NETLAS NEWSLETTER 11-2022

Deputy Vice-Chancellor Research and Innovation Professor Shane Weller from Kent University Visits the Applied Optics Group (AOG)

23rd November 2022

AOG had the privilege to receive a visit by the Deputy Vice-Chancellor Research and Innovation Professor Shane Weller from Kent University. The visit started with a presentation given by the head of AOG Prof Adrian Podoleanu, followed by the tour of the labs.

We are happy to report that Professor Weller was impressed by our research results and collaborations and acknowledged the need for the continuation of the funding for the Summer Vacation Research Competition. Prof Weller said: "*I am happy to have had the opportunity to meet you all and hear about your amazing research. You are a strong team, I am glad to see new PhD Students and Postdocs. I learned a lot from this visit, and I hope I can find the way to support your research in the future*".

Professor Shane Weller visits the AOG

SPIE Student Paper Price for two NETLAS PhD Students

With the occasion of the 25th Congress of the International Commission for Optics ICO-25 Conference, Dresden, Germany (5-9 Sept 2022), NETLAS PhD Students Irene Rodriguez Lamoso from Technical Univ of Darmstadt, Germany and Sacha Grelet from NKT Photonics, Denmark, received SPIE Student Paper Price for their contributions.
Sacha's title presentation was "*40 MHz A-scan rate OCT at 1060 nm using a swept-source based on time stretch and low-noise supercontinuum*" and Irene's poster title was "*Towards optical coherence tomography based on electrically pumped MEMS-VCSEL as swept source in the C and L band*".

Congratulations Irene and Sacha!

@ Photos by Irene Rodriguez Lamoso and Sacha Grelet

@ Photo by Prof. Adrian Podoleanu

SECONDMENTS

Netlas PhD Student

Philipp Tatar-Mathes

Recruited by: Tampere University, Finland

Secondment started on 25th November 2022
University of Kent, UK
Applied Optics Group (AOG)

Duration: three months

PhD Project: Broadband gain blocks for amplified swept source

During my secondment in Kent University, I will get deep insights into the working principles of OCT by working alongside Dr. Manuel Marques on a polarization-sensitive OCT setup. This differs quite a lot from my typical daily work in Tampere, and I am excited and looking forward to learning something new.
Before coming here, I was very lucky to find so many communicative colleagues that took their time with any concern that I came up with. Thank you, guys, (Rene, Adrian Fernandez, Manuel, Alejandro, Ramona) so much for everything, housing was also not a problem at all!

Good luck Philipp!

OPTICA Student Chapter event, AOG, Kent University

28th October 2022, at 6 pm in Kennedy Seminar Room 2, Kent University

OPTICA Student Chapter organized a presentation given by former AOG PhD student Dr Sophie Caujolle

Sophie completed postgraduate study in Applied Optics at Kent University and now works as Technology Scout at Heidelberg Engineering, Germany. Sophie's hybrid talk outlined **the experience of transitioning to industry from academia,** talk which was also live broadcast.

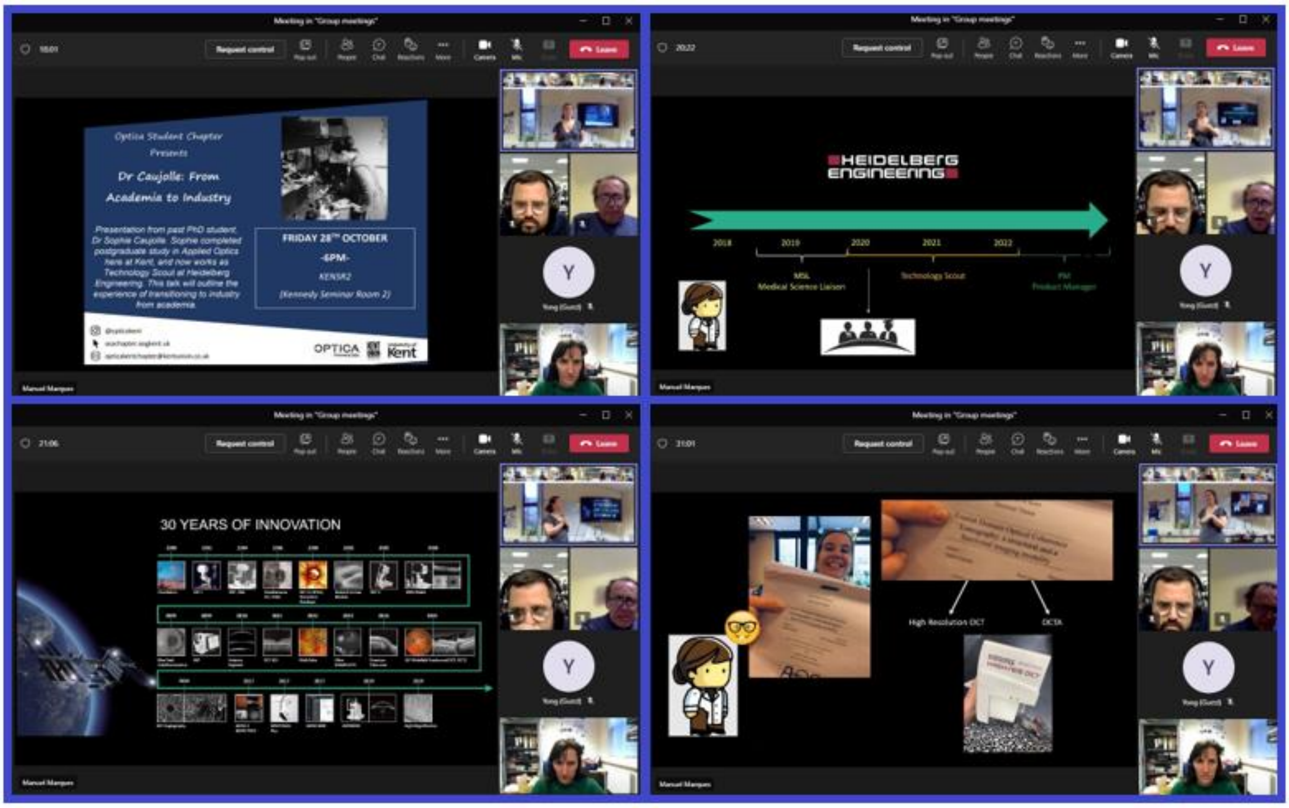
@Photos by OPTICA and Dr Ramona Cernat

@@Thank you, Sophie, for sharing with our students your experience of transitioning to industry from academia

Dr Sophie Caujolle visit the AOG, Kent University

31th October 2022 at 4 pm

[OPTICA Student Chapter]() Kent University branch invited Dr Sophie Caujolle to give a presentation to their members & Kent University students on 28th October 2022 at 6 pm. Having this opportunity, as a former member of AOG, Sophie visited the AOG labs on 31st October and gave a hybrid scientific presentation to the AOG members. A few print screens from her presentation will follow.



