

Events Newsletter

**Mersey and Western Cheshire Network
Including the Isle of Man**

September 2025 – December 2025

**Future Engineers in the Making
On the Right Track to be a
Young Engineer**

All our events are
free to attend for
IET members and
non-members alike,
pages 16–18



**It is really full of surprises!
Welcome to our face-to-face events and webinars!**

The 2026 Annual Dinner

Friday 6 February 2026

£70 for individual tickets for Members, Non-Members and Guests

£40 for Student Members

See page 19 for full details

Friends of the Network

The Mersey and Western Cheshire Local Network is run by volunteers, who each year arrange free-to-attend lectures, technical visits and workshops, as well as an annual dinner.

These activities would not be possible without the support of our Friends of the Network. These organisations support the Local Network in many different ways, from sponsorship of the local network, taking advertisements in the two events newsletters that are published each year,

taking tables at our Annual Dinners, funding places at our Annual Dinners for young engineers, providing speakers for lectures and allowing technical visits to their factories, engineering offices and academic institutions. Without their help and support, it would not be possible to run the high-quality events that we strive to deliver.

We are grateful for the support given both in the past and going forward into the future by our Friends of the Network.



Thank You for Your Support!

Chair's Message

One of the great things about this Network is the people! Those who Volunteer and meet regularly, those who come to Events and meet occasionally AND then, there are those that we meet for the first time!

One of the Guests at our Annual Dinner in February was a colleague of our Main Speaker.



Natasha Kinnear, Head of Partnerships – Northwest for Primary Engineer wasted no time, in this our first meeting, and invited me to take part in the regional Judging Panel for their competition entries.

I have to say that some of the ideas from Reception through to Year 6 children were amazing!

For the privilege, I received this certificate – and a further invitation to the Awards ceremony for the winners!

Seeing the joy on the Children's faces, as they received certificates and awards, was well worth the effort!

As one of my own abiding passions is to find ways to encourage Young People into Engineering, you 'might' imagine that I consider this to be a brilliant initiative.

For anyone wanting to help and to inspire children into our profession, this is just one of many organisations that you can link with.

All you must do is make the first contact!

You will read more about the activities within our Network in the following pages and some of the things that you can enjoy!

Question:
Will your company be our next Award winner?
Read more on page 29.



Godfrey Evans
Chair

Mersey and Western Cheshire Network

ADVERTISE YOUR COMPANY'S PRODUCTS OR SERVICES IN OUR NEWSLETTER

Contact: Godfrey Evans, Godfrey.Evans@ietvolunteer.org to express your interest

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Kingsmead Science Week March 2025

Dr Ruth Duberley of Kingsmead School contacted Alan Dixon and Roger Todd to see if they could help out at the school science week in March. Alan could not attend on Monday the 17th so Roger attended on that day and Alan attended on Tuesday the 18th.

Roger's first group of children were a group of about twenty, and they were split up into groups of five or six and proceeded to examine what items we could use. The IET items included 'Hoop Gliders' which consisted of a black drinking straw on to which a small paper hoop was glued to the front and a bigger hoop on to the back.



The glider was then thrown to see how well it would fly. We soon had the children throwing their gliders with the teacher looking after them being the target. We next moved on to the "Ping-Pong Ball

Flingers". The "flinger" – again an IET supplied item – consisted of a small plate about 10 cm square, into which two small DC motors were fixed and on the spindle of each motor is a 35 mm plastic disc with a rubber band on its edge.

When the motors were operated so they span in the same direction, placing a ping-pong ball so it just went between the two rubber coated disc, resulted in it being flung out at high

speed and travelling many meters vertically and horizontally. To make it more of a challenge two plastic buckets were placed three meters and six meters in front of the users with the aim to get a ball to land in the bucket. Landing in the closest one scored one point and the farthest one scored ten points. The near one was easier but with a bit of help from the teacher the distant one was hit many times.

In the afternoon it was decided that one group could make the IET LED torch. This went very well, and it was explained that the 'diode' bit of LED meant that the electricity could only travel in one direction through the LED. The LED was shown to have two wire pins, one slightly longer than the other and it was pointed out that the longer one is the positive lead.

The positive leg of the LED was pushed across the foam centre so that the correct legs of the LED went over the parts of the battery. On squeezing the legs together over the battery, the red LED illuminated. The next part of the process was to put a small plastic square over both sides of the foam middle and then bind them together using an IET label. Soon red LEDs were being flashed on and off. The question was posed as to whether this device could be used to send messages? The answer was "yes", and Morse code was frequently suggested as a solution.

Alan attended on Tuesday and the class was arranged in groups of six at a time.

Firstly, each group had explained to them how DC electricity flows and the workings of the IET LED torches as Roger had described to the pupils at the Monday session. They then started making the torches. Later in the morning two groups were successfully introduced to the battery powered "Ping Pong Ball Flinger", which they found great fun.

The session finished with Alan explaining to the pupils' ways of producing electricity from wind, wave, and sunlight. All pupils were attentive, and many questions were asked. All in all, both days went extremely well.

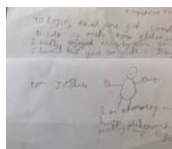
On Monday the 17th of March Alan represented the IET at a Mock Interview event at Leftwich High School Northwich, with another Mock Interview day planned on Tuesday the 25th of March at Shavington High School Crewe.

Roger Todd

Children loved the activities, and the balloon buggy building and racing was a great hit later in the week with my class too. Some thank you letters attached too from Hen Harriers children.

Many thanks,

Ruth Duberley



Jigsawsafe®: Securing the Future of Field Engineering Data

On 23 January 2025 Jigsaw Group Ltd delivered an excellent event for the Network on “Securing the Future of Field Engineering Data”.

In today's connected world, engineering professionals rely increasingly on timely, trusted field data to drive decisions and maintain standards. Whether it's verifying tooling configurations, auditing suppliers, or capturing site conditions during installation, one thing is clear: reliable evidence is essential. That's where Jigsawsafe® enters the picture.

Developed by Jigsaw Business Group, Jigsawsafe® is a patented, app-based platform that enables secure, high-integrity collaboration across distributed operations. Originally designed to tackle compliance challenges in the automotive sector, it's now empowering engineers across industries – from manufacturing to renewables – to capture, transmit, and verify field data with confidence.

What Does It Do?

Jigsawsafe® enables users to collect photos, video, and structured form data directly from the field – whether via a smartphone, tablet, or workstation. Each file is encrypted, time-stamped, geo-tagged, and securely stored on the cloud. This digital fingerprinting ensures an unbroken chain of custody, delivering confidence to remote stakeholders and auditors alike.



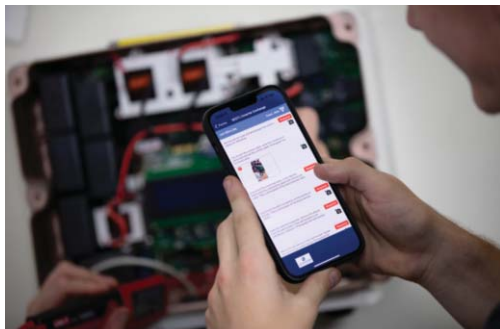
JigsawSafe mobile and laptop

But what truly sets it apart is its Secure Authorised Field Evaluation (SAFE) model. Rather than rely on uncontrolled file transfers or vulnerable messaging apps, Jigsawsafe® creates temporary workspaces where access and editing rights can be controlled per user and per file. Once a task is complete, the system can lock down media, preserving evidence in its original state.

Built for Engineers, by Engineers

Jigsawsafe® isn't just about governance – it's built to support fast-moving technical work. Through live video with annotation tools, remote experts can guide field staff in real time. Technical leads can review and approve tooling sign-offs or

non-conformance reports without waiting for someone to return to the office. Engineers in different time zones can review the same installation record without compromising data integrity.



JigsawSafe mobile

Key features include:

- Support for over 40 file types, including photos, videos, documents, and structured forms
- Minimal setup – users receive a secure invite link to download the app
- Market-leading compression algorithms for quick upload from low-bandwidth sites
- Automated archiving for audit and compliance trails

Reducing Risk, Travel & Carbon

From a governance perspective, Jigsawsafe® aligns closely with engineering risk management principles. It reduces the reliance on manual note-taking, ad hoc screenshots, or unverifiable claims. For organisations seeking ISO 9001, 14001, 45001 or 27001 compliance, it offers structured data integrity without disrupting operational workflows.

Perhaps most impressively, Jigsawsafe® reduces the need for travel. A quality engineer in Sunderland can verify a process taking place in Seoul without leaving their desk – cutting cost, lead time, and CO₂ emissions in the process.

The Engineering Context

For members of the IET, Jigsawsafe® offers a living case study in applied digital transformation. It embodies core principles of engineering practice: clarity of evidence, control of risk, and continuous improvement. It also opens the door for wider adoption of remote-first workflows across supplier quality, commissioning, and technical assurance roles.

As the engineering profession embraces smarter, more adaptive digital tools, Jigsawsafe® reflects a shift from isolated documentation to integrated, secure collaboration. It's not just about data capture – it's about building trust in the process, one click at a time.

Yaniv Oren

The Future of Engineering



Changing the perspective of engineering in primary schools and building the skills pipeline. This was the inspiring topic that Dr Susan Scurlock, CEO and Founder of Primary Engineer, a UK-based non-profit, spoke about at the IET Mersey & West Cheshire Annual Dinner on Friday 7th February.

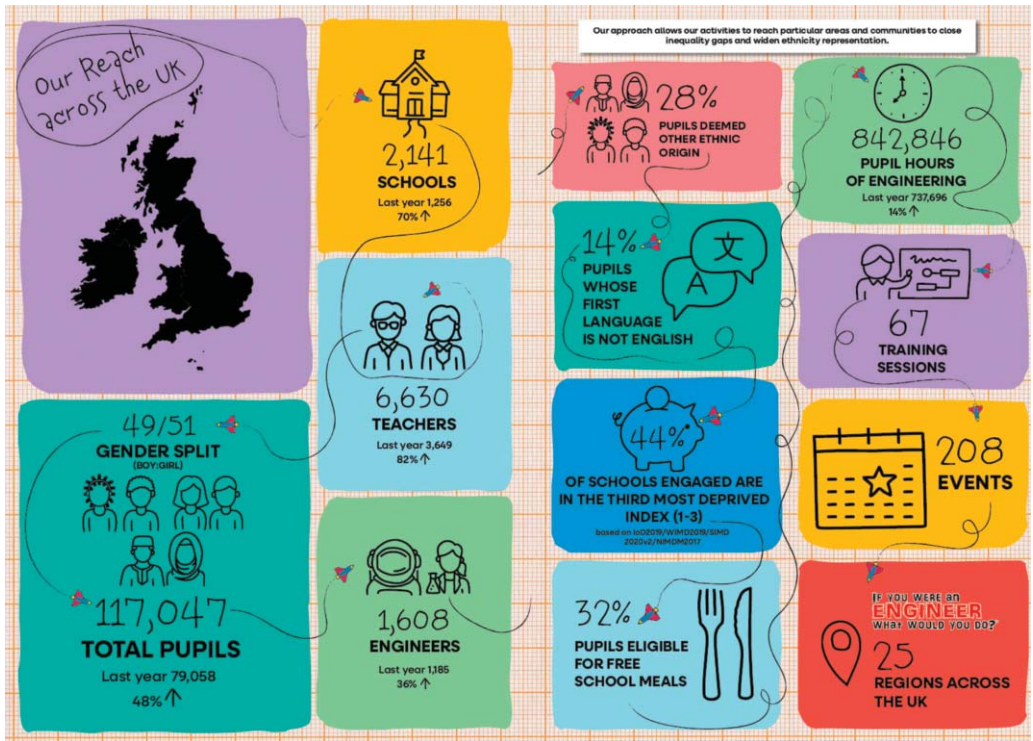
The IET has been a long supporter of Primary Engineer, and since 2005 we have been on a mission to bridge the gap between education and industry by bringing engineering to life in classrooms across the UK with our range of fully-funded educational programmes and competitions. These activities are designed to engage both teachers and pupils in significant ways by creating meaningful connections between engineering principles and real-world applications, raising aspirations of pupils and breaking down barriers.

