

A spotlight on the vibrant north west chemicals sector

Elements



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- A Northwest entrepreneur with a quest to assist in reducing petrochemical reliance attracts some Royal attention
- Cleaning up fast fashion: can it be done?
- Patenting research outputs – AI-implemented inventions
- PSM is about people, plant and systems, and what they do in real life
- Considerations for an effective and efficient 5-year process hazard review
- Keeping pace with opportunity
- Infinity room launches at Catalyst
- Clamp-on flowmeters deliver reliable ~ 215 °C steam measurement.

**Plus many more articles and features from a wide range of
Chemicals Northwest members**

Annual Awards Dinner 2024

SAVE THE DATE

21st March 2024
@ Hilton Deansgate

Elements is published by
Chemicals Northwest
The Innovation Centre
Sci-Tech Daresbury
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Designed and Printed by:



2co Limited
www.2-co.com
Email: info@2-co.com



CIA | Chemical Industries Association

Chemicals Northwest is part of the Chemical Industries Association

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Membership

Would your company benefit from joining an organisation that supports and promotes the chemistry-using sector in the Northwest? Do you want to understand more, and contribute to, the industry issues within the region?

If you are a manufacturer, chemical user or offer products and services to the sector, why not join us today?

<https://www.cia.org.uk/chemicalsnorthwest/Membership/Benefits-Costs/>

2023 rates. (from 1st April 2023)

| | |
|--|----------|
| Micro corporate membership (1 - 10 employees) | £493.28 |
| Standard corporate membership (11-100 employees) | £857.97 |
| Large corporate membership (100+ employees) | £1091.85 |

Our membership year runs from 1 April to 31 March. A pro-rata basis usually applies to joining at other times in the year and we'd be happy to discuss on application.

Welcome

Dear Reader,

Welcome to the Autumn edition of Elements, we hope you had an enjoyable Summer. As we move into the Autumn, we take a look at what the team at Chemicals Northwest have been up to since the last edition of Elements.

We held a successful Regulation update event on the 15th June with a diverse range of speakers giving updates on regulation and the latest topical issues for industry. Our next meeting is planned for the 10th October with Ian Cranshaw covering Free Trade Agreements and CPTPP. A presenter from Dr Knoell will cover REACH Regulations from Korea, China and Taiwan. We will also be joined by a presenter from the Chemical Industries Association who will be giving an update on UK REACH policy and the latest from the Government. The Regulation event is open to all members of Chemicals Northwest and is a roundtable forum for helpful and informative discussions. Please contact Alex or visit the website for further details.

The September breakfast networking event is currently planned for the 28th September, slightly later in the month than normal. At the time of going to print we have the following speakers confirmed. Tom Haynes, Associate Partner, Interim and Permanent solutions from Page Executive who will be introducing Page Executive and sharing insight into the current hiring market and strategies for success. This will be followed by Charles Lynch who will introduce Keyser and Mackay NV, a respected speciality chemical distributor with over 125 years' experience in the field and a recent entry into the UK market. Our third speaking slot will be Holly Evans, Chemicals Team Leader and Liam Shannon, Pharmaceuticals Team Leader from Science Solutions Recruitment. They will be introducing Science Solutions Recruitment's chemical and pharmaceutical divisions, discussing market trends and where the wider chemical and pharmaceutical industry has had success and failure with recruitment, counter offers and time to hire.

We have our date confirmed for the 2024 Chemicals Northwest Awards as the 21st March, taking place once again at the Hilton Manchester Deansgate. We are delighted to be hosting the awards at this iconic venue once again, and after the tremendous success of the 2023 awards we hope to build on this to make 2024 a bigger celebration of achievements from our industry. We are currently working with sponsors and further details on the awards will follow in the next few weeks.

We are working with our members to bring some new events to the Chemicals Northwest membership for 2024 so please keep an eye out for further details.

As always please keep your good news stories, case studies and thought leadership articles coming in to be featured in the Elements. We look forward to working with all going forward and seeing you at some of our events in the near future.

Alex Abraitis - Member Services and Events Manager

About us...

Chemicals Northwest is an established business network wholly owned by the Chemical Industries Association.

With around 160 members we actively promote this important regional sector and our objective is to help membership to grow through;

- **facilitating** networking events, common interest groups and interactive workshops, all aimed at covering topical industry issues.
- **supporting** projects and programmes that identify and enhance business performance and generally support continuous improvement across the sector.
- **promoting** science and engineering based skills, helping to address the region's future needs.
- **improving** the image of the industry overall, including generating a positive reputation, through communicating achievements and success.
- **contributing** to the industry's strategic voice and the national growth agenda aligned to the work of the Chemical Industries Association.
- **connecting** the community of chemistry-using businesses and the vital supply chains here in the Northwest.

Chemicals Northwest really does bring people together! It is an essential feature of successful networking strategies used by many organisations. We coordinate a range of meetings and events to enable 'face to face' networking for the benefit of all members. Every successful business networking organisation also needs effective communications channels.

As a result of gradual development over recent years, getting messages across, promoting member companies and reporting news, Chemicals Northwest has reached new levels of topicality and quality.



A Northwest entrepreneur with a quest to assist in reducing petrochemical reliance attracts some Royal attention

Paul H. Jones, Managing Director of Anacarda Ltd and Bitrez Ltd, both current Queens award for Enterprise winners in the innovation category for specialty polymer manufacturing, completed a clean sweep with his third business. Chemical Processing Services Ltd (CPS) was awarded an inaugural Kings Award for Enterprise 2023, again in the innovation category.

The King welcomed recipients of The King's Award for Enterprise to Buckingham Palace, joined by The Duke and Duchess of Edinburgh and The Duke and Duchess of Gloucester. Paul attended the function for which the Lancashire-based company had secured the award for its recently Patented technology. Paul coined the term Furalkamine for the bio-based technology he developed which is being used to extend the lifespan of products, as part of his holistic view to environmental improvement.

The awards citation says "The unique chemical structure imparts exceptionally high chemical and acid resistance. This allows the formulation of systems that can operate in the most hostile environments, withstand the most arduous conditions, and provide resilient bond lines and protective coatings."

Paul said: "I'm delighted that CPS has won the Inaugural King's Award for Enterprise especially in the innovation category. This specialist business was set up to develop new disruptive technology and it is an honour and a privilege to be recognised with this award".

With little time to rest, Paul had to switch hats back to his Bitrez demands with the second FOREST (Advanced lightweight materials FOR Energy-efficient Structures) EU Horizon funded consortium meeting, being hosted at the Fraunhofer Institute for Manufacturing Technology and Advanced Materials in Bremen, Germany. This meeting brought together consortium members for an opportunity to meet, present, and discuss project progression.

The Fraunhofer Institute for Manufacturing Technology and Advanced Materials IFAM has its main location in the Technology Park Bremen. With approximately 400 employees working on sustainable innovations for industry and society, the IFAM scientists carry out research and development work in interdisciplinary teams for various industrial sectors and application areas.



Consortium members pictured outside the meeting venue.

Key personnel from IFAM are working with Paul on the development and enhancement of biobased Benzoxazines with an aim to increase the biogenic Carbon content, enhance the fire resistance, and generate matrix systems that will aid lightweighting in the electrification of vehicles whilst satisfying the arduous specification requirements.

With the support, guidance, and assistance of his preferred European Patent Attorneys Mathys & Squire who have aided the accelerated Grant of several of the CPS patents through the UK Green Channel, Paul's latest Patent to Grant is the Bio-Benzoxazines that are forming part of the FOREST project and included within the schedule of works. Paul is also looking at opportunities to work with other organisations seeking similar goals and objectives in the hope of forming clusters, enabling further technical sharing and dissemination of information that may support industry progress in the route to decarbonisation. The aim of this project is fully aligned with EU 2030 Climate and Energy challenges.

Paul commented, "We are always looking for opportunities to contribute and support the scientific community in turn changing the face of industrial practice and rectifying anthropogenic damage. I have said it before, but I feel honoured to be part of the FOREST project and able to work alongside the creative partners that form the consortia. We are pushing boundaries with disruptive bio-based polymers, I believe that collectively we will accomplish our target requirements and we will succeed in bringing sustainable and recycled materials to the transport sector to aid their quest to reduce fossil fuel dependency, electrify, and further lightweight for efficiency.

Author: Wendy Howarth

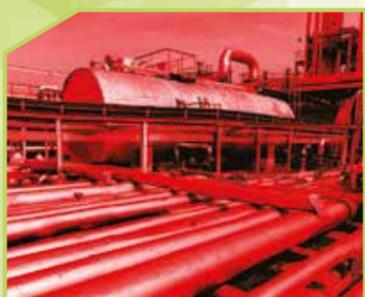
For further details visit <https://www.cps-consultancy.com/> or <https://www.bitrez.com/> To read more about the FOREST project visit - <https://www.forest-project.eu/>





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NaTech Hazards – How Can We Effectively Understand and Assess the Risks?

Natural Hazards Triggering Technological Accidents (NaTechs) lie at the intersection of the natural environment and industrial activities, potentially resulting in severe consequences for both human safety and the environment. As the frequency and severity of natural hazards increase due to climate change, it becomes crucial to effectively understand and assess the risk associated with NaTech events. By implementing proper safeguards and risk reduction strategies, industries and communities can mitigate potential disasters caused by these hazards.

What is a NaTech Hazard?

Firstly, we must understand what is meant by the term 'natural hazard'. Natural hazards are extreme events that occur within the natural environment and pose a risk to society and/or the wider environment. In general, threats from these hazards are categorised between people, goods and environment. In certain scenarios, a domino effect can lead to a secondary hazard, for instance, an earthquake may trigger a landslide, and in turn a volcanic eruption (e.g., the 1980 Mount St Helens eruption). The possibility of secondary hazards must be understood when responding to natural hazards.

The term NaTech refers to instances in which natural hazards initiate events which challenge the safety and operation at hazardous installations. An example of this would be loss of utilities, a significant risk associated with most natural hazards due to issues such as downed power lines, burst water/gas lines etc. This may impact a site's ability to operate normally and safely under these conditions. Any impact a natural hazard can have on a site which has the potential to impact the safe operation of the site is therefore considered a NaTech risk. So, how do we assess this risk?

Understanding and Assessing the Risk

There is a series of questions we must ask ourselves when assessing NaTech risk:

What are the natural hazards of concern? - Only once you know where the risks are coming from can we begin to understand and plan for them.

What are the consequences of the natural hazard; both direct and indirect? - Direct consequences include situations such as physical loss of containment due to damage caused by the natural hazard. Indirect consequences are those which can occur when the site itself is not impacted by the initial event. The consequences of natural hazards can impact a widespread area and can result in the loss of utilities or site access which may then have a knock-on effect at the site, e.g., due to loss of power, or water. By understanding these events, the risk picture can begin to form with sites understanding areas of vulnerability to natural hazards. It is also vital to ensure that any secondary hazards are identified as the design may be suitable for the primary hazard but not the secondary hazard.

What is the risk of this natural hazard? - What is the possibility of the natural hazards you have discussed leading to a NaTech event? It is important to be aware of the likelihood of these events happening, though a low likelihood does not negate the need for sufficient measures to be implemented.

What safeguards are in place to mitigate the risk? - Any site handling hazardous substances should have safeguards in place covering a range of hazards. It is important to note that NaTech hazards may be responsible for the loss of multiple safeguards. Sites should understand the impact of NaTechs on the current safeguards and determine whether any safeguards are designed to be operational in the event of a NaTech incident.

What more can be done to reduce the risk? - Can any additional NaTech-specific safeguards be implemented? Not all barriers are designed to function in a NaTech event, so users should be cautious when crediting existing barriers.