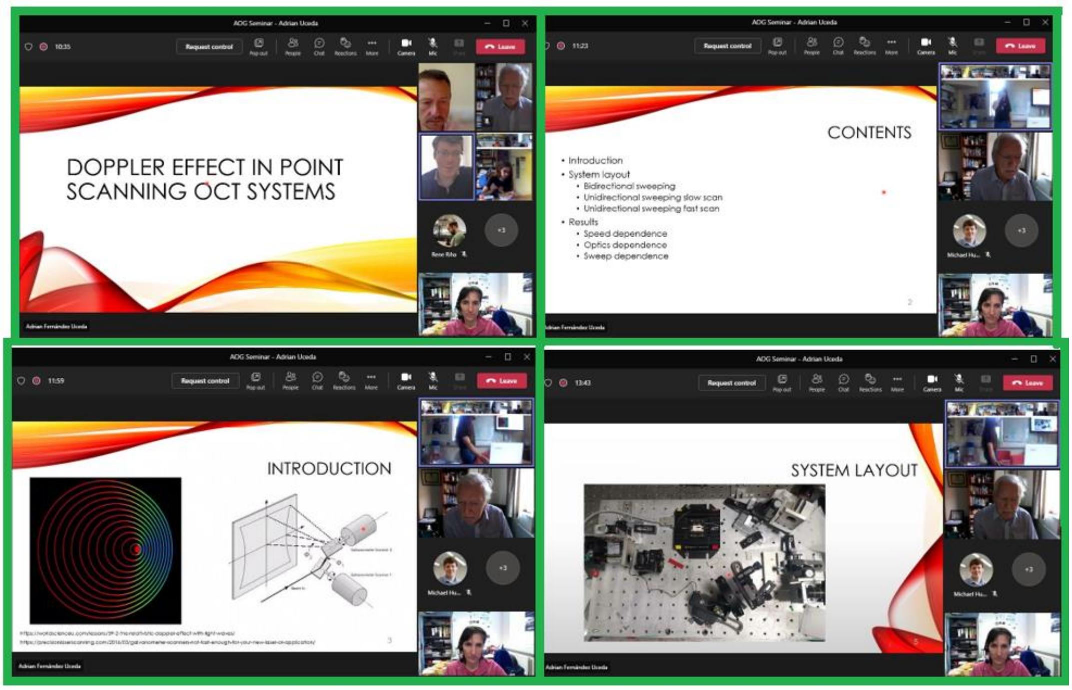
A few print screens from Dr. Sophie Caujolle's presentation

AOG Journal Club

11th November 2022, 12 pm UK time

AOG PhD Student Adrián Fernández Uceda presented some results of his research with the title "**Doppler effect in point scanning OCT systems**".

Summary: Most Swept Source OCT systems use some sort of scanning to compose the full volume of a sample, with galvo scanners (GS) being one of the main choices as scanning drivers. Upon imaging, the speed of the GS is dependent on the size of the scanned area, the A-scan line rate and the number of A-scans per B-scan and per volume. As the swept sources become faster, the scanning speed can be increased, and this poses a risk for doppler artefacts to appear in the image obtained. By using a bidirectional swept source, we managed to study the effects of the doppler shift occurred due to the increase of speed from the GS. We present different results based on changes in the alignment and optical components in the OCT systems, changes on the speed of the GS and changes of the sweep direction of the source and how these factors are interconnected, leading to larger or smaller artefacts in the final image. For all the results, three different setups were employed, using sources that range from 2kHz to 100kHz sweep rate, some commercial, some experimental. We hope that a better understanding of this effect and its relations with the setup can lead to better control of the alignment, as well as being a source of concern for possible errors in the assessment of medical images.



A few print screens from Adrián Fernández Uceda's presentation

PUBLICATIONS

Bright Quantum Dot Single-Photon Emitters at Telecom Bands Heterogeneously Integrated on Si

Pawel Holewa, Aurimas Sakanas, Ugur M. Gur, Pawel Mrowinski, Alexander Huck, Bi Ying Wang, Anna Musial, **Kresten Yvind,** Niels Gregersen, Marcin Syperek, **Elizaveta Semenova***

ACS Photonics 2022, 9, 7, 2273–2279
https://doi.org/10.1021/acsphotonics.2c00027

Whereas the Si photonic platform is highly attractive for scalable optical quantum information processing, it lacks practical solutions for efficient photon generation. Self-assembled semiconductor quantum dots (QDs) efficiently emit photons in the telecom bands (1460–1625 nm) and allow for heterogeneous integration with Si. In this work, we report on a novel, robust, and industry-compatible approach for achieving single-photon emission from InAs/InP QDs heterogeneously integrated with a Si substrate. As a proof of concept, we demonstrate a simple vertical emitting device, employing a metallic mirror beneath the QD emitter, and experimentally obtained photon extraction efficiencies of ~10%. Read More

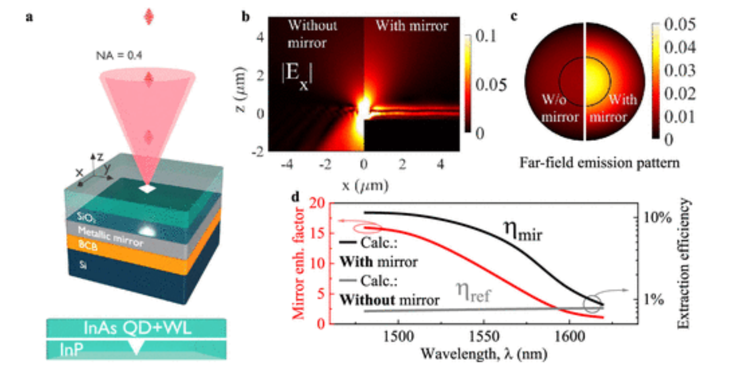


Figure 1. Design of our structures and theoretically estimated performance. (a) Investigated structure scheme, consisting of InAs/InP quantum dots (QDs) with a metallic reflector integrated on a Si substrate. WL, wetting layer. (b) The electric field component $|E_x|$ for $\lambda = 1550$ nm for the structure without (left) and with (right) a metallic reflector made of aluminum (Al). (c) Calculated far field emission ($P_{lens,NA}$) for the reference (left) and the device with an Al mirror (right). The half-circle marks the collection cone of a 0.4 NA objective. (d) Calculated broadband mirror enhancement factor (left axis) and photon extraction efficiency for the QD device with a mirror (η_{mir}) and the reference structure without a mirror (η_{ref}) as a function of emitter wavelength.