Traditionally, many engineers are inspired by someone they know. But what about pupils who lack such role models? The lack of role models for children or a clear picture of what engineers do, coupled with a lack of diversity in the field, is a significant challenge. This limited understanding translates into a smaller talent pool, hindering the industry's ability to attract future engineers.

The role volunteer engineering and technology professionals play in inspiring, nurturing and developing the next generation cannot be underestimated. After all young people cannot aspire to something they didn't know existed. This is why bringing engineering and technology professionals into the classroom to work alongside teachers and pupils is a major part of our work.

We have seen a fantastic increase in the number of engineers volunteering their time and companies supporting our mission. Their involvement has helped us showcase the variety of engineering careers and opportunities, making the field come alive in classrooms across the UK.

Our reach extends far beyond the boundaries of the UK's devolved curricula, touching schools from bustling city centres to expansive rural areas. In the 2023–2024 academic year alone, we have reached an impressive 117,047 pupils, 6630 teachers, and 1608 engineers,



collectively investing over 842 846 pupil hours in engineering education which is the total amount of time school pupils spent learning about engineering in school. These statistics are a testament to our impact and commitment to inspiring the next generation of engineers.

Beyond the numbers, are the stories from engineers, parents, carers, teachers, and the young people themselves are extraordinary examples that the dial is changing significantly. Our approach is much more than just a fleeting moment – it is about creating lasting memories, developing skills and opening doors to their future careers and interests.

The definition of an engineer and the perception of engineers has been at the heart of STEM engagement for decades. We can clearly see that from the 117 047 pupils

who took part in our competitions and programmes over the 2023–2024 academic year, they perceive engineers to be the people who help others, produce creative solutions to the world's problems large and small, are not afraid of automation, robotics or AI.

The engineering skills gap is a complex issue, but we are so proud of our work. Over the past twenty years, the perception of engineering has been transformed but there's still more work to be done.

IET members can be part of the story by registering for more information: <https://leadersaward.com/join-us/>

Steph Shencoe,
Media Relations & Communication Manager
at Primary Engineer

Manufacturing and Management Group

Technical Visit at Nexperia – Semiconductor Wafers Manufacturing

IET Mersey & West Cheshire Network visited Nexperia Manchester in June 2025. The group of 11 IET members and guests were presented with the history of the company, from its beginnings as Mullard through to the present – 50 years later!

Principal Applications Engineer, Phil Ellis, gave the group an insight into the applications of Nexperia products, a history of the MOSFET and a brief overview of the manufacturing process.

Abby Clements, R&D Engineer, spoke about her career in the Industry. Starting in The Phillipines, her home country, Abby gained her qualifications and initial experience before “taking the plunge” and flying to Manchester to take up a new position in Stockport! As she said, it was a tremendous upheaval – but, one that she would not hesitate to take again!

Abby is one of a growing group of female Engineers and is very active in promoting the benefits of working within the business and encouraging more to join.

Following the presentations, the group were split into two and treated to a tour around the Application Laboratory where we saw various Demonstration units incorporating the Manchester product.

Swapping over, we were then awed by the facilities and the “nano-scopic” investigation techniques used in the Quality Assurance Laboratory.

Kerry Abrams, QA Laboratory Manager, explained one example of the step-by-step process of identifying the root cause of a single component failure found on a finished



8 inch wafer that turned out to be a nanometre-scale crack in the Silicon substrate. This, in turn, allows a process improvement so, preventing recurrence of that fault in further manufacture. It is this approach which is how Nexperia achieve defect rates in the parts per billion range.

The Group came away from the days experience thoroughly impressed by the facilities and enthusiasm displayed to us.

This is one that has been described by one of the group as “one of the best technical visits I have been on”.

Many thanks to all involved in making the visit happen.

Godfrey Evans

Search "IET Mersey & Western Cheshire"
on social media sites to keep up to date
with events and activities!

Annual Dinner 2025

More than 110 guests joined us at Hilton Liverpool Centre Hotel on Friday 7 February for an evening of Networking and revelations of some of the exciting activities happening in our region – and further afield!

Following a very lively Drinks Reception, guests were seated, and the evenings programme was introduced by Local Network Chairman, Godfrey Evans.



We were treated to a Keynote presentation from Professor Mark Thompson, co-Founder and Chief Technologist at PsiQuantum.

Mark discussed a brief history of computing, leading up to Quantum computing – and what the future holds.

There were lots of conversations around all tables as we all enjoyed a fabulous 3-course dinner.



Our after-dinner speaker was Dr. Susan Scurlock MBE, CEO & Founder of Primary Engineer.

Susan gave a brief history of her career as a teacher and the 'frustration' that led her to set up Primary Engineer.

The aim of the company is to introduce STEM –

and Engineering – to children in education, starting from 4 year-old Reception pupils all the way through to 19 year-olds leaving schools and colleges.

Throughout Susan's presentation, she gave numerous examples of the work that the company does – training teachers and providing support materials for them to use in class – and the support they give to Engineer Volunteers as they go into schools to encourage and inspire the next generations of Engineers.

The audience was so engaged with Susan's presentation that – as one guest remarked – "you could hear a pin drop!"

The formalities were closed off with the presentation of this years' "Workforce of the Future" award.



Trophy Design

This year, we were extremely pleased to work with Scottish Power Energy Networks (SPEN) (last years' winner) to produce a Trophy that will be presented each year to the worthy winners.

The Trophy was designed by a team of Young Engineer Trainees from SPEN's Deeside Facility.

Applicants were shortlisted and the company demonstrating the strongest entry this year was EA Technology Ltd.



The Trophy and certificate were presented to EA Technology by Nia Lowe (SPEN) and Godfrey Evans. The pride in their efforts was plain to see as the award was presented.

During the event, guests were encouraged to give generously to our two nominated charities this year – Alder Hey Children's Hospital and KIND Liverpool. Both charities provide much needed support to the region's young people.

We are very pleased to say that the collection totalled £700 which has been shared equally between these deserving causes.

Thanks must go to everyone who attended on the night to support and network with our region's Engineers!

[#EnviroSolutions](#), [#TheEyeQ](#), [#SPEN](#), [#BilfingerUK](#), [#EATechnology](#), [#PowellIndustries](#), [#ImechEMersey&northWales](#)

Godfrey Evans

Response to Charities

Dear Godfrey,

On behalf of all at KIND, I would like to thank you for your very kind donation of £350. Your support is very much appreciated, and I hope that you will be pleased to know that your donation will be used to help fund our 6-week Summer Out of School programme, which also includes our Summer Residential in mid-Wales.

Thanks to your support our children will take part in a wide range of fun, exciting and educational activities all designed to show them that they and life can be different. Equally as important, is the chance we give them to create

some very happy and positive memories of childhood – memories that will stay with them forever. Together we will make a real difference in many unlucky young lives this summer.

On behalf of all at KIND and especially the children and families who will benefit from our Summer Programme this year, may I thank you again for your kindness, generosity and support and wish you a wonderful summer – just like the one you are helping our children to have.

With all best wishes,

Stephen Yip
Chief Executive, KIND

Update from The Institution of Chemical Engineers (IChemE) The Hydrogen Challenge

How Might We further Promote the Hydrogen Economy across the North West and North Wales?

For some time the Chester and North Wales Group of the IChemE has been exploring ways to promote engineering, and specifically chemical/process engineering, to school pupils across the North West and North Wales. Many of you might be aware of the LEGO models, based around unit operations found in the food industry, we have built in collaboration with the University of Chester and Liverpool John Moores University, which we take to careers events organised by local schools and other organisations such as the Cheshire & Warrington Careers Hub, Careers Wales or the Engineering Education Scheme Wales (EESW).

Whilst the LEGO cupcake and tomato ketchup lines, illustrate examples taken from only one sector of process engineering, when used in conjunction with promotional banners supplied by the IChemE we are able to open up the conversation and introduce many other activities and products found across the chemical industries. Nonetheless, it would be helpful if practical illustrations from other sectors could also be included at careers events.

One such sector of local significance is the production of hydrogen. The HyNet consortium has major plans for producing and using hydrogen across our region. To foster commercial interest in the hydrogen economy two conferences have recently been held in Liverpool as part of Hydrogen Week. The North West Hydrogen Alliance organised “Delivering the Hydrogen Economy” on the 26th February, whilst MTC followed shortly afterwards with “Opportunities in the Hydrogen Supply Chain”. At both these events the prospect of how we bolster the career pipeline through schools, colleges and university was touched upon. Here is one possibility.

I recently became aware of the Hydrogen Challenge earlier in the year.

The Hydrogen Challenge is a workshop that puts hydrogen fuel cell technology into the hands of school children. The workshop consists of an introduction covering a variety of topics related to hydrogen energy, followed by a hands-on engineering activity and post-activity Q&A session. Participants are challenged to design and build a hydrogen fuel cell vehicle from custom designed kits provided by The Hydrogen Challenge organisers. The aim is to design the most energy efficient vehicle possible or which travels the furthest distance on a limited fuel supply. Participants take an iterative approach, redesigning their vehicles multiple times in search of the perfect balance of characteristics.

In order to introduce the Hydrogen Challenge, IChemE are running a webinar on the 17th June 2025 entitled “Demystifying and Promoting Hydrogen Fuel Cells through Play”. The speaker is Arlan Harris. Arlan is Director of Hydrogen Challenge Ltd and has over 10 years experience in delivering hands-on experiences with hydrogen fuel cells. He was previously Head of Education at Arcola Energy Ltd and Ballard Power Systems where he delivered events to over 125 000 participants across the UK and Internationally. He set up Hydrogen Challenge Ltd in early 2024 to deliver and develop hydrogen-based public engagement activities with the goal of increasing public understanding and pressure for hydrogen-based infrastructure.

For further information please visit:

[17-6-25 Demystifying and promoting hydrogen fuel cells through play – IChemE](https://www.icheme.org/17-6-25-Demystifying-and-promoting-hydrogen-fuel-cells-through-play-1IChemE)

Peter Swanson

**Reading the Newsletter on both Android and Apple devices using
Adobe Liquid Mode:**

<https://www.adobe.com/acrobat/hub/how-to/what-is-adobe-liquid-mode.html>

Point to Point Microwave Radio

On Thursday 6th February 2025, Andy Sutton, BT Fellow & Principal Network Architect at BT visited Wirral YMCA and delivered a talk on Point-to-Point Microwave Radio.

He explained how Microwave Radio is positioned at the intersection of Electronics, Mathematics and Physics before moving on to describing how microwave radio has always been part of his career in communications. He explained how the talk covers the history, before moving on to propagation and spectrum considerations, access and trunk networks, co-channel dual [polarisation operation, core capacity, and engineering components.