An additional question to consider is the impact of Climate Change - it is important that efforts are made to implement measures that will provide safety down the line, using climate change forecasts to determine what the risk may look like for the site in the future.

The topic is a complex one, extending much further than discussed here. RAS is contributing to efforts to tackle this issue and will be presenting a paper, "NaTech Hazards – What they are, why we should care and what we can do," at IChemE's Hazards 33 Process Safety Conference in Birmingham on Thursday 9th November.

For further information visit <https://www.ras.ltd.uk/>



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Cleaning up fast fashion: can it be done?

A study by Aalto University has revealed that the fashion industry accounts for 10 per cent of global pollution and textile production generates a staggering 92 million tonnes of waste per year. In a bid to tackle this problem, a fresh wave of tech-led disruptors are attempting to clean up the world of fast fashion.

Counting the environmental cost

The textile industry negatively impacts the environment in a variety of ways; two key areas include the use of potentially polluting chemicals and energy-intensive production methods. For natural fibres, such as cotton, the environmental impact begins in the field, due to the use of mechanised irrigation systems to keep crops watered in countries where water supplies are already depleted. Synthetic fertilisers are also used to optimise yields, despite the fact that one tonne of nitrogen fertiliser emits greenhouse gas emissions equivalent to nearly seven tonnes of CO₂.

Regardless of whether natural or synthetic fibres are being used, dyeing and finishing processes also have a significant environmental impact, using potentially hazardous chemicals in large volumes that are often washed away in wastewater, or released into the atmosphere impacting biodiversity and potentially causing respiratory disease.

Becoming more circular

Due to the costs associated with implementing cleaner technology and practises, the pathway to a circular textile economy is currently being led by smaller tech-led innovators, rather than the bigger players. Many of these smaller companies are involved in the development of new fibre recycling technologies, such as finding ways to deal with impurities by separating out polyester blends or innovating cleaner dyeing methods. For example, DyeRecycle, a spinout from Imperial College London, has developed a circular chemical technology to decolour textile waste and reuse old dyes.

Innovative steps

An analysis of recent patent-filing activity in Europe, conducted by Withers & Rogers, has shed light on some of the cutting-edge innovation involved in developing a circular textile economy, with much of the innovation activity focused on cleaning up production processes and facilitating recyclability.

The Aalto University Foundation has a European patent (EP3577271) pending for a process that converts waste textile material into new fibres while limiting the use of harmful chemicals. This process involves cooking waste material in a liquor to remove lignin, which results in a pulp that can be dissolved and spun into new cellulose fibres.

Other innovators are looking to clean up the processes involved in textile recycling by reducing the environmental impact of polymer separation. For example, UK-based Worn Again has a patent (GB2560726) pending for a process that

involves fewer energy-intensive steps for recycling textiles. The method described in the patent application involves the use of an ionic liquid, which is used as part of an adaptive solvent system to separate out the polymers.

Focusing on fibres

Cotton is a widely used raw material in the manufacture of yarns, but its cultivation requires the use of a large amount of water. Spinnova has been granted a European patent (EP2753738) for an innovative method of producing a fibrous yarn without using a large quantity of water, which involves eliminating the need to produce a paper first.

Headquartered in the Netherlands, Flocus is attempting to side-step the use of cotton altogether by working out a way to extract spinnable kapok fibres from the kapok tree. With a patent application (EP3887579) pending, Flocus has developed a means of separating out the longest and cleanest kapok fibres which are suitable for spinning and adjusting their moisture content so they can be blended with a fibre base.

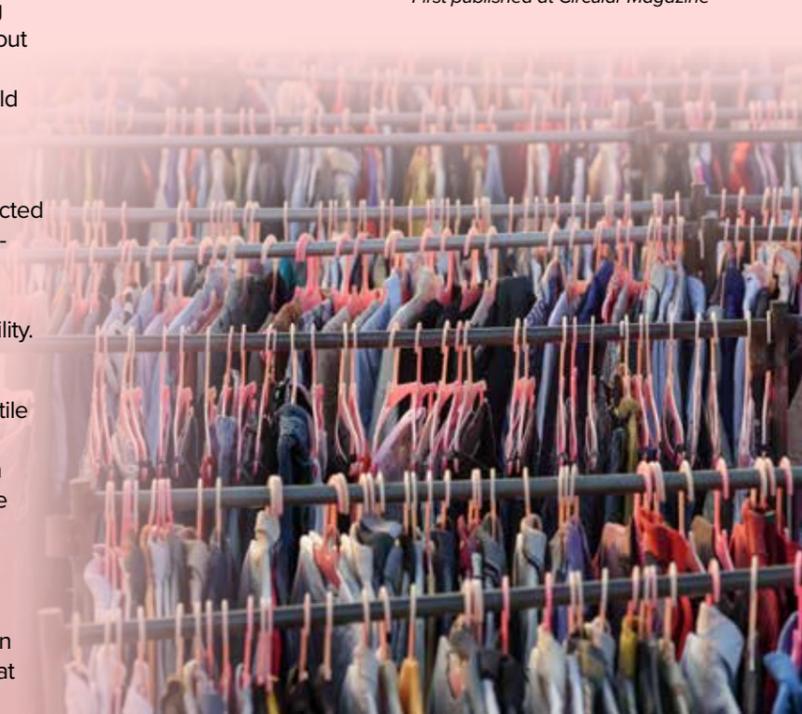
The innovation curve

With so much interest in cleaning up the textile industry and the world of fast fashion, innovation activity is gathering pace. This makes it even more important than usual that disruptors apply for patent protection at an early stage to protect their innovations from copycats and prevent competitors from beating them to market.

*Dr Joanna Thurston is a partner and patent attorney at European intellectual property firm, **Withers & Rogers**. She specialises in advising CleanTech companies on commercialising their innovations.*

*Naomi Higginson is an associate in the Circular Economy group at **Withers & Rogers**. She has experience working with clients improving the sustainability of their processes.*

First published at Circular Magazine



Patenting research outputs – AI-implemented inventions

As we continue our series on considerations for researchers interested in patenting their research outputs, WP Thompson looks at the role Artificial Intelligence (AI) plays in emerging technologies and the problems that can be encountered when attempting to acquire a patent for an AI-implemented invention, as well as considering solutions to those problems.

The future is here...

Artificial Intelligence (AI) has been a hot topic for discussion in the last 12 months, heavily fuelled by the popularity, and controversy, of tools such as ChatGPT. Encompassing various types of computer programs, including machine learning algorithms and artificial neural networks, AI already looks to be becoming central to research in the chemicals sector, including in the screening for new molecules, predicting molecular properties, and optimising synthesis routes and conditions for driving chemical reactions. However, the patentability of new AI-implemented tools, and methods utilising them, can be quite complex.

...but is it patentable?

Case law regarding the patentability of AI-implemented inventions is limited. However, guidance from the European Patent Office (EPO) on the patentability of mathematical methods, computational models and algorithms has been available for some time, including special approaches for AI-implemented inventions, and last year the UK Intellectual Property Office (UKIPO) released guidance specifically on the allowability of AI-implemented inventions. Although worded differently, both UKIPO and EPO guidelines essentially exclude from patentability inventions relating solely to a computer program or a mathematical method. What, then, does this mean for inventors of AI-implemented inventions?

Any port in a storm

Mathematical methods and computer programs in isolation are not patentable before the UKIPO or EPO because they are considered non-technical. Amongst other considerations is that they are complex but something that the human mind could, theoretically, accomplish unaided. As such, a patent application for an AI-implemented invention should at least disclose the AI as being computer-implemented to introduce a technical feature. However, claiming the AI running on a generic computer is not enough to render the invention patentable alone. Rather, the invention must demonstrate a technical contribution – that is, an objective and reproducible technical effect that serves a technical purpose and is inventive. We will explain this requirement in the context of two safe harbours provided by the EPO.

Safe Harbour 1: Applications of AI

An AI program might be patentable if applied to a particular technological field, and linked to a specific technical purpose,

such as controlling a piece of apparatus or a process, or analysing real-world data and outputting actionable information. Again, vague definitions are unlikely to be enough, and inventors might consider filing multiple patent applications, limited to specific uses which are defined in the claims, to acquire protection for their research outputs. Of course, a balance needs to be struck between providing an enabling disclosure and keeping a “black box” method sufficiently opaque to protect proprietary data such as training data. To that end, careful drafting of a patent application to supplement relatively broad claims with support for narrowing amendments can be key to acquiring a patent.

Safe Harbour 2: Implementations of AI

Patentability might also be achievable if the AI is designed with technical considerations of the internal functioning of a computer system or network in mind. Specifically, it might exploit a particular technical property of the system, such as the memory or the processor. For example, the AI could be designed to effect a change in the system implementing it, such as more efficient data storage, or it could require and utilise particular features of the system, such as parallel processors not found in any generic system. As we said earlier, a vaguely defined computing system is unlikely to be enough, meaning specific details of the system may need to be claimed too.

Implications and applications

Acquiring patent protection for AI-implemented inventions is not straightforward, but it is achievable. Frontrunners in the race to patent AI-implemented inventions have taught us a lot, including the need for specific real-world applications or implementations. As the chemicals sector pushes deeper into the uncharted waters represented by AI, it will therefore benefit researchers to consider the real-world effects of their AI-implemented inventions and how they might be protected moving forward.

To find out more from WP Thompson, including how IP could benefit your work, please visit <https://www.wpt.co.uk> or contact Stuart Forrest at sfo@wpt.co.uk

Considerations for an effective and efficient 5-year process hazard review

The Control of Major Accident Hazards (COMAH) 2015 regulations requires upper tier COMAH establishments to review and update their safety report every 5 years. This includes a review of their chosen method to identify major accident hazards (MAH). If the hazard study is not completed correctly, some hazardous scenarios may be missed or incorrectly defined. This can result in errors in the design of protection systems for example; defining the wrong safety instrumented function (SIF) or under-sizing of a pressure relief valve. The hazard study methods commonly used to identify MAHs are HAZID, HAZOP, process hazard review (PHR) or process hazard analysis (PHA).

HAZID is a systematic top-down assessment technique that considers the MAH first and then identifies possible causes before a qualitative assessment of the likelihood and severity. HAZOP on the other hand, uses a bottom-up approach by engaging a structured line by line analysis of a system, process or operation. It identifies deviations and considers if they can lead to a hazard. It also includes qualitative assessment of the likelihood and severity of the consequence. A HAZOP study is more detailed and time consuming compared to a HAZID study. Both techniques complement each other and when applied together can be an effective approach to hazard identification. Even with well-practised HAZID and HAZOP methodologies, there are many pitfalls. Add these potential pitfalls to the resource and time constraints of a 5-year process hazard review and they can amplify the errors made.

A review of any hazard study method is time-consuming and resource-hungry. Streamlining, cost saving and industry skill gaps, make resourcing this important work challenging. This results in different approaches; some companies look to complete a full review of all HAZOPs, others take a more high-level approach and update the HAZID or review by exception. A key improvement that companies can make is to incorporate the updating of hazard studies into their management of change process therefore making it a live document. Companies should also consider the following:

Preparation: Time can be wasted when the team is unfamiliar with the process, the control philosophy, the associated procedures, the alarm response etc. There should be time set aside by the team to gather and learn the appropriate information before the meeting.

Competence: The hazard study review should be performed by a competent person who is familiar with hazard study guidelines and the requirement of the UK HSE.

Independence: It is also useful to have someone that is independent in the hazard study, usually the chair and scribe, so that the team is not blinded to the obvious and to ensure challenging questions are asked.