[Electrically-driven Photonic Crystal Lasers with Ultra-low Threshold](https://doi.org/10.1002/lpor.202200109)

Evangelos Dimopoulos, Aurimas Sakanas, Andrey Marchevsky, Meng Xiong, Yi Yu, **Elizaveta Semenova,** Jesper Mørk, **Kresten Yvind**

Lasers & Photonics Review, 2022

https://doi.org/10.1002/lpor.202200109

Light sources with ultra-low energy consumption and high performance are required to realize optical interconnects for on-chip communication. Photonic crystal (PhC) nanocavity lasers are one of the most promising candidates for this role. In this work, a continuous-wave PhC nanolaser with an ultra-low threshold current of 10.2 μA emitting at 1540 nm and operated at room temperature is demonstrated. The lasers are InP-based bonded on silicon (Si), and comprise a buried heterostructure active region and lateral p–i–n junction, feature CMOS-compatible drive voltage, and exhibit low self-heating. Read More

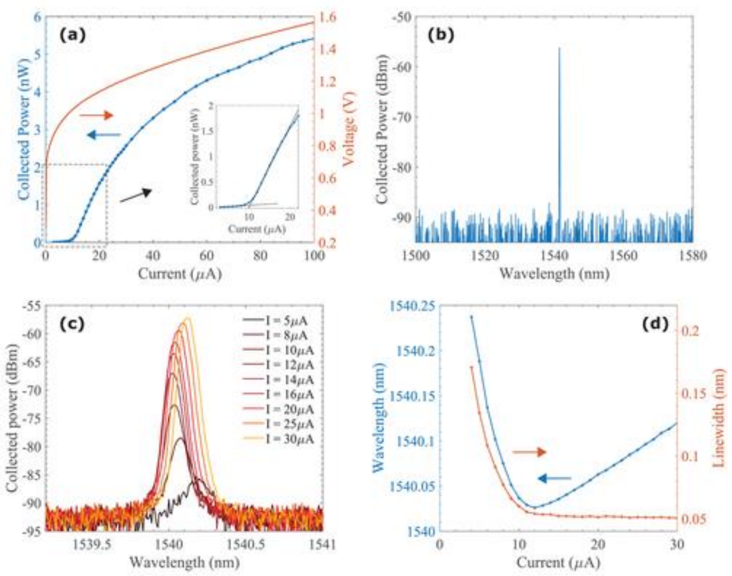


Fig. 3 Electrically-driven L3 PhC laser. a) Collected output power and voltage versus injection current. The inset shows a close-up of the *L–I* curve at the region around the threshold. b) OSA trace at 100 μA injection current. c) The spectral evolution of the laser for different injection currents. d) The peak wavelength and the linewidth of the emission peak as a function of the injection current.

Influence of the linewidth enhancement factor on the signal pattern of Fourier domain mode-locked lasers

Özüm Aşırım, **Robert Huber,** and Christian Jirauschek

November 2022, Applied Physics B 128(12)
DOI:10.1007/s00340-022-07933-5

Fourier domain mode-locked (FDML) lasers are frequency-swept lasers that operate in the near-infrared region and allow for the attainment of a large sweep-bandwidth, high sweep-rate, and a narrow instantaneous linewidth, all of which are usually quite desirable characteristics for a frequency-swept laser. They are used in various sensing and imaging applications but are most commonly noted for their practical use in optical coherence tomography (OCT). An FDML laser consists of three fundamental components, which are the semiconductor optical amplifier (SOA), optical fiber, and the wavelength-swept optical bandpass filter. Read More