He commenced with the history and showed how the trunk microwave network covered the UK, originating from BT Tower in London, delivering not only voice but also TV content. He explained the basics of a Huygens wavefront and how it is focussed but ever expanding, before being captured by a small antenna (in relation to the size of the wavefront). The interesting area is the first Fresnel zone and, if needed, a local building can be used to "block off" an unwanted reflection which would cause signal degradation. He also explained how tree growth and building changes are major problems that need regular attention. He also explained how longer radio hops are subject to propagation changes due to differing air densities.



Andy went into some detail on "radio parlance" and defined how the "microwave band" covers from 4 to 42 GHz and terminology such as "L band, S band and C band" are in the "satellite domain". Microwave engineers however use terminology associated with frequency such as 40, 32 and 80 GHz. The term "millimetre wave" refers to frequencies greater than 30 GHz although that definition is not followed in the Cellular World as the 3GPP refers to 26 GHz as "millimetre" wave.

The interesting point was made that higher frequencies traditionally means increased free space path loss and reduced range, but this effect can be offset by increased antenna gain and advanced design techniques to produce ETSI "class 4" antennas. In addition, frequency re-use can be helped by optimised antenna radiation patterns which can help when OFCOM are allocating frequency space. Some frequency "blocks" have been bought by operators, and these are "self-policed" by ensuring that these do not exceed band edges and that "guard bands" are used.

Atmospheric absorption was mentioned in that there is a water absorption peak at 23 GHz and an Oxygen peak at 60 GHz which need to be accommodated and are recognised in the frequency planning tools. Several frequency bands are unlicensed but still used by campus and automotive networks but they not carrier grade. Mention was made of "E Band" (71–86 Gbps) which will deliver 20 Gbps across a 1 km distance.

Andy described how the 6 GHz band is split into two zones, the lower part by microwave and 6 GHz Wi-Fi. The upper part is used by microwave and in the future possibly IMT (International Mobile Telecommunication).

He summarised his talk by describing how important frequency spectrum is a limited resource and how spectrum re-use is key to moving forward. In particular, techniques such as XPIC (cross polarisation Interference cancellation) can be applied to cross polarisation (both horizontal and vertical polarisation on the same carrier) and spatial diversity to enhance communication efficiency for radio paths over water.

An excellent detailed presentation thoroughly enjoyed by all present.

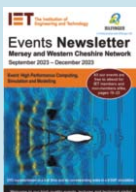
G. A. Nicholas

Mersey and Western Cheshire Network

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Transform discoveries into solutions.
Transform ideas into impact.

Report on the IET Manufacturing Technical Network (TN)

The IET Manufacturing TN continues to promote and raise awareness of developments in manufacturing and technology.

During the first half of 2025 we held events covering Manufacturing on the Moon (20th January), Lasers in Manufacturing (4th March), Manufacturing Technology Adoption (9th April), Attracting People into Engineering (13th May) and What does tomorrow hold for Process Related Manufacturing (19th June). We have also launched our Young Professional and Early career competition covering Manufacturing in Space for 2025.

The first of these events gave an opportunity for our Early Career Manufacturing in Space competition (2024) winners to present. The second, Lasers in Manufacturing, is covered elsewhere in this newsletter.

Our event on 9th April was designed to help businesses, especially small and medium-sized enterprises (SMEs), thrive in the rapidly evolving world of manufacturing. Attendees learned how to develop a winning strategy for adopting the latest manufacturing technologies and gain a competitive edge.

The event on 13th May was a first for the Manufacturing TN in that we held a panel-discussion without any presentations. The discussion created a lively and interesting debate about how to attract people, especially from under-represented demographics into Manufacturing.

The event on 19th June gave attendees an overview of

two key areas of the process industries – food & drink and bioengineering for petrochemicals – and delved into the technologies that are making an impact in this sector. Experts in the field presented case study examples on how technology introduction has had a significant impact for companies and research areas.

For the remainder of 2025 we continue to organise events that we believe are of interest to the wider Manufacturing community. These include:

- Future of lean Manufacturing and Beyond (16th September),
- Manufacturing Related to Space (7th October),
- Quantum Technologies and AI (Q4 2025).

We will also launch our 2025 Apprentice prize in September.

For more information on any of our events, including recording of past events please see our web-page IET EngX (theiet.org).

If you are interested in contributing to and/or helping drive our TN activities, we have openings for volunteers to join the TN and help reshape and expand the Executive. These opportunities range from simply attending a committee meeting, to bring new ideas to the table, through to organising, running, and promoting events. For more details, please contact us at Manufacturing-TPN@ietvolunteer.org

Dr Chris Proudfoot

Lasers in Manufacturing

On 4th March 2025 the M&WC LN held a webinar on Lasers in Manufacturing, jointly with the IET Manufacturing Technical Network and the IET Robotics and Mechatronics Technical Network. The webinar focussed on opportunities in Manufacturing arising from new developments of laser technology, including handheld lasers for welding and cleaning.

David Maclellan, Executive Director Association of Industrial Laser Users, (AILU), gave an overview of Laser Processing that he described as having an “exciting future”. His talk covered the advantages of lasers and a brief history followed by a review of applications and the future.

Lasers have a range of advantages, including the low heat input, non-contact, energy efficient, non-polluting and they are digital and easy to automate.

In terms of history, lasers have been around since the 1960s, but are now significantly smaller, lighter, more powerful and lower cost. They have applications for cutting, engraving, etching, anodising, additive manufacturing and drying. The future will bring even more increasing power, flexibility and greener, with an increasing range of applications.

Matt van den Braak, SICK Sensor Intelligence, gave a case study of the use of Lasers for LIDAR (Light Detection And Ranging), combined with SLAM (Simultaneous Location and Mapping) in an application for control of AMRs

(Autonomous Mobile Robots). LIDAR is used for detecting distances in 3D and has benefits of high accuracy, precision and use in low light. SLAM allows the construction and updating of mapping in an unknown environment and allows AMRs to navigate when GPS is not available. The case study shows that significant benefits and cost savings can be obtained including accuracy and flexibility of guidance, safety and collision avoidance and cost.

Louise Geekie, Director at Croft Additive Manufacturing Ltd., outlined how Croft utilises open innovation to help develop Additive Manufacturing (AM) as well as product and other parts of the process. She described a Case Study with a sister company, Croft Filters. A student study was initiated that looked at different models of industrial filters for improved fluid flow. A second study was then initiated to enable manufacture through use of Laser AM. Significant benefits in fluid flow were obtained.

The final speaker was Sinan Bilgin from SS Laser Solutions. Sinan gave an overview of core laser technology for welding, cutting, cleaning and marking. He discussed use of hand-held lasers, and the training and safety issues associated with them. Issues with cutting revolve around how to stop the laser light.

The webinar is available for viewing here:

[Lasers in Manufacturing](#)

Dr Chris Proudfoot



The
University
Of
Sheffield.

AMRC
North West



The Institution of
Engineering and Technology

Engineering the Future: A Technical Visit to AMRC North West

Engineers visiting the Advanced Manufacturing Research Centre North West (AMRC NW) will step into a hub of cutting-edge industrial innovation. Located in the Samlesbury Aerospace Enterprise Zone, AMRC NW is part of the University of Sheffield's AMRC network, that is in itself part of the UK's High Value Manufacturing Catapult, one member of the Innovate UK Catapult Network, providing a unique combination of cutting-edge R&D facilities and world-class technical expertise to support UK business innovation. The AMRC and its network of centres is internationally recognised for its role in driving manufacturing excellence and bridging the gap between academia and industry.

AMRC NW was founded in 2021 with support from the Lancashire Enterprise Partnership. The facility provides a collaborative environment where businesses, from local SMEs to global manufacturers, can access the latest technologies to boost productivity, sustainability, and competitiveness.

Key Research Priorities

AMRC North West leads nationally significant programmes across several key technology areas, including:

- **Additive Manufacturing (AM):** The centre plays a pivotal role in accelerating the adoption of metal and polymer 3D printing across the North West. Through collaborative R&D and the North West Additive Manufacturing Forum, engineers are supported in integrating AM into real-world production—enabling faster prototyping, reduced material waste, and design freedom that traditional techniques cannot match. The centre has the unique capability of Additive Friction Stir Deposition (AFSD) processing, not only in the UK but also in Europe, allowing us to produce parts with material properties like wrought materials
- **Battery Innovation:** AMRC NW is deeply engaged in battery research for next-generation electrification, supporting



The AMRC – NW at Samlesbury

sectors including aerospace, automotive, and clean energy. Projects focus on developing and automating efficient battery assembly lines, improving energy density, and enhancing the recyclability and sustainability of battery technologies.

- **5G in Manufacturing:** A national first, AMRC NW hosts the UK's only standalone private 5G testbed dedicated to manufacturing through its Factory of the Future and FoFoRAN projects. These initiatives are exploring how ultra-fast, low-latency 5G can revolutionise factory communications, remote monitoring, robotics, and data-intensive processes on the shop floor.

In addition, Research and Development is conducted in Data Capture and Analytics, Robotics and Automation, Simulation and Digital Twins, Machine Monitoring.

State-of-the-Art Facilities

The purpose-built 4500 m² AMRC NW building features flexible R&D workshop space and digital labs designed to enable hands-on collaboration. It serves as both a demonstrator for advanced technology and a testbed for energy-efficient, low-carbon smart building systems.

Technical Visit Opportunities

A technical visit is planned for 5th November 2025. This visit can offer opportunities for exploring the AM developments taking place in the centre for component manufacture, understanding 5G-enabled sensors for real-time data, gaining insight into battery assembly automation, as well as the centre's other activities. The visit offers engineers a first-hand look at emerging technologies reshaping manufacturing. By connecting research to application, AMRC NW is playing a key role in transforming the region into a powerhouse of modern industry.

Contact: nw-enquiries@amrc.co.uk

Martin Sharp



Meld Additive Friction Stir Deposition

Report on the Isle of Man: STEM Activities



In March 2025, over 2 days, over 800 years five and six students from across the Isle of Man gathered for STEMFest at the Villa Marina in Douglas. This now annual event sees local companies and organisations, within three zones, Science, and Technology & Maths, bring their interactive activities showcasing how STEM principles apply to their industry.

This year saw the largest number of students attending, showing the popularity this event is attracting. As one teacher explained, "It puts what they learn in classroom into reality".

From larva lamps, building bridges, recording their own TV shows, assembling ejector seats, playing golf with bimetallic strips, water mazes, grading scallop shells, to understanding how fibre optic cables let them play their video games, there was an array of activities to engage and spark interest into each and every curious mind.

Within the Engineering & Construction zone you could find the IET stand manned by apprentices from Swagelok's IET Accredited apprenticeship scheme making gliders with the children, these gliders even make an appearance in The Department for Enterprise video highlights of the event .



