- Fredrik Laurell, KTH, Sweden
- Mikael Lindgren, NTNU, Norway
- Adam Piotrowski, Vigo, Poland
- Janis Spigulis, University of Latvia, Latvia
- Anan Srinivasan, KTH, Sweden
- Juha Toivonen, Tampere University of Technology, Finland

**PROGRAMME COMMITTEE  
FOR THE INDUSTRY SESSIONS**

- Pierre-Yves Fonjallaz, PhotonicSweden, Sweden
- Eduards Gavars, Lightguide Optics Inc, Latvia
- Asger Jensen, NKT Photonics A/S, Denmark
- Daniel Karlsson, Mentanglement, Sweden
- Michael Lund, JAI, Denmark
- Gunnar Maehlum, Integrated Detector Electronics AS, Norway
- Ewa Orlowska, Hamamatsu, Sweden
- Kasper Paasch, University of Southern Denmark, Denmark
- Jyrki Saarinen, PhotonicsFinland, Finland
- Jes Schroeder, Millpond ApS, Denmark
- Henrik Schumann-Olsen, Zivid Labs AS, Norway
- Lennart Svensson, PhotonicSweden, Sweden

**LIGHT ROBOTICS: LIGHT-DRIVEN AND -ACTUATED  
MICRO-ROBOTICS FOR BIOPHOTONICS AT THE  
CELLULAR LEVEL**


**JESPER GLÜCKSTAD**  
DTU Fotonik, Denmark

Jesper Glückstad (JG) established the Programmable Phase Optics in Denmark more than a decade ago and currently holds a position as full Professor at the Dept. of Photonics Engineering at the Technical Univ. of Denmark (DTU), and a position as 5-years Guest Professor in Biophotonics at Lund Institute of Technical in Sweden 2006-2011. In 2004 he received the prestigious Doctor of Science (DSc) degree from DTU for the dissertation entitled "The Generalised Phase Contrast method". Prior to his achievements in Denmark, JG was a visiting scientist at Hamamatsu Photonics Central Research Laboratories and in the Physics Dept. at Osaka University in Japan. Since he obtained his PhD at the Niels Bohr Institute at Copenhagen University in 1994, he has published more than 300 journal articles and international conference papers and holds over 30 international patents/applications. He is the year 2000 recipient of the Danish Optical Society Award and was elected as «Scientist of the Year» in 2005 by Dir. Ib Henriksen's Foundation in Denmark. JG is a 2010 elected Fellow of the OSA and a Fellow of the SPIE as the first from DK. In 2012-2014 he was appointed for the prestigious SPIE Fellows committee together with an American physics Nobel laureate. JG was invited as nominator for the highly Kyoto Prize 2017 (aka the Asian Nobel Prize). JG is founder of the spin-out OptoRobotix ApS originally rooted in the Silicon Valley region and also founder of the associated tech-transfer unit.

### **BENEFITING FROM A SMALL COUNTRY: THE POTENTIAL OF LASER RESEARCH AND LASER INDUSTRY IN LITHUANIA**

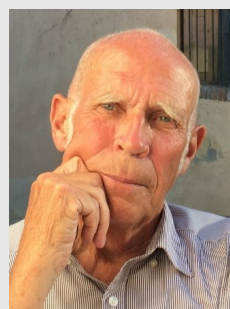


#### **ALGIS PETRAS PISKARSKAS**

Vilnius University Physics, Lithuania

Prof. Dr. Habil. Algis Piskarskas currently holds a position as professor emeritus at Vilnius University Physics faculty, Laser research center, while also the president of Lithuanian Laser Association. He received his Ph.D. degree in laser physics and nonlinear optics at Moscow M. Lomonosov University in 1969. Prof. A. Piskarskas is the inventor of a well-known OPCPA technology (1992) which recently in tandem with CPA is at frontiers to boost laser light to extreme intensities. During the period of 1983-2012 he had been holding a position of founding director at both Vilnius University Quantum Electronics department and Vilnius University Laser Research Center. His research interests include ultrafast nonlinear optics, time-resolved spectroscopy, optical parametric amplification, 3D microfabrication and lasers of extreme intensity. Prof. A. Piskarskas is a member of the European Physical Society (EPS) and the Lithuanian Academy of Sciences (LAS). He was elected as a vicepresident of LAS for 2001-2005. He received the Fulbright Research Award (USA) in 1989, A. von Humboldt Research Prize (Germany) in 1992, Quantum Electronics and Optics Prize of the European Physical Society in 2001, Baltic Assembly science prize in 2012 and the National science prizes (Lithuania) in 1994 and 2002.