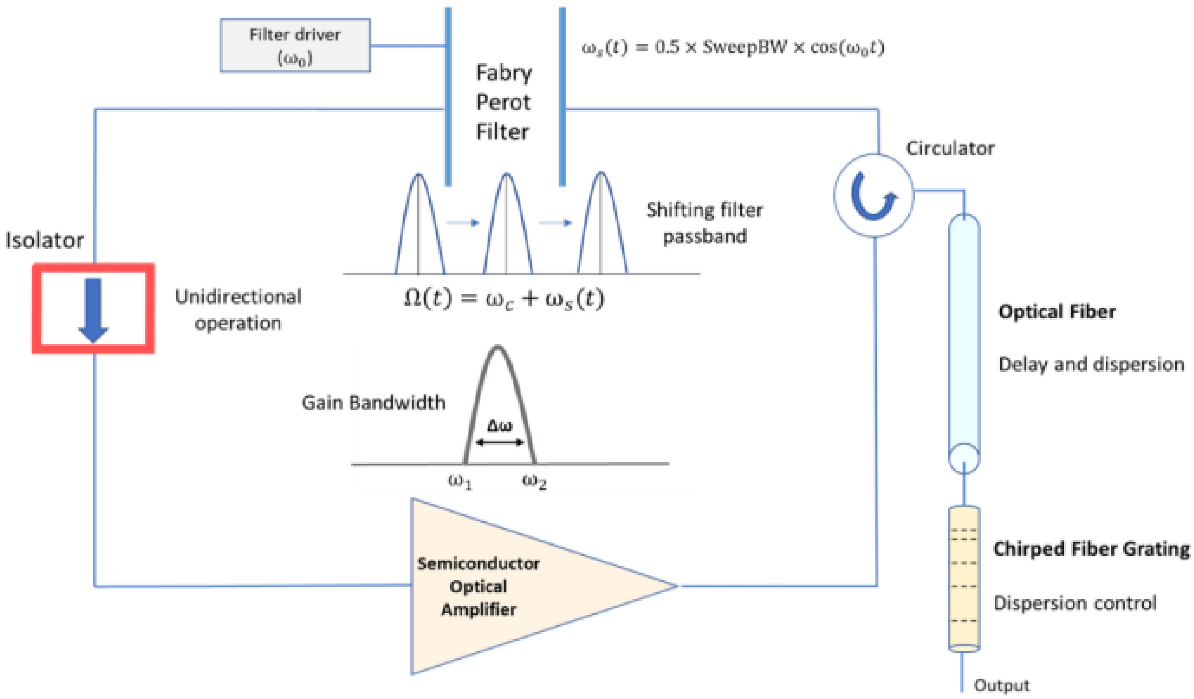


Fig.5 Configuration of an FDML laser. Basic components of an FDML laser include the SOA for light amplification, the long optical fiber for delay imposition, and the Fabry–Perot filter for tunable filtering

Central posterior hyaloidal fibrosis – A novel optical coherence tomography feature associated with choroidal neovascular membrane

Hina Khan, Rida Amjad, **Pearse Keane,** Alastair Denniston, Brandon Lujan

American Journal of Ophthalmology Case Reports 28(2):101709, Sept 2022

DOI:10.1016/j.ajoc.2022.101709

Purpose

To describe a novel optical coherence tomography (OCT) finding at the vitreomacular interface (VMI), and report its association with advanced choroidal neovascularisation (CNV).

Observations

Optical coherence tomography (OCT) scans performed at three retinal imaging centres at Amanat Eye Hospital, Pakistan from May 2016 till May 2021 were reviewed. A specific change at the vitreomacular interface was noted consisting of abnormal hyper reflectivity at the point of attachment of the posterior hyaloid membrane to the foveal center which appears to 'fill in' the foveolar depression. Eight eyes of eight patients were identified. Read More

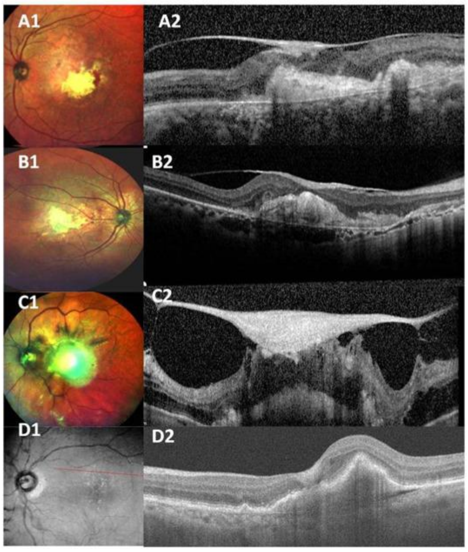


Fig. 2. Multicolor fundus pictures (A1-D1) of affected eyes of cases A-D. A2-D2 shows central line scans with CPHF.

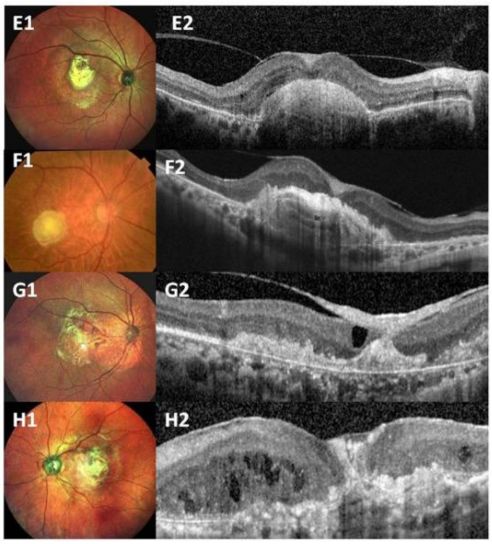


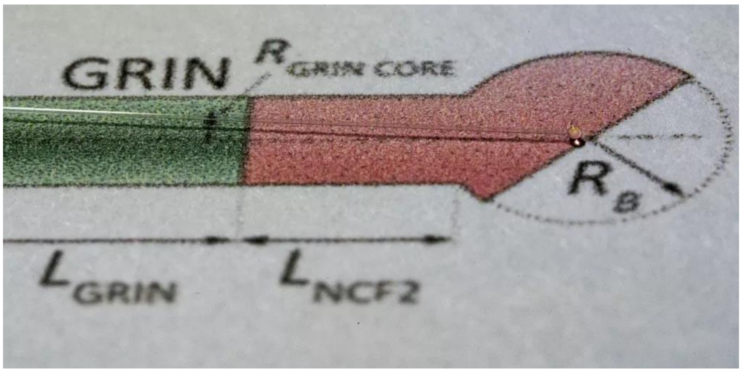
Fig. 3. Multicolor fundus pictures (E1-H1) of affected eyes of cases E-H. E2-H2 shows central line scans with CPHF.

How to improve microendoscopes?
New probe design brings promises to improve biomedical imaging

Microendoscopes are the cornerstone of modern medical diagnostics – they allow us to see what we could not even describe two decades ago. The technology is constantly improving, with ICTER scientists contributing to the development of the probes.

Microendoscopes using fiber optics are becoming increasingly important imaging tools, but they have physical limitations. They are essential for applications that require a long working distance, high resolution, and a minimum probe diameter. The research paper titled "Superior imaging performance of all-fiber, two- focusing-element microendoscopes," by Dr. Karol Karnowski of ICTER, Dr. Gavrielle Untracht of the Technical University of Denmark (DTU), Dr. Michael Hackmann of the University of Western Australia (UWA), Onur Cetinkaya of ICTER and Prof. David Sampson of the University of Surrey, sheds new light on modern microendoscopes. It is noteworthy that the research work started while the authors worked in the same research group at UWA.

In it, the researchers showed that endoscopic imaging probes, particularly those for so-called side viewing, combining fiber-optic (GRIN) and spherical lenses, offer excellent performance over the entire range of numerical apertures and open the way to a broader range of imaging applications. In the publication, the performance of endoscopic imaging probes is comparable to commonly used single focusing element probes.



@ Photo: Karol Karnowski

Read More on https://icter.pl/ on how to improve microendoscopes

[Chip-scale high-peak-power semiconductor/solid-state vertically integrated laser](https://doi.org/10.1038/s41467-022-33528-x)

Yue, J. et. Al.