The IET stand with Ruth Watterson



Pupils celebrating building the suspension bridge with Construction IOM



In the process of making lava lamp in Swagelok stand

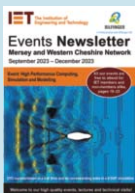
Ruth Watterson
Training and Development Specialist, Swagelok Limited

Mersey and Western Cheshire Network

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IET Volunteer Medal Celebration – Buckingham Palace

Ruth Watterson, IET Education Officer for the Isle of Man, recently attended the Education and Skills Garden party at Buckingham House with her daughter Anya. This invitation recognises her achievements in winning the 2024 Institution of Engineering and Technology (IET) Volunteer Medal and her services as one of the first IET Education Officers on Isle of Man. On a gloriously sunny day in May, Ruth and her daughter met with members of the IET executive team and fellow attendees at Savoy Place. Once they had taken in the stunning views from the Johnson Roof Terrace, they weaved their way through the London traffic to Buckingham Palace. Entering through the front gates of the Palace they enjoyed the beautiful surroundings before seeing the King and Queen enter to fanfare accompanied by Beefeaters. After enjoying afternoon tea, they took the opportunity to walk through the beautiful Palace gardens made even more beautiful by the brilliant sunshine weaving through the trees with many an opportunity to meet with numerous remarkable guests. The highlight of the day was seeing their hosts, King Charles and Queen Camilla. A very special day which will never be forgotten.

Congratulations Ruth!



Godfrey Evans

Young Professional Engineers Group

What Your Local Network Young Professional's Group Can Do for You, and What You Can Do for It!

Whether you have just started on your engineering journey as an undergraduate or apprentice, or whether you are progressing well into your early engineering career, there is a place for you in the IET M&WC Young Professional's Group (YPG).

There is a lot to be gained from volunteering within the YPG, and the handy guide below indicates what you may gain from volunteering as you begin your engineering career.

Apprentices:

With the assumption that you have just left school or college to embark with (potentially) your first employer, there is a lot to be gained from joining the YPG. From the members of the wider committee, there are a few who started in the same position you did and can be there to offer advice and guidance during your time volunteering. Helping to plan events, schedules and communications are skills you will need to develop to progress in your career – so why not get a head start with some experience as a volunteer in the YPG.

Undergraduates:

Wherever you may be on your university journey, there is something for you. Rubbing shoulders with professional engineers outside of your university will allow you a precious insight into the vast world of engineering that your fellow students may be missing, and could offer you information into placements, career tips and tricks. You never know

where you might meet your future employer upon graduation. Worth it for the price of planning a factory tour, webinar or careers fair, no?

Graduates:

Finding your feet in the industry can be tough, but plenty of our volunteers have been in your shoes. Planning events, such as professional registration guidance, can help you understand the targets you should be setting to reach professional development goals. You will be able to network with other graduates around the local area and build your own network going forward.

Early Careers Engineers & Technicians and Post-Graduates:

For those looking to develop professional competencies in order to progress against UKSPEC, volunteering can be a good way to continue your professional development, and form part of a varied CPD portfolio. With some volunteers having also worked in professional registration advisory roles, you may even pick up some good advice along the way.

If you are a young professional and are interested in more information, or would consider a role in the M&WC YPG, then please contact the group chair at alex.headspith@ietvolunteer.org.

Alex Headspith

Built Environment | Design and Manufacturing | Digital | Education and Skills | Energy | Engineering Safety | Healthcare | Transport | Innovation and Emerging Technologies

DATE	EVENT AND LOCATION	PRESENTER	SECTOR	GROUP	TIME	CONTACT	CPD
Wednesday, 17th September	Technical Visit to FORD Halewood Transmission Plant: Power Unit in Halewood Speke Boulevard, Halewood, Liverpool L24 9LE 1YD	Phil Boden Production Manager	Design and Manufacturing	Manufacturing and Management	Start 2:00 p.m. Finish 4:30 p.m.	Godfrey Evans	2
Wednesday, 24th September	Behind the Scenes at Liverpool John Lennon Airport Speke Hall Avenue, Speke, Liverpool L24 1YD	Andrew Dutton Environment & Sustainability, Robin Tudor PR & Communications	Energy, Built Environment, Transport, Engineering Safety	Energy and Environment	Start 5.00 p.m. Finish 7.00 p.m.	Godfrey Evans	2
Tuesday 7th October	Hearing Aid Technology and the Forgotten Sense YMCA Wirral 56 Whetstone Lane Birkenhead CH41 2TJ	Tony Murphy Phonak UK	Healthcare / Innovation and Emerging Technologies	Electronics and e-Systems	Start 6.30 p.m. Refreshments and Networking 6.00 p.m. Finish 7.30 p.m.	Gordon Nicholas Karl Formstone Online registration	2
Tuesday 21st October	The Development of Coherent and Secure 6G for Broadcast and Streamed Contributions YMCA Wirral 56 Whetstone Lane Birkenhead CH41 2TJ	Laurence Murphy Salford University	Built Environment	Electronics and e- Systems	Start 6.30 p.m. Refreshments and Networking 6.00 p.m. Finish 7.30 p.m.	Gordon Nicholas Karl Formstone Online registration	2
Wednesday, 29th October	Automated Metrology for Manufacturing Online via TEAMS	Glenn Wedgbrow Micro-EpsilonUK Ltd.	Design and Manufacturing	Manufacturing and Management	Start 12:30 p.m. Finish 1:30 p.m.	Glenn Wedgbrow Online registration	1
Wednesday, 5th November	Technical Visit to the Advanced Manufacturing Research Centre – North West AMRC-NW, Samlesbury Enterprise Zone, Blackburn BB2 7HP	TBA	Design and Manufacturing	Mersey and Western Cheshire	Start 2:30 p.m. Finish 4:30 p.m.	Iain Martin Tina Russell Online registration	2

Event Programme September 2025 – December 2025

September

Technical Visit to FORD Halewood Transmission Plant: Power Unit in Halewood

Date: Wednesday, 17th September

Time: Start 2:00 p.m.

Finish 4:30 p.m.

Venue: Speke Boulevard, Halewood, Liverpool L24 9LE 1YD

Speakers: Phil Boden, Production Manager

Ford Halewood Transmission Plant have recently launched Electric Drive trains (PDUs) for Transit and Puma Gen-E. The factory visit will explain Halewood's journey as we have transitioned from manual transmissions to electric drive units.

A major element of the visit will be how Halewood has used Innovation in all areas to improve our business.

The visit will consist of short presentation followed by a factory tour between 60 to 90 minutes then a Q/A session.

Online registration / CPD 2 hrs

Contact: Godfrey Evans, Godfrey.Evans@ietvolunteer.org

Behind the Scenes at Liverpool John Lennon Airport

Date: Wednesday, 24th September

Time: Start 5.00 p.m.

Finish 7.00 p.m.

Venue: Speke Hall Avenue, Speke, Liverpool L24 1YD

Speakers: Andrew Dutton, Environment & Sustainability,
Robin Tudor, PR & Communications

A unique opportunity to experience the operations of an increasingly busy international airport and to discuss their focus on ensuring sustainable energy optimisation.

The talk will be followed by a tour of the airport terminal – including security, departure lounge, main apron area (by bus) and Fire & Rescue.

Pre-screening for security is essential for all attendees.

Online registration / CPD 2 hrs

Contact: Godfrey Evans, Godfrey.Evans@ietvolunteer.org

Event Programme September 2025 – December 2025

October

Hearing Aid Technology and the Forgotten Sense

Date: Tuesday, 7th October

Time: Start 6.30 p.m.

Refreshments and Networking 6.00 p.m.

Finish 7.30 p.m.

Venue: YMCA Wirral 56 Whetstone Lane Birkenhead CH41 2TJ

Speakers: Tony Murphy, Phonak UK

An overview of the different types of hearing loss and how this can affect a person's quality of life. We will also discuss how technology has attempted to overcome these challenges. From the adoption of wireless technologies and AI which are giving unparalleled access to the modern world for people with a hearing loss. To proprietary technologies and standard Bluetooth protocols and the challenges of incorporating these within a hearing device.

Online registration / CPD 2 hrs

Contact: Gordon Nicholas, gordon.nicholas@btinternet.com
Karl Formstone, karl.formstone@ietvolunteer.org

The 2026 Annual Dinner

Friday 6th February 2026

Hilton Liverpool City Centre

All our events are free to attend for IET members and non-members alike

For more information on how the IET supports CPD please visit <http://www.theiet.org/membership/career.cpd>

If you do not have access to the internet, registration can be done via e-mail or telephone to the contact listed

Contact details are shown on event synopses on pages 16

October

The Development of Coherent and Secure 6G for Broadcast and Streamed Contributions

Date: Tuesday, 21st October

Time: Start 6.30 p.m.

Refreshments and Networking 6.00 p.m.

Finish 7.30 p.m.

Venue: YMCA Wirral 56 Whetstone Lane Birkenhead CH41 2TJ

Speakers: Laurence Murphy, Salford University

Over the last twenty years the broadcast industry has diversified its use of transmission and distribution technologies over services such as terrestrial, satellite, the internet as a carrier and mobile data. In the last five years we have seen more overlap and synergies between the communication sector and the broadcast sector along with the use of common and complementary technologies and techniques. This session will illustrate the expanded use of these applications and systems and point the way forward, flagging potential issues towards a more sophisticated and resilient hyper merged technology landscape.

Online registration / CPD 2 hrs

Contact: Gordon Nicholas, gordon.nicholas@btinternet.com

Karl Formstone, karl.formstone@jetvolunteer.org

Automated Metrology for Manufacturing

Date: Wednesday, 29th October

Time: Start 12:30 p.m.

Finish 1:30 p.m.

Venue: Online via TEAMS

Speakers: Glenn Wedgbrow, Eng (Hons)

Manufacturing processes with Industry 4.0 and digital manufacturing techniques start with robust, quality process data. Micro-Epsilon UK Ltd are leading providers of high precision displacement, infrared

temperature, colour sensors and dimensional measurement systems for industry. The webinar shows how these can be applied to a process to gain the essential product/process data used to improve efficiency, quality and reduce waste. Use cases highlighting this technology and metrology systems include product thickness measurement, automated inspection with robotics and surface topography measurements.

Online registration / CPD 1 hr

Contact: Glenn Wedgbrow,

Glenn.Wedgbrow@micro-epsilon.co.uk

November

Technical Visit to the Advanced Manufacturing Research Centre – North West

Date: Wednesday, 5th November

Time: Start 2:30 p.m.

Finish 4:30 p.m.

Venue: AMRC-NW, Samesbury Enterprise Zone, Blackburn BB2 7HP

Speakers: TBA

Advanced Manufacturing Research Centre North West, AMRC-NW, a pioneering facility for cutting-edge manufacturing innovation. Hear and see how advanced research in Additive Manufacturing, Battery Technologies, and 5G-enabled automation is transforming manufacturing industries, as well as how robotics, digital twins and simulations, and smart factory systems are supporting digital manufacturing and industry 4.0 implementation. An ideal visit for engineers and technical professionals seeking to engage with emerging manufacturing technologies.

Online registration / CPD 2 hrs

Contact: Iain Martin, i.d.martin@amrc.co.uk

Tina Russell, t.russell@amrc.co.uk

Mersey and Western Cheshire Network

Report on the Network

The LN is proud to have an approximately 4600 strong membership living in a considerably large region.

The Local Network (LN) facilitates the dissemination of knowledge and the advancement of science, engineering and technology through the provision of various activities including school visits, lectures, seminars, workshops, technical visits, biannual recognition events, group meetings, and our Annual Dinner. The LN is governed by the Network Committee (NC).

The LN publishes two Events Newsletters per year, one in January and one in September. The NC endorses major proposals, propose strategic direction, provides a forum for the sub-committees to network, delegates authority to the sub-committees and manages the event programmes and financial budget.