### **INTERDISCIPLINARY LASER SPECTROSCOPY – APPLICATIONS TO ENVIRONMENT, ECOLOGY, AGRICULTURE, FOOD SAFETY AND MEDICINE**



#### **SUNE SVANBERG**

Lund University, Sweden  
and South China Normal University, China

Sune Svanberg became professor and head of the Atomic Physics Division at Lund University, Sweden in 1980, and remained in this position until 2008. In Lund a vigorous program of laser spectroscopy, including basic atomic physics and applications to energy, environmental and medical research has been pursued. In 1995 he was appointed director of the newly established Lund Laser Centre, which also gained the EC status of a European Large Scale Facility. He remained its director until 2010, and now continues as part-time Senior professor in Lund. Since 2011 he is also a part-time Distinguished professor at the South China Normal University, Guangzhou, China, focusing on environmental monitoring and biophotonics. In 2014 he obtained the highest honor to foreigners, the China Friendship Award, and in 2015 he became an honorary citizen of Guangzhou. He received around 20 international and national awards (including 5 gold medals) in addition to 4 honorary doctor degrees, and 4 honorary professorships. He is Fellow of 5 learned professional societies. He is a member of 6 scientific academies, including the Royal Swedish Academy of Sciences, the Royal Swedish Academy of Engineering Sciences, and the Third World Academy of Sciences. He served 10 years on the Nobel Committee for Physics, 2 years as its chairman. He has well over 600 scientific publications and over 30 patents or patent applications.

WEDNESDAY, 12 SEPTEMBER 2018

09:00-10:00 Room: **Ground Floor**  
On-site registration and welcome coffee

10:00-10:15 Room: **MA 7**  
**Opening Remarks**  
*Joakim Bood, General Chair, Lund University*

10:15-11:00 Session Chair: *Joakim Bood*  
**Plenary Talk** Room: **MA 7**  
Interdisciplinary laser spectroscopy –Applications to environment, ecology, agriculture, food safety and medicine  
*Sune Svanberg, Lund University, Sweden & SCNU, China*

11:00-12:30 Room: **MA 7**  
**Information**  
Exhibitor Pitch Talks Session Chair: *Lennart BM Svensson*

12:30-14:00 Room: **MA 10**  
**Lunch & Poster Session & Exhibition**

Room: **MA 7**

14:00-15:30  
**Session A2 | Spectroscopy and Sensing**

Session Chair: Christian Brackmann

14:00-14:30  
**Invited talk**  
Complete control over reflected fields with plasmonic metasurfaces  
*Sergey Bozhevolnyi, University of Southern Denmark (SDU), Denmark*

14:30-14:45  
Comprehensive sensing Raman spectroscopy for stand-off detection of explosives and precursors  
*Matilda Ågren, FOI, Sweden*

14:45-15:00  
Scheimpflug lidar for flame thermometry  
*Elin Malmqvist, Lund University, Sweden*

15:00-15:15  
Bidirectional flame lasing  
*Pengji Ding, Lund University, Sweden*

15:15-15:30  
Micro-focusing of broadband high-order harmonic radiation for pump-probe experiments  
*Piotr Rudawski, Lund University, Sweden*

Room: **MA 6**

14:00-15:20  
**Session B2 | Intelligent Lighting & Laser Technology**

Session Chair: Jonas Sandsten

14:00-14:20  
Perspective of Intelligent Lighting  
*Myriam Aries, University of Jönköping, Sweden*

14:20-14:40  
Smart purchasing of general lighting  
*Markku Laatikainen, CEO Valtavalo Oy, Finland*

14:40-15:00  
Surface Mid-IR spectroscopy  
*Konstantinas Zakalskis, Ekspla, Lithuania*

15:00-15:20  
Modern supercontinuum applications; from labs to fabs  
*Asger Jensen, NKT Photonics, Denmark*