Detail: More, is a priority in this case. People forget. It can be difficult to recollect discussions from hazard study performed a week ago not to mention 5 years. It is therefore vital that important details are well documented, unambiguous include timelines and assumptions/information used.

Safeguards – Check independence e.g., don't use an alarm associated with the instrument that has failed. Record the “softer” safeguards such as maintenance, training, alarms etc. as these feed into other sections of the safety report. Be careful when copying and pasting, check all the safeguards are relevant to the hazard.

*Lyeanda Robinson MEng CEng, MChemE FS Eng
Principal Process Safety Consultant - AXIOM*

To find out more about how Axiom can support you with Process Hazard Assessments including HAZID and HAZOP, and COMAH safety report updates, please visit <https://www.axiom-ltd.com>



Scan the QR code to find out more

On October 5, CIRS Group, a leading product safety and regulatory consulting firm will be hosting its Global Chemical Regulation Conference in London.

The one-day event will bring together global industry experts and members of the CIRS international team to cover a variety of topics:

| Topic | Speaker |
|---|--|
| Chemicals Policy in the EU – Hot topics and Trends. | Marko Susnik, senior advisor - Austrian Federal Economic Chamber (WKO). |
| Planet, People and Profit: 3Ps of the Triple Bottom Line and the Ecovadis Sustainable Rating. | Sebastien Chaigneau, EHS director - BMI Group. |
| Regulatory Experiences of Single Wall Carbon Nanotubes (SWCNTs). | Gunther Van Kerckhove, H&S lead manager - OCSiAl Group. |
| Latest EU CLP and Global GHS updates. | Michel Hemberg, CEO - Lisam Systems. |
| Global Trade and Supply Chain for UK Companies. | Alastair Gardner, trade specialist (chemical) - Department for Business and Trade, UK. |
| An Introduction to Korea-REACH and Korea-BPR. | Junho Lee and SeoWon Kim - CIRS Korea. |
| Exploring the Chemical Management Regulations in China. | Dean Winder, senior regulatory consultant - CIRS Europe. |
| Overview of Challenges Facing UK Chemicals Companies. | Ian Cranshaw, head of international trade and regions - Chemical Industries Association (CIA). |
| How to Prepare for KKDIIK (Turkey REACH) Registration Deadline? | Elif Koç, managing partner - Chemleg. |

There will also be two panel discussions focused on sustainable development and supply chain challenges.

Together with some of the speakers, panellists include:

- Greta Waissi, vice president and head of regulatory affairs at NordShield, chair of the Finnish Society of Toxicology (FST);
- Pierre Germain, technical and regulatory affairs manager at the European Association of Chemical Distributors (Feccd); and
- Dara Hun, senior director R&D, Incubator & Open Innovation, Indie Brand Integration, Coty.

The event will provide attendees with plenty of opportunities to ask questions about the regions and jurisdictions.

It is open to all professionals in the chemicals industry, including manufacturers, distributors, regulatory affairs managers, and especially those looking to move into new markets or trying to understand their obligations in the ever-changing regulatory landscape.

We are delighted to offer Chemicals Northwest members the early bird price of €199.

Scan the QR code to register and find out more. Or contact Bryan Zhou, deputy general manager of CIRS Europe via Bryan.Zhou@cirs-group.com or +353 1 477 3710.

PSM is about people, plant and systems, and what they do in real life

Good governance of process safety requires a clear strategy, robust policies and procedures, and allocation of appropriate resources. But that alone is not enough. It also requires a positive culture, embodied by the right mix of individual and group values, attitudes, competencies, and behaviours to remain confident that things will get done as expected when no one is watching.

Every organised group of individuals develops a culture, but a good culture makes people feel safe and respected, enabling them to perform at their best.^[1] Without this those involved in process safety management (PSM) will just be a collection of individuals guided by their own values, knowledge, and experience.

A good process safety leader should determine policy, set standards and expectations, and encourage engagement throughout. An effective safety management system (SMS) will provide structure and serve to reinforce the overall safety culture.

All establishments falling under the COMAH Regulations^[2] must prepare a Major Accident Prevent Policy (MAPP) setting out the measures in place for managing major accident hazards.

For lower tier sites the MAPP will be a relatively simple standalone document covering what is to be achieved, referencing essential elements of the underpinning SMS. The MAPP is concerned with people, plant and systems, and what they do in real life^[3] and must demonstrate a commitment to continuous improvement in all aspects.^[4]

For upper tier sites the MAPP must be included as a separate document in the COMAH safety report. In turn, the safety report should detail risks due to credible major accident scenarios on site for personnel, nearby populations, and the environment, and should demonstrate that the MAPP and the SMS for implementing it have been put into effect in accordance with the information set out in Schedule 2 of the Regulations. In essence, the safety report is a snapshot in time, providing stakeholders with a degree of confidence that the systems in place for managing major accident hazards are effective. Further, under Regulation 10, any changes to the SMS that could have significant consequences for the prevention of major accidents or the limitation of the consequences of major accidents to human health and the environment will call for review and, where appropriate, revision of the safety report.

But regardless of planned changes, management systems can degrade with time. Recognising this, Schedule 2 of the Regulations places a requirement on every COMAH operator to adopt and implement procedures "... for periodic systematic assessment of the major accident prevention policy and

the effectiveness and suitability of the safety management system."

Audits are an essential part of any management system and should be carried out as part of normal day to day business. Auditing should be a structured process of collecting information on the efficiency, effectiveness, and reliability of the whole SMS.

In accordance with L111^[4], the audit plan should include details of the:

- areas and activities to be audited
- frequency of audits for each area concerned
- roles and responsibilities
- resources and personnel required for each audit
- audit protocols to be used
- procedures for reporting audit findings
- follow-up procedures, including corrective action management

Different parts of the SMS may be subject to different audit frequencies, based for example on policy, risks or the maturity of the SMS, but the programme must cover the entire SMS and operational areas over time. A well-designed audit programme should also promote workforce engagement, making best use of available resources, and drive improvement towards defined standards and goals. Reports should also help stakeholders to understand the current state of the SMS – the way things are versus defined standards – and what needs to be done to realise the desired future state based on what is reasonably achievable and acceptable to all concerned.

OpenPSM has been designed to help operators manage their SMS audits easily and simply in-house. For more information, go to www.openpsm.uk.

[1] Lead From the Top: 5 Core Responsibilities of a CEO | Entrepreneur
[2] The Control of Major Accident Hazards Regulations 2015 (legislation.gov.uk)
[3] Understanding-comah-new-entrants.pdf (hse.gov.uk)
[4] The Control of Major Accident Hazards Regulations 2015. Guidance on Regulations L111 (hse.gov.uk)



Keeping pace with opportunity

Laker Vent Engineering are an Engineering business servicing the UK process sectors, specialising in piping & mechanical disciplines within highly regulated industries such as chemical manufacturing, petrochemicals, pharmaceuticals & healthcare, power, nuclear, food & brewing.

Our services range from new build green field projects, brownfield improvement & upgrade projects, to long term residence maintenance support & turnover/shutdown works.

“Lakers” were established in 1962, originally known as Lakers (Northern) Ltd. In 1980 a separate company, Vent Engineering, was formed before the two businesses merged in the early 90’s to form Laker Vent Engineering Ltd

Our staff are largely made of trades/trade back grounds and have typically been with us on a journey from apprentice/trainee, through to time served tradesperson. Our management team consist of long-term staff and you will see a number of fathers seeing their sons, and daughters, join the business, uncles seeing their nephews and nieces join.

We see our longevity in the industry and recent success in growth targets being the result of investment in our staff

as well as our systems, processes and procedures which give customers the confidence that we can deliver highly regulated works.



Opportunity over the last 5 years has seen significant increases in our staffing levels and volume; we have seen staffing & revenue increase by over 50%. The opportunity for further growth in the next 5 years and beyond is there; with job creation, being involved in exciting, high impact projects that will contribute to the UK’s efforts towards NET Zero & economic growth – the only thing that will prevent us taking up this huge opportunity, is the availability of skilled people.

ONS statistics indicate that the total UK construction industry workforce is the same today as it was in 1997, and it is

estimated that an additional 400,000 workers will be required by the end of this decade to achieve NET Zero targets.

We are tackling this challenge already within the engineering construction industry. The ECIA surveyed its members and the results indicate that a 50% increase in the numbers of trade staff will be required in 2024; it is estimated that numbers of certain trades, such as Welders, will need to double by Q3 of 2024!

We are seeing a gap between the older generation within the industry, many who are at end of career, and a younger generation, who we find are more likely to move between employers regularly. It is a bit of a generalisation; however, we see a shortfall in the age grouping between 35 & 50 who have built up experience and have appetite and desire to continue their work in the industry over the next 10 to 15 years. As a result, there is real difficulty with recruitment; we are competing with competitors, other clients, projects and industries for the available resource.

work in preparing future trades for the industry. We are moving keen apprentices through college, workshop, onto site and up to craftsman status. Separately, we explored and took up alternative routes such as the ECITB’s “Train to Retain” & “Upskilling” programmes which provide routes to trade from less traditional routes.

To keep pace with the increased numbers of trainees, we incentivised older trade staff to stay involved as trade mentors to help accelerate the progress of apprentices and provided opportunity for progression from within the business, with continued training & development leading to a large proportion of promoted engineers, supervisors & managers starting as Laker Vent trainees.

There is still significant amounts of work to do to keep pace with opportunity and this will involve continuing the good work we are doing, but exploring less conventional ways of getting people into the industry; things like reaching out to groups that would not be seen as traditionally entering the

industry in a trade capacity (eg. 321,000 women in construction in UK, but only 6,240 at site as trade person), provide alternative entry routes not restricted by age or experience (eg. ex-service men & women), incentives for older, experienced trade mentors to stay in the industry (incentives for the individual & the employer), and provide the right working environment and employment benefits to attract & retain staff within the industry.

We do not see this as an easy ride, but look forward to the exciting journey.



So, what do we do about it? Well, we see the only option being to continue doing what we have always done (bring in apprentices and trainees, invest & develop, and ensure the working environment provides security & opportunity for long term employment & progression), but at an accelerated rate.

We are taking an increased number of trainees from the Engineering College in Birkenhead, who are doing great

Tom Ventre, Operations Director, Laker Vent Engineering.
For further details visit <https://lakervent.co.uk/>





Department for
Business & Trade

LOOKING TO **GROW** YOUR BUSINESS INTERNATIONALLY?



The UK chemicals industry is one of the most important exporting sectors in the UK, with more than £37bn of goods exported overseas each year.¹

Demand for the UK chemical industry's innovative and sustainable products remains strong, with companies across the world choosing the UK to manufacture their products.

For free help selling to the world visit [great.gov.uk](https://www.great.gov.uk)

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Hydrogen: The pursuit of progress, not perfection

In the Summer edition of Elements, Antonio Matamala well-described the state of the hydrogen production economy. However, very little remains the same for any length of time, and perhaps even less so in the world of hydrogen production. Hydrogen remains as volatile, but technology around storage advances with almost every vessel that's delivered. Mobile storage too, is increasing in size and safety. And greater efficiencies (in terms of hydrogen delivery, and water and power consumption) are being realised with every model of electrolyser that's conceived.

And, despite some notable disappointments, more and more users are entertaining the use of hydrogen. In Scotland, where I and IKM Consulting are based, there's long been talk of hydrogen as a fuel source for ferries and the odd filling station or two with a dispenser. In particular, Aberdeen City Council has made great strides in its use of, and making available, hydrogen.