The sub-committees or groups are: Education Officers, Young Professionals Group, Energy and Environment Group, Electronics and e-Systems Group, Manufacturing and Management Group, Biomedical Engineering Group.

The LN works in close cooperation with the region's Universities, Research and Development Institutions, Schools, Colleges and Industrial Companies both small and large, whose contribution to the events programme is absolutely instrumental to maintaining the provision of high quality activities.

The LN is keen to have new members to contribute to the work of the Network Committee and all sub-committees. Are you interested? Please contact any of the Key Contacts on page 37.

Andrew Kaldos

2026 Annual Dinner

Mersey & Western Cheshire Network

Join us on 6th February 2026

at Liverpool Hilton City Centre



Meet with prospective partners and build relationships with key people in your field.

Network with engineers from all sectors. Executives, Heads of Departments and Senior Engineers from a variety of organisations will all be attending.

Recognise your employees or host clients with a delicious three-course dinner in a prestigious waterfront setting.

Table Cost: £700 (seats 10)

Individual Tickets £70

Updates from Academic, Industrial and Research Partners

Virtual Engineering Centre, University of Liverpool



Lead partner of

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Liverpool City Region gets £48.9m GVA boost from UKSPF-backed innovation programme

The Horizons programme, led by the University of Liverpool's Virtual Engineering Centre (VEC) in partnership with Liverpool John Moores University and Edge Hill University, has emerged as a symbol of innovation and success. Supported by the UK Shared Prosperity Fund (UKSPF), this initiative plays a crucial role in stimulating economic development, projecting the creation of *484 new jobs* within local SMEs and a remarkable increase of *£48.9 million* to the region's Gross Value Added (GVA).

Horizons has been a catalyst for change, supporting over 100 small and medium-sized enterprises in the region, spanning the manufacturing, wholesale and retail trade, construction, and transportation sectors, which have benefited from targeted interventions that have helped them embrace digital technologies, optimise processes, and ultimately enhance productivity. Remarkably, 76% of grant recipients experienced a GVA uplift, while 82% reported at least two variations of notable improvements in productivity.

Launched by Mayor Steve Rotherham in November 2023, the programme's mission was clear: to ignite business innovation across the region through a powerful alliance of three local universities. This collaboration was pivotal in delivering direct support across all six regions and demonstrating the potential of unified efforts to drive regional growth. Notable outreach efforts included Roadshow events at St. Helen's Glass Futures and Knowsley's Bowring Park and Golf Course, as well as participation in local economic forums across Sefton, showcasing the programme's commitment to engaging directly with the wider business community.

The project offered bespoke innovation consultancy, technical support, and exclusive access to world-class university facilities and research hubs. Additionally, thirty companies received grants to invest in digital transformation, fostering sustainable growth and future-ready business models. Significantly, thirty-seven businesses were new to public support, highlighting the programme's success in

reaching previously untapped potential. Moreover, 30% of the grants were awarded to women-led organisations, underscoring Horizons' dedication to promoting diverse leadership in business.

The grants have been utilised to invest in digitalising processes through the introduction of emerging digital tools, creating state-of-the-art digital skills suites for upskilling existing workforces and implementing new technologies and equipment to streamline processes to enhance the way teams work as part of their innovation roadmaps, creating sustainable plans for the future.

Andrew Borland, Chief Innovation Officer at the VEC, expressed his pride in the project's achievements: "We're incredibly proud of what we've achieved through the Horizons project and the tangible impact it's had on SMEs across the Liverpool City Region. SMEs account for 99% of all businesses in our region and so we understand the crucial role they play in our economy."

In addition to Horizons, the VEC launched Novel, a leadership programme designed to empower business leaders in sectors such as biotech, engineering, and manufacturing to transform research and development into commercial success. Novel fosters collaboration among innovation leaders from across the Liverpool City Region, driving forward a new era of growth and development.

The success of the Horizons programme offers a powerful blueprint for other regions, demonstrating the immense potential of collaborative efforts between government, universities, and businesses in harnessing regional strengths and accelerating economic prosperity.

Businesses can still take advantage of the Horizons project and the opportunity to engage with the team to unlock bespoke support.

<https://lcrhorizons.co.uk>
hello@lcrhorizons.co.uk

Emma Green

Marketing and Communications Manager



Lead partner of

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The next chapter in innovation leadership



The leadership
innovation programme



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Open Innovation as an SME Manufacturing Company

Maintaining a R&D programme for manufacturing and business processes is a major challenge for SMEs. Their staff are few in number, highly skilled in certain areas and the Company may lack the financial capacity to invest in expensive equipment that may be crucial to successful project delivery. Open innovation, where collaboration and financial support is sourced from outside the company is one method to support R&D as an SME. Here I will describe how our engagement with open innovation has led to product development.

Croft Additive Manufacturing Ltd was established in 2013, by their sister company Croft Filters Ltd, through open innovation with the Design Council in 2012. Croft Filters specialises in the manufacture of bespoke industrial filters which are then supplied into a wide range of sectors. The bespoke filters can range in size from a fingernail to metres in length. Most of the filters produced are custom filters designed, in-house, to suit the customers' filtration requirements.

Design considerations for filters include, the operational flow rate and pressure, the filtration level (what minimum size of particles are captured) and the overall size of the filter. However, when a filter is installed in a conduit and fluid passed through the filter, a pressure drop is created by the turbulence created in the flow and the decreased open area of the filter. The increased pressure drop across the filter requires more energy to pump the fluid through the filter. With a decrease in aperture size, the pressure drop: resistance created by the filter, increases. Therefore, there is always a balance to be sought between maximising the open area of the filter (mesh aperture size and filter support open area) to enable as much fluid flow as possible and the incorporation of sufficient material in the filter to deliver the required operational strength. Croft Filters works toward achieving this balance to produce filters that deliver effective filtration for the operational conditions.

One of the major contributors to the increase in pressure drop produced by a filter is the filter support shape and open area. When fluid enters the filter, it is usually aligned with the pipe, the fluid must then turn through the sides of the cone before turning again to continue flowing down the conduit. The changes in fluid flow direction leads to turbulence and thereby increases the pressure drop across the filter. Mark Burns, Director, wished to reduce this turbulence by enabling the fluid to flow through the support in line with the laminar flow along the conduit and thus reduce the turbulence. Firstly, a billet was milled and drilled but this method did not allow for close placement of adjacent

holes. Other methods were trialled, but none produced a support with sufficient open area. A chance encounter with plastic 3D printing, where the component is manufactured layer by layer, provided a potential method to manufacture a holes-in-line filter support. Croft determined to explore this potential opportunity to increase filtration efficiency.



Conventional Filter

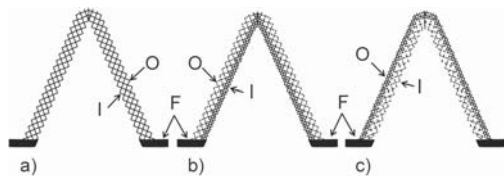
Holes in Line ABS AM Filter

Croft firstly engaged with C-TECH to explore potential designs for a holes inline filter and for the designs to be evaluated using CFD modelling for the fluid flow through the filter. The designs were developed with Design for Additive Manufacture (DfAM) principles for the end manufacturing operation. This extensive trial led to a few potential AM filter designs validated by the fluid flow CFD results. Croft now had a potential energy saving filter with improved filtration efficiency but as typical with most SMEs' they did not have the particular in-house skills needed to prove and deliver the concept to market. Croft engaged with the Technology strategy Board (now Innovate UK) to set up a Knowledge Transfer Partnership (KTP: 1 year) to build the prototype by AM and to perform fluid tests on the design prototypes. For the KTP, a graduate student worked at Croft Filters for

1 year, supported by their university's academics and facilities as well as practical support at Croft Filters to design and build an in-house flow test rig. The KTP delivered a commissioned in-house flow test rig and a software developed to capture the required pressure, time and flow data. External providers printed the prototype AM filters in Acrylonitrile Butadiene Styrene (ABS) which were then tested on the new flow test rig. Compared to a conventional perforated cone the holes inline AM cone, had a decrease in pressure drop of 40% at flow rates of 450 l/min and when meshed the pressure drop across the AM cone was 10% less than that of the conventional meshed cone. The Straightliner™ AM holes inline filter delivered an improvement in filter efficiency. Croft identified that manufacturing, layer by layer, using AM, could enable more complex filter designs that could improve filtration efficiency. This R&D success was dependent on the access to skills and academic support through the KTP, which not only delivered proof of concept for a novel filter design, but also enabled evaluation of a new production method.

Croft Filters invested in metal powder bed fusion AM technology, established the sister company, Croft Additive Manufacturing, to utilise their AM technology to develop novel AM filters as well as having the capability to supply industrial AM components.

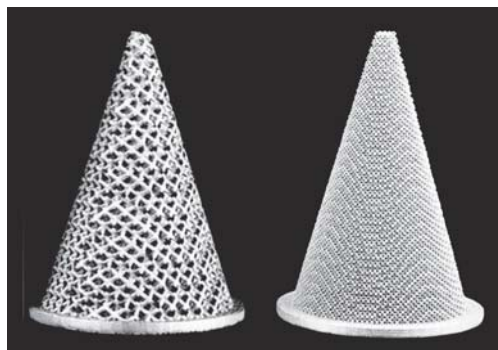
AM is well known for its capability to reduce part weight by the introduction of internal latticework. Croft then explored potential filter designs that were entirely comprised of a 3D latticework to improve the flow through the filter thus decreasing the filter resistance. Three designs were developed, one with uniform latticework and two with smaller latticework within the larger latticework frame in an IN-to OUT and OUT-to-IN arrangement.



a) Uniform aperture, b) In-to-OUT, c) OUT-to-IN

Here the latticework forms both the filter support as well as the filtration area. The AM prototypes were built in SS316L. To determine strand size, aperture size and strand fusion Croft applied for a short grant (3 month: TSB Smart Voucher) and engaged with University of Leicester to examine the latticework filters using X-ray CT. Results determined that the aperture size could not be measured effectively by this method. Whilst the CAD model had strands of even thickness, in the filter in the areas where the strands met, more material was deposited compared to the CAD model.

Croft successfully applied for a TSB 1.5-year grant to determine the filtration characteristics of the AM integrated filter design, their strength and development of the design. This support led to an extensive R&D programme in-house,



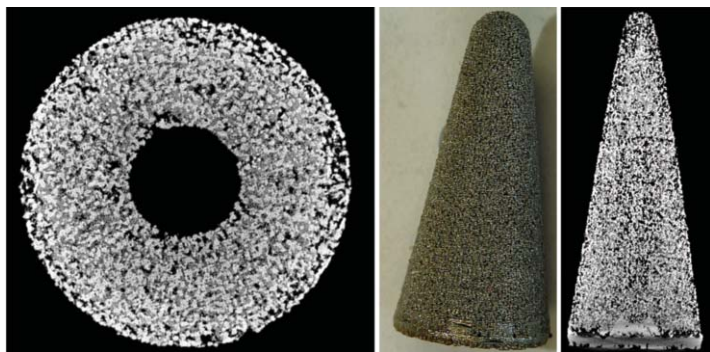
Uniform 1000 µm

OUT to IN 500 µm 1000 µm

supported by STFC facilities and led to design development. Flow test results determined that the AM integrated filter had a lesser pressure drop compared to equivalent conventional filters at all aperture sizes and flow rates tested. The integrated support and mesh filter design delivered defined and consistent aperture and strand sizes and was shown to have an increased open area and retained strength through the design. The AM design was built as a single part, using less material and delivers high value through filtration performance. Croft was granted the patent for the integrated AM filter design in 2021.