WEDNESDAY, 12 SEPTEMBER 2018

15:30-16:00

**Coffee break & Poster Session & Exhibition**

Room: **Balcony + MA 10**

Room: **MA 7**

16:00-17:30

**Session A3 | Photonics in Environmental Technology**

Session Chair: Joakim Bood

16:00-16:30

**Invited talk**

Inorganic thin film solar cells – efficient, tunable and long term stable

*Charlotte Platzer-Björkman, University of Uppsala, Sweden*

16:30-16:45

Scheimpflug lidar for biological targets

*Mikkel Brydegaard, Lund University, Sweden*

16:45-17:00

Hybrid plasmonic and pyroelectric harvesting of light fluctuations

*Mina Shiran, Linköping University, Sweden*

17:00-17:15

Light Extraction Enhancement in GaN-based LEDs by Structured TiO<sub>2</sub> Nanoparticles-based Optical Coatings

*Dennis Visser, KTH, Sweden*

17:15-17:30

Optical whispering gallery mode microsphere resonators

*Janis Alnis, University of Latvia, Latvia*

17:30-18:45

**Session A4 | Photonics for Communication and Light Sources**

Session Chair: Daniel Karlsson

17:30-18:00

**Invited talk**

Recent advances in secure quantum communication based on energy-time entanglement

*Guilherme B. Xavier, Linköping University, Sweden*

Room: **MA 6**

16:00-17:20

**Session B3 | 3D Imaging**

Session Chair: Per Knudsson

16:00-16:20

Machine Vision for 3D-imaging

*Jussi Tenhunen, VTT, Finland*

16:20-16:40

Design tool for Time-Of-Flight and Structured-Light based 3D cameras

*Grégory Bouquet, SINTEF Digital, Norway*

16:40-17:00

Single-photon counting 3D Geiger-mode laser radar imaging

*Lars Sjöqvist, FOI, Sweden*

17:00-18:20

**Session B4 | Optical Metrology**

Session Chair: Myriam Aries

17:00-17:20

Previous and current activities within underwater optics and analysis of liquids at Norsk Elektro Optikk

*Jon Kristian Hagene, Norsk Elektro Optikk AS, Norway*

17:20-17:40

Why thermal and gas cameras are so cool System engineering to user focused solutions

*Jonas Sandsten, Flir Systems AB, Sweden*

17:40-18:00

Next generation UV-Vis/NIR spectrometer

*Rob Wills, Agilent Technologies, Sweden*

## WEDNESDAY, 12 SEPTEMBER 2018

### Room: MA 7

17:30-18:45

#### **Session A4 | Photonics for Communication and Light Sources - continued**

*Session Chair: Daniel Karlsson*

18:00-18:15

Cavity enhanced microwave to optical signal conversion in Er<sup>3+</sup>:YSO

*Sebastain P. Horvath, University of Otago, New Zealand (currently at Lund University)*

18:15-18:30

750 nm direct emitting MECSELS and VECSELS towards isotope separation applications for nuclear medicine  
*Kostiantyn Nechay, Tampere University of Technology, Finland*

18:30-18:45

KTiOPO<sub>4</sub> Metasurface for Terahertz Wave Manipulation

*Jingyi Tian, KTH Royal Institute of Technology, Sweden*

### Room: MA 6

17:20-18:20

#### **Session B4 | Laser and Optical Metrology - continued**

*Session Chair: Myriam Aries*

18:00-18:20

Higher order multipoles in metamaterial homogenization

*Christopher A. Dirdal, Microsystems and Nanotechnology (MiNaLab), SINTEF Digital, Norway*

19:00-22:00

#### **Welcome Reception | Poster Session & Exhibition**

Room: **Balcony + MA 10**

19:00-19:30

The MAX IV accelerators

*Pedro Fernandes Tavares, Machine Director MAX IV*

## NOTES

THURSDAY, 13 SEPTEMBER 2018

09:00 Room: **Ground Floor**  
On-site registration and welcome coffee

09:30-10:15 Room: **MA 7**  
**Plenary Talk**  
Benefiting from a Small Country: The Potential of Laser Research and Laser Industry in Lithuania  
*Algis Piskarskas, Vilnius University, Lithuania*

