

A spotlight on the vibrant north west chemicals sector

# Elements



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- **Selection inventions: a powerful strategy for protecting chemistry-based innovations**
- **Patenting research outputs – sufficiency in different jurisdictions**

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

# Annual Awards Dinner 2024

## The Chemicals Northwest Awards are now launched!

The team look forward to receiving your entries. Further details on the 11 categories and how to enter can be found here:

[https://www.cia.org.uk/chemicals\\_northwest/awards\\_2024](https://www.cia.org.uk/chemicals_northwest/awards_2024)

SAVE THE DATE  
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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,

**W**elcome to the Winter edition of Elements. As we move into Winter, we take a look at what the team at Chemicals Northwest have been up to since the last edition.

We held a successful Regulation and trade update event on the 10th October with Ian Cranshaw from Chemicals Northwest and the Chemical Industries Association covering Free Trade Agreements and CPTPP. Ian also explained new policy on Rules of Origin and Duty Suspensions which are critical to companies operating in the chemical sector. We were joined online by two speakers from Dr Knoell Consult Ltd. Wiebke Sossinka in Germany and Cristina Garcia in Portugal, they covered REACH and Regulations for China, South Korea, Taiwan, Columbia, Chili and Peru. Our final presenter was Silvia Segna from the Chemical Industries Association who gave an update on UK REACH policy. The Regulation event is open to all members of Chemicals Northwest and is a roundtable forum for helpful and informative discussions. Our next event is planned for the 17th January where we have Paul Wright, European Industry Business Sector Leader from SLR who will be giving an update on adding Climate Change Adaptation Planning and Risk Assessments into your management system, if you operate an installation under an Environmental Permit. Ian Cranshaw will update the group on Free Trade Agreements and CIA Trade Activity for 2024 and Silvia Segna from the Chemical Industries Association will be giving an update on UK REACH policy and other updates from Government.

The UK celebrates STEM and the activities around it throughout the year and Chemistry Week, coordinated by the Royal Society of Chemistry was celebrated between the 5th – 11th November. At the time of Elements going to print, we were about to host our December breakfast networking event on the 7th December and were delighted to welcome two speakers engaged in STEM Activities. Our first presenter, Joy Parvin from the Centre for Industry Education Collaboration (CIEC) will be covering the Children Challenging Industry initiative which will be launching in the North West in 2024. Our second speaker, Sarah Myers from STEM Learning will present about engaging future talent in the chemical sciences in the North West including the STEM Ambassador programme. Both Joy and Sarah have articles featured in this edition of Elements. We will also have Julian Hought from OpenPSM presenting his new product, OpenPSM®, a cloud based solution allowing users to evaluate management system design and implementation through structured PSM systems auditing. Our final presenter will be David Jasiewicz, Patent Attorney at Appleyard Lees IP LLP. David will present the third edition of Appleyard Lees annual Inside Green Innovation: Progress Report with a presentation focused on bioplastics and plastics recycling.

We are delighted to announce our awards host as Jimmy McGhie, an acclaimed stand-up comedian. The awards are taking place at the Hilton Manchester Deansgate on the 21st March. The awards are open for entries and booking and are both welcomed from members and non-members of Chemicals Northwest. Special thanks go to our sponsors for the evening. All details of the awards can be found here - [https://www.cia.org.uk/chemicalsnorthwest/awards\\_2024](https://www.cia.org.uk/chemicalsnorthwest/awards_2024)

We have some new events coming up in Quarter one of 2024 in association with Page Executive and the IChemE. Further details can be found here <https://www.cia.org.uk/chemicalsnorthwest/CNW-Events>.

As always please keep your good news stories, case studies and thought leadership articles coming in to be featured in Elements and, as we sign off for the year we wish all of our members and readers season's greetings and a prosperous 2024.

**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 140 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.

## Here are the the main features and benefits of membership...

### Annual Awards Dinner

During the annual Chemicals Northwest awards programme we are privileged to witness the many achievements made in our sector. Culminating in a great night of celebration each year's awards are a fantastic way your company can support the region's chemicals sector and help raise your own profile. Over 300 guests from across the industry gather on the night in Manchester and everyone can see for themselves the amazing achievements made by our industry, people and organisations.

### Breakfast Networking

Chemicals Northwest has gained a good reputation for high quality breakfast networking events. With no specific theme, delegates are encouraged to come along and make a short business pitch about their company, its products and services plus news announcements! The breakfast meetings have proved to be very popular and currently run quarterly with up to 40 in attendance. New contacts can lead to new opportunities and new business. All are welcome and the event is free of charge to attend.

### Partner Events

Over the years CNW has focused on a range of highly topical and relevant business issues. We run these focussed events in conjunction with members. Technical, regulatory and operational insights have been delivered by experts in their fields. These events ensure good practices are shared and all attendees gain new knowledge. As businesses get to grips with the changing landscape there will always be new issues for members to analyse.

### Common Interest Group

Chemicals Northwest have launched a "Regulation and Trade" update group. This quarterly meeting is a round up of the latest news for the industry on REACH, Regulations, Trade issues and negotiations and any other topics of interest for the industry to keep up with the latest developments. This group is open to members of Chemicals Northwest and is free of charge to attend.

### Elements Magazine

This is a great opportunity to establish an association between your organisation and important sector issues, by contributing

free editorial and press releases as part of membership. Companies who do business in the chemicals sector may also wish to look at advertising options. The CNW sector directory is integrated into Elements showing our service suppliers to the sector.

### Website

The website is regularly updated with industry news and events from CNW and the sector. Companies are increasingly using it for enquiries. Viewers of the directory pages can search the whole of our supply chain providers to find where to buy products and services.

### E-bulletin

Chemicals Northwest send out a monthly bulletin with the latest industry news, export opportunities, events from Chemicals Northwest and the sector. Plus ad hoc bulletins with latest/ urgent calls. All members and new members are able to send a "meet the member" bulletin. A paid for advertising service is also available for those wishing to advertise their events or company news.

### LinkedIn

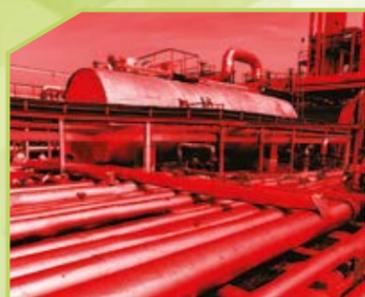
The Chemicals Northwest LinkedIn group provides the opportunity for chemical industry professionals to share ideas and knowledge. There is also the CNW LinkedIn company page which provides a forum for information sharing between CNW and our members.





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BUSINESS



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# Integrating Sustainability into Hazard Studies: Making projects Safe, Smart and Sustainable

With the uncertainty we are experiencing in relation to climate change and rising costs, professionals involved in process safety are confronted by a decision - keep project costs down or think about the bigger picture and try and to make a project as sustainable as possible over its entire life. We believe that adopting sustainable practices is not only the right thing to do, but it also makes good business sense. Integrating sustainability into projects is essential for businesses that want to achieve the following goals:

- Reducing your ecological footprint
- Making a more marketable product
- Minimising waste
- Reducing operating costs

### Short term vs Long Term Costs

Naturally, financial costs are one of the most influential factors when making business related decisions, so reluctance to spend big sums on making changes to your plant in order to make it more sustainable is understandable. However, this is not to say that avoiding doing so is the most cost-effective option in the long term. The initial costs can be offset in several ways, and this requires a focus on capital expenditure (CapEx), as well as just Operational Expenditure (OpEx). By considering both the initial purchase and installation costs (CapEx) plus the operating costs (energy and maintenance costs) for the life of the equipment (OpEx), initial purchase price differences can be quickly overridden by operating cost savings. Applying this

same logic to other areas of your project (utilities, emissions, location, raw materials, sustainability of manufacturer etc.) can mean that sustainable practices can actually be financially beneficial to your business down the line, not to mention the inevitable positive impact on a company's reputation and brand image.

For projects, it is particularly important to think about sustainability early in the design as it is more cost effective to make changes on paper and invest earlier on than it is to make changes to an already established and operating plant. Generally, the later in the project life cycle that changes are integrated, the greater the costs, and on the contrary the earlier any changes are introduced, the greater the potential savings in the long run. This got us thinking about the parallels with process safety. We promote Inherent Safety, so why not Inherent Sustainability?

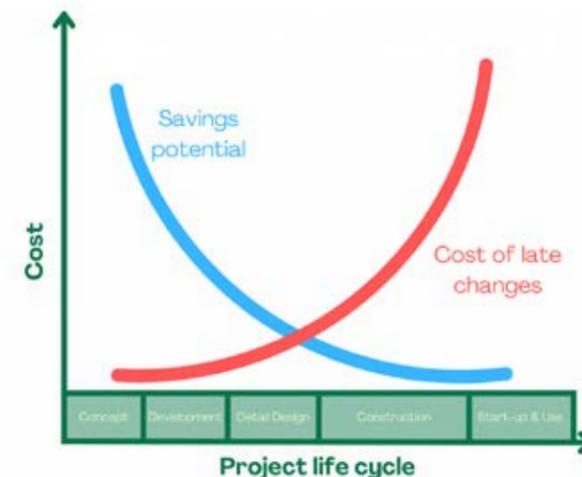
### Sustainability in relation to Hazard Studies

We believe that with relatively small changes to established and embedded hazard study processes, sustainability can be thought about at the right time to maximise the potential benefits. For example, Hazard Study 2 (HAZID) provides a perfect opportunity to consider more sustainable options, at this point the overall aim of the project is understood but the project has not yet reached a stage where changes are extremely costly, both in time and money (e.g. detailed P&IDs have not yet been drawn).