R&D into AM machine parameters and component finish have been supported by collaboration grants (Innovate UK) with multiple partners (4–5) and were one to two years in length. The most successful collaborations were with one other SME, one university and one large organisation (eg MTC and STFC). However, with increasing numbers of partners within a grant, the overall research progress is less agile compared to an in-house project but this is offset by the increased access to knowledge and resources not held in-house.

Most AM operators utilise their build parameters to build their components with densities greater than 90%. If the laser powder bed fusion AM technology is open source then the machine operator can change the build parameters. Croft has utilised manipulation of the build parameters to make porous AM filters that have similar properties to open foam metal filters and sintered metal filters. However, determination of the aperture size in the porous AM filters was problematic. Light microscopy and the bubble point test produced test results that were highly variable and therefore an accurate results could not be obtained. Croft engaged with a number of partners to characterise a method to determine aperture size accurately. X-ray CT was used to examine the aperture size and the results showed that many of the pores were elongated and highly variable in length, as expected in a metal foam equivalent. Unfortunately, this method did not provide an accurate measurement of the filtration rating for the porous AM filter. As part of a Measurement to Recovery study undertaken by the National Physical Laboratory, they identified particle challenge testing



XRay-CT scans of SS316L AM porous filter

as a potential measurement method to determine aperture size. Croft then secured an SBRI grant from Innovate UK for the National Physical Laboratory to explore the feasibility of using particle challenge to determine aperture size and to develop a method for this measurement system for Croft to adopt in-house. This six-month project successfully determined the aperture size for a number of AM porous filters Croft had developed. The NPL also developed the methodology that Croft could introduce in-house to measure the aperture size of different AM porous filters. This project outcome delivered high value to Croft as AM porous filters previously could not be assigned a filtration level and therefore this project opened up a new filter type market. Further value was gained as Croft now has the potential to manufacture novel AM porous filters and characterise their filtration level in-house.

Croft has employed other forms of open innovation by engaging with students at Lancaster University and Liverpool John Moores University, either as individuals or in groups to deliver specific projects within short time frames. Some projects formed part of the final year projects for Engineering students as well as summer projects for individual students. Following discussion, a balance between learning outcomes and the scope of the project suggested by the company

delivers clear aims and structured outcomes. In this type of R&D the students benefit from having a real question to solve and gain experience with working collaboratively with a business. The business gains as the R&D work is supported by academic supervisors and resources at the University.

Student access to powerful CFD software supported our design development by determining the impact of design changes on fluid flow. New knowledge is gained on both sides.

Engineering students, with work experience as one of their years of

study, have been employed for a year (Year in Industry programme). This enables the student to be involved in industrial manufacturing processes, learn practical skills as well as focus on individual in-house R&D projects. Students also gain experience related to business processes and working collaboratively as part of a team.

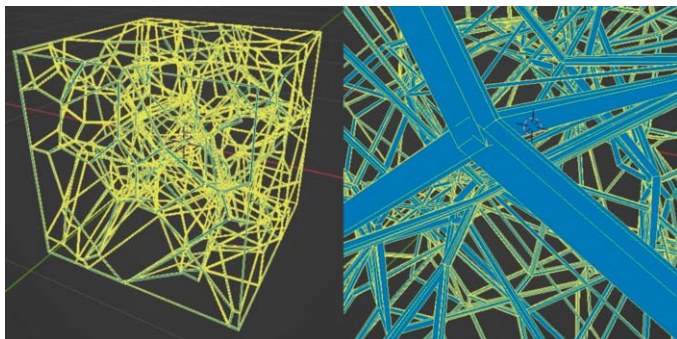
Recently, we have supported three college students with the T-Tech qualification. This is a new education initiative which has work experience as part of its core learning objectives. Supporting skill development in college students delivers value to both parties and is flexible to the employer as the proposed work may change from application date to start date.

Seeking skills and knowledge from academics, students, and business consultants has supported company growth by developing business plans, creating a customer database, IP development, process optimisation and Digital 4.0.

Overall, a project's success is determined by a good beginning with clear defined project aims, methods and intended end use for the outcomes. Without this clarity, some projects fail to deliver the expected outcomes or become unwieldy. Generation of good working collaboration relationships with universities, academics and consultants can support any SME to gain external knowledge, resources and skills. Securing grant funding supports larger R&D projects and can diminish the financial risk of extensive R&D aims. Smaller projects can also be realised through in-direct funding or no funding by engaging directly with universities to complete small projects.

Both Croft Filters and Croft Additive Manufacturing have embraced open innovation successfully to develop their products, processes and business streams to support company growth and product development.

www.croftam.co.uk,
www.filters.co.uk



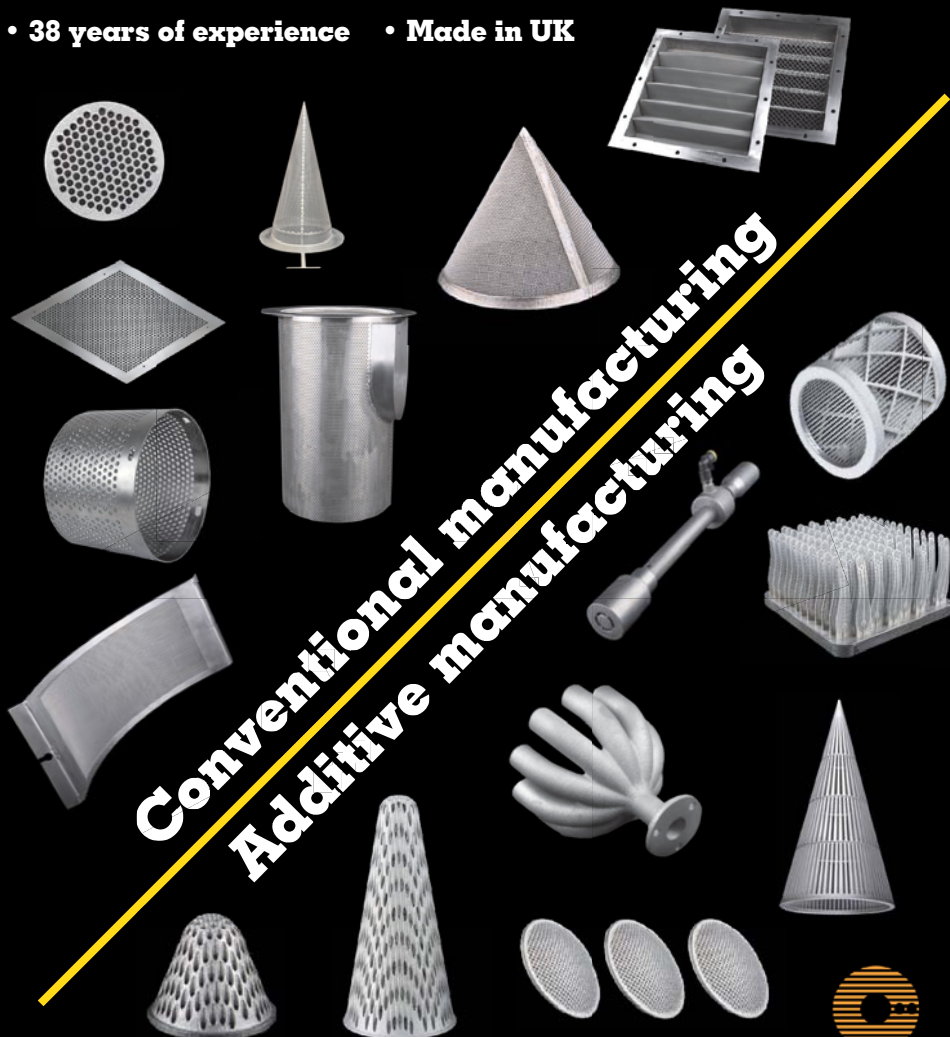
Student project to develop random latticework



CROFT
Filters

Based in Warrington, UK, Croft Filters has been providing custom filtration solutions to businesses worldwide. Supplying to industries such as Oil & Gas, Food & Beverage, Energy, Nuclear and Formula 1. Croft Additive Manufacturing, provides end-use metal 3D-printed components to these sectors amongst others.

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- Problem solvers
- 38 years of experience
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The IET Leadership Seminar 2025

This year's IET Leadership Seminar took place on 17th June (from 2 p.m. to 3 p.m. via the Zoom Platform) and was presented by Jerry Hopkins of Hopkins & Ball who shared with over 75 delegates his experience of how run a highly engaged team. The seminar started with an explanation of the Infinite Cycle and setting out the case to invest time and effort in employee engagement. Engaged employees will always deliver a great service to external or internal customers. That will mean happy and therefore retained customers and always lead to increased cash flow and other performance measures. Most businesses will then reinvest into the business and particularly into those teams that are performing well.



The seminar then focused on the three areas that leaders of teams can influence that have the biggest effect on employee engagement:

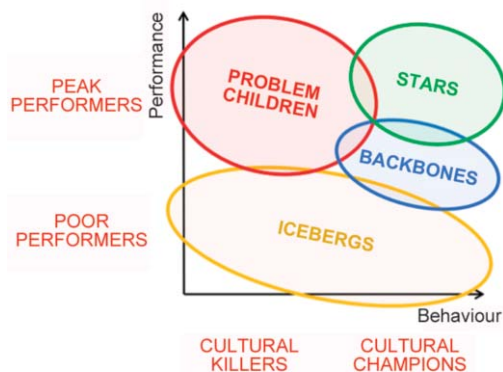
1. Making sure you have the right people,
2. Having up to date team & individual plans,
3. Communication, Appreciating people & team bonding.

1. Making sure you have the right people

Before you can decide on whether you have the right people you need to have both a collective sense of purpose (a team 'Why') and a shared set of values / behaviours. A lot of organisations have a set of values (hopefully three ... because any more and hardly anyone can remember them) and it is best for a team to use those values to avoid inconsistencies with the organisation. However, the team purpose or Why is usually different to that of the organisation and this is an opportunity to involve the whole team in developing it. A good way to think of why your team exists is to imagine that a magic wand replaces what your team does and ask everyone what that magic wand would do. It takes time to develop and lucky there is no rush to do so.

Once a common set of values and a team purpose is established, you can assess where each member of your team is on the P-V Matrix. Look at their performance and their adherence to the values and purpose now and consider where you think they could get to with your support. If you only see them as an iceberg, take steps to remove them ... sooner rather than later. If you see them as a

Problem Child, the same is true, but it could take longer as they might have key skills, knowledge or contacts. However, very few 'Problem Children' go on to become Stars or Backbones of the team and them being there will stop your team from becoming highly engaged. Then really look after the Backbones ... they are key to your team ... and look after the Stars as much as you can ... you're unlikely to keep them all, but be happy for them to progress their career in another team should that be the best way to keep them in the organisation.



2. Having up to date team & individual plans

In some ways, this is the easiest discipline to have as the leader of a team, can often make the biggest difference and yet is the least adhered to! The development through regular 1-to-1's and team meetings of individual plans for each team member and a quarterly updated team plan highlighting the key things you need to achieve each quarter and painting a picture of the medium term.

All leaders need to do is book the next 1-to-1 or team plan meeting at the end of session ... then never cancel them ... just move them slightly if you need to.

