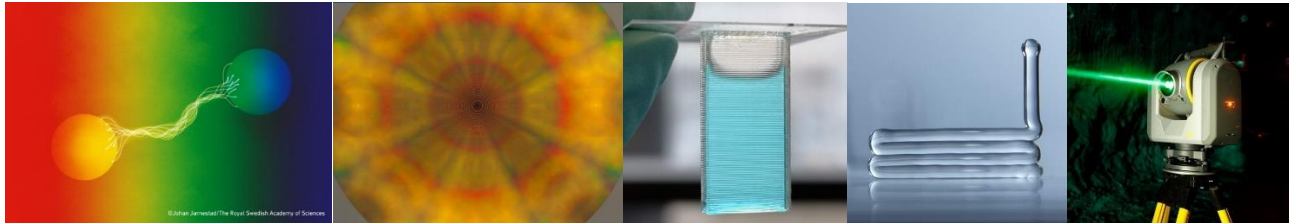


# Welcome to **Optopub** in Stockholm!

Wednesday 14 December-2022 17.30 – 21.00

RISE, Electrum at Kista, Kistagången 16 / Isafjordsgatan 22  
Room Knuth, Elevator B to Level 6



Nobel Prize in Physics 2022

NIL Technology

Nobula3D

Eclipse Optics

## **2022 Nobel Prize in Physics: Entangled photons**

**Mohamed Bourennane, Professor, Fysikum, Stockholm University, Stockholm**

Alain Aspect, John Clauser and Anton Zeilinger have been awarded the 2022 Nobel in physics “for experiments with entangled photons, establishing the violation of Bell inequalities and pioneering quantum information science”. Aspect, Clauser and Zeilinger have each conducted groundbreaking experiments using entangled quantum states. Their results have cleared the way for new technology. The peculiar effects of quantum mechanics are starting to find applications. There is now a large field of research and technological development that includes quantum computers, quantum imaging, quantum sensing, and secure quantum encrypted communication. The photonics play a central role in the so-called the second quantum revolution.

## **Latest advancements at NILT on flat metalens based camera modules in near infrared**

**Fredrik Mattinson, Senior Optical Designer, NIL Technology ApS, Denmark**

NIL Technology (NILT) a solution provider of flat optics presents the latest achievements in meta optical elements (MOE) by demonstrating 94% absolute efficiency at 940 nm and successful demonstration of camera module. The design of the camera module has excellent performance compared to a refractive lens counterpart with exceptionally low f-number and high relative illumination (100%). The characterization of the performance of the meta optical lens (MOE lens) shows full agreement with the simulated performance of the nominal design. Tolerance analyses are provided to support the subsequent mass production using nano imprint lithography. The advancements towards mass production readiness are key areas for successful adoption of MOEs in various markets and applications.

## **Nobula3D’s technology and success story**

**Michael Fokine, CSO Nobula3D AB, Assoc. Prof. Applied Physics at KTH-Alba Nova, Stockholm**

Glass is an amazing material that is found in all parts of society. The wide spread use stems from the inherent properties of glass, including optical transparency and high thermal, mechanical, and chemical stability. These unique properties however, come at a cost. Processing glass requires very high temperatures and the hard and brittle material can be difficult to shape. Glass was considered the last frontier in additive manufacturing, but in recent years a number of different glass 3D printing solutions have been presented. This talk will review our journey from idea to forming a start-up in glass 3D printing.

## **Success story for Best Photonics Company of 2022**

**Lars Rymell, CEO, Eclipse Optics AB, Stockholm**

Over the years, Eclipse Optics have completed hundreds of optical designs ready to be manufactured. With a deep knowledge in optics and image sensor technology Eclipse offers services spanning the entire chain from lens to finished image. Our customers can be found all over the world and on many different markets. We work with applications within automotive, medtech, safety/surveillance, green technology and consumer products. We will describe the market for optics and photonics from Eclipse perspective. The main focus will be on 2023 and our thoughts about new trends and markets.

**followed by Optopub**

**IEEE Photonics Chapter invites everyone who pre-registered for food and drinks**

**Please, register here: <https://forms.office.com/r/AGBEQh2xWe>**

**No later than Monday 12<sup>th</sup> Dec before kl.13:00!**

**Welcome!**

**Lennart BM Svensson (PS) & Qin Wang (RISE) & Arne Alping (IEEE-Photonics Chapter)**