Room: **MA 7**

10:15-11:30  
**Session A5 | Photonics in Life Sciences**

Session Chair: Janis Spigulis

10:15-10:45  
**Invited talk**  
Infrared spectral imaging for histopathology  
*Peter Tidemand Lichtenberg, Technical University of Denmark, Denmark*

10:45-11:00  
Improving medical imaging by reducing the speed of light by 4 orders of magnitude  
*Alexander Bengtsson, Lund University, Sweden,*

11:00-11:15  
Monte Carlo simulations of multispectral snapshot image data for skin microcirculation estimation  
*Maria Ewerlöf, Linköping University, Sweden*

11:15-11:30  
High-resolution laser spectroscopy in orthopedics  
*Peng Chen, Guanzhou University of Chinese Medicine, China*

11:30-12:30  
**Session A6 | Advanced photonic materials and light sources**  
Session Chair: Carlota Canalias

11:30-12:00  
**Invited talk**  
Molecular glasses as a promising class of materials for photonic applications  
*Martins Rutkis, University of Latvia, Riga, Latvia*

12:00-12:15  
"Probing collective nonlinear optical effects in plasmonic oligomers with cylindrical vector beams"  
*Godofredo Bautista, Tampere University of Technology, Finland*

Room: **MA 6**

10:15-11:35  
**Session B5 | Photonics in Transportation**

Session Chair: Lars Sjöqvist

10:15-10:35  
Camera systems in Automotive Active-Safety  
*Per Knutsson, Veoneer AB (fd Autoliv Electronics), Sweden*

10:35-10:55  
LIDAR technology overview for autonomous driving  
*Olov von Hofsten, Eclipse Optics AB, Sweden*

10:55-11:15  
Infra-red gas sensors – Roadmap to automotive, environmental and consumer applications  
*Henrik Rödjegård, SenseAir, Sweden*

11:15-12:35  
**Session B6 | Optical Systems and Applications**

Session Chair: Christopher A. Dirdal

11:15-11:35  
Development of optical analyzers for efficient on-site mine exploration and ore beneficiation  
*Sanna Uusitalo, VTT, Finland*

11:35-11:55  
Development of industrial Scheimpflug lidar systems  
*Can Xu, NEOLund AB, Sweden*

11:55-12:15  
Key quality parameters in hyperspectral cameras  
*Trond Løke, Norsk Elektro Optikk AS, Norway*

THURSDAY, 13 SEPTEMBER 2018

Room: MA 7	Room: MA 6
<p>11:30-12:30  <b>Session A6   Advanced photonic materials and light sources - continued</b>  <i>Session Chair: Carlota Canalias</i></p>	<p>11:15-12:35  <b>Session B6   Optical Systems and Applications - continued</b>  <i>Session Chair: Christopher A. Dirdal</i></p>
<p>12:15-12:30  Purcell enhancement of rare-earth ions doped in nano-crystals  <i>Mohammad Alqedra, Lund University, Sweden</i></p>	<p>12:15-12:35  Active Hyperspectral technique for detection of bio and chemical threats in various environments  <i>Ott Rebane, LDI Innovation OÜ, Estonia</i></p>
<p>12:30-14:00  <b>Lunch &amp; Poster Session &amp; Exhibition</b></p>	Room: Balcony + MA 10
<p>14:00-15:30  <b>Session A7   Photonic Components and Integrated Optics (1)</b>  <i>Session Chair: Åsa Haglund</i></p>	<p>14:00-15:20  <b>Session B7   Vision Systems</b>  <i>Session Chair: Ott Rebane</i></p>
<p>14:00-14:30  <b>Invited talk</b>  Progress in III-V/Si photonic integration technology  <i>Mircea Guina, Tampere University of Technology, Finland</i></p>	<p>14:00-14:20  Augmented and Virtual Reality: Development of Immersive Technology for Unique User Experience  <i>Jussi Rahomäki, Dispelix Oy, Finland</i></p>
<p>14:30-14:45  Photonic crystal fiber characterization using streak camera  <i>Vygandas Jarutis, Vilnius University, Lithuania</i></p>	<p>14:20-14:40  Multi-Touch Technology - Why many poor signals are better than a good one  <i>Ola Wassvik, Flatfrog AB, Sweden</i></p>
<p>14:45-15:00  All-organic waveguide Mach-Zehnder interferometric device for communication and sensing applications  <i>Edgars Nitiss, University of Latvia, Latvia</i></p>	<p>14:40-15:20  UTOFA: Underwater Time-of-Flight Camera for 3D and range extension   5,7MEUR EU-projekt  <i>Karl Henrik Haugholt, SINTEF Digital, Norway</i></p>
<p>15:00-15:15  Robust, low-threshold, cascade-free mirrorless optical parametric oscillator  <i>Andrius Zukauskas, Royal Institute of Technology, Sweden</i></p>	
<p>15:15-15:30  Anisotropic light scattering in transparent wood  <i>Elena Vasileva, Royal Institute of Technology, Sweden</i></p>	
<p>15:30-16:00  <b>Coffee break &amp; Exhibition &amp; Poster Session</b></p>	Room: Balcony + MA 10
<p>16:00-17:00  <b>PhotonicSweden Awards</b></p>	Room: MA 7
<p>18:00-19:00  <b>Snacks &amp; Drinks   Poster Session and Exhibition</b></p>	Room: Balcony + MA 10
<p>19:00-22:00  <b>Conference Dinner</b></p>	Room: <b>Restaurang Tegnér's Matsalar</b> Sandgatan 2, 22 350 Lund, <a href="http://www.tegners.se">www.tegners.se</a>