Hazard studies provide a natural forum to consider factors such as alternative technology that uses less energy, less raw materials, recovers more product, requires less maintenance, uses fewer consumable parts, or reduces the requirements for subsequent processing. Hazard studies can also be used to identify opportunities to reduce emissions and waste.

### Integrate for Effective and Positive Change

Sustainability must be embedded as a company goal to have the greatest impact. Integration into existing hazard study processes is a realistically achievable approach. Introducing sustainability into the process safety management processes could have far-reaching benefits.



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

# Unlocking the Power of STEM: Transforming futures in the North West with Children Challenging Industry

The Children Challenging Industry (CCI) initiative will be launching in the North West in 2024; this flagship programme of the Centre for Industry Education Collaboration will be igniting the flames of curiosity and ambition among young minds across the region. The programme stands at the intersection of education, industry, and community, offering a unique opportunity for companies to make an impact on the STEM aspirations of local children.

## The vision

The CCI programme is designed to bring about meaningful and lasting change in the STEM education landscape:

**(i) Enhancing understanding of STEM and sustainability:** CCI bridges the gap between the classroom and industry, demonstrating the real-world applications of science, technology, engineering, and mathematics; sharing important sustainability stories from industry

**(ii) Raising STEM career aspirations:** CCI ignites the spark of curiosity and aspiration in young minds. By offering engaging site visits, connecting with industry professionals, and showcasing STEM careers in a relatable manner, we cultivate the next generation of scientists, engineers, and innovators.

## The role of industry

Industry partners play a pivotal role in the success of CCI. By partnering with us, you can have a direct impact on local children's understanding of the relevance of their science to your work, by:

**(i) Building relationships:** CIEC employs advisory teachers who act as facilitators between schools and partner companies. As an industry sponsor, you'll have the opportunity to build relationships with local schools, fostering a sense of community and collaboration.

**(ii) Empowering STEM professionals:** Your sponsorship enables us to train and provide continuous support to STEM professionals within your company. These individuals become effective communicators of their science and careers, offering engaging site visits and interactions with children.

**(iii) Teacher development:** By sponsoring the programme, you support the professional development of teaching staff in partner schools. This includes training and in raising children's Science Capital, ensuring that links with industry are accessible and exciting across all year groups, as well as a wealth of industry-linked science resources that support the teaching of the science national curriculum.

**(iv) Practical learning:** Your sponsorship directly impacts the learning experience of children. We tell your company's story via a sequence of hands-on, practical, fully-resourced classroom activities for 9-11 years.



**Proven impact: The CIEC legacy**  
CIEC has been at the forefront of such initiatives since 1996, and its legacy speaks volumes. 60,000 children have visited industry, and 15,000 teachers from over 2,000 schools have participated in the CCI programme. The rigorous evaluation conducted by our researchers, via pre- and post-programme surveys with children, teachers, and STEM professionals, provides valuable insights into the transformative impact of the programme, whilst enabling us to continuously refine the programme.

**Empowering the future generation**  
Our data reveals that, on completing the programme, children feel science is 'for people like me' – those who look like them, sound like them, and live near them. This holistic approach not only enhances children's science knowledge but also sharpens their communication, problem-solving, and teamwork skills.

Teachers, too, reap the benefits of the programme, gaining the confidence to teach science within an industrial context, and develop the skills to facilitate practical problem-solving activities that encourage children to think like scientists and engineers.

**Join us in shaping the future**  
The CCI programme is an opportunity for industry sponsors to shape the

future of STEM education in their locality. By partnering with us, you have the chance to make a lasting impact on your community, inspire young minds, and foster a thriving STEM ecosystem in your region.

**For more information on how to become an industry partner, please contact us at [ciec@york.ac.uk](mailto:ciec@york.ac.uk), or find out more at the CNW breakfast meeting on the 7th December at Daresbury.**

**Together, we can unlock the potential of the next generation and make a difference that lasts a lifetime.**



## A new interactive game to help awareness in the Chemical sector and support the Catalyst Science Discovery Centre and Museum in Widnes

Bitrez Ltd in conjunction with other associated businesses have commissioned a new interactive game called CHEMPLOY. This game consists of a series of stages that allow young people to undertake tasks in various departments.

Following an introduction from the Managing Director, the player is invited through four optional doors to enter either the laboratory, production, warehouse, or engineering departments. Once the player has entered the doors, they will be asked to dress an Avatar with the appropriate Personnel Protective Equipment (PPE) to undertake the work in that area. Once the correct apparel has been affixed the player can enter and undertake a secondary task.

The game uses employees from the business and their resultant Avatar to navigate the process with prompts and words of encouragement from the various staff members. It also offers a brief summary of the individuals job title, description, and some unusual or interesting snippets. The idea behind the game is to provide an awareness of the career opportunities that are available in the industry and hopefully provide some degree of entertainment and support to the museum. Bitrez project manager, Wendy Howarth worked with the creative designers, animators, and developers, Fuzzy Duck to craft the game and bring the characters some dimension and depth.

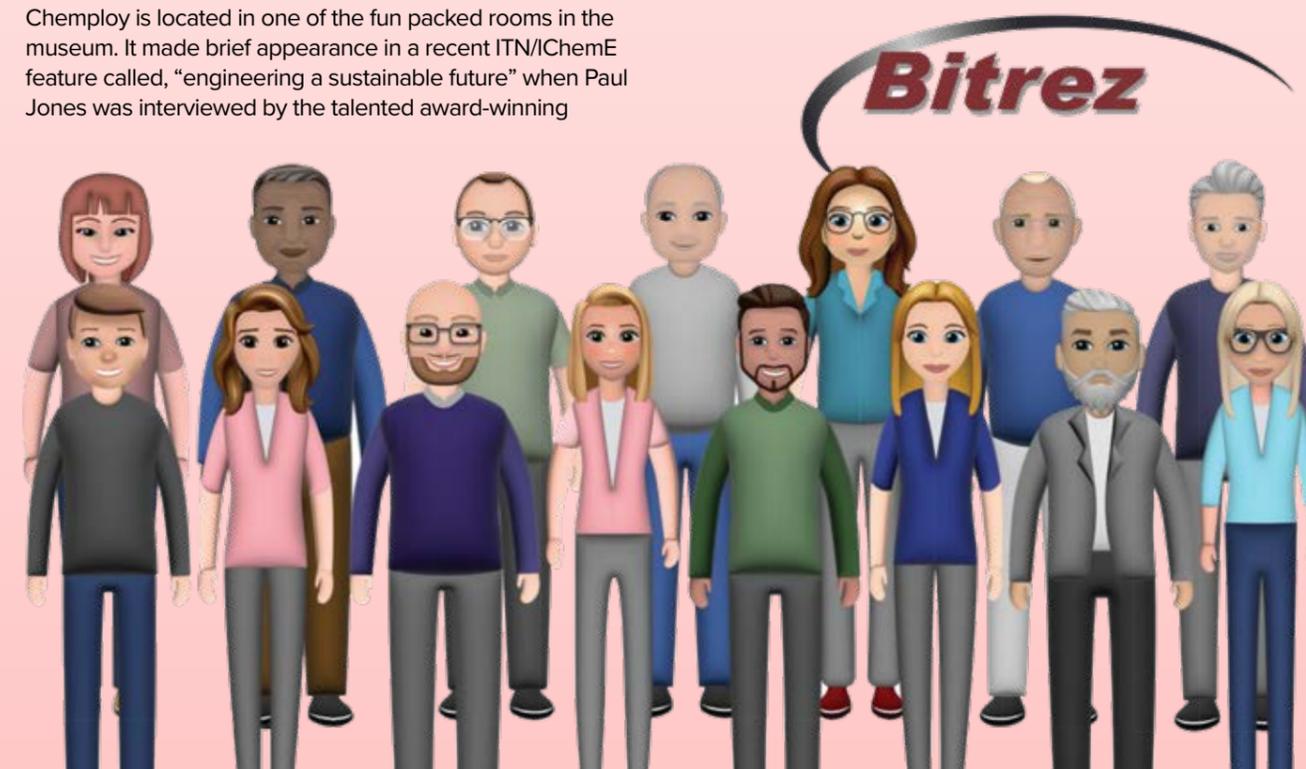
Chemploy is located in one of the fun packed rooms in the museum. It made brief appearance in a recent ITN/ICHEM feature called, "engineering a sustainable future" when Paul Jones was interviewed by the talented award-winning

television correspondent and writer, Catherine Jacob about his work with sustainable polymers. The feature was filmed at the Catalyst to showcase some of the historical developments in the chemical industry and to utilise the interesting and informative backdrop to highlight the industrial and green revolution.