Nature Communications volume 13,
Article number: 5774 (2022)

https://doi.org/10.1038/s41467-022-33528-x

Compact lasers capable of producing kilowatt class peak power are highly desirable for applications in various fields, including laser remote sensing, laser micromachining, and biomedical photonics. In this paper, we propose a high-peak-power chip-scale semiconductor/solid-state vertically integrated laser in which two cavities are optically coupled at the solid-state laser gain medium. The first cavity is for the intra-pumping of ytterbium-doped yttrium aluminum garnet (Yb:YAG) with an electrically driven indium gallium arsenide (InGaAs) quantum well, and the second cavity consists of Yb:YAG and chromium-doped yttrium aluminum garnet (Cr:YAG) for passive Q-switching. Read More

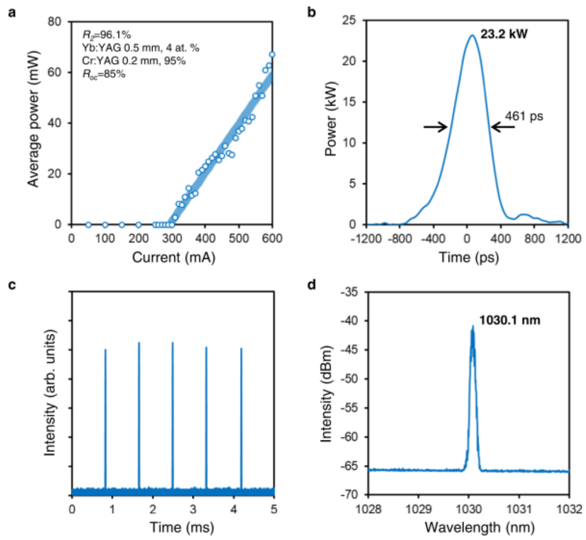
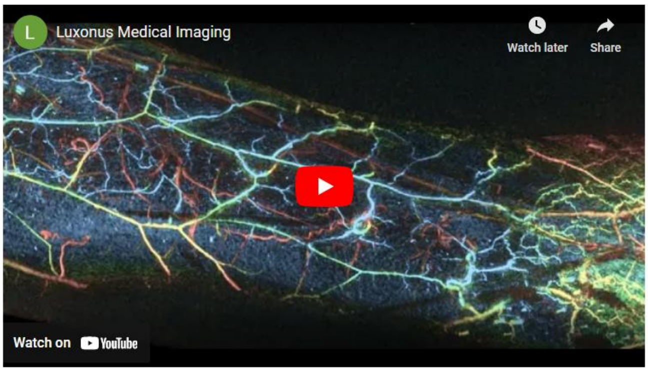


Fig. 4: Experimental results of the mechanically assembled laser.
a I–L characteristics.
b Single-pulse waveform. The vertical axis was calculated from the obtained pulse energy (12.1 μJ) and the pulse waveform.
c Temporal waveform.
d Optical spectrum. The data presented in **b–d** were measured at an injection current of 370 mA.

A bold new vision

The Luxonus photoacoustic imaging device offers an entirely new perspective on medical imaging

In 2021, Luxonus, a Japanese startup, created an extraordinary picture of the medial side of a lower leg. In vivid, colourized 3D, the image showed the complex fretwork of small and large vessels inside the leg and the flow of blood through it. Compared to any other type of medical imaging, the detail is unprecedented. Luxonus used its new device, a game-changing photoacoustic 3D scanner that deploys the relatively new science of photoacoustic imaging (see basics of Photoacoustic 3D Imaging Technology). The Luxonus photoacoustic imaging device is a next-generation medical imaging technology that generates much more data, in far greater detail, with less risk and less burden for patients and operators, and at a significantly lower cost than ultrasound, computed tomography (CT), and magnetic resonance imaging (MRI).



The advantages of the photoacoustic 3D scanner over MRI and CT are many. Unlike MRI and CT, the photoacoustic 3D scanner is able to allow for colour differentiation of veins and arteries to detect the oxygen saturation of the blood. Unlike CT scans, no contrast agent is required for vascular imaging, and radiation, such as X-rays or the powerful magnetic fields used in MRI, poses no risk to either patient or machine operator. Read More

Izatt Named Chair of Biomedical Engineering at Duke

Joseph A. Izatt, a globally recognized expert in medical imaging, will lead Duke BME through 2025 with a focus on research and educational excellence and innovation

Joseph A. Izatt has been appointed chair of Duke's Department of Biomedical Engineering. An internationally recognized expert in medical imaging innovation, respected student mentor and advisor, and faculty leader, Izatt has served as interim chair since July and will now lead Duke BME until June 2025.

"After seeing the energy and dedication he brings to the position, even in a temporary capacity, I quickly concluded that Joe would be an excellent choice for chair," said Jerome P. Lynch, Vinik Dean of Engineering at Duke. "His first-hand experience in translation of innovation from lab to clinic makes Joe a fantastic resource to lead Duke BME into its next phase of growth, which will emphasize deepening its positive impact on society."

The Izatt Biophotonics Lab continues to seek further innovations with the promise of improving human health—including new methods of non-invasive medical diagnostics, *in vivo* tomographic microscopy, and real-time, image-guided robotic surgery. The lab's expertise in OCT technology has also allowed it to expand beyond the realm of biomedical imaging, such as investigating how OCT could help autonomous robots and vehicles to see better.

Izatt is a partner in a decades-long interdisciplinary collaboration with Cynthia Toth, a medical doctor and Duke professor of ophthalmology. Their work to improve the accuracy of examination and surgery of the eye has led to handheld OCT systems for infants and the first intraoperative OCT-guided system for eye surgery.

Read More from https://bme.duke.edu/about/news/izatt-named-chair-biomedical-engineering-duke

[Research Culture: Highlighting the positive aspects of being a PhD student | eLife (elifesciences.org)]

Three benefits of doing a PhD

There are two primary outputs from a PhD: new skills and expertise for the graduate, and new knowledge for the wider world. In this article we focus on the former and discuss the three main benefits of doing a PhD for the individual: (i) the development of specific skills to become an expert; (ii) the ability to work in a collaborative environment; (iii) improved communication skills while sharing knowledge (Figure 2). For each of these benefits we discuss both general aspects that apply to most doctoral students, and specific aspects that depend on the student's supervisor, field of research, location and other factors.