FRIDAY, 14 SEPTEMBER 2018

09:00-09:45

Room: **MA 7**

**Plenary Talk**

Light Robotics: light-driven and -actuated micro-robotics for biophotonics at the cellular level

*Jesper Glückstad, DTU Fotonik, Denmark*

Room: **MA 7**

09:45-11:00

**Session A8 | Materials and Light Sources**

Session Chair:

09:45-10:15

**Invited talk**

Recent progress in compact fiber-based mid-IR lasers and applications

*Irina Sorokina, NTNU, Norway*

10:15-10:30

MID-IR supercontinuum generation and cascaded soliton self-compression in  $\chi^{(2)}$ -modulated KTiOPO<sub>4</sub>

*Anne-Lise Viotti, Royal Institute of Technology, Sweden*

10:30-10:45

Spinwave harmonic comb generation by ultrafast laser pulses with a high repetition rate in thin magnetic films

*Ademir Aleman, University of Gothenburg, Sweden*

10:45-11:00

Optical properties of block copolymer based self-assembled hyperbolic metamaterials

*Morten Kildemo, Norwegian University of Science and Technology, Norway*

11:00-11:30

**Coffee break & Exhibition**

Room: **MA 6**

09:45-11:00

**Session B8 | Nordic Workgroup Meeting**

Session Chair: Lennart BM Svensson

09:45-10:00

Investment Promotion in Sweden

*Iris Öhrn, Investment Advisor- Life Science, Business Region Göteborg, Sweden*

10:00-10:10

Photonic activities at VTT and its spin-off companies  
*Jussi Tenhunen, Senior Scientist, VTT - Technical Research Centre of Finland, Finland*

10:10-10:20

Photonic activities at SINTEF and its spin-off companies  
*Christopher Dirdal, Research Scientist, SINTEF Norway, Norway*

10:20-10:30

Photonic activities at RISE and its spin-off companies  
*Åsa Claesson, Department Manager, RISE-Research Institute of Sweden, Sweden*

10:30-10:40

Photonic activities at the Baltic Photonics Cluster (BPC)  
*Ott Rebane, Chairman of BPC, Estonia, Janis Spigulis, Prof. Univ. of Latvia, Latvia*

10:40-10:50

Photonic activities at the Danisch Optal Society (DOPS)  
*Asger Jensen, DOPS / NKT Photonics, Danmark*

10:50-11:00

Activities and collaboration with Photonics Finland  
*Juha Purmonen, Photonics Finland, Finland*

Room: **Balcony + MA 10**

FRIDAY, 14 SEPTEMBER 2018

Room: **MA 7**

11:30-12:30

**Session A9 | Photonic Components and Integrated Optics (2)**

*Session Chair: Mikkel Brydegaard*

11:30-12:00

**Invited talk**

Self-assembling nanomaterial structures as a platform technology for micro-LEDs

*Lars Samuelson, Lund University, Sweden*

12:00-12:15

Epitaxial growth of GaAs Nanowires on Silicon substrate for photovoltaic applications