Paul Jones said, "We are delighted to be partners and supporters of this outstanding facility and all of the great work that they do. I find their altruism and selflessness to be inspirational and their commitment to rousing interest for future generations in the scientific community is exemplary".

The Catalyst Science Discovery Centre and Museum hosts a wide range of interactive exhibits, re-constructed scenes, science shows and hands-on workshops to stimulate the senses and bring a range of subjects to life from Science, Maths, Engineering and Technology to the Humanities and Geography. There are a variety of attractions and activities to offer an entertaining educational experience and we encourage everyone to support this wonderful establishment in their quest to inform, educate and inspire the widest possible audience about the relevance of chemistry, through their unique offerings, hands-on experiences, and their rich industrial heritage archives.

**Catalyst Science Discovery Centre and Museum Trust Ltd is a registered charity. Find out more here - <https://www.catalyst.org.uk/>**



# Making chemistry accessible for all in the North West

**S**KILLS shortages are a significant challenge for the vast majority of STEM (Science, Technology, Engineering and Mathematics) industries and the chemicals sector is no different. The challenge for the sector is that people often don't think of careers in the chemical sector either because they either don't know about it or because of misconceptions about what jobs in this area actually are.

Addressing these misconceptions requires us to change the views of multiple groups including students, parents, teachers and schools.

Industry has a key role to play in addressing this by being proactive in communicating what working in the chemicals sector is actually like in 2023 – and so attracting the talent needed for the future. There are multiple ways individuals and employers can support this message, one of which is the STEM Ambassadors programme.

Funded by UKRI the STEM Ambassadors programme<sup>[1]</sup> provides a volunteering infrastructure for companies to:

- Inspire students with STEM subjects
- Change mindsets of students/teachers so individuals aspire to pursue STEM careers
- Gain access to social value reporting
- Support staff in developing skills through volunteering and giving back

Out of the 2000 volunteers in the North West, we currently have around 300 STEM Ambassadors who consider themselves able to talk about chemistry. An increase in this number during 2024 would really help showcase the variety of careers and jobs in the North West chemicals sector.

Another reason to explain the chemical sector skills shortages is the challenge of inclusivity. A piece of research by Royal Society of Chemistry<sup>[2]</sup> shows that “chemistry” currently isn't seen as “being accessible for all” – role models are a critical part of changing this, as you can't be what you can't see. More role models from diverse backgrounds engaging with students means chemistry starts to feel more inclusive and more “for me.”

Real impact on businesses can be seen through raising the visibility of opportunities. Dale Power Solutions in North Yorkshire are an example of where a company engaged their apprentices with the STEM Ambassadors programme and participated in a number of secondary school careers events in their local area. In the space of 12 months not only did their number of apprentice applications increase dramatically but the quality of individuals applying improved as well.

Supporting this mission also brings benefits to employees. Volunteering is a great way to show skills development in areas additional to job responsibilities and is shown to boost

job satisfaction. A 2022 study found that, from a cohort of 470 STEM Ambassadors, 96% of respondents stated that the STEM Ambassadors programme enhanced their ability to communicate with a range of audiences<sup>[3]</sup>. In addition the Chemical Industries Association (CIA) ChemTalent<sup>[4]</sup> initiative is a great way of getting young professionals within the industry to support each other and feel valued within the sector.

So get involved, be proactive, be part of the solution – join the STEM Ambassadors programme and start addressing those misconceptions around working in the chemical industry and make the sector far more inclusive.

**For more information please contact Sarah Myers at STEM Learning - s.myers@stem.org.uk**

#### References:

- [1] STEM Ambassadors Programme
- [2] Is chemistry accessible for all?
- [3] Evaluation of the impact of the STEM Ambassadors programme upon STEM Ambassadors Dr Hannah Blake and Chris Percy, University of Derby, December 2022
- [4] ChemTalent



# Chemicals Northwest join the employability event at the Department for Chemical Engineering at the University of Manchester

**T**he Department of Chemical Engineering at the The University of Manchester hosted its second annual Employability Event on the 4th of October 2023.

The event was held in collaboration with the Institution of Chemical Engineers (IChemE) and The University of Manchester Faculty of Science and Engineering Makerspace. The event received 17 potential employers – including KPC International, Jacobs, Rolls-Royce, TriRx, Syngenta, Costain, Sellafield and United Utilities amongst others. The interlinked ground floor space in Core 4, from the blended lecture theatre through the event space and into the makerspace, was buzzing with Chemical Engineering students throughout the day and they received a varied timetable of seven presentation sessions, company stands and networking opportunities.

Some companies offered interview sessions to the students during the fair, and four of them were progressed to the next stage of the interview process.

It was particularly pleasing to welcome back alumni who are forging successful careers at these companies. This was a true source of inspiration for our students and pleasing to see that these graduates hold the Department in such high regard.

#### Feedbacks from companies:

It was a wonderful day spent interacting with young minds at the STEM career fair at the University of Manchester.

A big thanks to Dr Perpetual for organizing a successful #careersfair at The University of Manchester. It was great to see so many interested attendees.

Thank you to everyone who stopped by our stand to learn about #CPI and the exciting opportunities we offer.

Excellent day at the University of Manchester Chemical Engineering Careers fair with my colleagues advertising the current Chemical Engineering and TSMS placement opportunities at TriRx - Speke Operations.

#### Feed back from students:

It was an enlightening experience and a fantastic opportunity for all of us to gain insights into various career paths within our field. The effort you put into coordinating and facilitating the event truly made a difference. I found the panel discussions and networking sessions exceptionally valuable, and I believe they greatly benefit our academic and professional growth.

#### Another student

I am writing to let you know that the Careers Fair was really useful. I myself was looking for summer placement opportunities, and many participating companies had enticing offers. I also had an opportunity to broaden my horizons regarding the newest technological advancements and the skills that are needed the most.

Many of my course mates, who are 2nd-year students, emphasized that the Careers Fair was very useful for searching for placement opportunities.

I hope that the Careers Fair will continue to be a highlight of the year in the upcoming years.

#### Another student

I am one of the presidents of the Chemical Engineering Society for this academic year.

I wanted to send this email on behalf of myself and many of my colleagues that attended yesterday's fair to emphasise how much of a success it was. It was a great opportunity to learn more about the various industries a Chemical Engineer can pursue, network with graduates and discover available vacancies within each company. As a final year student, I found it particularly useful as I begin to consider my prospects beyond graduation.

I really do hope this Careers Fair continues in the following years!

**Dr Hosam, an academic from the department**  
Special thanks are due to Dr Perpetual Eze-Idehen for the excellent organisation.



# Helping your business navigate the education and skills landscape

A skilled workforce is at the heart of every successful business and attracting and developing the right workforce can be a challenge.

Getting involved with the education and skills system can be part of the solution, even for small businesses. Recruitment for example, becomes streamlined because you've engaged early with the next generation of talent. And your existing workforce can gain from flexible upskilling or reskilling options revealing new opportunities for your business to grow.

That said, we know that education and skills in England has changed and can be complex to understand, which is where Education Landscape: A guide for Employers comes in.

#### Did you know:

- Small and medium sized businesses make up 99% of registered businesses in the UK
- 4 out of 5 have recruitment concerns, and more than half fear there is a lack of candidates with the right knowledge and skills

#### A national commitment to small business employers

We're committed to helping small businesses find the education and skills landscape easier to navigate. That's why we're sharing Education Landscape: A Guide for Employers, which has been developed in partnership with organisations including the Federation of Small Businesses, CBI, British

Chamber of Commerce, and IoD to help businesses across England. The Guide includes a clear, short overview of the education and skills landscape system, and concise information about the education and skills opportunities that businesses can engage with, and the benefits these offer. There are links to further information for the options you want to prioritise.

#### Download the Education Landscape: A Guide for Employers

Jenifer Burden, Gatsby Director of Programmes explains, "Whether it's careers fairs, industry placements for older students, apprenticeships, or shorter programmes to support upskilling for employees, the need for education and business to collaborate has never been stronger. For a smaller business however, the breadth and variety of the opportunities can be hard to keep up with, especially for those without dedicated Human Resources or Learning and Development teams.

"This is why we are working with trusted business support organisations to provide small businesses with a clear starting point. The Education Landscape guide explains how SMEs can get involved with education and skills and shares the benefits that small business owners have experienced.

"By being involved, business support organisations are working closely with SMEs, widening the career opportunities for young people and nurturing the critical role businesses play in building and developing their skilled workforce."

