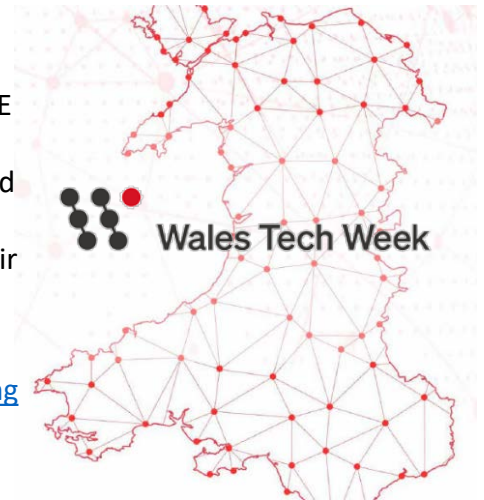


Hotter than July! - Wales Tech Week

Wales Tech Week 2021, hosted by Technology Connected, took place in June. During the week long online tech extravaganza, CPE hosted two webinars which focused on how photonics-based technology can boost industry growth within Wales. Also included were presentations from CPE enterprise partners Thermetrix, SteamBio, Spectrum Technologies and Grafmarine discussing their collaborations with CPE.



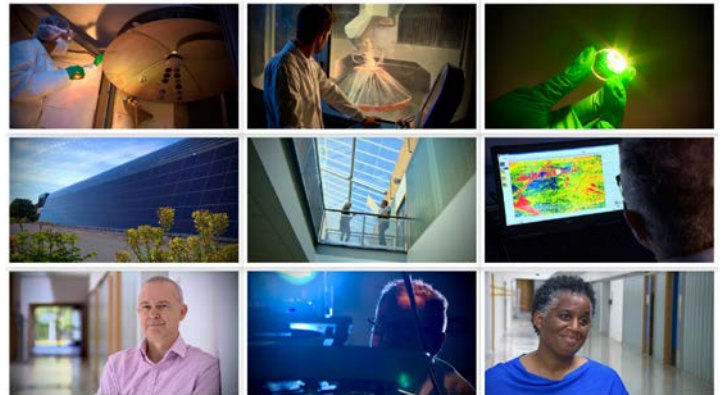
Missed the sessions or would like to view again?

- 1) CPE Photonics in Action – [How To Keep Growing and Innovating](#)
- 2) CPE & Grafmarine – [Making Waves in the Marine Sector](#)

It's A Wrap!

CPE are very excited to be working with Picture House Films on shooting a new promotional video to capture the benefits of working with CPE.

Here are some stills from the film shoot captured during visits to the OpTIC Technology Centre, Transcend Packaging and Diamond Centre Wales.



Many thanks to our CPE collaborators Diamond Centre Wales, Enviro365, Grafmarine, iVAPPS, JR Biomedical and Transcend Packaging for their incredible support.

The finished video will be available to view shortly, but for the time being, watch our early teaser video via the link - [CPE Teaser Video](#)

Did you know...

So far, CPE have collaborated with 45 different companies across the West Wales and Valleys region using photonics technology applications on a wide range of innovative projects.





5 Minutes With... Martin Leigh

Name & Job Role:

Martin Leigh, Technical Director

Company:

Grafmarine Ltd

Location:

The OpTIC Centre, St Asaph

How and where does the story of Grafmarine begin?

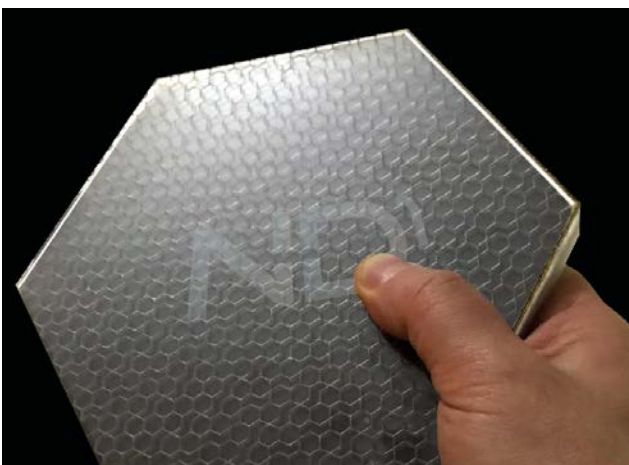
Grafmarine was conceived after I was made aware, through a previous project, how unaware ship operators were of fuel use and emissions. In 2015, the CO2 emissions from shipping were comparable to the manufacturing economies of Germany or Japan.

What has the journey been like from the beginning of Grafmarine to where you are now?

Every new product development has its challenges. The initial understanding of how to get things done had to be learnt from scratch as I am not an engineer or scientist by background. Before I meet with anyone smarter than me, I always make sure I understand what is important to them, before I ask for what I need.

Tell us about the exciting projects you are working on now.

I believe we can get the technology for Grafmarine Nanodeck to become a net producer of energy within 5-10 years, no other renewable energy is going to provide this opportunity. I am also in the early stages with a number of other projects for agri-tech, diabetes and hydrogen technologies.



Do you have any advice for micro or SMEs looking to invest time in research, development, and innovation?