*Elizaveta Lebedkina, Technical University of Denmark, Denmark*

12:15-12:30

Tunable Diffractive Optical Elements

*Sergiy Valyuk, Linköping University, Sweden*

Room: **MA 6**

11:30-12:30

**Session B9 | Nordic Workgroup Meeting**

*Session Chair: Lennart BM Svensson*

11:30-11:40

Activities and collaboration with PhotonicSweden

*Lennart BM Svensson, PhotonicSweden*

11:40-11:55

SME Development with the internationalization and commercialization of innovations.

*Håkan Sehlin, Business Development Manager at Invest in Skåne*

11:55-12:30

Round table discussion – How can we collaborate in the Nordic and Baltic countries

*Niklas Saxén, Photonics Finland / Edmund Optics*

12:30-12:45

**Closing Remarks & Farewell**

Room: **MA 7**

12:45-13:45

**Lunch & Exhibition**

Room: **Balcony + MA 10**

13:45-16:00

**Laboratory visits**

(see p. 15 for details)

**MAX IV**

**Lund Laser Centre (LLC)**

**Diagnostics Tool for Cancer Tissues Using Terahertz Spectroscopy Imaging**

*Leena Al-Ghuraibawi, University of Essex, United Kingdom*

**Integrated Optics Based on Nonlinear Optical Diffraction Grating**

*Carlos Amaro de Faria, Institute for Advanced Studies – IEAv, Brasil*

**Quantum Control and Processing of Optical Signals**

*Carlos Amaro de Faria, Institute for Advanced Studies – IEAv, Brasil*

**Spherical whispering gallery mode resonators covered by ZnO nanolayer**

*Aigars Atvars, University of Latvia, Latvia*

**Event modeling for light scattering in nonhomogeneous semi-ordered materials**

*Adil Baitenov, KTH-Royal Institute of Technology, Sweden*

**3D imaging of hydroxyl radicals in a gliding arc discharge in single shot**

*Yupan Bao, Lund University, Sweden*

**The Optimization of Pulse Compression for Compact High Energy Femtosecond Fiber Laser with CVBG Compressor**

*Tadas Bartulevicius, Ekspla Ltd., Lithuania*

**Combined Laser-Induced Incandescence And Elastic Light Scattering For The Study Of The Influence Of Metals On Soot Formation**

*Per-Erik Bengtsson, Lund University, Lund, Sweden*

**Towards ultraviolet and blue microcavity lasers**

*Michael A. Bergmann, Chalmers University of Technology, Sweden*

**Laser-based measurements of quantitative species concentrations in gas phase**

*Christian Brackmann, Lund University, Sweden*

**Ridge waveguides in LiNbO<sub>3</sub> for efficient nonlinear optical conversion**

*Cristine Calil Kores, KTH Royal Institute of Technology, Sweden*

**Raman Spectroscopy On Soot Produced From A Mini-Cast Soot Generator: Impact On Structure From Heating In Air And Nitrogen Up To 900 Oc**

*Kim Cuong Le, Lund University, Sweden*

**Illumination Pattern Estimation for Multiple Exposures Extraction in a Snapshot Imaging Technique**

*Karolina Dorozynska, Lund University, Sweden*

**Investigation on Raman scattering and stray light suppression in spectroscopy using periodic shadowing**

*Miaoxin Gong, Lund University, Sweden*

**Electron acceleration and x-ray emission from interacting wakefields**

*I. Gallardo González, Lund University, Sweden*

**Modeling of Electrically Triggered Tunable Magnetic Metamaterial Hat for Multifunctional Control in MRI applications**

*Ali Hassan, School of Biological Science & Medical Engineering, South East University, Nanjing, China*