Further south on the east coast there are now live opportunities to heat houses and cook meals with zero-carbon fuel. While on the west coast serious conversations are happening around replacing a proportion of natural gas with green hydrogen in isolated gas networks. This might not be perfect, but it must be a step in the right direction in comparison to bringing gas to isolated areas by road-going (diesel-drawn) tankers. Speaking of tankers, we know of several fleet operators that are only holding back from procuring hydrogen-fuelled vehicles because of concerns around reliability of supply.

Hydrogen production in Scotland (and the United Kingdom) makes sense. There is an abundance of its raw ingredients and increasing wherewithal to power production. There's also demand for its by-products, including oxygen and heat.

While this sounds ideal, it presents challenges to developers and their consultants: How to arrive at an optimised solution when the means to meet your objective is evolving? And what is the optimal solution when demand is in a state of rapid, potentially exponential, growth?

These are some of the challenges we're addressing as we design a new production and dispensing facility. Along with our client (and others) we have gone to pragmatic lengths to assess what demand may be in 3-5 years. Nothing's

guaranteed of course, so we propose using several smaller plants in a scalable solution. Smaller plant has the added advantage of allowing our client to respond to seasonal fluctuations in demand. And we're taking lessons from the wind energy sector where more efficient nacelles are installed on existing masts: Bases will be designed and arranged to reduce the effort necessary to 'plug and play' larger plant in the future.

Where power is being drawn from the grid, how much is too much network reinforcement? Where power is from client-operated turbines, a bona fide green solution, it's perhaps less critical. Similarly, where quality can be achieved, water from a watercourse is superior to drawing potable water from stretched water company resources, and there's an albeit modest contribution to alleviating flooding.

Another consideration is process safety and overall safety and security of a site that will attract public, media and industry attention. How much fire/ blast wall is too much? Are hostile vehicles a risk? What's the fire (and fire water) strategy? Should occupied buildings be blast resistant? If so, to what extent? Looking for precedents from existing facilities, the answers vary from simply clad palisade fences to dominating concrete monoliths – not ideal for showcasing new technology!

In a perfect world, I'd now say we have answers to each of the questions above and can see what the facility will look like, how it'll operate and how much it'll cost. The reality is we're on a journey. We know what the journey is and we're travelling it with good data, but that data will continue to improve. Recognising that change is integral to the solution and should be embraced, we're moving ahead.

On that journey with us is an entire team including our client, architects, an array of engineers as well as regulators and the planning authority. Collectively, we're convinced of the part hydrogen plays in our net-zero future. Whether it's the panacea or only part of the picture is another conclusion that will only become clearer over time.

Very soon we hope the public and consumers will join us on our journey too.

For further details visit <https://www.ikmconsulting.co.uk/>



About Paul Robertson
Paul has more than 30 years' experience in civil engineering and construction generally. He has significant experience in leading design teams and developing innovative solutions to emerging issues including some of the earliest SuDS schemes constructed in

Scotland as well as internationally acclaimed car-free housing developments.

Shotton Paper Mill – complex demolition, dismantling and earthworks

Shotton Paper Mill, Deeside, was recently purchased by Eren Group. The Group consists of paper manufacturing, cement production and energy production.

The site was originally reclaimed from the adjacent Dee Estuary for the construction of British Steel Shotton; a huge volume of sand was pumped ashore in the 1940's to enable the site to expand. The steel works closed in 1980, however construction of the paper mill commenced soon after.

With the decline in requirements for newspapers, the new owners quickly identified the requirement to change Shotton's output from newsprint and turn it into a producer of packaging card and tissue paper. The redevelopment requires the demolition of almost the entire production facility before building new processing plant.

John F Hunt Regeneration was contracted to complete a demolition and enabling project for the new plant. The Company has a long history of successfully delivering complex demolition and remediation projects across the UK and immediately set about developing a plan for the demolition works to commence.

Service disconnections and flushing of the miles and miles of pipework and ensuring live sub stations throughout the site were kept working were major complexities; these feed the existing recycling facility and power station which are staying live throughout the demolition. Working closely with the sites' management and the Principal Designer, the JFHR team successfully ensured these plants were kept live until diversions were completed.

The first part of the project was to demolish the finished goods Paper Store to provide a yard suitable for the metal processing operations required.

The paper production halls had been constructed from exceptionally heavy steel sections with heavily reinforced concrete walls and floors, all to withstand the vibrations and forces coming from the huge paper machines they housed. PM1 was the first to be demolished as this machine had been decommissioned several years ago. PM2, however, was still

in use when the new owner purchased the site - as an up-to-date machine, the company are selling the entire asset for reuse elsewhere. Once the cladding sheets were removed the columns were pushed over to allow safer and easier processing on the floor.

Matt Harvey, the Project Manager commented, "As the team entered PM1, they removed the paper machine section by section as they proceeded through the building. Each paper machine was over 100m long and consisted of heavy steel sections filled with several heavy rollers up to 75 tonne in weight. These were designed to squeeze water out of the new paper as it progressed through the machine. Both buildings were adjacent to each other, which meant the decommissioning and demolition phase had to be carefully conducted to save any damage to the PM2 Building and the machinery within."

John F Hunt Regeneration are no strangers to dealing with heavy demolition operations and whilst a combination of mechanical and burning operations have safely downed much of the structure, the ground on which it sat has revealed far more than the project team expected.

Built over the old steelworks, the team has uncovered a large amount of the former site's industrial heritage buried beneath. "We have found piles, concrete footings, slabs, even old chimney bases buried. All the material is being crushed into 6f2 for use in the onward build. However, we have also found some contaminated materials that have required treatment by way of careful segregation and treatment by our land remediation specialist colleagues".

The client was keen to agree early completion so reconstruction operations could commence as soon as possible. "We are used to this, we focus on delivering certain sections as quickly as possible. Having the added issue of uncharted structures below ground has impacted on the time scale slightly, but this has been offset by the work we are able to undertake having appointed specialist subcontractors to help process and recycle material on site."

[For further details visit Home | John F Hunt Regeneration | UK](#)

Ensuring product compliance in the era of quick & easy online shopping

How to overcome the challenges?

Do you own or operate an online platform or web store that enables the trading of chemical products? Do you engage in purchasing chemical substances or mixtures from various online platforms? If yes, then there are critical compliance considerations to take into account while conducting your e-commerce activities.

What is the current landscape like?

The accessibility, convenience and rapid growth of online shopping, further accelerated by the global health crisis (COVID-19), has led to an increase in the sale of products, including those containing hazardous chemicals. The decentralised nature of online sales platforms creates challenges when it comes to overseeing and regulating the sale of products, especially those that contain dangerous chemicals. Unlike traditional physical stores, online platforms often involve numerous sellers, making it difficult for authorities to monitor and enforce adherence to chemical regulations. This presents a significant challenge for authorities in ensuring compliance and safeguarding the health of consumers and the environment.

Given these circumstances, online platforms have unfortunately enabled the unauthorised trading of and access to restricted chemicals by individuals who are not permitted to possess them, such as the general public. This widespread availability of restricted chemicals in online sales represents clear instances of non-compliance with CLP (Classification, Labelling and Packaging) and REACH regulations.

Key considerations to tackle product compliance challenges in online sales

By considering the following points, online sellers can proactively address the challenges of product compliance and foster a safe environment for consumers engaged in online purchases of chemical products while ensuring the businesses to mitigate the risks associated with non-compliance.

1. ECHA's Enforcement Forum (REF - 8): Stay updated with the guidelines and recommendations provided by the European Chemicals Agency's Enforcement Forum (REF - 8). This forum provides a platform where compliance of certain CLP, REACH and BPR duties related to substances, mixtures and articles sold online were assessed.
2. Duty of online suppliers: Recognize the responsibility of online suppliers to comply with relevant regulations and laws regarding the sale of chemical products. Suppliers should thoroughly understand and adhere to the requirements imposed by CLP and REACH regulations.
3. Responsibilities for different online platforms: Differentiate the responsibilities of various online platforms involved

in the sales process, such as websites, web shops, and marketplaces. Each platform should be aware of their obligations and actively collaborate with suppliers to ensure compliance.

4. Requirements for restricted substances: Pay careful attention to the restrictions on certain substances imposed by CLP and REACH regulations. Online sellers must refrain from offering products that contain restricted substances to the general public. Remain vigilant and make required updates to your product catalogues to ensure compliance with these restrictions.
5. Transfer of health-relevant information to the consumer: Facilitate the transfer of health-relevant information to consumers during the online sales process. Clearly communicate any potential hazards associated with the chemical products, provide safety instructions, and ensure that product labelling and documentation comply with regulations.

Ready to take the first step towards product compliance in online sales?

Join Yordas Insight's courses today and ensure a compliant and responsible approach to selling chemical products in the digital marketplace. You can conveniently choose between a virtual half-day classroom and an in-person training session according to your availability and needs. **Find out more: Virtual Classroom | In-Person Training (Manchester).**



As a Chemicals Northwest member you can also receive an additional £20 discount! Contact Jodie to receive this at j.kershaw@yordasgroup.com

Author: Yasemin Ertugrul



Engineering | Consultancy | Project Delivery

With more than 150 years of experience, Otto Simon is proud to serve the North West chemical industry with engineering services. Our capabilities include:

- Process-led multi-discipline engineering team
- Process & functional safety specialists
- Regulatory compliance expertise
- Construction & commissioning staff
- RoSPA Gold Award for outstanding H&S
- ISO 9001 & 45001 certification

As well as chemical manufacture and processing, Otto Simon works with a range of technologies and processes, including:

- Fuel Switching Studies
- Energy Efficiency
- CO2 Reduction
- Hydrogen



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Infinity room launches at Catalyst

A free, immersive exhibit about recycling has launched at Catalyst Science Discovery Centre and Museum. The 'Infinity Room' installation, created by recycling not-for-profit Every Can Counts, aims to teach children and the wider public about the importance of recycling drink cans, as well as illustrating the infinite recyclability of aluminium.

Those who step inside the giant drink can will find themselves in a mirrored room that creates an illusion of being surrounded by an infinite number of suspended aluminium cans. At the same time, a narrator will take them on an educational journey through aluminium can recycling and its environmental benefits. The exhibit, which is made up of 1,500 recycled cans and 25 square metres of mirrors, also makes for an ideal photo opportunity.

Chris Latham-Warde, Programme Manager for Every Can Counts said "Our one-of-a-kind Infinity Room installation has been a great success in both Glasgow and Dundee over the past few months, so we're very excited to be bringing it to yet another new location in the UK. The aim of the exhibit is to raise awareness of the infinite recyclability of aluminium in a visual and interactive way. Every drink can that is recycled could be back on the shop shelf in 60 days, so we hope that visitors to Catalyst Science Discovery Centre are left feeling inspired by this and the vital role that they can play in keeping this cycle going."

Clare Lightfoot, Community Engagement Coordinator at Catalyst said "Informing, educating and inspiring younger generations about the wonders of science and the impact they can have on the environment is what we're all about at Catalyst. It's great to be able to partner with Every Can Counts to host their Infinity Room exhibit and spread the message about the infinite recyclability of aluminium in a fun and interactive way. We look forward to hearing what our

visitors think and the small changes they'll be making in their everyday lives to make sure each and every drink can that they consume is recycled."

The Infinity Room was launched with the help of Mr Moorcroft and his pupils from St Augustines RC Primary School from Runcorn who were the first to explore the room!

Every Can Counts is a unique partnership formed between drink can manufacturers, drink can fillers and the wider recycling industry, all with the goal of reaching a 100% recycling rate for drink cans. The programme provides free recycling support to businesses and organisations around the UK. To find out more information about Every Can Counts, visit www.everycancounts.co.uk

Catalyst is a Science Discovery Centre and Museum offering a host of interactive exhibits, museum archives, historical galleries, family shows and hands-on workshops.