*Find out more about how the Guide can benefit you or visit the website for further details - Strategic Development Network | Experts in FE, skills and apprenticeships*



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FACE-TO-FACE



IN-COMPANY

TRAINING

# Human Factors in the Chemical and Process Industries

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[www.icheme.org/human-factors](http://www.icheme.org/human-factors)



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# Hosokawa Micron Ltd sets new standards for Business Growth and Success

Runcorn-based Hosokawa Micron Ltd – one of the world’s leading suppliers of powder, particulate and liquid processing equipment and systems to sectors including pharmaceuticals, chemicals, nuclear, food, space and cosmetics – has been enjoying an exciting and rewarding 2023 so far, achieving two more, globally recognised, accreditations. Its commitment to the UK apprenticeship scheme, meanwhile, is paying dividends with two of its Level 4 apprentices being recognised for their outstanding contributions and dedication to developing new process techniques that are, significantly, saving weeks of assembly time in the workshop. In other news, sister company, Hosokawa’s new ON brand – creating process systems for producing high-quality energy performance materials – is on course to further elevate Hosokawa Micron Group’s reputation in the growing battery materials industry, which is great news for the containment equipment side of the business, which is based at Hosokawa Micron Ltd.



From left to right: Kevin Rice (Manufacturing Manager), James Moore (Managing Director), Mark O’Loughlin (Project Manager), John Cronshaw (Financial Director / Company Secretary), Andy Morris (QSHE Manager)



## ISO 14001 and ISO 45001 Accreditations to complement ISO 9001

Hosokawa Micron Ltd is very proud to have recently earned two more bsi-accredited certificates, which supplement its ISO 9001 certificate for Quality Management, achieved in 1998, and its food safety accreditation, FSSC ISO 22000.

ISO 14001 (Environmental Management) recognises the company’s achievements and commitment to the adoption of sustainable business practices. Vital for helping to protect the environment now and in the future, this internationally recognised certification formalises the steps that Hosokawa Micron has been taking for many years to reduce its carbon footprint and provides an excellent benchmark to attain and proactively build on, which can be demonstrated to their domestic and international client base while building trust and helping to secure future business.

Perfectly dovetailing into the ethos of the ESG Charter created by Hosokawa Micron’s parent company, Hosokawa Micron Group, significant developments at the Runcorn site have included the purchase and installation of a new compressor system that serves both the manufacturing set up and also the Technical Centre. Home to the contract manufacturing side of the business, the Technical Centre is also enjoying the benefits of a new air dryer, offering significant improvement to the air feed used to supply its size reduction equipment. As a result, energy consumption has reduced by an impressive 30%. LED lighting is now a feature in 75% of the workspace, while much improved waste management processes include waste data recording, in partnership with accredited waste-handling companies, and the introduction of recycling bins in areas such as the kitchens and canteen. Plans are in place for introducing even more sustainability measures into the business, installing photovoltaic panels and EV charging stations on-site in 2024, which promises to help meet the company’s ambitious sustainability goals.

ISO 45001 (Occupational Health and Safety) addresses meeting and exceeding standards for managing health, safety and equality practices of the benefit of employees, clients, suppliers and other visitors to the UK office and is designed to prevent work-related injuries and ill-health in the workplace. Crossing geographic, political, economic, commercial and social boundaries, this internationally recognised certificate is perfect for a manufacturing business that operates globally and demonstrates an important and proactive on-going commitment to rigorously preventing risk, as well as striving for continual improvement and promoting innovation.

## Manufacturing Apprentices win Hosokawa Micron Group Achievement Awards

Two of Hosokawa Micron’s younger employees, Dan and Nick – both Science Industry Maintenance Technician apprentices in their fourth years of working



at Hosokawa Micron Ltd – have been awarded company honours in recognition of their outstanding contributions to the business’ manufacturing team, innovating significant process improvements in the assembly factory that have resulted in increased manufacturing efficiencies while consistently saving considerable amounts of assembly time during the build stage of its Micron-brand size reduction processing equipment and systems, as well as its portfolio of high-performance containment equipment.

Demonstrating meticulous attention-to-detail and dedication, as well as impressive problem solving and strategic thinking, Dan and Nick have been pivotal to innovating a specific way of segmenting the assembly area into distinct, designated bays incorporating ‘hold and control’ points. With a more organised and more tactical manufacturing environment, the apprentices have, undoubtedly, initiated a new and improved approach both to learning and manufacturing that they, along with the wider business and clients, are now reaping the rewards of.

Productivity has increased, equipment is delivered to clients more quickly and current and future apprentices will now be able to gain valuable hands-on experience of Hosokawa Micron Ltd’s diverse and expansive technology portfolio more easily and in a shorter space of time. Suffice to say, both apprentices have proven to be invaluable additions to the manufacturing arm of the business and are looking forward to a very bright future at Hosokawa Micron Ltd.

## Hosokawa Micron Group – switched ‘ON’ to Battery Material Processing

Hosokawa Micron Group has just launched its new ‘ON’ brand in Europe, dedicated to the design and manufacture of equipment and process systems for



commercially producing advanced battery material. The group is also focussed on the recycling of production scrap created during the manufacturing of lithium-ion batteries, as well as the recycling of the batteries themselves at the end of their useful life. The brand has been developed by the Hosokawa Micron Group, and will be heavily supported by the European Hosokawa teams in the UK and the Netherlands, who will be collaborating on bespoke battery production systems for clients in the UK, Europe and beyond.

Along with the necessary processing equipment required to cut, mill, mix, dry, separate and round the battery material to exacting standards – such as Hosokawa Alpine’s APR Particle Rounder and Hosokawa BV’s Nauta Conical Screw Dryer – it is essential to integrate a high-performance containment element (such as an Isolator/Glovebox or a single pass or recirculation Downflow Booth) to protect operators from the potentially toxic and carcinogenic raw and active materials, to ensure the battery material is protected from any contamination that will degrade its quality and to create a safe and stable processing environment.

Hosokawa Micron Ltd is proud of its extensive experience in this area, engineering and manufacturing cutting-edge, tailor-made containment systems for clients worldwide, including single and multi-cell variants for operations such as dispensing and sampling, as well as robust, accurate filling and weighing systems for the conveyance of the processed battery material.

**For further information, please contact:**  
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Containment Isolator

# LOOKING FOR SOMEONE TO TAKE OVER YOUR BUSINESS?

I'm an individual with the means to acquire and operate a small-medium sized business in the UK. I'm not a broker or business trying to profit from a sale. This is an acquisition that I would make a wholehearted commitment to.

If you are interested in exploring a sale in the next 6 months, generating >£500,000 in earnings and don't have a reliance on one single customer, let's explore if this could be a good fit. I'm no stranger to the industry, originally from Liverpool and spent my career shipping bulk Chemicals into the UK.

I'm looking for a business where the founder cared as much as I will.

All discussions are confidential.

Visit [www.ardfincapital.co.uk](http://www.ardfincapital.co.uk) for contact details

## A game-changing partnership in Chemical Manufacturing

In the dynamic world of chemical manufacturing, the collaboration between Actikem Ltd and Hidex Chemicals Oy is rewriting the industry's rulebook. This article explores the innovative alliance between the two companies and its significance for the chemical manufacturing sector.

### The Power of Contract Chemical Manufacturing:

Contract chemical manufacturing is a strategic practice where one company specialises in producing chemical products for another. Actikem, the industry specialist, leverages its formulation and product sourcing expertise to craft unique liquid scintillation cocktails for Hidex Chemicals. This strategic approach offers multiple advantages:

1. **Cost Efficiency:** Outsourcing to a contract manufacturer like Actikem helps Hidex Chemicals reduce costs associated with in-house production.
2. **Quality Assurance:** Actikem's expertise ensures consistent, high-quality output, which is an essential factor for Hidex Chemical's reliability.
3. **Scalability:** The partnership allows for quick adaptation to market demands, with production volumes that can be easily adjusted.
4. **Core Focus:** Hidex Chemicals Oy can concentrate on their strengths – research, development, marketing, and customer service – while Actikem Ltd handles the manufacturing process.

### Actikem Ltd: The Trusted Contract Chemical Manufacturer

Actikem Ltd is at the heart of the partnership, offering a range of chemical products and services. Known for their commitment to quality, safety, and environmental responsibility, Actikem Ltd stands out in the chemical manufacturing industry.

Key Services provided by Actikem Ltd:

1. **Customised Formulations:** Actikem Ltd collaborates closely with clients like Hidex Chemicals to develop tailored solutions.
2. **Regulatory Compliance:** They strictly adhere to industry regulations, ensuring safe and legally compliant production.
3. **Environmental Responsibility:** Sustainability is a priority, with eco-friendly practices and a continual commitment to reducing their environmental impact.

### Hidex Chemicals Oy: The Visionary Partner

Hidex Chemicals Oy's visionary approach is the driving force behind this partnership. By teaming up with Actikem Ltd, they are realising their goals, which include:

1. **Focused on Innovation:** Allocating more resources to research and development, leading to ground-breaking products.
2. **Market Expansion:** Actikem's scalable production capabilities open doors to new markets and a wider audience.
3. **Superior Customer Service:** Hidex Chemicals ensures on-time deliveries, consistent quality, and exceptional customer service.
- 4.



### Conclusion:

The alliance between Actikem and Hidex Chemicals is reshaping the landscape of contract chemical manufacturing. The collaboration exemplifies the potential for innovation and growth that strategic partnerships offer in the chemical manufacturing sector. Companies seeking contract chemical manufacturing solutions can look to Actikem Ltd for a prime example of how such collaborations can transform their business.