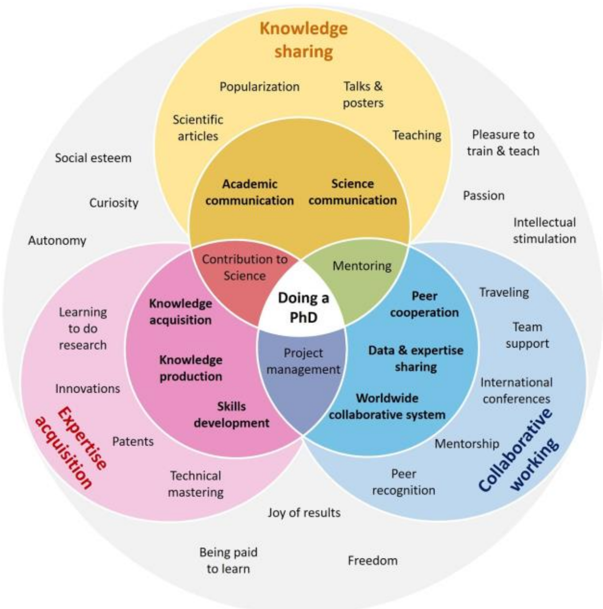


Fig.2

The positive aspects of doing a PhD.

The three primary benefits of doing a PhD are acquiring expertise (pink circle), learning to work in a collaborative environment (blue), and developing communication skills for sharing knowledge (yellow). For each benefit, general aspects that apply to almost all doctoral students are shown in bold type in the small circle, and specific aspects that depend on, for example, the student's supervisor or field of research are shown in plain type in the large circle. The large grey area contains more abstract and subjective ideas that are not discussed in the main text. It should be noted that this figure is conceptual, and that the aspects and ideas in it could be grouped in other, equally valid, ways.

Student Theses -Optical Coherence Tomography News

The Advanced Applications for Optical Coherence Tomography in Skin Imaging

By QIUYUN XU

Wayne State University, Detroit, Michigan

Abstract

Optical coherence tomography (OCT), based on low coherent interferometry, is an FDA approved non-invasive imaging modality. It uses a low coherent near-infrared laser around the wavelength of 1300 nm [1]. OCT has been widely used in ophthalmology to assess retina thickness and anatomical changes. In 1997, this technology was tested to image the cross-section of human skin in vivo, and it was able to visualize different skin layers and skin appendages [2]. Although, OCT has great potential in monitoring skin morphologic changes, skin cancer diagnosis, and tumor margin assessment [3], it is not well recognized and adopted by many dermatologists.

Read full dissertation

[Optics | Laser Focus World]

[Fully automated compact wavelength selection for broadband light sources]

A newly developed technique based on rotatable optical broadband filters helps with the selection of wavelengths and adjustment from the UV to near-IR range when using a broadband light source.

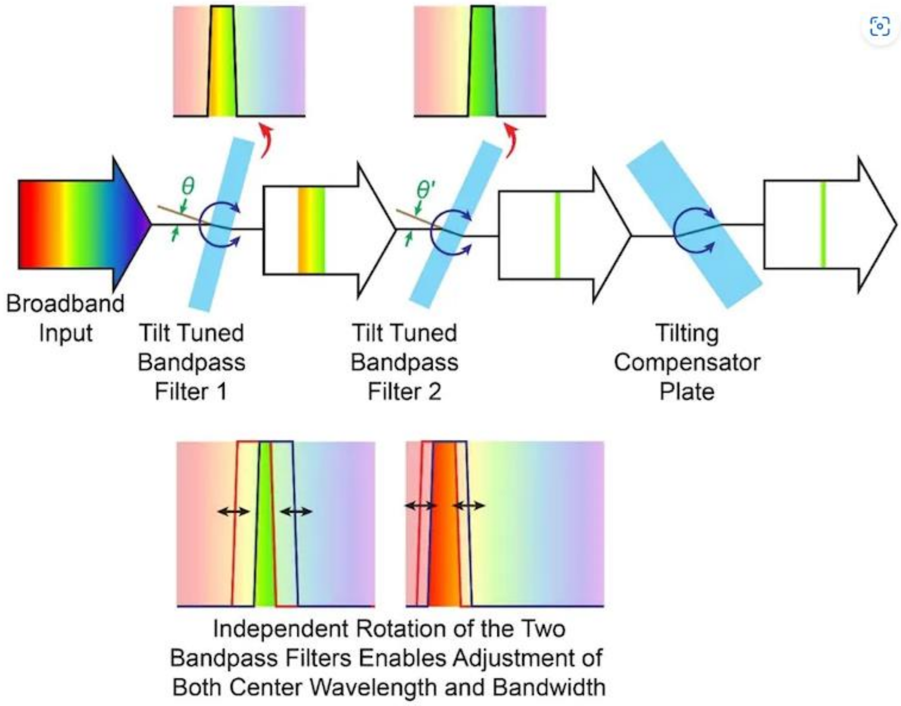


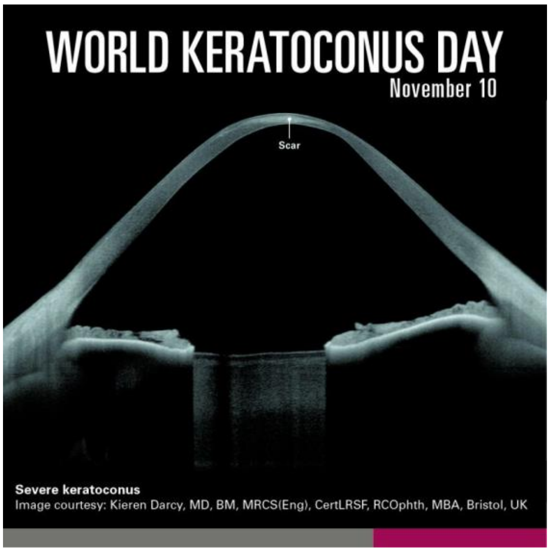
FIGURE 1. Schematic diagram of TwinFilm technology.