Visitors can explore the Infinity Room at Catalyst free of charge, from 10am – 5pm every day (apart from Mondays when the centre is closed) until the end of August but visitors are encouraged to purchase an admission ticket to experience all of the activities and exhibits the centre has to offer. Visitors buying an admission ticket will automatically receive an annual pass, enabling them to visit multiple times over the next 12 months.

For further information about Catalyst please contact Meryl Jameson, Marketing Manager, Catalyst Science Discovery Centre and Museum, Mersey Road, Widnes, Cheshire WA8 0DF. Email meryl@catalyst.org.uk www.catalyst.org.uk



Learn with IChemE

The Institution of Chemical Engineers (IChemE) is a market leader in process industry training. We offer an extensive range of courses to help chemical and process engineers, and their colleagues, develop their chemical engineering and process safety knowledge.

Learn online or face-to-face, and consider an in-company course if you have a team to train.

Discover how we can support your training needs.



Course topics include



Process safety

- Hazard identification and risk analysis (including HAZOP and LOPA)
- Process safety management
- Understanding hazards (including hydrogen hazards)
- Human factors



Process and plant operations

- Chemical engineering for scientists and other engineers
- Distillation technology
- Plant and production management
- Scale-up of chemical processes



Contract and project management

- Contract law for engineering contracts
- Engineering project management
- IChemE Forms of Contract



Sustainability

- Leading an ESOS Assessment
- Introduction to sustainability
- Life cycle assessment (LCA)

Empowering women in STEM: Unlocking the potential of a diverse future

As we move forward in the 21st century, the world is embracing technological advancements at an unprecedented pace. At the heart of this revolution lies the domain of STEM - Science, Technology, Engineering, and Mathematics (...Maths here in the UK!), driving innovation and progress across various sectors, including in Chemicals. However, a significant challenge remains: the underrepresentation of women in STEM fields.

Hearing on the radio recently a well-known presenter and their team questioning what STEM stands for, it begs the question how we can expect everyone to educate their children about the benefits of a STEM career, if many are not aware of the issue or even know what the 'buzz' acronym means.

Reading the article by Universum Global titled "Global Women in STEM" it highlights the persistent global gender gap and the importance of empowering women to bridge this divide. Let's hope that one day this subject becomes 'a non-issue', but for today, we have to accept that it's an ever-present issue we must continue to tackle.

The article by Universum Global reflects how different countries are at different stages of their progress, as are different companies in the UK and across Europe too, something we see in our work.

We thought it was helpful to summarise some of the main points the report identified to help companies attract more females into their businesses.

- You must be seen to care about diversity and show how you are working towards diversity across your own company.
- By recruiting more females, more females will want to join your company.
- Be empathetic to what will attract and motivate a female to join and stay with your business.
- Organizations and institutions must take a proactive approach to create an enabling environment that nurtures female talent.

Perhaps there is also a bigger piece of work for us to consider though, and that is how we build a bigger and stronger pool of women who have STEM skills.

There has been significant progress in gender equality over the last few years, but despite this the representation of women in STEM roles remains alarmingly low. Through RMG's own search work recruiting for professional level roles in the wide Chemicals and Process Manufacturing sector, and in Healthcare and Life Sciences, we still see that women constitute a minority in certain technical professions or in some short-lists, especially in such as Engineering and Operations Management. The article quotes in the UK that 13% of Scientific and Technical management roles are held by females, with only a fraction reaching leadership positions within STEM organizations.

A critical aspect of empowering women into STEM is continuing to break stereotypes that perpetuate the idea that certain fields are better suited for men, or reiterating intuitive counter-productive beliefs that it's female workers who will need or be more attracted by flexible working conditions, which is quite thought-provoking, having experienced always working with a family. It's becoming increasingly known that stereotypes start from an early age, influencing career choices and educational pursuits. To challenge this narrative, we must keep encouraging young females to explore their curiosity in STEM subjects and keep providing them with positive STEM role models to aspire to.

One thing is for certain, successful and ambitious professional working women or young female students in the UK, do not want 'favours' or to be patronised. Women want to be recruited or to succeed on merit, due to their own potential, skills, or achievements, not just to fit into a certain government or company quota.

It has been reassuring to see the awakened confidence and self-belief of young women in the sector in very recent years, ready to equally compete in their chosen (STEM) career-paths, and rightly so.

There is work still to be done. But as a final takeaway from the article, it stresses the need for continued tailored support and mentorship for women pursuing STEM careers. Providing access to networking opportunities, skill development programs, and leadership training which can significantly improve career progression for women in these fields. Which is good to acknowledge that this is happening in our local Chemicals hub and UK sector network.

Diverse perspectives foster creativity, leading to more well-rounded solutions to complex problems. By encouraging and empowering more women to participate in STEM careers, I believe we can harness the power of diversity and create a more inclusive and equitable world.

Anita Caldwell, Principal Consultant, Chemicals & Process, RMG. For further details visit <https://www.rmg-uk.com/>



Energy efficiency in the chemical industry

With rises in energy prices, it is becoming increasingly important for companies to look for areas where they can reduce energy consumption.

By selecting the right lubricant and the right lubrication partner who provides the necessary experience and know-how, companies can achieve two goals in a single step: saving costs and reducing their environmental footprint.

Lubricants are often overlooked when it comes to increasing energy efficiency, however, in applications involving gearboxes and compressors, they can play an important role. Here, the right choice of lubricants can save between three and five percent of energy, thereby reducing the carbon footprint.

Changing lubricants can bring payback in a short time

Most of the steps a company can take to increase energy efficiency will come at a notable cost.

Upgrading to newer machines, changing equipment, or installing alternative energy sources like solar panels can be expensive, and it can take years to make up for

the costs. With lubricants, on the other hand, payback is immediate, and a change can be made much more quickly. Lubricants offer new ways of attaining sustainability goals, lowering costs, and achieving a better energy balance, but it is vital to look at the whole system and take a before/after comparison.

Why should you trust our solutions?

We can prove what we claim! For more and more companies, the certification of energy and resource management plants are increasingly important. To do so, they need a reliable lubricant partner with the experience to deliver energy savings with the right choice of lubricants. At Klüber Lubrication, we can prove energy savings and carry out projects that comply with internationally recognised standards such as the International Performance Measurement and Verification Protocol (IPMVP) or DIN ISO 50015. Another advantage is provided by our detailed energy savings report that can be part of your energy audit documentation.

For further details visit
<https://www.klueber.com/uk/en/>



Two examples where we have proven energy efficiency through lubrication

1 Business Case: Energy Efficiency increased at cooling towers in Korea
Application: 11 cooling cells
 Mineral Oil with ISO VG 320 used in all gearboxes
 Installed power of 37kW per gearbox
Goal: Reduction of total energy consumption and costs
Result: 6% reduced energy consumption
 Total reduction of 272 MWh and 161 tons of CO₂ emissions/year
 €17,600 total cost savings/year
 Payback time of 4 months

2 Business Case: Significant savings in a specialty gas plant in Thailand
Application: 2 x Turbo Compressors – Cameron ASD 6000
 Rated power: 1120 kW & speed of 2978 rpm
 Lubricant volume = 300L (each)
Goal: Increase efficiency and reduce energy consumption
Result: Extended drain intervals from 2 years to every 3 years
 Total reduction by 46 MWh and 17 tons of CO₂ emissions/year
 €19,500 savings per year on each compressor
 Return of investment in only two months

Embracing Sustainability: Hibiscus's remarkable factory renovation and solar transformation

At Hibiscus, we have always believed in the power of progress and innovation. As the leading company in chemical labelling, we understand the importance of staying ahead of the curve and adapting to the changing needs of our customers and the environment, and we are thrilled to announce that we have recently undergone a major renovation of our factory by rejuvenating our office spaces and taken a significant step towards sustainability by installing solar panels on our roof. This extensive undertaking not only enhances our operational efficiency but also demonstrates our dedication to environmental stewardship.

A facelift that transforms

The factory renovation at Hibiscus is nothing short of extraordinary. We have revamped every corner of our facility to create a workspace that fosters creativity, collaboration, and productivity. From the spacious open-plan offices to the state-of-the-art demonstration rooms, we have carefully considered every aspect of design to ensure that our employees feel motivated and inspired.

Revitalising our offices

The Hibiscus renovation project included a complete overhaul of our offices, focusing on creating an environment that fosters creativity, teamwork, and customer engagement. The design team at 'Workspace Design' carefully considered our employees' feedback and integrated elements that promote communication and adaptability.



One exciting addition to our revitalised offices is the new Print Demo Room. This dedicated space is open to all new and potential customers, providing them with an opportunity to experience our extensive range of print solutions firsthand. Hibiscus understands the importance of showcasing our capabilities, and the Print Demo Room allows us to display the quality and versatility of our printing and software services.

By incorporating the Print Demo Room into our office design, we have created a space that reflects our commitment to innovation and customer-centricity – here, customers can explore various print materials, finishes, and techniques whilst our knowledgeable staff is available to guide them through the

print process, answering questions and offering expert advice. We believe that this interactive experience not only showcases our print solutions but also serves as a platform for creative collaborations and idea generation, and also enhances customer satisfaction and builds stronger relationships.

In addition to the Print Demo Room, the renovated offices feature vibrant and comfortable areas for collaboration, brainstorming, and relaxation. We have prioritised employee well-being, incorporating contemporary designs, ergonomic workstations, and ample natural lighting throughout the workspace. This holistic approach ensures that our employees enjoy a comfortable and aesthetically pleasing workplace that aligns with our company's values.

Harnessing the power of solar energy

At Hibiscus, we are deeply committed to minimising our environmental impact and so, in line with our business sustainability goals, we have undertaken an extensive roofing project to integrate solar panels into our factory building.

Understanding the importance of transitioning to sustainable energy sources, we decided to leverage the abundant sunlight available to us which not only

reduces our reliance on traditional energy sources but also positions us as a leader in renewable energy adoption within our industry.

The integration of solar panels enables us to generate clean energy, resulting in reduced electricity bills and the stabilisation of our electricity costs over the long term.

Embracing a new chapter of growth

The installation of solar panels at Hibiscus represent a significant milestone in our sustainability journey and by embracing solar energy, we are proud to be at the forefront of environmentally conscious manufacturing practices.

The decision to renovate our factory was driven by our commitment to providing our employees with a conducive and inspiring work environment. We recognized the need to create a space that fosters collaboration, productivity, and overall well-being. By investing in the renovation project, we aimed to enhance both the functionality and aesthetics of the Hibiscus workspace.

Looking towards a bright future

The extensive factory renovation marks a significant milestone in Hibiscus's journey towards sustainability and we firmly believe that every step we take towards minimising our environmental impact makes a genuine difference.

In recognition of our efforts, we are proud to hold the rare accreditation of ISO14001 Environmental Management, which is a significant achievement for a manufacturer of products of our nature. This prestigious accreditation supports organisations in identifying, managing, monitoring and controlling environmental processes and highlights our commitment to minimising our environmental impact and ensuring sustainable practices throughout our operations.

As Hibiscus moves forward, we remain committed to investing in innovative technologies and sustainable initiatives and will continue to explore ways to reduce waste, conserve resources, and positively contribute to the communities in which we operate.

For further details visit <https://www.hibiscus-plc.co.uk/>

Helping businesses
protect and utilise
chemistry-based
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Innovation | Branding | Strategy | Solutions

Clamp-on flowmeters deliver reliable ~ 215 °C steam measurement

With the ability to handle incredibly high-temperature and high-pressure fluids such as superheated steam, non-invasive clamp-on ultrasonic technology is taking away the worry of downtime for plant operators looking for an accurate measurement solution, without the risk of contamination. Because flowmeters are safely attached to the outside of the pipe, there's no need for any process interruption whatsoever.