For further details visit  
<https://www.actikem.com/>



## Clamp-on ultrasonic flowmeters take on polyamide 12 flow measurement challenge

Polyamide 12 is a high-performance plastic used in a variety of industries, from oil and gas production, to automotive, medical technology, and 3D printing. The production process involves several stages, beginning with the hydrocarbon compound butadiene and ending with the monomer laurolactam. When many of the components are connected, they form a chain - the base polymer polyamide 12.

Clamp-on ultrasonic flowmeters are offering a long-term measurement solution to the challenge of polyamide 12 flow measurement at incredibly high temperatures of around 280 °C. A revolutionary technology in the field of flow measurement, clamp-on flowmeters work by emitting ultrasonic waves that travel through the fluid inside a pipe. The time it takes for these waves to travel upstream and downstream is measured, and the difference is used to calculate the flow rate. This non-invasive technology offers numerous benefits, especially when dealing with challenging mediums and process conditions such as those involved in the production of polyamide 12.

### Replacement of Coriolis flowmeters

At the production plant of the world's leading supplier of polyamide 12, the product stream of the base polymer behind the polymerisation reactor is divided into two sub-streams. Initially, Coriolis flowmeters were installed in both for quantity measurement. However, due to the process conditions, this wetted measuring technology was found to have serious shortcomings. The melting temperature of the polymer is around 180 °C, so the product stream needs to be heated continuously. This proved to be a constructive challenge for integrating the Coriolis flowmeter into the insulation. The minimum flow velocity required for vibration measurement necessitated a tapering of the pipe cross-section from DN50 to DN25, thereby causing a considerable pressure loss. Depending on operating conditions, the polymer may occasionally solidify causing irreparable damage to the Coriolis flowmeter.

This is where FLEXIM's clamp-on ultrasonic flowmeters proved to be a highly flexible solution. They are quick to install and do not require any alterations to existing pipelines or necessitate process shutdowns. Due to the extreme process temperatures of around 280 °C, ultrasonic transducers were installed on a patented mounting fixture at both measuring points. This high temperature device is designed to separate the transducers thermally from the hot pipe and ensures optimal acoustic contact.

### Practical advantages

The measurement was initially intended as a temporary bridging, but proved so convincing that it was decided to

permanently measure the two polymer partial flows using clamp-on ultrasonic technology. An additional advantage is the high sensitivity of acoustic measurement technology to low flow velocities. Therefore, tapering of the pipe cross-section can be dispensed with, which consequently means less pressure loss and allows a reduction in pump power consumption.

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



## Selection inventions: a powerful strategy for protecting chemistry-based innovations

### What is a selection invention?

To be patentable, an invention must be novel. This means that the invention must not have been disclosed in any form, anywhere in the world, before a patent application is filed. This does not however mean that a patentable invention cannot fall within the general disclosure of a previous disclosure (termed the “prior art”).

### Inventions that fall within the general disclosure of the prior art are known as “selection inventions”.

Selection inventions are especially common in the chemical field. For example, selection inventions can occur when a specific compound or narrow group of compounds are found to have special properties even though they fall within a class of compounds known in the prior art. This may be the case, for instance, where the prior art teaches that fatty acids are useful for a particular purpose but it is later found that linoleic acid is especially beneficial. Another example is the selection of a narrower numerical sub-range of a particular parameter that falls within a previously disclosed broader range. For example, the prior art may teach that a temperature above 60 °C is necessary but a temperature of from 72 to 78 °C may later be found to achieve a highest yield.

Defining a selection invention narrowly and away from the examples and specific values disclosed in the prior art should satisfy the novelty requirement.

For a patent to be granted, it is usually also necessary to establish an inventive step, meaning that the invention is not obvious over the prior art. For a selection invention it is usually necessary to show that there is something special about the selection made, for example by establishing that a new technical effect is provided that does not occur outside the narrow selection. It is often helpful to include data in the patent application, for example that compares the selection to the prior broader disclosure and to demonstrate the technical effect. It is sometimes also possible to file further supporting data later, during patent prosecution.

### Use of selection inventions to enhance patent protection

In some cases filing patent applications directed to selection inventions can effectively extend the term of patent protection for chemical compounds or compositions that are already protected by a patent.

For example if you currently have a patent application or patent covering a broad class of compounds but have subsequently found that a narrow subset of these compounds, or even a single compound, is particularly effective beyond what has been disclosed, you could obtain another patent for this subset or compound. In this way the narrow subset or compound would then be protected by both your existing and new patents.

Filing a new (selection) patent application can effectively extend your term of patent protection because the patent term runs from the filing date of the patent application, so that the later filed (selection) patent will expire later than the original broader patent.

Of course, this strategy can also be used to obtain selection patents within the scope of existing competitor patents and thus to potentially affect the freedom to operate of competitors.

Action can be taken when drafting patent specifications to minimise the risk of competitors pursuing patents to selection inventions, especially if you know the route that your research might take after filing the initial patent application. For example, you may wish to disclose potential commercially important selection inventions in your original patent specification, to try to prevent a competitor from pursuing patents to these. This will however also prevent you from pursuing further patents and so a careful balance must be struck. A patent attorney can assist with such filing strategies, which require an understanding of the art and the commercial aims.

### Patentability of selection inventions

Different patent offices around the world assess selection inventions differently. The European Patent Office (EPO) has established guidelines and case law for dealing with selection inventions, and routinely grant such that patents. The recent case law has been favourable to the granting of patents relating to selection inventions such that the chances of success at the EPO are good.

*To find out more about selection inventions and how IP can bring value to your business, please contact Kate Hickinson, Partner, Appleyard Lees.*



# Making Process Safety a core value through effective leadership

Safety is defined as the state or condition of being protected from harm, danger or loss. This definition can be expanded to include all measures and practices taken to prevent harm, danger or loss. This is written into UK law through the Health and Safety at Work act 1974 and the Control of Major Accident Hazards (COMAH) Regulations 2015. Safety is the responsibility of employers and employees. So rather than a priority, safety should be regarded as part of the core business and integrated into business work practices.

Leadership is defined as the ability of an individual or a group of people to influence, motivate, inspire and guide others. Poor process safety leadership has been identified in several major accident investigations including BP Texas City, Gulf of Mexico deepwater horizon, Fukushima nuclear incident and Buncefield in the UK, to name a few. There has been a growing emphasis from regulators and industry to set out process safety leadership principles and guidelines. The Process Safety Leadership Group (PSLG), a joint industry and regulator group, published the eight principles of process safety leadership in 2009. In 2012 the OECD published a guidance document 'Corporate Governance for Process Safety – Guidance for senior leaders in high hazard industries' aimed at senior decision makers able to influence the direction and culture of their organisations.

The Health and Safety Executive also has COMAH competent authority procedures and delivery guides including Major Hazard Leadership guide and intervention tool. These provide useful information to operators on the expectations for major hazard leadership including investigating leadership failures that may have contributed to major accidents. In addition to this, upper tier COMAH sites are required to have a major accident prevention policy (MAPP) to prevent major accidents and minimise their potential impact. A MAPP should set out the roles and responsibilities of management and their

commitment towards continuous improvement.

It is now well recognised that the behaviours, decisions and actions of leaders have a huge influence on the safety culture in a workplace. Company leaders are often unaware to the extent of their influence. Just saying the right words and writing policy statements about safety being the number one priority is not enough. The behaviour of the workforce is mostly influenced by actions not just empty words.

The starting point for all leaders is an understanding of process safety and why it is important. Industry examples of major accidents all serve as good examples for why it is important. Major accidents are relatively rare events, but their consequences are severe and can result in fatalities, environmental pollution and damage to company assets.

Process safety leadership is more than the ability to influence, motivate and inspire people. Leaders must also understand the major hazards specific to their workplace. The HSE's statement following the Buncefield prosecutions outlined the following key questions leaders should ask themselves:

- do we understand what could go wrong?
- do we know what our systems are to prevent this happening?
- and are we getting the right information to assure us they are working effectively?

Answering the above questions gives leaders the information they required to put in place process safety management systems and process safety performance monitoring in line with their other business monitoring systems. Leaders need to communicate with the workplace to gather and understand the information required to answer the questions.

**Lyeanda Robinson MEng(Hons)  
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Principal Process Safety Consultant**

**If you would like further advice or information, please contact:  
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# Patenting research outputs – sufficiency in different jurisdictions

As we continue our series on considerations for researchers interested in patenting their research outputs, WP Thompson looks at the requirements of different jurisdictions to identify how much detail is needed in a patent application for it to be held as sufficiently disclosing an invented product.

## Sufficiency of disclosure

Patent applications in the chemical and biotechnology sectors often describe inventions in detail. They can also include large numbers of examples and data to help show that an invention works and to describe the features and interactions therebetween in specific workings of that invention. These data are intended to disclose to the skilled person in sufficient detail how to work the invention.

Based on common filing strategies, inventors/applicants typically look to satisfy the requirements at the European Patent Office (EPO), the UK Intellectual Property Office (UKIPO) and the US Patent and Trademark Office (USPTO). However, the judicial framework within which each office needs to work results in relatively closely aligned offices, such as the UKIPO and EPO, having different approaches to assessing sufficiency. Three decisions issued this year have highlighted these differences, which must be borne in mind when applicants provide data and embodiments to support their patent applications.