At a 1-to-1 level whether you catch up monthly, quarterly, biannually or annually, just keep the session focused on finding out how they are, understanding any frustrations and helping them develop their skills and career ... if they want to. Often the biggest barrier is the organisation's system ... too long with too many forms to fill in ... really just needs a simple one-pager.

At the team level, again, just focus on developing a simple team plan highlighting the key strategic elements. Hopkins & Ball have a simple one-page format for this (like with individual 1-to-1's). Like the team purpose, let it develop over time and when you have got it to the simplest version ... the team will know and have huge buy in to it as it will be based on their ideas.

Team: Team Name

3 Years to 31 Dec 27	• 50% through 1st tier suppliers (MerCo, Hobsons + 1/2 more)	• Full online systems	• 85% engagement • Electrical PM's x 2 • Some electricians (build subcontractors)	• £8 m t/o • 10% profit • 10% overheads
Year to 31 Dec 25	• More commercial work, less pricing of bespoke works • Focus on 'our place' in the market	• Fully trained all staff on Actos	• Possible additional PM and ongoing development of our estimating resources	• £6 m t/o • 8% profit • 11% overheads
Qtrs to 30 Sep 25	• M&E direct for customers on retails projects • This is starting to take shape with Albas initially, and more enquires being received	• Set up forms on Actos system	• Develop known Electrical capability • Recruit Mechanical Project Manager	• £4.5 m t/o • 7% profit • 12% overheads
	Customers	Infrastructure & processes	People & Communication	Performance

'Team Purpose / Why...'

3. Communication, appreciating people & Team bonding

As individuals we want to feel appreciated and we particularly don't like it if others are appreciated more than us when they don't deserve to be! Fairness (or lack of it) can be the biggest demotivator. So whether you are just saying "thank you" (the cheapest and most underutilised form of appreciation!) or giving people an award, offering them some training, etc, make sure you do it in a fair way that recognises the respective efforts of all team members. You may have to systemise how you do it by putting reminders in your diary – to your team it should come across as natural and ad hoc, but if you don't systemise it you can end up demotivating all those who perceive things as unfair.

Team bonding is again something that needs to be systemised – make sure you have something planned in every quarter. Whether it is something like the Hopkins & Ball Team Challenge, a lunch & learn session, a team walk or even something outside of work, make sure it is regular and inclusive ... a full set of golf-only related activities will usually demotivate more people than it motivates!

Communication is again a simple systemised process – like the Employee Briefing Cycle below – have it regularly planned in and never miss it – as with so much around employee engagement it is important not to start something and then stop it. Whether you plan it in weekly or monthly with the team, make sure it is varied with opportunities for genuine input.

Employee Briefing Cycle



In conclusion, running a highly engaged team is actually quite simple ... particularly when you have the right people on board and have removed any of the wrong people. It is just about having the right mindset of support as a leader and then sticking to simple, proven processes ... like a lot of common sense though, it is often not common practice!

Jerry Hopkins

Mersey and Western Cheshire Network

“Workforce of the Future” Award – IET MWC Annual Dinner

EA Technology Wins “Workforce of the Future” Award

Recognised at the IET Mersey and Western Cheshire 2025 Annual Dinner

A Night to Remember

EA Technology were honoured with the “Workforce of the Future” Award at this year’s prestigious IET Mersey and Western Cheshire Annual Dinner – held at the Hilton Liverpool City Centre on Friday 7 February 2025.

The event brought together over 100 leading engineers, scientists, academics and future talent from across the region. Set against the elegant backdrop of Liverpool’s vibrant waterfront, the evening celebrated innovation, collaboration and the power of education in shaping the future of our industry.

A highlight of the night was an inspiring keynote by *Dr Susan Scurlock MBE*, Founder and CEO of Primary Engineer, who showcased remarkable ideas developed by children across the UK. Her message was clear and compelling – invest in the young, and you invest in a better tomorrow.

“It was one of the most inspiring industry dinners I’ve attended — a real celebration of young talent, innovation, and community spirit.” – *Hamza Ansari, Graduate Consultant, EA Technology.*

Our Award-Winning Vision

The “Workforce of the Future” award is a testament to EA Technology’s long-standing commitment to *developing, empowering and trusting the next generation* of professionals. With 41% of our workforce under 35, we are building a culture that fosters personal growth, technical excellence, and bold innovation.

We champion a range of initiatives that set our early-careers strategy apart:

- *Graduate schemes* that nurture leadership and technical depth through real-world projects,
- *Apprenticeships* in technical and non-technical fields, creating alternative career pathways,
- *Youth training* through paid internships and formal education support,
- A culture of *mentorship, purpose-driven work, and supportive leadership.*

From leading the development of a carbon calculator for the streetworks industry to managing multimillion-pound software programmes, our young professionals are already making a significant mark on the energy sector.

Celebrating Together

Receiving this award in a room filled with students, apprentices and rising stars made the moment even more meaningful. The evening also brought together experienced professionals from across the energy and engineering sectors, creating a rich environment for conversation, connection, and inspiration.

It was a fantastic opportunity to engage with those who have shaped the industry – as well as those who will define its future. We were reminded that our work goes beyond building networks – it’s about building futures.

We’re deeply grateful to the IET for this recognition and to everyone at EA Technology who contributes to our dynamic, inclusive and forward-thinking culture.



Looking Ahead

This win is not just a celebration of what we’ve accomplished – it is a call to continue our journey. By investing in people, championing new ideas, and enabling young professionals to thrive, we are helping shape a smarter, safer and more sustainable energy future.

We are already looking forward to next year’s IET Annual Dinner, and to celebrating even more shared successes with our industry colleagues, partners, and future innovators. Until then -thank you for being part of our story.

Ed Pitchford
Events Manager

FREE EVENTS OPEN TO ALL
Register online at
www.theiet.org/events

Mersey and Western Cheshire Network Workforce of the Future Award

What's the 'fuss' about?

Three years ago, in conjunction with Bilfinger UK, the Local Network developed the idea of a regional Award that would recognise a Company's efforts in the recruitment and development of their Engineering Talent.

The Award is to recognise organisations who have demonstrated a commitment to the industry of the future by investing in talent through graduate schemes, apprentice schemes and youth training schemes.

The WINNER in 2024 was Scottish Power Energy Networks (SPEN).

Setting their entry apart was its visionary approach to workforce planning. The company has ingeniously combined local recruitment with centralized training programs, transforming its workforce ahead of the curve. In doing so, SPEN fills an impressive 50% of its engineering and technical roles and a staggering 90% of its field staff positions through trainee programs.



"Our team were proud to win the Institution of Engineering and Technology (IET) Workforce of the Future Award for their work in the Merseyside and West Cheshire area to transform our current and future workforce for Net Zero."

In fact, they were so proud, their trophy was taken on the road to their various facilities around the country!

And, SPEN agreed to Sponsor the next Trophy!

During discussions about the 'next' one, we decided that it would be good to have this as a 'perpetual' trophy that would be returned each year and Winners names added.

SPEN also agreed to set this as a design project for some of their young Trainees.

The brief we developed was for the Trophy to represent as many Engineering disciplines as possible in order to reflect the broad scope of IET membership while remembering the need to add winners names.

The resulting Trophy represents Engineering Geologists, Designers, Structural, Civil, Mechanical, Electrical and Power Engineers and symbolises the POWER of NETWORKS!



The result!



The designers!

The winner is:
EA Technology.



Will YOUR COMPANY be collecting this "prestigious" trophy on 6 February 2026?

The Award is open to any business in our region – and entry is FREE!

Godfrey Evans



Automation in Industrial Metrology: Introducing Micro-Epsilon UK

In a manufacturing era defined by precision and automation, Micro-Epsilon UK, a subsidiary of the German parent company Micro-Epsilon, stands at the forefront of industrial metrology. The company offers metrology expertise encompassing sensors, systems, and software that empower industry to measure with micrometer accuracy. From laser triangulation and confocal chromatic sensors to interferometers, inductive and capacitive technologies, Micro-Epsilon covers virtually every measurement principle, and delivers solutions tailored to sectors including aerospace, semiconductor manufacturing, battery production, and automation.

Distance Measurement & Inspection

Micro-Epsilon manufacture a range of displacement sensors that can be incorporated into a range of distance and thickness measurement systems.

Laser displacement sensors are designed for non-contact measurement of distance, position, and thickness with micron-level resolution. These compact yet powerful sensors fit in tight spaces central to factory automation.

An example is the optoNCDT 1320: A "plug and play" mini-SMART sensor with a 10–50 mm range. It features intuitive configuration via onboard web interface, factory presets, and a 'quality' slider to adapt to static or dynamic measurements.

A blue laser variant using patented blue laser triangulation enables stable, precise measurements on glowing metals or transparent/organic surfaces – critical in metallurgical or electronics applications. Resolutions reach sub-micron scales, with data capture rates up to 75 kHz.

Inductive and magneto-inductive sensors can offer robust, contactless displacement and vibration measurement in harsh industrial environments; delivering high accuracy despite shock, humidity, or temperature extremes.



The optoNCDT 1320 plug and play laser displacement sensor

Confocal and interferometric sensors deliver nanometre-scale precision. Confocal sensors and white light interferometers provide absolute distance measurement with sub- μm to nm accuracy: ideal for tasks like wafer positioning or surface film thickness analysis

3D Topographic and Surface Measurements

Micro-Epsilon offer 3D sensor systems such as "SurfaceCONTROL" and "ReflectCONTROL". These snapshot-based sensors generate 3D point clouds of matt or shiny surfaces respectively. Deployable in robotics or inline inspection, they detect geometric anomalies, flatness deviations, and form inspection – all in production time.

"ScanCONTROL" 3D Laser profile scanners are high-speed, high-accuracy scanners producing inline 3D profiles for quality control, dimension measurement, and automated part positioning. Use cases include checking parquet boards, aluminium rims, or conveyor-edge positioning – all with embedded intelligence and Software Development Kit support.

Engineered for film, strip, and plate thickness control – including battery electrodes and separators, thickness GAUGE 3D Systems combine capacitive, eddy-current, or interferometric sensors with integrated drives for precision measurement on manufacturing lines.

Why These Products Matter for Automated Metrology

Micro-Epsilon products are widely used for automated metrology applications in manufacturing industry. They provide a complete sensor solution for metrology applications by incorporating the following key features:

Inline integration: All products support common industrial protocols (Ethernet, IO Link, analogue/digital I/O), allowing easy plug-and-play deployment in production.

Webinar

Automation in Industrial Metrology

29th October 2025; 12:30 to 13:30 GMT

Looking to boost precision and automation in your production line? This webinar introduces our metrology tools, and give case studies of how Micro-Epsilon metrology systems have been employed for inline product thickness measurement, facilitate automated inspection with robotics and deploy surface topography measurement technology in various manufacturing applications.



Laser profile scanners

Smart sensor capabilities: Embedded web interfaces, presets and real-time compensation simplify setup and reduce downtime.

Precision across environments: Whether in cleanrooms or heavy industry – and even on glowing metal – Micro-Epsilon sensors deliver repeatable micrometric accuracy.

Industry-specific expertise: With decades in automation, Micro-Epsilon's tools are proven in demanding applications from CNC positioning to battery roll-to-roll inspection.

More than Metrology!