Measuring the flow rate of high temperature steam with ultrasonic flowmeters demands the use of the cross-correlation method rather than the more commonly used transit-time difference principle. Two pairs of ultrasonic transducers are mounted on the pipe at a defined distance from one another, forming two acoustic measurement barriers. The ultrasonic signals radiated into the pipe are modulated by the vortices of the turbulently flowing fluid, and because the vortices are carried along by the flow, they pass through the two measurement barriers with a time delay. By cross-correlating the modulation signals over time, the flowmeter is able to determine the flow velocity of the steam and calculate the mass flow based on the geometry of the measuring point and the physical parameters.

Avoiding a plant shutdown

At a German waste-to-energy plant, it is a fundamental belief that waste should be seen as a precious resource. Recycling

the waste of well over a million people, operators were struggling to deal with increasing measurement errors from their existing inline ultrasonic measurement system, installed in the inlet to a turbine. The measurement is required for balancing, as well as to protect the sensitive turbine from excess steam.

System technicians needed an effective replacement measurement technology that would take little effort to install, and not disrupt processes – because if the pipeline needed to be opened, the entire waste incineration plant would have to be shut down.

Invaluable on-site testing prior to installation

A key advantage of non-invasive clamp-on flowmeters is that suitability can be tested onsite before installation takes place, and modifications can also be made at any time if necessary. This meant that service technicians were able to adapt the installation and the transducer technology, while the developmental engineers at the company's headquarters analysed measurement and diagnostic data.

With clamp-on ultrasonic technology now permanently installed, the waste-to-energy plant has the benefit of precise and reliable steam quantity measurement, which completely replaces the old inline measurement that was prone to failure.

For more detailed information on the benefits of non-invasive ultrasonic flow measurement in the measurement of steam, contact Simon Millington - www.flexim.co.uk | sales@flexim.co.uk | +44 (0)1606 781 420 industry, contact Simon Millington - www.flexim.co.uk | sales@flexim.co.uk | +44 (0)1606 781 420



CIRS Group

At the CIRS Group, we use our technical expertise, resources, and international network to provide comprehensive compliance services globally. We help clients gain a competitive advantage by reducing business risks associated with regulatory affairs.

Global GHS compliance

We provide safety data sheet and labelling services for North America, Europe, the UK, China and the Asia Pacific region.

We also offer chemical consumer product labelling and 24-hour emergency telephone number services for China. This includes compliance with China's new rules on QR codes for hazardous chemicals.

Global chemical notification and registration

We provide EU REACH registration and Only Representative (OR) services to companies globally. We were the first company in China to offer support with EU REACH registrations and now account for 70% of the Chinese chemical consulting market.

We also offer the following registration services:

- China: new chemical substances (MEE Order

- 12) and hazardous substances;
- South Korea: K-REACH, KBPR and Kosha;
- Taiwan: TCSCA and Osha;
- Turkey: KKDIK; and
- India CMSR.

We can also provide chemical notifications in other regions including Japan the Philippines, the US and Australia.

Cosmetic services

In recent years we have seen a real increase in the demand for cosmetic-related services and as such we now offer a variety of services including notification and registration for China, South Korea, the EU and the UK.

We provide the following services for the EU and the UK:

- pre-clinical and clinical safety trials;
- hazard profiles and risk assessments;
- regulatory monitoring;
- product information file (PIF); and
- labelling and communication.

For China, we offer a variety of services including being able to assist with cosmetic ingredient safety information code application via the NMPA platform.



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www.linkedin.com/company/chemical-inspection-and-regulation-service-limited

LinkedIn regulatory newsletter:

www.linkedin.com/newsletters/6962380396164489216/



Keyser & Mackay

Your partner in chemical distribution

Keyser & Mackay is a market oriented agent and distributor of chemical raw materials and industrial equipment, acting as an intermediary between customers and suppliers. Keyser and Mackay NV has their headquarters in Amsterdam, Holland and has been active since 1894, regional offices are spread across Europe, with locations in Belgium, France, Germany, Switzerland, Spain and Poland. Keyser and Mackay started to operate in the United Kingdom in April 2022, under the management of Charles Lynch based in the North West of England. Charles Lynch has been in the chemical industry since 1992 and has held senior management roles within Solvay Interox Ltd and Incorez Limited both located in the North West of England.

We have a strong focus on chemical specialties for the formulating industries. Keyser & Mackay represents over 100 suppliers producing a wide range of products including additives, pigments, fillers, polymers, surfactants, resins,

silica's wax emulsions, epoxy hardeners, silanes and many more, serving a wide variety of industries like coatings, inks, adhesives, sealants, plastics, construction, food, pharmaceuticals, personal care and many others.

In our philosophy, transparency toward our customers and principals is one of the most important elements that differentiates Keyser & Mackay from other distributors. Providing technical solutions, delivering service and adding value are key drivers of the sales teams.



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Hibiscus Plc

Hibiscus Plc is one of the UK's leading manufacturers of chemical labels and hazard communication compliance software. For over 40 years they have specialised in providing high-quality labelling solutions for the chemical and hazardous goods industries and are renowned for their knowledge of industry legislation and the durability and performance of their products.

Hibiscus provides a wide range of label options to meet various needs, including GHS/CLP labels, ADR transport labels, off-the-shelf hazard warning labels and durable tags. These labels are specifically designed to meet the strict requirements of the chemical industry, where accuracy and clarity are essential. Constructed from BS5609-certified materials that can withstand harsh conditions, including weathering, abrasion and UV light, Hibiscus' labels deliver long-lasting adhesion and legibility ensuring that the vital information remains clearly visible throughout the product's lifespan.

Hibiscus has also developed a software range focused on chemical classification, safety datasheets, and the creation of On-Demand BS5609-compliant chemical labels. As a partner of printer manufacturers such as Lexmark, Toshiba and Epson, Hibiscus are also able to provide printers specially calibrated to give the best possible performance in hazardous goods labelling.

Hibiscus' commitment to quality and customer service has made it a respected provider of labels and software and it continues to innovate and improve its products and services to meet the evolving needs of the chemical sector, making it a trusted name in the industry and a dependable partner for businesses looking for reliable labelling solutions.



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Page Executive

Page Executive – the executive recruitment division of PageGroup – provides a range of search, selection and talent management solutions for organisations needing to recruit at Board- and Director-level. We are recognised for our powerful in-house research function, speed and flexibility of our response, and high success rates in finding suitably qualified leaders.

- **Assignment success rate 26% higher than UK average**
- **Speed to hire 42% faster than industry average**
- **100% candidate satisfaction score year-to-date in 2023**

Our consultants work closely with every client, to understand their need, provide market insight and develop a strategy that will identify, engage and assess the best possible leaders.

Page Executive works closely with all types of organisations, from family-run businesses and SMEs, to multinationals and young start-ups at the cutting edge of innovation. By partnering with Page Executive, you get more than just qualified candidates. We offer industry-leading

guidance on profiles that can implement DE&I strategies, hit sustainability targets and adapt decisively to a constantly evolving business landscape.

"We are thrilled to announce our exciting new partnership with Chemicals Northwest, solidifying our commitment to driving excellence in executive recruitment within the UK Chemicals sector."

Through collaboration with CNW, Page Executive hopes to bring real added value by offering exclusive insights into senior hiring trends and the executive recruitment market. We are also on hand to support and consult organisations through their ESG and DE&I journeys, while helping to better define their employer value proposition - ensuring they continue to attract the best leadership talent.

We look forward to working with CNW, not only as executive search suppliers, but as true industry partner."

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150+ Speakers



Supplying to the Chemical Industry

Knowing your local supply chains is important, and suppliers of expertise, solutions and great products are right here in the northwest. CNW members have a strong association with and many years of experience supplying to the chemical industry. The companies listed in this directory cover a wide range of products and services. They have established customers in the sector, with proven track records. Many will be well known, long-standing firms and there will also be new and innovative businesses that you may not have heard about. Effective supply partnerships, delivering success for all! For more details, the websites for the listed companies and organisations can be found at:
<https://www.cia.org.uk/chemicalsnorthwest/Membership/Our-Members/>

Chemicals Distribution, logistics & chemical handling

2M Holdings Ltd

Chemical distribution and related services of sample management, storage and blending. Provision of AdBlue, Samsol products, packed chlorine and TRIKLONE & PERKLONE chlorinated solvents. Markets served include: automotive, precision cleaning, coating, oilfield & refineries, flavours, fragrances, surfactants for personal care, household and industrial cleaning and pharmaceuticals.

Actikem Ltd

An ISO9001 certified business, specialising in a range of chemical processes and manufacturing services, including mixing, storage and re-packaging. We provide toll and custom manufacturing services for SMEs as well as blue-chip organisations, and supply customers with on-tap production facilities, offering them potential cost-savings and greater flexibility.

F2 Chemicals Ltd

As a specialist in the handling of fluorine gas, F2 Chemicals Ltd offers a variety of organofluorine products all manufactured at our Preston plant. Our primary product is a range of high specification perfluorocarbons, such as octafluoropropane and perfluorodecalin, under the Flutec tradename, used in applications including medical, tracers, plasma-cleaning, cooling and cosmetics.

Hibiscus

Hibiscus is one of the UK's leading manufacturers of chemical labels and hazard communication compliance software. For over 40 years they have specialised in providing high-quality labelling solutions for the chemical and hazardous goods industries and are renowned for their knowledge of industry legislation and for the durability and excellent performance of their products.

Hosokawa Micron Ltd

Integrated powder processing technologies including: size reduction, air classification, mixing, drying, containment equipment such as gloveboxes and downflow booths. Contract processing services for 1kg to multi-tonne lots. Remote monitoring solutions that include: condition monitoring, analytics for improving product quality and energy efficiency and on-line diagnostics for predictive maintenance and improved plant availability.

Itac

Itac specialise in developing high performance solvent-based adhesives and coatings. We design and manufacture bespoke adhesives and coatings formulations, enabling our customers to develop market leading products critical to countless end use applications. Itac also provide confidential toll manufacturing services allowing our clients to focus on their business objectives.

Kanon Liquid Handling Ltd

Design and manufacture of drum, IBC and container filling systems ranging from fully automated robotic systems to simple manual machines. Full range of marine, road and rail tanker loading/unloading and safe access equipment. Distributor for Mann-Tek couplings, with repair facility and 'return to base' option.

Keyser & Mackay

Keyser & Mackay is a market oriented agent and distributor of chemical raw materials and industrial equipment, acting as an intermediary between customers and suppliers. Keyser and Mackay NV has their headquarters in Amsterdam, Holland and has been active since 1894. With over 125 years' experience, the company's success today is down to reaping the benefits of all those generations of staff that have been or still are working for it. Today, the group has offices in the Netherlands, Belgium, France, Switzerland, Germany, Poland and Spain, and has started another chapter with the recent entry into the UK market.

Klüber

Global manufacturer of over 2500 specialty lubricants for virtually every industry, Klüber Lubrication high-performance speciality lubricants and effective lubrication management programs enable customers to achieve their operational efficiency goals, increase reliability, and lower the total cost of ownership across assets.

Suez Water Technologies and Solutions

Suez Water Technologies and Solutions is one of the world's leading providers of water treatment chemicals, services and equipment. Through focussing on customer service, value delivery and research and development of new products, we have been instrumental in helping our customers overcome the world's toughest water and process challenges.