## The European approach

A recent decision issued by the EPO's Board of Appeal (T 0835/21) regards a patent for antibodies, or antigen-binding fragments thereof, that bind to the human low-density-lipoprotein receptor-related protein 6 polypeptide (LRP6), and their use in the treatment of cancer. An opponent of the patent alleged that the number of compounds that would need to be tested to arrive at the claimed antibodies, in the absence of a reproducible example, would demand an unreasonable amount of trial-and-error. However, the Board of Appeal decided that the tools for identifying antibodies with the claimed characteristics were well-known and that the application would successfully lead the skilled person to the invention since they could readily identify failures. The invention was thus deemed sufficiently disclosed simply because the skilled person would be able to make the antibodies in question.

## The US approach

In the US, *Amgen Inc. v Sanofi (No. 21-757)* considered a pair of patents also claiming antibodies; specifically, an entire genus of antibodies that bind to specific amino acid residues on the protein PCSK9, or block PCSK9 from binding receptors responsible to extract low-density lipoprotein cholesterol from the bloodstream. Despite providing amino acid sequences of twenty-six suitable antibodies and methods for making other suitable antibodies, the patents were held to cover far more than those twenty-six antibodies, thus encompassing more than the skilled person was taught how to produce. It therefore appears that applications in the US might require at least one example that demonstrates a common quality of the members of a claimed class, in order to be considered sufficient, in contrast with the European approach.

## The UK Approach

The UK approach to sufficiency involves the additional requirement of plausibility. *Sandoz v BMS ([2023] EWCA Civ 472)* concerned a patent disclosing lactam-containing compounds and derivatives thereof as Factor Xa inhibitors, which are used to treat thromboembolic disorders. The first claim to the invention related to such a use of the individual compound apixaban. However, the application was said to do no more than assert that apixaban could be used as such an inhibitor, without plausibly demonstrating the truth of this assertion. Without a plausible, and thus sufficient, use the patent was considered to be directed to the compound itself, the mere identification of which is not inventive. Although it concerned a claim to a single compound, rather than a group thereof, this decision demonstrates that supporting data can play an important role in seeing a patent granted in the UK.

## Thinking ahead

The UK and US decisions discussed above cite the notion of the "patent bargain", wherein an inventor receives a monopoly right for their invention in return for disclosing it for the public to use after the right expires. Whilst the EPO appears to take a less stringent approach to how sufficient this disclosure must be, inventors should always bear in mind this purpose of a patent, as well as considering in which jurisdictions protection might be of interest, when deciding if they have enough supporting data to proceed with filing their patent application.

**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](mailto:sfo@wpt.co.uk)**

# 2M Group of Companies acquires Warwick Equest Limited from The Lubrizol Corporation

The 2M Group of Companies has acquired Warwick Equest, an industry leading provider of “natural” stained fabrics for detergent testing, from The Lubrizol Corporation.

Based in Consett, Durham UK, Warwick Equest has earned a stellar reputation for manufacturing an extensive range of stained fabrics, which are used worldwide in the development of high-performance detergents. Their dedication to innovation and customer satisfaction aligns seamlessly with the 2M Group of Companies core values.

Within the 2M Group of Companies, Warwick Equest will continue to operate under its current brand name, preserving its unique identity and commitment to expertise. Customers can expect a seamless transition and uninterrupted access to Warwick Equest’s exceptional services.

“We are excited to join the 2M Group of Companies. This partnership will enable us to reach new heights, expand our product offerings, and provide even greater value to our loyal customers,” said **Paula Gibson, Warwick Equest manager.**

“The integration of Warwick Equest into the 2M Group will open up opportunities for collaboration and innovation, further enhancing customer partnerships and driving growth for both businesses,” said **Mottie Kessler OBE, Chair and CEO, 2M Group of Companies.**

“We are delighted that Warwick Equest has the opportunity to continue to serve customers and grow as part of the 2M Group of Companies,” said Karen Allen, Senior Director in Lubrizol’s Beauty & Home business. “Lubrizol is committed to supporting



a seamless transition for Warwick Equest and its customers in the days as the business moves forward.”

The 2M Group of Companies and Lubrizol are committed to ensuring a smooth transition for employees, customers, and suppliers throughout this process.

For further details please visit <https://www.2m-holdings.com/>



# The Ultimate Guide to Recruitment

Our team has recently produced The Ultimate Guide to Recruitment sharing all their best tips to help streamline recruitment processes and help find the most suitable candidates in the market. The guide is thorough and can be downloaded from our website, but I thought it would be helpful to distil the guide into my top five takeaways.

## 1. Define your recruitment needs

Before you even begin recruiting, it's essential to have a clear understanding of your organisation's hiring needs. This involves collaborating with various stakeholders, such as department heads and HR professionals, or if you are a smaller organisation without such support, you may want to consider engaging third party providers. Many organisations like RMG will provide a no obligation and complimentary scoping meeting providing feedback on the market, helping to identify specific skills, experience, and qualifications required for the position.

You should define your hiring needs as follows:



You must be strict with yourself not just for plain budgetary reasons, but also in that there are plenty of organisations who grow too quickly, they over-recruit and consequently experience some negative outcomes. An article from 2023 Investors Chronicle shows that despite the instinct to “get on the front foot” and hire people to meet demand, the only thing you can guarantee in the early days of recruiting new people, is the cost of paying them!

## 2. Craft engaging job descriptions

A well-crafted job description is the first step in attracting top talent. To create an engaging job description, follow these guidelines:

- Start with a job title that accurately reflects the role.
- Clearly outline the responsibilities and expectations of the position.
- Highlight the benefits of working for your organisation.
- Specify the qualifications and skills required.
- Avoid biased language and focus on inclusivity.

## 3. Conduct structured interviews

Structured interviews are a key component of the recruitment process and keep the process fair for each candidate. Without structure, too much of the decision-making process can become subjective and each candidate can have a different experience. Develop a list of behavioural and situational

questions that assess the candidate's skills, competencies, and cultural fit. Often, when feeding information and interview feedback to us, candidates become unsure about a company's culture and professionalism if it seems the interview lacked structure and was 'off the cuff'.

## 4. Check references thoroughly

Reference checks are an often-overlooked step in the recruitment process. Take the time to contact previous employers or colleagues to gain a deeper understanding of the candidate's work ethic, performance, and interpersonal skills. While some employers revert to a basic reference of 'I confirm X worked as Y between these dates' there are still those out there that will provide detailed references. In some cases, we have been presented with references before even asking for them, this is usually a sign of a candidate who knows they will be spoken about in a positive way.

## 5. Provide a positive candidate experience

A positive candidate experience can leave a lasting impression, even on candidates who are not selected, remember the 'market' is quite close and bad news can travel faster than good on occasions, so maintain your market reputation as a company. Always ensure timely communication to keep candidates aware of what is happening in your process out of courtesy and after interview offer constructive feedback. Keep close to a candidate after offer stage and provide a seamless onboarding process for new recruits.

**These steps might sound obvious but it's surprising how many inhouse processes forget to formalise steps to ensure consistency across departments and locations. If you are running a process and want to talk to someone then please contact me on 01928 711 800.**



Anita Caldwell

# Leadership: in conversation with Faye Freeman (President, Aurorium)

**Tom Haynes, Page Executive:** Thanks for speaking today. What does “leadership” mean to Aurorium?

**Faye Freeman:** Leadership is about people empowerment, how you empower people to achieve and how to create an environment where magic happens. It’s challenging to lead people through Covid, Brexit, economic difficulties; it’s important to create an environment that makes them feel secure and supports their growth.

**TH:** “Secure” is an interesting word.

**FF:** It’s about creating that safe environment where people can push their boundaries, try new things and learn from mistakes, all while having a safety net. They can bounce back and learn from the experience, that’s how you can unlock potential.

**TH:** That must be a powerful message when you’re hiring?

**FF:** Definitely. People want autonomy and to be part of creating something, they want the opportunity to innovate. But they also want to know they are trusted to try and something new and that we support learning and growth this way.

**TH:** That can be difficult maintain as people move into senior leadership roles.

**FF:** It can. I read The Advantage by Patrick Lencioni about organisational health. It resonated with me and I’m an advocate that a leadership team should work to be vulnerable with each other and to challenge each other constructively.

We’re on this journey as a leadership team, becoming more comfortable challenging each other in a supportive way – and are more willing to admit when we need help. We’re one team: we win together, we fail together. I believe we’ve blossomed with that approach.

**TH:** I’ll have a read! How have you found hiring new leaders?

**FF:** We try to be honest about who we are, our values, and that this company is being built as we grow. It isn’t for everyone, but we try to establish that in the interview, so we end up hiring people who will thrive here. Combine this with a great package and offering roles that have a real impact on our strategy and results, Aurorium is a compelling prospect for new leaders.