Micro-Epsilon have developed a wide range of industrial sensors alongside our metrology portfolio. In monitoring and optimising your production line, distances, thicknesses etc.,

are just one set of parameters that need to be considered. These include industrially robust infrared pyrometers, and thermal imaging cameras; wavefront sensors for optical testing and fibre optic sensors; and colour sensors to ensure quality and repeatable coloured surfaces.

All these sensors are designed for integration into digital manufacturing systems, and backed by a team of highly experienced development and integration engineers.

Some application areas

The range of application areas for our products is vast and diverse. Our products can be found in additive manufacturing, e.g. positioning, powder application and component dimensioning tasks; metal production – monitoring of the thickness of metal strips; Battery production is an important and growing application. Key uses are the measurement of film thicknesses in process, and temperature measurement during battery film coating.

Let Micro-Epsilon UK Equip Your Automation Toolbox

From compact triangulation sensors to industrial 3D scanners and thickness systems, Micro-Epsilon UK offers the portfolio and expertise needed to implement robust, high-resolution measurement solutions in any factory setting. The upcoming webinar is a perfect opportunity for your team to explore these tools, ask technical questions, and consider pilot projects tailored to your operations

What Engineers Will Gain from the Webinar

Integration insights: See how our sensors can be incorporated in to automated production lines.

Application scope: Explore metrology's vital role in industries – from high-precision semiconductors to battery production and heavy machinery.

Efficiency & quality: Discover how inline, non-contact measurement can reduce scrap, boost throughput, and ensure product consistency.



Optical Precision Micrometers



Complete measuring and inspection systems

Glenn Wedgbrow

Glenn.Wedgbrow@micro-epsilon.co.uk

Semiconductor Wafers Manufacturing



Nexperia is a global semiconductor business, headquartered in Nijmegen, Netherlands, with sites across Europe, Asia and US, including our site in Greater Manchester.

Globally, we employ 12500 people, including 1000 members of #TeamNexperia in Manchester. These roles include highly skilled jobs in manufacturing, R&D and professional service functions.

At Nexperia Manchester we manufacture semiconductor wafers, in one of the world's most complex high-tech manufacturing environments. Our products are manufactured at an atomic level, they do not store, transmit nor contain any software, but are featured within and enable the basic functionality of practically all electric designs.

Nexperia Manchester has a rich history of over 50 years and is also the Headquarters of our Power MOSFETs business group. Our multi-cultural team is made up from over 50 countries, and we are proud to attract to the UK some of the best minds in semiconductors.

Nexperia's slogan is 'efficiency wins'. This encompasses our entire business, and at the core, is our ability to innovate. Innovation flows through our entire business from R&D- that we reinvest 15% of our revenue back into- to the application of we have an ambition to reinvest our products. From our advanced manufacturing processes to our quality laboratories.

Innovation is at its best when there is diversity; and that is why Nexperia invest in our people and actively celebrate diversity on our sites. At Nexperia Manchester there are over 50 nationalities represented and our commitment to

encouraging women into STEM roles globally is reinforced in our ESG report: an aim by 2030 to have 30% of women in managerial roles and 20% of women in R&D functions.

Nexperia also encourage employee led groups including a Pride Network, Women in Nexperia, that showcases our outstanding women across the business and forums for presentations from inspirational individuals from within our business and also external guests. These groups inspire and support members of #TeamNexperia, creating closer communities and a more diverse understanding of the team.



Sustainability is another topic that supports our efficiency mission, both the sustainability of our sites and the application of our products as sustainability enablers. Our ambitious global target of carbon neutrality in scope 1 and 2 emissions by 2035 is a key focus for us and our customers alike.

Nexperia has achieved a successful sustainability performance rating result and received a GOLD medal for the second time from EcoVadis in April 2025. This result placed Nexperia among the top 5% percent (98th percentile) of companies in our industry assessed by EcoVadis in the past 12 months. The result underpins Nexperia's strong sustainability performance.

Efficiency and diversity lead to better innovation. Sustainability provides a framework for a global business, that is focused on its people and rooted in communities across the world; including here in Greater Manchester; to operate in a responsible manner. Innovation and sustainability go hand in hand to best serve our customers, the markets we support and the communities that we operate in.

Hannah Dolan
Nexperia UK

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Updates from Academic, Industrial and Research Partners

4wardFuture



4wardFutures is a Warrington based charity that is working to empower young people of all backgrounds to take control of their future careers and progression opportunities by engaging with employers, universities, and professional organisations against the backdrop of a world that is rapidly changing through the impact of innovation and new technology.

<https://www.4wardfutures.org.uk>

Blue Sky to Green Earth Project – 4wardFutures have recently been awarded funding through the Science and Technology



Facilities Council (STFC) SPARK Award to deliver their 'Blue Sky to Green Earth'



(BS2GE) project. BS2GE connects learners with STFC-funded researchers and professionals and their incredible work. By participating in interactive workshops and events, students will learn how cutting-edge 'Blue Skies' research supported by STFC contributes to solving real-world sustainability challenges on our 'Green Earth.' The project aims to inspire young people to see STEM careers as viable, understand the steps to achieve them, and recognise their societal impact.

By introducing **role models** and showcasing **real people**, BS2GE will inspire young people aged 9 to 11 by highlighting the career and progression pathways across the wide variety of sectors supported by STFC, helping them to improve their confidence in exploring such career opportunities.

If you are an **STFC-funded researcher or professional** and would like to share your work or experience of **Blue Sky Research** with young people through the **BS2GE project**, please contact us.



Merseyside Aviation and Aerospace Project – 4wardFutures have been awarded funding by the Civil Aviation Authority through their Reach for the project initiative to deliver their Merseyside Aviation and Aerospace (MAA) project.

The MMA project aims to introduce young people from disadvantaged areas to the exciting work that people from the aviation and aerospace sectors are doing to design, build and operate aircraft, including in space.

By introducing **role models** and showcasing **real people**, MAA will inspire young people aged 9 to 11 by highlighting



the career and progression pathways across the aviation and aerospace sectors, helping them to improve their confidence in exploring these career opportunities.

AI Futures Project – 4wardFutures have recently piloted their AI Futures project that will give young people aged from 8 to 18-years-old a better understanding of the impact that AI is and will have on their current and future career opportunities across a wide range of sectors such as engineering, space, science, law, finance, art & design, retail, logistics, transport... If you are an engineer researching or working with AI or on the application of AI in your area of work and would like to share your work with young people through the AI Futures project, please contact us.



Virtual Sustainable Futures Careers Expo – As part of the development of their Sustainable Futures programme, 4wardFutures have been hosting a Virtual Sustainable Futures Careers Expo.

<https://www.4wardfutures.org.uk/sustainable-careers-expo>



By exhibiting at the Expo: companies, individuals, and organisations from all sectors will be able to share with young people the work you are doing to combat the climate and ecological challenges humanity faces, alongside how you are reducing the carbon footprint and environmental impact of your own organisations and give an insight in the progression and career opportunities that you can offer young people.

Companies, organisations, training providers, universities... who wish to exhibit are welcome to get in touch. **There is no charge to exhibit at the Expo.** The 4wardFutures team can if required work with you to help create an exhibition stand. **For further information about any of our projects or if you are interested volunteering or working with us, then please contact us at:** media@4wardfutures.org.uk or via <https://www.4wardfutures.org.uk>

Mark Waters

Bilfinger UK Secures Multi-Million-Pound Contract to Enhance UK Gas Distribution Network



BILFINGER

**Your Performance
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Bilfinger UK has secured a multi-million-pound contract with Cadent to update critical elements of the UK's largest gas distribution network. This 12-month construction project, set to begin in Q1 2025, will involve a multi-disciplinary approach encompassing civil, mechanical, and electrical & instrumentation (E&I) scopes:

- 12-month construction project to update critical elements of the UK's largest gas distribution network.
- Multi-disciplinary approach involving civil, mechanical, and electrical & instrumentation (E&I) scopes.

The project will be executed under a framework agreement for Capital Construction Services and will cover four sites: two in the North West of England, one in the Midlands, and one near Cambridge. The works are designed with the future in mind, incorporating elements that will allow for the transportation of hydrogen within the network by

2050. Some components will be semi-future-proof to accommodate this transition.

Ben Hill, Gas Framework Director at Bilfinger Engineering & Maintenance UK, commented: "By utilising joint resources from our engineering, automation, and production teams, we are well-equipped to deliver comprehensive solutions that meet the highest standards of safety, quality and performance."

"Our partnership with Cadent reflects our commitment to innovation, efficiency, and sustainability, and we look forward to continuing our collaboration to meet the challenges of net zero and securing the UK's energy supply."

Will Banks, Head of Commercial – Capital Delivery at Cadent, said: "We are excited to work with Bilfinger UK on this critical project. Their expertise and commitment to safety and innovation align perfectly with our goals for the future of the gas distribution network."

Cadent, the largest gas distribution network in the UK by size, number of assets, and customers, prioritises safety in all its operations. This project will integrate safety measures throughout its execution to ensure the well-being of all stakeholders.



Stacey Lynch

Communications & PR Manager Engineering & Maintenance UK

Mersey and Western Cheshire Network

Obituary – Ian Lucas



Ian Lucas

22 May 1957 – 20 April 2025

Ian Lucas grew up 'tinkering' with cars in his Father's Garage business and learned to drive at a very early age. It was a 'natural' progression into Engineering and Ian started his career as an apprentice Boilermaker with ICI in Widnes & Runcorn where he learnt his skills in welding, becoming one of the first "coded" welders in the company – at the age of 19.

Following his apprenticeship, Ian was introduced to the Design Office where he completed his HNC and was responsible for checking and certifying Pressure Vessel and load bearing designs. Ian was promoted to Design Engineer and from there, he moved to become Training Officer in the company's Training School giving instruction in basic welding and fabrication techniques.

Ian then moved to a department within ICI Chlor-Chemicals designing bespoke solvent degreasing machines fulfilling roles as Design Engineer (Bespoke Customer Projects), Technical Manager, Quality Manager & SHE Manager dealing with everything from Lawn Mowers to Vacuum Chambers in Space!

Following closure of ICI, Ian established his own business supporting former customers of ICI. Ian was recognised as an Expert contributor to the EU Solvent Emissions Directive and built a reputation as a consultant within the solvent cleaning industry.

Ian's passion has always been about protecting the environment, and his most recent work concentrated on Net-Zero/Decarbonisation with specific focus on mass storage of compressed air as an energy saver and efficiency improvement.

Sadly, Ian passed away before seeing a completed installation.

Ian became a Technician Engineer and Institution Member in 1980 and really became an active Volunteer only later in life. He took the role of Lead in the Energy & Environment Special Interest Group for the Local Network at the start of 2024.

He always retained a keen interest in encouraging and developing young Engineers to progress their careers while mentoring them with some of his own accumulated knowledge and skills.

Ian was a life-long Everton supporter and boasted that he was 17,000th on the list for a Season Ticket!

He also played Squash and was a very competent Skier – organising weekends and holidays with his Ski Club.

Ian married his Love in 1986 at St Ann's Church, Rainhill and spent a lot of time with their respective families' doing his utmost for their wellbeing.

Ian is survived by his wife, Carol.

Our heartfelt wishes go to Carol and the extended family.

Godfrey Evans

Local Network Key Contacts

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Can't find the contact you need?

You will find contact details for each event in the event synopsis on pages 16–18.



Search "IET Mersey & Western Cheshire"

on these social media sites to keep up to date with events and activities!

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