Education, training & skills

Catalyst Science Discovery Centre

An independent charitable trust playing a pivotal role in promoting science across the Northwest. Catalyst works in conjunction with industry partners to excite young people about all STEM subjects and careers available within the science sector. Companies can also sponsor a local school to visit and attend industry days.

Centre for Industry Education Collaboration

CIEC supports companies in making credible and sustainable links with primary schools, in order to inspire the next generation of scientists and engineers. We train STEM professionals to improve their communication skills, and develop industry-focused activities for use directly by teachers or by ambassadors visiting schools.

Chemistry with Cabbage

We work with students of all ages, demonstrating through practical experiments, the relevance of chemistry in solving problems. Research shows that children make career choices very early on, so capturing their imagination early is important. Chemical companies are welcome to support our hands-on work in primary schools.

IChemE

The leading professional qualifying body for chemical, biochemical and process engineers.

TTE Training Ltd

Engineering training and apprenticeships focused on whole person development and bridging the sector's skills gap. The learning environment will be one which is welcoming, safe and inspiring, appropriate to the subjects and responsive to the needs of the learner.

Wirral Met College

Provision of education and training, supporting innovation and development. The College is pioneering SIP traineeship programmes with local employers, preparing young people for science apprenticeships. New STEM Centre opened in 2016.

Engineering products & services

Addison Project

Addison Project is a Multi-Disciplined Engineering Project Management & Design organisation, established in 1997, with offices located in Cheshire, Lancashire and Teesside. We have an in-house team of engineers and designers circa 130 people, catering for mechanical, civil, structural, EC&I, process engineering and a full range of CDM services.

Beamex

Beamex helps its customers to find a better way to calibrate, according to the most demanding requirements of process instrumentation. Beamex offers a comprehensive range of products and services – from portable calibrators to workstations, calibration accessories, calibration software, industry-specific solutions and professional services.

CDR Pumps UK

A leading independent Pump manufacturer. Since opening our doors 60 years ago, we have gone from strength to strength bringing you a company that has the product, service and knowledge to support the chemical, nuclear and pharmaceutical industries on a global scale. And small enough to give you the individual care and attention you need yet big enough to support multi-site, multi-national blue-chip chemical companies. Our global manufacturing facility in Milan is strategically located to support our customers across the world.

Dron & Dickson

Dron & Dickson are recognised market leaders in the supply and maintenance of hazardous area electrical equipment. Our Engineering Services and Wholesale divisions offer bespoke solutions incorporating the very latest industry standard and safety legislation.

Flexim Instruments UK Ltd

We support UK clients with their measurement, commissioning, verification & maintenance needs. Offering clamp-on flow metering of liquids & gases; SIL 2 for safety critical duties; mass flow or concentration measurement options from outside the pipe; virtually zero maintenance; no cost escalation with exotic pipe, pressure or temperature; no outages for commissioning or maintenance; zero leak paths

Laker Vent Engineering Ltd

Supply, fabrication and installation of process and utility piping systems. Project management, detailing, procurement, on and off-site fabrication and installation of pipework and coded welding. Associated steelwork supporting and mechanical installation of plant and equipment. Testing and Handover. Pipework and steelwork is fabricated to specific customer-needs and conforms to all appropriate ISO, BS EN and ASME standards and specifications.

Know your supply chains

Engineering products & services

Lokring UK

Lokring UK offer technical engineering support and sales for Lokring technology across the UK. The Lokring "Cold Weld" pipe and tube joint reduces the need for hot work, NDT inspection and reduces on site resources. Code compliant with ASME B31. Lokring is a Safer, Faster, Lower Cost replacement for site welding and flanged fabrication.

Manntek AB

Supply of safety dry disconnect and safety breakaway couplings. Comprehensive range of specialist dry quick release couplings to suit 99% of known chemical applications. Bespoke solutions with a size range of ¾" to 8" nb. Dry disconnect couplings are made to NATO standard Stanag 3756.

METTLER TOLEDO

Mettler Toledo manufacture & service weighing, analytical and inspection equipment used throughout the product cycle from Research & Development, through Scale-Up & Production to Quality Control, Storage & Despatch. We work with our customers to understand and achieve their business goals, including key areas of safety, quality, productivity and sustainability.

MCE Group

Offering valve service and overhaul in our state-of-the-art service workshops, or on site, using OEM parts, from single valves to complete outages. European distributor for ValvTechnologies, providing severe service, zero-leakage isolation valve solutions, setting the standard for the next generation of valves for the chemical industry.

O'Hare Engineering Design Ltd

Innovative, Detailed, Working Solutions. O'Hare Engineering Design Ltd. are providers of 3D laser scanning, mechanical and pipe design solutions. With over 18 years' experience, we know that accuracy is fundamentally the most important element in every engineering design project, so our client focused approach uses the latest technology to provide an effective solution that is sure to hit the brief, every time.

Perry Process Equipment Ltd

Buying and selling of high quality used processing plant and equipment. Savings of up to 70% on the cost of process equipment, full mechanical and electrical refurbishment and equipment immediately available from stock. Centrifuges, dryers, evaporators, filters, heat exchangers, mills, mixers, reactors, separators, tanks.

Pumptec Engineering Services

Specialises in supporting the chemical industry in the inspection, repair, overhaul and fitting of all types of rotating equipment. Our highly trained engineers can support your routine maintenance, call outs and shutdowns. Our Wirral based machine shop can complete overhauls on your pumps, fans and mixers.

ProDecon®

Providing industrial service solutions to the Oil&Gas, Chemical, Power, Pharmaceutical and Industrial sectors. Specialising in hazardous hydrocarbon and chemical environments. ProDecon® has a unique range of technical expertise, that enables us to support customers with restoring process performance and providing maintenance risk management through bespoke industrial cleaning solutions.

SABSCO (Steam and Air Blowing Service Company)

is the British subsidiary of the Solarca Group, with offices in Kent. They have been providing world-class steam/air blowing services on projects across the globe since 2003. With the addition of SABSCO, the Solarca Group gained a major competitive advantage: the ability to offer integrated chemical cleaning and steam/air blowing services. World-renowned in their field, they have been selected by leading engineering companies for large-scale steam/air blowing projects in every corner of the globe

Studley Engineering Ltd

A multi-disciplined mechanical and electrical engineering contractor, providing a comprehensive service to the process industries in disciplines including: steelwork, welding, maintenance, site services, pipework, tanks and vessels. Over time we have gained an enviable reputation as a reliable, responsive, motivated contractor that delivers safe, high quality, cost effective work.

Swagelok Manchester

Fluid system solutions, products, training and services. Supply of over 7000 fluid system components including; fittings, hoses, tubing, regulators, equipment servicing and custom fabricated solutions. Provision of practical information, know-how, tools and speciality services needed to purchase, manage and apply them successfully.

Yokogawa

Yokogawa is a leading provider of field instrumentation, safety systems, industrial automation and digital transformation solutions. IIOT, OT Cybersecurity and Alarm Management are specific areas of focus for Yokogawa's Advanced Solutions team with a number of major projects currently being delivered across Europe.

Engineering project management & energy

6 Engineering

Is a safety engineering consultancy for the major hazard industries specialising in process and functional safety. Our mission is to provide world class safety expertise, helping you to keep people and assets free from unnecessary risk. Our site engineers can be there to support you when you need us. See more at www.6engineering.co.uk

Atlas Copco Rental UK

Provides temporary cost and energy efficient solutions for long- or short-term demands, planned maintenance or unexpected emergencies. Our engineers design the most suitable temporary installation, utilising our fleet of state-of-the-art equipment which includes 100% oil-free Class 0 and oil-injected compressed air at medium or high pressure, generators for power, and nitrogen. Quality of service, environmental care and personnel safety are guaranteed by our triple ISO certification.

Axiom Engineering Associates Ltd

A multi-award-winning, asset management solutions provider, supporting the chemical, pharmaceutical, oil & gas, bulk storage, power, renewables and related industries. With integration of their Materials, Mechanical, Inspection, Process Engineering and Process Safety Services, Axiom are uniquely positioned to identify and mitigate key through-life risks across the entire asset life cycle.

Graham Hart (Process Technology) Ltd

Delivering high integrity heat transfer equipment for over 45 years. The company has a strong emphasis on Chemical/Process & Mechanical Engineering backed up by an advanced manufacturing facility.

IKM Consulting

With 25 years of civil & structural engineering and environmental consulting experience, IKM's portfolio in high-hazard and regulated industries is extensive. With offices in Runcorn and Grangemouth, IKM specialises in consulting services around asset integrity, secondary & tertiary containment, asset infrastructure inspections, environmental risk assessments and COMAH compliance.

John F Hunt Regeneration Ltd

John F Hunt Regeneration are a trusted partner for brownfield demolition, remediation, water treatment and enabling services. As part of the John F Hunt Group, we have the scale and financial stability to provide a complete works package no matter the size of the scheme.

Otto Simon Ltd

Diverse engineering consultancy and project delivery organisation. Initial consultations, technical and commercial due diligence and front-end design and definition. Feasibility studies through design, supply, erection, and commissioning services using in-house and licensed technology. Services for complete plants or upgrades. Procurement, construction management, start-up and operation & maintenance expertise.

PM PROJEN

A multi-disciplined engineering, design and project management business working across a range of market sectors for a diverse mix of clients from SMEs to multinational blue-chip companies. We are part of PM Group, a 2,200 strong, employee owned company operating across Europe, Asia and the USA.

Engineering, IT & process consultants

Gexcon UK Ltd

Safety and risk management and advanced dispersion, explosion and fire modelling. Unique expertise and shared knowledge on how to prevent explosion accidents. Carrying out accident investigations and dedicated facilities for physical testing. Ventilation and dispersion modelling also available. Hazardous area classification and quantitative and qualitative risk analysis and assessment.

OpenPSM

OpenPSM® is a cloud-based software solution, developed to help businesses manufacturing or handling hazardous chemicals meet the requirements of modern risk-based process safety legislation. Providing a unique framework allowing you to log and assess every aspect of your company's process safety management programme, OpenPSM® necessarily supports engagement from shopfloor to boardroom, allowing everyone with an active part to play in process safety to have relevant information to hand.

Siemens Digital Factory & Process Industries and Drives

Productivity and efficiency requirements continuously increase in the field of process automation. A comprehensive range of process automation and Drives products as well as an award-winning range of training and support services.

Environment, health & safety risk management

ABS Consulting

A global process safety consultancy and training services provider with regional headquarters in Warrington, UK. Our expertise in data-driven risk and reliability includes a range of capabilities: root cause analysis, incident investigation, organisational culture evaluation, risk management, process hazard analysis, bow-tie and data science techniques. Our approved process safety leadership training courses and proficiencies also include building risk assessments, HAZOP analysis, compliance auditing, asset integrity management competency assurance and management systems certification services.

BakerRisk Europe Ltd

Dedicated to help predict, prevent and mitigate hazards and explosions, fires and toxic releases. Specialising in process safety and risk management, we help clients understand their risks and offer cost-effective risk management solutions. Success is delivered through proven knowledge and experience, innovative research and unique engineering capabilities.

Chemical and Industrial Consultants Association

An association of independent consultants with extensive experience, many having worked in the chemical industry, across various fields. Provision of technical and business advice on almost every aspect of chemical manufacture, development, marketing and management.

RAS Ltd

Expertise that covers the full range of risk assessment and management services across; safety risk, business risk and environmental risk. Carry out Quantitative risk Assessments and Predictive & consequence modelling, through 'softer' risks affecting an organisation's reputation.