**Rotational CARS Thermometry and Concentration Measurements in Ethylene-Nitrogen Mixtures**

*Ali Hosseinnia, Lund University, Sweden*

**Optical photoswitching of symmetric dimethyldihydroxy derivatives**

*Renata Karpicz, Vilnius University, Lithuania*

**Single Ion Detection of Cerium for use as a Quantum State Probe**

*Vassily Kornienko, Lund University, Sweden*

**Control of plasmonic nanostructures for high performance applications**

*Avesh Kumar, Ambedkar University, Agra, India*

**Remote imaging photoplethysmography device for palm microcirculation assessment**

*Edgars Kviesis-Kipge, University of Latvia, Latvia*

**Optical diagnostics for lung function monitoring on preterm infants – studies on a 3-D tissue phanom**

*Jim Larsson, Lund University, Sweden*

## POSTER PRESENTATIONS

### **Characterization of visual and IR reflectivity for soft car targets**

Mikael Lindgren, Research Institutes of Sweden AB, Sweden

### **Time-Gated Raman probe for Raman measurements in high temperatures**

Hannu Lindström, VTT Technical Research Centre of Finland Ltd., Finland

### **Optical Repetition Rate Stabilization of Ultrafast SES-AM-Based Yb Doped All Fiber Oscillator**

Karolis Madeikis, Ekspla Ltd., Lithuania

### **Conversion of optical vortices into beams with polarization singularities by optical parametric amplification**

Aidas Matijošius, Vilnius University, Lithuania

### **Utilization of CO<sub>2</sub> laser beam radiation to process semiconductor core fibers**

Korbinian Mühlberger, KTH Royal Institute of Technology, Sweden

### **Spectroscopy of optically levitated droplets.**

Soumya Radhakrishnan, University of Gothenburg, Sweden

### **Structural Colors from Self-Organized InP Nanopillars**

Ajith P Ravishankar, KTH Royal Institute of Technology, Sweden

### **Photolysis-free two photon laser induced fluorescence of H atom**

Maria Ruchkina, Lund University, Sweden

### **Spatial coherence of light detected with nanoscatterers**

Tero Setälä, University of Eastern Finland, Finland

### **Advanced imaging technologies for distant assessment of in-vivo skin**

Janis Spigulis, University of Latvia, Latvia

### **Food safety monitoring by laser spectroscopic techniques**

Sune Svanberg, Lund University, Sweden

### **Monitoring of atmospheric atomic mercury by laser radar techniques**

Sune Svanberg, Lund University, Sweden

### **Fast and robust creation of an arbitrary qubit state by nonadiabatic shortcut pulses in a three-level system**

Hafsa Syed, Lund University, Sweden

### **Raman Spectroscopy as a Future Tool for Process Optimization of Iron Ore Beneficiation**

Sanna Uusitalo, VTT Technical Research Centre, Finland

### **Ultrafast CPA laser system based on Yb fiber seeder and Yb:YAG amplifier**

Laurynas Veselis, Ekspla Ltd., Lithuania

### **A 1.57 $\mu\text{m}$ fiber source for atmospheric CO<sub>2</sub> continuous-wave differential absorption lidar**

Xiong Yang, KTH Royal Institute of Technology, Sweden

## CONFERENCE PROCEEDINGS

The conference proceedings including all plenary and submitted abstracts are available here:

[photonicsweden.org/wp-content/uploads/NorthernOptics2018\\_proceedings.pdf](http://photonicsweden.org/wp-content/uploads/NorthernOptics2018_proceedings.pdf)





### MAX IV

With the MAX IV facility, Sweden has the highest quality of X-rays available to scientists from academia and industry in the whole world. These X-rays are used to understand, explain, and improve the world around us. They enable the study of materials that we use today and improve them beyond the performance that we know. In addition, MAX IV will allow scientists to develop new materials and products that we cannot even imagine today, such as medications with better and more precise functions and fewer side-effects, nanoparticles for diverse areas of application, including paints, catalysis or computing, or lighter and stronger packaging materials for the future. Here, experiments at some selected beamlines will be presented for the visitors. Note that the number of visitors is limited to 40.



### LLC

The Lund Laser Centre (LLC) is an organization for interdisciplinary research and collaboration in the fields of optics, spectroscopy and lasers at the Lund University. At the LLC a broad range of activities are pursued within several different research divisions and groups at the engineering, sciences and medical faculties, and at the MAX IV Laboratory. Here several laboratories at the Division of Atomic Physics and the Division of Combustion Physics will be open, exposing activities ranging from basic research in attosecond physics to applied laser diagnostics in optical engines.

## NOTES

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