The beginning is difficult. Be very clear from the start what you need to do and, identify who can help you, it will save time. Try and get referrals to meet the right people and don't ask for too much from them at the start, genuine people will always be there for you when you need them.

What are you most proud of?

To actually get this far! New product innovation can be a complex process, it requires such a wide range of skills as there are challenges and risks with every big decision you need to make. We are also pleased to announce that we have been shortlisted as finalists in the Welsh Startup Awards 2021!

Tell us something others would be surprised to know about you or Grafmarine.

Grafmarine are in talks with a major oil company for future prototype testing. Many years ago, I was lucky enough to design this oil company's annual shareholders' exhibition for several years as a graphic designer in London. To be involved with such an influential business on such different projects makes me believe anything is possible if you really want it!



A big thank you to Martin for taking the time to speak to us. For more information about Grafmarine, visit:

<http://www.grafmarine.com/>

How are we doing?

A selection of the latest testimonials from CPE enterprise partners



“As a small optics research business, AVoptics was keen to collaborate with CPE to access their extensive coating facilities and wide optics expertise. We now have a much stronger understanding of what was possible for our optical product concept and have already identified a follow-up opportunity to take advantage of the CPE’s vacuum coating facility.”

Malcolm Watson (Principal Research Engineer), AVoptics Ltd

“Our collaboration with CPE was not only quick to instigate but provided a sounding board and the technical capability to advance our basic idea to prototype stage for further funding. The administration tasks were made simple and without this form of academic help, the project may have been on hold indefinitely. The outcome for Enviro365 is an exciting next stage to the journey, with new friends made and a successful University partnership.”

Tony Powell (Managing Director), Enviro 365

“We at Mon Naturals were really impressed with CPE and their project capabilities. After initially agreeing to a possible collaboration with the CPE team, a project was put in place and up and running in no time. This process was efficient and allowed the focus to be on the project rather than the paperwork. From the start this has been a positive experience and I can only thank the team for their professionalism.”

Ianto Jones (Managing Director), Mon Naturals

CPE supports production of PPE during the COVID-19 pandemic

MicroGeneration Ltd and Aberystwyth University collaborated on a CPE project to develop a photonics-based process to facilitate the manufacture of personal protective equipment (PPE) products in the form of protective face shields.



During the early stages of the COVID-19 crisis there was an undeniable lack of PPE for use in hospitals, care homes and GP practices. MicroGeneration UK Ltd was working as part of a group of companies which were seeking to provide PPE to various locations across wales, including Aberystwyth, Machynlleth, Newtown and Welshpool. The initial production of PPE face shields involved 3D printing and hand fabrication, which was slow and inefficient.

CPE, in collaboration with MicroGeneration, developed a photonics-based process to facilitate the manufacture of PPE products in the form of protective face shields. MicroGeneration provided production stock materials and the initial digital files for cutting the stock materials into the required shapes. The CPE team at Aberystwyth University then processed the stock materials, using the method of laser cutting, evaluating the process / production improvement, and refining the digital files using this photonics-based method.

The use of laser cutting increased the production output of face shields by an order of magnitude, rising from approximately 2 per hour to 40 per hour. In addition, significant improvement in the accuracy and quality of the finished product was also observed.

MicroGeneration assembled the components into full face shields which satisfied the requirements of PPE for use in hospitals, care homes, and GP practices. They then distributed them to the locations which were in need.



New CPE facility for high resolution imaging

A state-of-the-art laser confocal microscope (Olympus LEXT OLS5000) was recently installed at Bangor University's CPE lab. The OLS5000 3D measuring laser microscope scans laser light over the surface of a sample to capture enlarged high-resolution images of micro and nanoscale features (down to 120 nm). Almost all types of surfaces can be imaged in 3D with fine details including surface roughness, steps, and other features. Watch the video link below for more details:

[Olympus LEXT OLS5000 Microscope](#)



Wales StartUp Awards

www.walesstartupawards.com

Wales StartUp Awards – Thurs 9th Sept 2021

CPE are proud to be supporting Wales StartUp Awards 2021. Following a record 750 entries, 90 finalists have been shortlisted across 27 award categories. Results will be announced during an evening ceremony on Thursday 9th September at the Depot in Cardiff.

We are very excited for our enterprise partner, Grafmarine Ltd, who have been shortlisted for the “Innovative Start-Up of the Year” category. Last year’s award went to our partner, iVapps, who officially launched their Smart Cartridge this year.

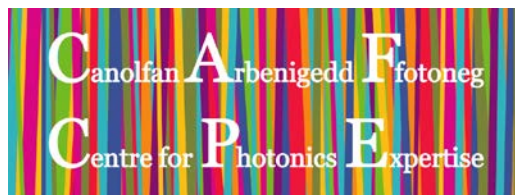
CPE are on YouTube!

To complement our existing social media outlets and further strengthen our online presence, CPE has recently launched its very own YouTube channel.

Here is where we showcase CPE promotional videos, previous webinars and presentations, and other interesting project content.

Join us on YouTube by subscribing via the link below:

[Centre for Photonics Expertise \(CPE\)](#)



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