**TH:** When senior hiring doesn’t work, it’s often due to a misalignment of expectations vs. reality.

**FF:** We try to tell the good, the bad and the ugly. And encourage people to ask us about the bad and the ugly! We want everyone to come in with open eyes. Now we are more comfortable in our own skin, able to say to people “we’re not perfect, but we love it here”, and we are finding it easier to attract good leaders. We’re lucky in that sense.

**TH:** I’d say that’s skill, not luck. How do you develop and retain the people who already work for Aurorium?

**FF:** We do pretty well at promoting from within. If we see people with the right talent and attitude, we give them opportunities. Great attitude can’t be taught. So we try to expose them to things to broaden their experience.

We sometimes take people outside of their traditional area, into something completely different (with the right support structure). Earlier in my career, I was given the opportunity to move into a role I didn’t have experience in. It was scary, but I gave it a go and it ultimately allowed me to progress. If someone hadn’t taken that chance on me, I wouldn’t be sat here today.

**TH:** That can be really effective, especially with a shortage of talent.

**FF:** Definitely. We joke that we’re always working “in the grey”. The last few years have thrown up so much ambiguity, not knowing what is around the corner. So being comfortable with change – in your own role or the wider business decisions – is so important now. I think in a way we actually get energy from that.

**TH:** It’s been a strange few years.

**FF:** It has. But if you focus on keeping your team happy, healthy and motivated, everything else should follow on.

**TH:** What a great point to end on. This has been really interesting, thank you.

**FF:** Thank you.



**Aurorium is a global provider of ingredients, materials and solutions used to create life-enhancing products that make the world a better place.**



**Page Executive helps companies in the Chemicals sector to hire Board- and Director-level roles. For further information visit - <https://www.pageexecutive.com/>**

# When it comes to AI and process control, the quality of data is key

Process control plays a vital role in manufacturing and industrial operations, guaranteeing consistency, efficiency, and effectiveness. It relies on accurate measurements as the foundation for effective control, and this becomes even more critical as artificial intelligence (AI) takes on a greater role in the process.

In the past, human operators were primarily responsible for monitoring and adjusting processes, but with the increasing prevalence of automation and digital technologies, AI is becoming an indispensable tool. AI can analyse data from process measurements and various sources, identify patterns, and make decisions to optimise performance. However, the quality and accuracy of measurement data are of utmost importance.

## Benefits of AI in Process Control

AI in process control offers several key advantages. First and foremost, it excels at analysing vast amounts of real-time data. In manufacturing and industrial settings, numerous sensors and data sources continuously generate data. Traditional control methods make it challenging for human operators to monitor and make quick decisions based on this data. AI, on the other hand, can process this data rapidly and accurately, facilitating real-time decision-making.

Another benefit of AI is its ability to identify patterns and anomalies that might elude human operators. AI algorithms can analyse data from multiple sensors, detect correlations, and uncover patterns not immediately apparent to the human eye. This capability is crucial in identifying potential issues before they become critical, enabling proactive corrective actions.

Predictive maintenance is another application of AI in process control. It uses sensor data to predict when equipment is likely to fail, allowing proactive maintenance scheduling to prevent unplanned downtime, reduce maintenance costs, and extend equipment lifespan. AI can also optimise processes in real-time by analysing data from sensors, identifying opportunities for efficiency improvements, waste reduction, and cost savings.

## Data Quality is the Key

Despite the many benefits, AI in process control faces challenges, and data quality is a primary concern. AI algorithms depend on high-quality data for accurate predictions and decisions. Inaccurate or inconsistent data can lead to erroneous results. Thus, ensuring data quality is crucial when implementing AI in process control.

An example from the Almaraz Nuclear Power Plant in Spain illustrates the importance of data accuracy. Enhanced equipment performance and calibration led to a significant improvement in the accuracy of reactor power measurements, resulting in higher revenue. As the energy sector increasingly adopts AI for power generation optimisation, precise measurements become even more critical.

Effective calibration of process measurements is essential for maintaining data accuracy in AI-based process control. Regular calibration is necessary to ensure the accuracy of data generated, emphasising the need for more efficient calibration processes. Effective calibration processes should be fully digital, ensuring high-quality data and data integrity throughout the process.

## AI's Impact on Jobs and Conclusion

Concerns exist regarding the potential job displacement caused by AI's increasing role in manufacturing and industrial settings. AI could replace human workers in some roles, potentially leading to job losses and societal disruption. However, AI also creates new opportunities for innovation and growth. Jobs related to measurement and calibration will emerge as AI places greater importance on data accuracy.

In conclusion, AI-based process control is revolutionising manufacturing and industrial operations. To fully realise its benefits, we must address challenges like data quality, proper calibration, and the need for skilled personnel. By doing so, we can unlock new opportunities for innovation and growth. The saying “Everything is based on measurements” holds even truer in the era of AI-based process control. The key to ensuring high-quality measurement data is a rigorous calibration program that maintains the regular calibration of measurement instruments with traceability and certainty.

For more information, visit [www.beamex.com](http://www.beamex.com)

Article written by:  
Heikki Laurila  
Product Marketing Manager  
Beamex

# How the Cyber Security challenges increase due to Industry 4.0

The fourth industrial revolution, or Industry 4.0, is seen as the next step after the computer automated industrialisation that happened during the last five decades. This new revolution is powered by buzzwords like IIoT – (Industrial Internet of Things) big-data and A.I.

No matter how a chemical facility is made “smarter”, all these technologies have two things in common, it is all driven by data, and it requires hyperconnectivity. And this is the next challenge for Cyber Security within industrial environments.

## Background

The reason for Industry 4.0 is clear. The drive within the chemical sector to improve is crucial. Moreover, the chemical industry also contributes to almost any other manufacturing supply chain so there is also lot of potential. Product improvement, cost efficiency, business optimisations are some of the drivers for this digital transformation. All the more reasons to expect this trend will continue. But again, what about Cyber Security?

Challenges the Industry 4.0 initiatives pushes forward to hyper connectivity, which results in more exposure of OT networks, usage of more generic IT services, cloud connectivity and “bypasses” the traditional segmented models. This isn’t necessarily a bad thing if Cyber Security is not an afterthought.

## Challenges explained

It is not always obvious that IIoT devices create new Cyber Security challenges as at first glance they often seem perfectly protected. Many IIoT vendors recognise the need of Cyber Security and deliver more secure and more capable devices. However, when poorly implemented or improperly maintained they can still introduce an unknown risk. Therefore, these cyber risks could be generally divided in two types, the IIoT solution itself and the implementation of the solution.

## Solution

Most important is to immediately incorporate Cyber Security during the design process of these new solutions, especially when IIoT or other remote connectivity is involved. This is not only applicable for new facilities but also for expansions or modifications.

The OT network is not always suited to incorporate all technical requirements and at the same time the technical

expertise might be lacking. Moreover, as most of these solutions are business or operations driven, they might overlook the Cyber Security implications during the project phase altogether.

Finally, many IIoT implementations require “connectivity” that may already exist in a facility or are sometimes unknown to the end-user.

## Conclusion and the way forward

It is expected that the Industry 4.0 and IIoT trend will continue for all sectors, including the Chemical sector. This will be primarily driven by the business and operational benefits. This is a fine so long as Cyber Security is not an afterthought. It’s important to include security design and operational costs directly into the business case of these smart initiatives and verify their impact on the OT Cyber Security posture. Internal and external security design reviews could assist in this stage. For existing solutions and systems there are multiple approaches: eg

- to review
- verify the current security state
- proactively solve potential issues before they create any business impact

The end goal remains to achieve safe, reliable, and cost-effective production and to manage cyber risk to an acceptable level to support those goals.

Bureau Veritas is able to support with strategy with regards to cyber security compliance and maintenance.-

- Analysis and recommendations on how to improve security
- Testing to ensure possible vulnerabilities are found and addressed
- Assisting to implement processes and procedures so that Cybersecurity becomes an every day habit
- Helping staff to become part of the security solutions

For further information visit - <https://www.bureauveritas.co.uk/>



# CIRS EU and UK Successfully held their Global Chemical Regulation Conference in London

CIRS’ Global Chemical Regulation Conference, held on October 5th, gathered delegates from 21 countries, representing a wide spectrum of the chemical industry. With support from five sponsors, nine industry associations, the Irish embassy in London, and the Department of Business and Trade (DBT), this conference marked a significant milestone for the CIRS Group – our largest European conference to date.

The packed agenda brought together industry experts and our global team, delivering nine comprehensive presentations covering the latest regulatory updates and challenges in the chemical industry across Europe, the UK, South Korea, and China.

Noteworthy presentations included Marko Susnik’s in-depth overview of current focal points and emerging trends in EU chemical policy. Marko is the Senior Advisor at the Austrian Federal Economic Chamber (WKO) and an Advisor to the Secretary-General on chemicals policy, SMEunited. He covered the Chemicals Strategy for Sustainability, the REACH revision, and safe and sustainable by design. He emphasized the evolving policies’ complexity and costs in chemical management. Marko noted bottlenecks, such as resource constraints, testing labs, and enforcement challenges, highlighting their growing importance in the field.