RPS Group

Provision of specialist consultancy to help those with responsibility for health and safety achieve compliance. With particular expertise in the chemicals sector, we provide support from plant development through to operation. Core services include: ATEX/DSEAR, asbestos, BowTie analysis, CDM, COMAH support, fire safety engineering, functional safety, hazard identification, Legionella, occupation health and risk assessment/analysis.

SLR Consulting

A unique blend of leadership, management, consulting, engineering and training services is offered to the chemicals industry. A forerunner in sustainable process safety management combined with proven business improvement capabilities enables delivery of practical solutions to promote safety and efficiency in design, operation and maintenance of complex hazardous facilities.

Facilities, finance and other business services

Department for Business & Trade

Operational support for British exports as well as facilitating inward and outward investment activity. Support is given to first-time exporters or established exporters requiring more help with accessing more difficult markets or putting strategic alliances in place. Access to expert advice, trade services, training and events.

Pen Underwriting incorporating OAMPS

Specialist Insurance services to high hazard manufacturing and haulage industries. Motor fleets, property, liability and transit policies. We help clients minimise risk through proactive risk management and a range of training and response services to assist companies in planning for and dealing with incidents and emergencies.

Sci-Tech Daresbury

We are a national science and innovation campus, and enterprise zone providing a range of office, laboratory and workshop accommodation for technology companies (from a desk to large laboratory and office units). Companies have access to a range of facilities covering material analysis, virtual design & simulation, and rapid prototyping.

STFC Innovations Technology Access Centre

A unique, fully equipped space for innovation, research and development. Providing flexible access to laboratory space, "hot labs" and scientific equipment. Ideally suited to start-up companies, smaller and medium size enterprises and R&D team from established companies.

TW Languages Ltd

Provision of a professional and reliable multi-lingual translation service delivering high quality translations. We specialise in business, technical and scientific translations into 250+ language combinations. We provide certified translations for legal purposes. We are full members of the ATC & EUATC and ISO 17100 Translation Services certified.

Laboratory products, testing and services

XCellIR8 Ltd

A world leader in animal-free testing. Our GLP accredited laboratory provides groundbreaking in vitro safety tests for the chemical and personal care industries. We are passionate about delivering testing strategies that are both scientifically advanced and ethically sound. Our award-winning work is recognised at a regulatory level by the OECD and ECHA.

Legal & patents

Appleyard Lees LLP

Patent and trademark attorneys. Aim to obtain the best possible patent protection for clients. Experience of product clearance against competitor patents and in due diligence for mergers and acquisitions. Advice on licensing issues and collaboration agreements relating to IP.

Bawden and Associates

A legal firm providing professional services across all IP matters. Drafting and prosecution of patent applications, handling opposition and appeals in the EPO and in litigation in UK and international courts. Business led and strategic approach to generate assets of real commercial value.

Mathys & Squire LLP

Mathys & Squire LLP is a full-service intellectual property law firm with industry-leading expertise in patents, trade marks, design protection and IP litigation and including a dedicated chemistry team of highly experienced attorneys holding higher degrees and research or industrial experience who are passionate about innovation in the chemical field.

Squire Patton Boggs (UK) LLP

Global legal company providing legal, regulatory and advocacy assistance to the chemical and performance material industries. Expertise that emphasises areas that mean the most to industry such as environmental, mergers and acquisitions, commercial finance, construction, litigation, IP, public policy and international expansion.

Withers & Rogers LLP

A leading UK and European intellectual property law firm with five offices including London and Munich. We offer a range of IP services including obtaining UK, European and worldwide patent or trade mark protection, the handling of contentious matters, advice surrounding licensing arrangements and issues including validity of patents and "freedom to operate".

WP Thompson

Intellectual property attorneys providing high quality advice to start-ups, SMEs or FTSE 100 companies. Team of experienced IP attorneys specializing in chemistry and life sciences, with first degrees and PhDs in these fields. Securing the most appropriate, cost effective and commercially valuable protection for your intellectual investment and innovation.

REACH and chemicals services

CIRS

CIRS Group was established in 2007 and is a leading product safety and regulatory consulting firm. It utilizes its technical expertise, resources, and international network to provide comprehensive compliance services including chemical notifications and registrations, global GHS compliance, laboratory testing, R&D, and data services across multiple industries globally.

Dr Knoell Consult Ltd

An independent service provider for the chemical and related industries. Globally the Knoell group has over 450 employees covering all aspects of regulatory compliance for industrial chemicals, agrochemicals and biocides: e.g., strategic planning, dossier preparation, exposure assessment, SDS preparation, and from REACH to K-REACH!

GlobalMSDS

A complete safety data sheet/literature and regulatory service for your entire product communications in any language, style and format required. Hazmix is a new 'pay as you go' web-browser product that is setting a new standard in SDS authoring. A Solutions service that also provides technical advice.

Intertek Regulatory Services

Health, environmental and regulatory services for implementation of chemicals management. Worldwide registration of chemicals, food contact compliance and notification, global chemicals compliance, design/optimisation of toxicological and eco-toxicological studies, hazardous substance management, EU cosmetic and biocidal products compliance, classification & labelling, SDS consulting.

Yordas Group

Yordas Group is a leading provider of scientific, environmental, human health and global regulatory consulting services. They offer chemical regulatory support, expert scientific services and support on chemicals management and product stewardship, global hazard communication, hazard and risk assessment, analytical and (eco)tox testing.

Adepto Technical Recruitment

A specialist engineering, manufacturing and scientific recruitment consultancy that focuses upon the provision of permanent staff and contract resource to the Chemicals industry. Established in 2015, Adepto has quickly become the partner of choice for many blue-chip and SME manufacturers, engineering companies and consultancies due to our deep knowledge of the industry, credibility and professionalism.

Handley James Chemical

Mid to senior level appointments solely within the Chemical Manufacturing space. Over 30 years search experience. The company was built on the success of Stuart Tomkinson's successful 11-year recruitment career primarily within the chemical manufacturing arena. Focusing on providing the best talent in the chemical industry. We work closely with you, to understand your business, your culture and exactly what you are looking for from a recruitment partner.

Page Executive

The executive recruitment division of PageGroup – provides a range of search, selection and talent management solutions. We focus on Board- and Director-level assignments, both on a permanent and interim basis, and have a strong track record of successfully partnering with the Chemicals sector.

RMG

RMG is an award-winning headhunting consultancy with a difference - we make it our business to search and understand who's who in the Chemicals and STEM sectors and have the know-how to find talented people who will deliver lasting impact and add financial value to your organisation.

Science Recruitment Group

Experts in the recruitment of scientific, regulatory, quality, engineering and technical professional across all areas of the industry. Support in recruiting temporary, contract or permanent staff for your team.

Science Solutions Recruitment

Is a specialist science & technical recruiter with specific expert teams to service niche fields, including speciality chemicals, drug discovery, polymers, materials, cosmetics, personal care, household products, pharmaceuticals, biotechnology & medical devices.

TransitionPlus Ltd

Executive search for science-based organisations, talent development, outplacement and career transition support. Experienced chair, NED, coach and business development consultancy. The "Plus" is to ensure that considerable attention



LIVE ONLINE



FACE-TO-FACE



IN-COMPANY

Human Factors in the Chemical and Process Industries

Modular human factors training

Would you like to develop your understanding of human factors in the chemical process industries?

Are you looking for practical guidance, tools and approaches to help you manage human factors effectively at your organisation?

Sign up for our human factors training and take your human factors understanding to the next level.

Training is delivered online and face-to-face in Edinburgh, UK. It can also be delivered in-company.

What's available?

Human Factors in the Chemical and Process Industries consists of four modules:

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- Managing Human Failure
- Strengthening Organisational Performance
- Human Factors in Design

Complete individual modules or all four depending on your training needs.

“*Human Factors in the Chemical and Process Industries has given me the confidence to lead the human factors agenda at a top tier COMAH site.*”

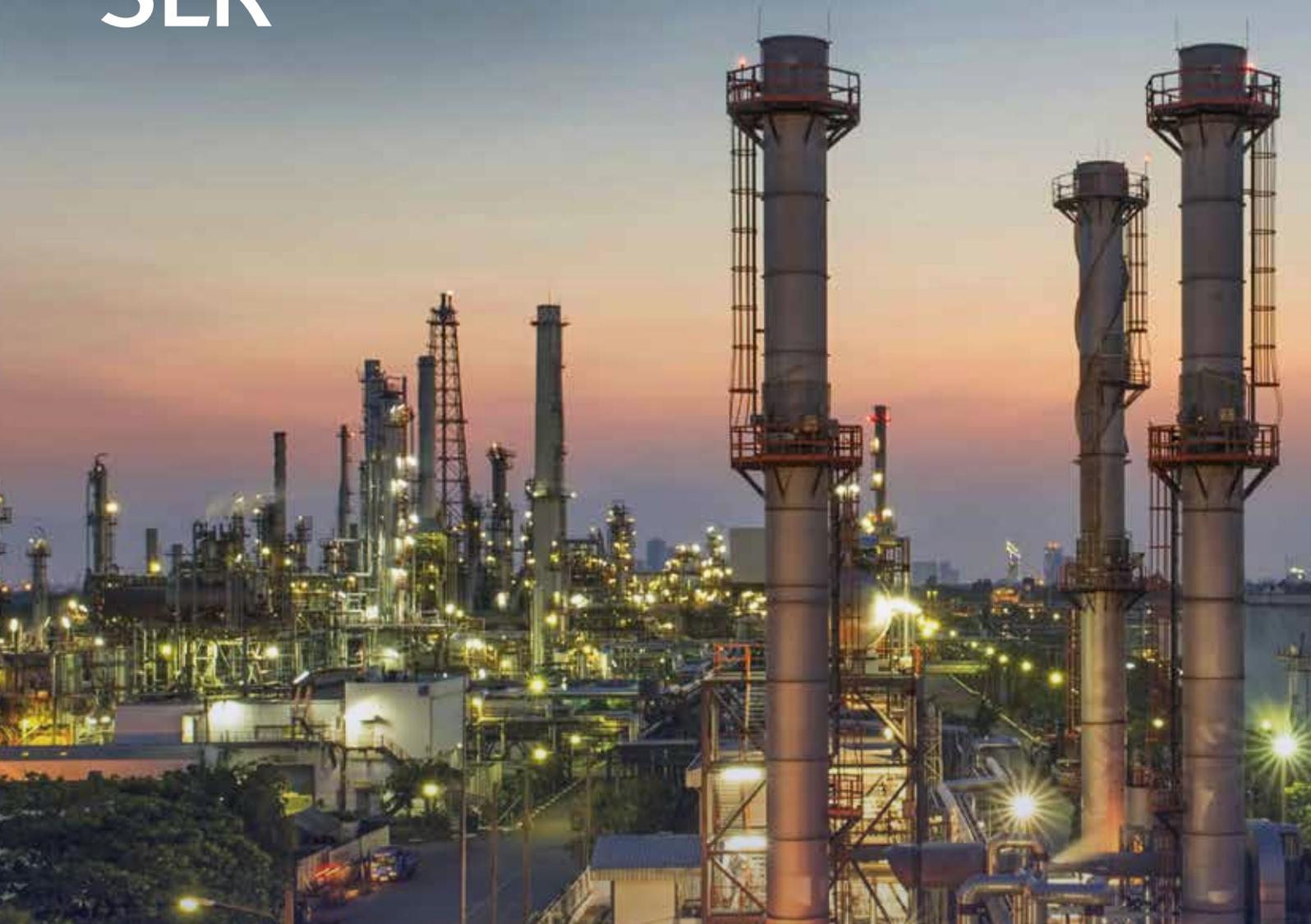
Ian Taylor, SABIC UK Petrochemicals

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