Selecting a proper wavelength is a critical procedure for spectroscopy and microscopy. Traditional methods such as filters, monochromators, and acousto-optic tunable filters have advantages and disadvantages. Users choose the best item suited to their purpose of use, costs, required properties, and compatibility with their system. A newly developed technique based on rotatable optical broadband filters allows users to select a wavelength and adjust width from ultraviolet (UV) to the near-infrared (near-IR) range when using a broadband light source. [Read More]

Heidelberg Engineering

10th November : World Keratoconus Day

a day dedicated to raising awareness about keratoconus, as well as educating and advocating for those living with this condition.



Heidelberg Engineering are committed to continuous innovation and product enhancements in support of early detection and tracking of progression. With the introduction of the ANTERION Imaging App, clinicians can easily visualize potential changes. Uncover more at: https://lnkd.in/eeuTUJJB

VECSELS

Vertical-External-Cavity Surface-Emitting Lasers for high-impact applications in Quantum Technology, Medicine and Industry

Vexlum is a spin-off from the Optoelectronics Research Centre (ORC), Tampere University of Technology, Finland. They capitalize on leading expertise in the area of VECSELs.

VECSEL TECHNOLOGY

Vertical External Cavity Surface Emitting Lasers (also known as **Semiconductor Disk Lasers or Optically Pumped Semiconductor Lasers**) combine the most important advantages of semiconductor and thin-disk lasers. Wavelength versatility of the semiconductor gain structures, and the heat management capability and external cavity architecture of the thin-disk concept make together the most versatile laser technology platform. This combination offers broad wavelength coverage, multi-watt power and tunable narrow-linewidth operation with high beam quality.

Read More about the Leading Expertise & Publications and find their products here.

News - Vexlum

NKT Photonics is improving their aeroGAIN fiber amplifier

NKT Photonics have demonstrated 233 µJ pulse energy and 357 fs pulse duration at 175 W average power at 1030 nm in a chirped-pulse-amplification system using our new and improved aeroGAIN-ROD fiber amplifier.

Increased demand for high-quality glass cutting and processing, drives the adoption of femtosecond lasers. Many applications within micromachining demand both high pulse energies and average power to handle a wide range of materials and processes at high throughput.

The high-power ultrashort laser pulse can vaporize glass with almost no heat conduction in a cold ablation process that leaves a perfect edge without any thermal damage or micro-cracks, as typically seen with long-pulse lasers.

Motivated by these demands, NKT Photonics have worked on further power-scaling their unique aeroGAIN-ROD PCF platform and **have managed to increase the average power handling by 2.5 times**. Read More

Prism Awards 2023 finalist

NKT Photonics

SPIE has announced the finalists for the 2023 Prism Awards – an event that celebrates the best of photonics innovation

NKT Photonics Denmark are thrilled to learn that their Koheras HARMONIK high-power fiber lasers are among the three finalists in the Lasers category.

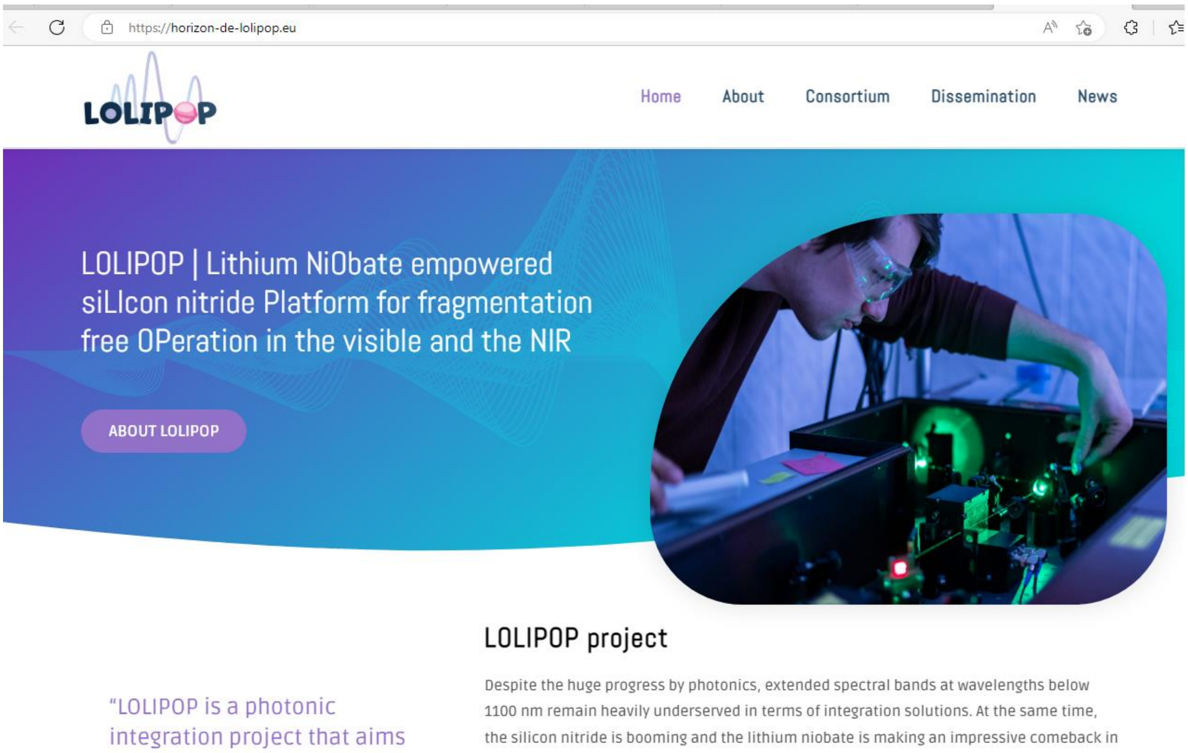
The finalists will be honoured during a gala evening at SPIE Photonics West 2023.

See all the finalists on SPIE's website.

Congratulations Superlum Diodes Ltd

Congratulations to Superlum Diodes Ltd (our NETLAS Beneficiary) for their achievement to be part of the LOLIPOP Project!

LOLIPOP is a photonic integration project that aims to fill this gap and enable the silicon nitride platform to make the next step and fully flourish. Read more about LOLIPOP and Superlum at https://lnkd.in/edVWvmsW



OPTICS & PHOTONICS NEWS

Optics & Photonics News Magazine November 2022 Issue

- Creating a Diverse, Inclusive Workplace
- Optics in Ukraine: Glorious Past, Uncertain Future

Browse all Issues

Image of the Week

Niagara Falls Rainbow

Beautiful rainbow visible while hiking the Journey Behind the Falls at Horseshoe Falls, Niagara Falls, Ontario, Canada.