Alastair Gardner, Trade Specialist (chemical) from the Department for Business and Trade (DBT), provided an overview of global export and trade opportunities for UK companies. He summarized the work of the DBT’s chemicals team in assessing new export markets for the chemical industry and shared how the DBT helps businesses overcome export barriers by offering services such as free advice, webinars, online learning tools, access to trade shows, international research, and funding opportunities.

Ian Cranshaw, Head of International Trade and Regions at the Chemical Industries Association (CIA), and Operations Manager at Chemicals Northwest, presented an overview of

the challenges facing UK chemical companies. He highlighted that CIA member companies anticipate energy costs, skills shortages, and increases in labor costs and raw material prices as key challenges for the coming year. Ian provided detailed background and figures to illustrate these issues. He also discussed some updates on DEFRA’s planned consultation on UK REACH.

In a joint presentation on South Korean chemical regulations, Junho Lee, Director of CIRS Korea, covered K-REACH updates, including the December 31, 2024 registration deadline for 100-1,000-ton substances. SeoWon Kim, Chief Manager of CIRS Korea, discussed K-BPR and emphasized the upcoming deadline for Group 2 categories. She also detailed the Ministry of Environment’s ongoing dialogue with industry stakeholders to enhance product regulation.

Dean Winder, Senior Regulatory Consultant at CIRS Europe, discussed Chinese chemical management. Topics included the challenges associated with MEE Order 12, the QR code system for hazardous chemicals, and GHS updates.

The conference also included two dynamic panel discussions, one focusing on the sustainable development of the chemical industry in which speakers discussed SMEs’ role in consumer education, concerns about REACH chemical bans, Asia’s regulatory gap, and understanding consumer interests in sustainability.

The second panel explored supply chain challenges for the global chemical industry where speakers discussed inaccuracies in forms causing delays, regulatory barriers, intellectual property concerns, global trade management, and digitalization challenges.

The insightful presentations equipped attendees with a deeper understanding of the diverse regulations and issues encountered in different regions, with ample opportunities for questions and discussions during breaks and at the end of each session.

Feedback from delegates has been overwhelmingly positive. After a brief hiatus due to the COVID-19 pandemic, we eagerly anticipate making these conferences an annual event once more, uniting professionals from the chemical industry to exchange insights and best practices.

Register your interest for 2024 and find out more about the conference by scanning the QR code or visit the CIRS website - <https://www.cirs-group.com/en>



## Reducing Your Turnaround Schedule



ProDecon® offer specialist chemical cleaning and decontamination services to restore asset performance, process flow and heat transfer efficiency, safely, within budget and on schedule.

- Hydrocarbon decontamination for faster safer turnarounds
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- Market leading chemistry, tailored to unique client challenges
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## New Hosokawa brand On: Extensive offer for manufacturers of lithium-ion batteries

Hosokawa Micron Group is increasing its focus on solutions for the manufacture and recycling of lithium-ion batteries. For this purpose, the group of companies has founded an international, group-wide competence team and created the brand "On". The new brand identifies a new product line for systems for the production of energy performance materials and enables interested parties from the battery industry to get started quickly and access the group's extensive range of solutions.

**Combined fields of expertise of the Hosokawa Micron Group**  
Hosokawa Alpine's Chemical Division is a specialist in processing cathode materials, the Minerals Division has extensive experience in processing anode material and the Recycling Division focuses on in-house and end-of-life recycling. Hosokawa Micron B.V. in the Netherlands specialises in drying and mixing as well as coating. There is vast experience in processing lithium carbonate from salars at Hosokawa Micron Powder Systems in the USA, in containment at Hosokawa Micron Ltd. in the UK, and in bulk & material handling at Hosokawa Solids in Germany and Spain. Material grinding using the ACM-BC in a ceramic design is a core competence of the Japanese Hosokawa Micron Corporation.

"It was an obvious decision for us to pool together these versatile competences for our customers and unite this power in the new brand On", explains Marco Hauk, team leader for the project and Vice President Powder Segment at Hosokawa Alpine. "Today, manufacturers are striving to create compact batteries with high energy density, fast charging times and a long service life. We want to help our customers meet these requirements in the most effective way possible," says Hauk. To this end, On supports customers in material development and the perfection of raw and active materials from the supply of complete production facilities and systems all the way to recycling.

### Raw material drying, grinding and coating for cathodes

Cathode materials such as nickel, manganese or cobalt oxide have to be dried in a continuous

process before grinding. The DMR Flash dryer from Hosokawa Micron B.V. makes it possible to dry active materials and achieve final moisture content levels of less than one percent. The ultra-fine grinding process for active powders creates smaller particles with a larger surface area in the next step. The special milling solutions from Hosokawa Alpine AG are the classifier mill ACM and the fluidised bed opposed jet mill AFG. The Cyclomix paddle mixer, the Modulomix modular paddle mixer or the Nauta conical screw mixer from Hosokawa Micron B.V. not only ensure a homogeneous mixture of materials, but also the optimum coating with carbon black and binders.

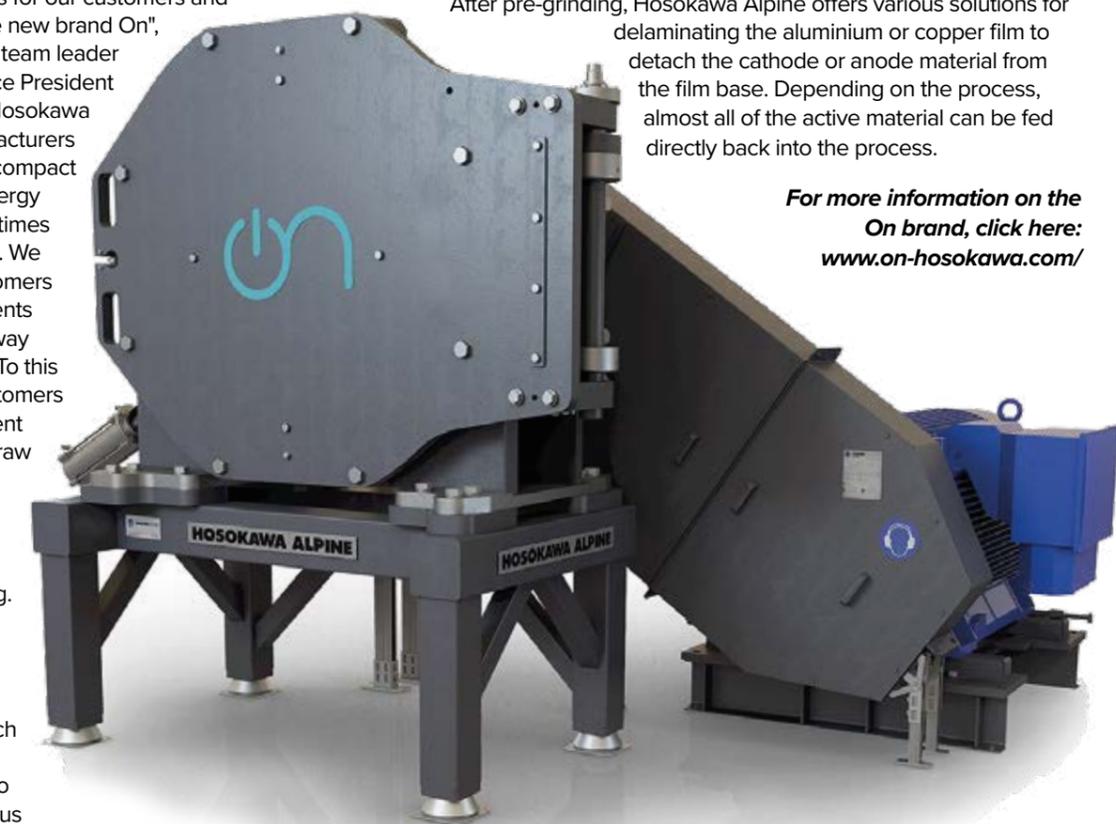
### Efficient graphite rounding for anodes

In order to meet the rapidly increasing demand for graphite, highly efficient system concepts for the sustainable production of graphite materials are needed. The solution is to design coordinated systems for grinding and rounding graphite particles, which decisively improves the performance and efficiency of lithium-ion batteries. Hosokawa Alpine has developed a special machine for rounding natural graphite: the APR (Alpine Particle Rounder). For grinding and rounding synthetic graphite or petroleum coke, customers can rely on the Zirkoplex ZPS classifier mill.

### Returning active materials to the process

Roughly ten percent of the coated cathode or anode films end up as scrap and have to be recycled. In particular, valuable active materials such as the NMC or LFP of the cathode films or the graphite-silicon mixtures of the anode films should be processed and directly recycled free of impurities. For this purpose, Hosokawa Alpine has developed a process that grinds the material scrap. This is done using the Rotoplex cutting mill. After pre-grinding, Hosokawa Alpine offers various solutions for delaminating the aluminium or copper film to detach the cathode or anode material from the film base. Depending on the process, almost all of the active material can be fed directly back into the process.

For more information on the On brand, click here: [www.on-hosokawa.com/](http://www.on-hosokawa.com/)





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FOR A CLEANER, HEALTHIER  
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## 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.

#### Pumpteck 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](http://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

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!

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#### 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.

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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.

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