—Stephanie Sciuletti, Federal Reserve (former Optica employee), College Park, Maryland, USA

Webinars

We recommend our NETLAS PhD students to attend these upcoming webinars (part of the free Thorlabs webinar series). Thorlabs’ Digital Webinars are covering a variety of topics, each with a dedicated live Q&A session, and have a common goal of providing educational, engaging, and valuable content.

[Thorlabs Previously Recorded Webinars](#)

Thorlabs’ Digital Webinar series began in mid-2020. Each webinar and Q&A session is recorded and added to the archive on [Thorlab’s web page.](#)

NetLaS

December
14
2022

Coming Soon!

Diffraction Gratings 101: Types and Applications

In this talk, Eric Habermann, a Thorlabs optic engineer, covers all there is to know about diffraction gratings and how to select the best type for your application. He will provide a quick overview of gratings, their function, and their usage. He will then transition into providing a deeper level of understanding into what are the different types of gratings available and what benefits and advantages are tied to each. Eric will also target a specific Transmission type called Volume Phase Holographic Grating (VPH), showcasing what capabilities Thorlabs has with this unique technique.

Presented by Eric Habermann, Optics Production Supervisor, Thorlabs

Eric Habermann has been with Thorlabs for over 10 years and is currently working as a Production Supervisor in the Optics department. Within this role, Eric works in the development and design of optics and opto-mechanical products for the Thorlabs catalog. He specifically concentrates in the isolator (free-space and fiber-to-fiber) product line on both manufacturing and design.

Click to Register!

Volume Phase Holographic (VPH) Transmission Gratings Are Available for Both Visible and NIR Wavelengths

AOG Pumpkin Carving event

On Friday 28th October 2022, AOG members and friends joined in with the spirit of the autumnal season and enjoyed a pumpkin carving evening prior to the Optica Student Chapter talk given by Dr Sophie Caujolle. It was a fun event for all involved and allowed each person's creativity to be shared with the group. All of the final designs (cute and spooky!) are shown below.

Photo by AOG PhD Student Adrián Fernández Uceda

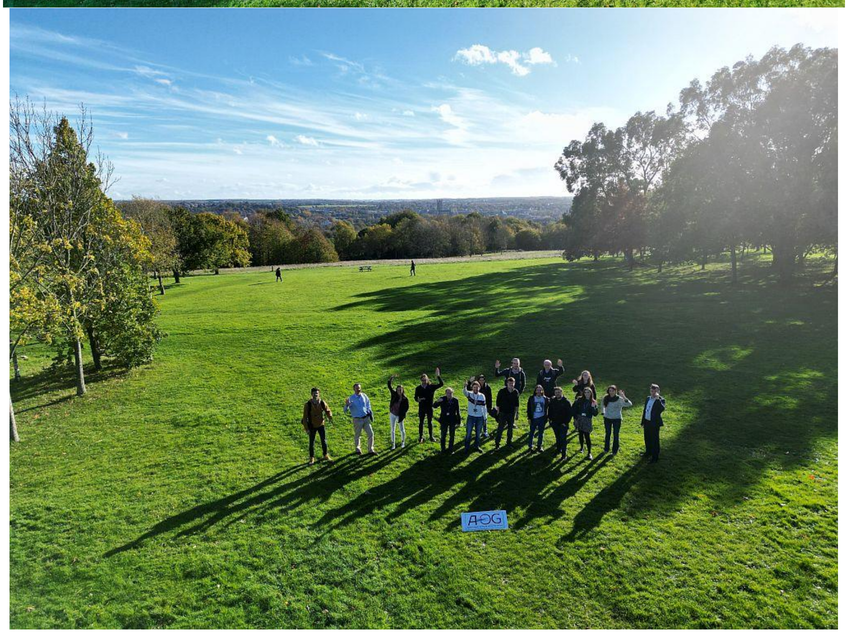
Photo by AOG PhD Student Adrián Fernández Uceda

Photos by Dr Manuel Marques

Article written by Lucy Abbott, AOG PhD Student

AOG Group Photo

AOG members organized a group photo on 9th November 2022. Netlas PhD Student Sacha Grelet recruited by NKT Photonics Denmark, at present doing his secondment at the University of Kent, had the initiative to bring his drone and have a group photo taken from above for the first time ever! Thank you, Sacha!



AOG Group Photos @ Netlas PhD Student Sacha Grelet

More photos were taken from different other location in campus thanks to AOG PhD Student Julien Camard!

AOG Group Photos @ AOG PhD Student Julien Camard

Happy birthday to
Marie Skłodowska Curie
7th November 1867
(Died: 4 July 1934)

Marie Curie was the first person to be awarded the Nobel Prize twice and to receive the prize in two different science categories: Nobel Prize for Physics in 1903 and The Nobel Prize in Chemistry 1911.

Find out more about this extraordinary laureate: Marie Curie – Facts - NobelPrize.org

Hélène Langevin-Joliot (left) with Jane Collins (right), former Chief Executive of Marie Curie.

A successful name in the field of science, **Marie Curie allowed her name to be used by the Marie Curie Hospital in north London. Opened in 1930,** it was staffed entirely by women to treat female cancer patients using radiology. It also had research facilities. After the **Marie Curie Hospital was more or less destroyed in 1944 by a bomb**, a group of people decided to re-establish the hospital as a charity under Marie Curie's name, rather than as part of the new NHS. This marked the start of the hospital's development into a charity to support cancer patients. Now, in the 21st century, Marie Curie is a major UK charity for people living with any terminal illness, not just cancer, and their families. They offer expert care, guidance and support to help them get the most from the time they have left. In 2015, Marie Curie's granddaughter, Hélène Langevin-Joliot, visited the Hampstead hospice and talked about her grandmother's legacy.

NETWORK EVENTS

We invite all partners to communicate events and ideas to place in our newsletter

Please send any piece of news, on NETLAS activities or anything else happening that may be of interest to the NETLAS community, to Ramona Cernat: R.Cernat@kent.ac.uk and to Adrian Podoleanu: ap11@kent.ac.uk