

A unique industry, with unique companies and unique news

Elements

In this issue:

- **Special CHEMUK edition – Visit Chemicals Northwest on stand L27**
- *Some of the topics covered in this edition...*
 - Risk*
 - Hydrogen*
 - Patents*
 - Data*
 - ...Plus many more member news stories*

Chemicals
northwest

2022

AWARDS

save the date

24th March 2022

@ **The Point** - Lancashire Cricket Club

Further details to follow via the awards pages on the website <https://www.cia.org.uk/chemicalsnorthwest/>

Elements is published by
Chemicals Northwest
The Innovation Centre
Sci-Tech Daresbury
Keckwick Lane
Daresbury
Warrington
WA4 4FS

The Chemicals Northwest Team is:



Ian Cranshaw
Operations Manager
cranshawi@cia.org.uk



Alex Abraitis
Member Services &
Events Manager
Tel: 01925 607050
alex.abraitis@chemicals
northwest.org.uk

Advertising sales: Alex Abraitis
Email: alex.abraitis@chemicalsnorthwest.org.uk

Designed and Printed by:



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



CIA | Chemical
Industries
Association

Chemicals Northwest is part of the
Chemical Industries Association

Disclaimer

Chemicals Northwest or 2co Limited cannot be held responsible for any inaccuracies or errors that may occur, individual products or services advertised or late entries. No part of this publication may be reproduced or scanned without prior written permission of the publishers.

Sponsor

This edition is sponsored by



RISK & HAZARD MANAGEMENT

Contents Autumn 2021

- 4** Welcome and about us
- 7** RAS - Sharing knowledge and experience at CHEMUK 2021
- 8** DIT - The future of the UK Chemicals Industry
- 10** From our members
 - Otto Simon - Developing a Hydrogen Economy in North West England
 - SLR - How does the safety concern of hydrogen compare with other fuels?
 - Lancaster University - FLP catalysis
 - ABS Group - Climate change and flood risk
 - Porous liquid technologies - New materials offering new platform technology
 - Siemens - Finding the right formula for the challenges ahead
 - BoS - 2021 Business of Science Conference
 - Warrington & Vale Royal College - Advanced Manufacturing & Engineering Training Centre
 - ITAC - Performance adhesives and coatings: the case for polyurethanes
 - SRG - An interview with Faye Allison, Team Leader for Chemicals North
 - Hosokawa - A brief history of air jet sieving for particle size analysis of powder
 - Stepan - named CIA Chemical Company of the Year
 - Bitrez - Steering a new direction for the chemical industry through innovation as recognised by the Royal Society of Chemistry, and the Queens Award
 - MCE Group - opens new valve maintenance facility in Cheshire
 - Dron & Dickson - continue UK expansion with new branch in Runcorn
 - Ingevity - to open new Capa Innovation Centre in Warrington
 - Catalyst - unveils Gossage plaque
 - Surfachem - celebrates 40th anniversary
 - RPS - Have you invited Human Factors to the table?
 - Appleyard Lees LLP - Chemical industry innovation in the 21st century - can patents be ignored?
 - Withers & Rogers LLP - Homecare is going vegan
 - WP Thompson - Patenting research outputs - generating supporting data
 - Hartree - New £210 million centre to advance AI and quantum computing
 - Axiom Engineering Associates - Making sense of inspection and testing data
 - How Made Smarter is helping North West SMEs embrace Chemistry 4.0
 - Intertek - Responsible Sourcing
 - RMG - Disruptive Stars
 - 6 Engineering - HAZOP: getting started from scratch
- 38** New members spotlight
 - ProDecon - New member spotlight and feature on PFAS
- 39** Supply chain directory

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? See over for details or please contact:

Alex Abraitis - Member services and events manager
alex.abraitis@chemicalsnorthwest.org.uk or visit:

<https://www.cia.org.uk/chemicalsnorthwest/Membership/Benefits-Costs/>
2021 rates. (from 1st April 2021)

Micro corporate membership	(1 - 10 employees)	£453+VAT
Standard corporate membership	(11-100 employees)	£789+VAT
Large corporate membership	(100+ employees)	£1004+VAT

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

Welcome



Dear reader,

Welcome to the Autumn edition of Elements magazine. We hope you are all keeping well and adjusting to life in the new normal.

As one of the "Headline Partners" at CHEMUK 2021 we are delighted to showcase this bumper edition of Elements magazine at the show, featuring the latest members news, achievements, advancements and general good news stories from the industry. CHEMUK 2021 will bring together the UK's chemicals, chemical & BIO-Chem processing, and chemical product formulation industries, providing an intensive 2-day supply chain sourcing, business networking, intelligence gathering, best-practice and strategy development experience. New for 2021 will be the 'CHEMSOURCE' Zone that will see an expansion of the exhibits space and speaker programme coverage, relating to chemicals, ingredients & raw materials supply chain & sourcing. CHEMUK 2021 is taking place at the NEC in Birmingham on the 15th and 16th September, and we look forward to catching up with you all there.

We are delighted to confirm the Chemicals Northwest 2022 Awards will be taking place at The Point, Lancashire County Cricket Club, Emirates Old Trafford, Manchester M16 0PX on the 24th March 2022. Further details will be due out in the next few weeks and sponsorship opportunities can be discussed.

We look forward to hosting the upcoming member catch up meetings, breakfast networking sessions and any other events which are relevant to the sector including the NextGenChem event in association with the University of Lancaster. If any members have further topic ideas please get in touch, we are sure there will be many more topical events which will come to light as the industry continues to develop.

I would also like to take this opportunity to say "goodbye for now" as I will be going on maternity leave on the 17th September. Plans are in place to find a replacement for my role while I am away and we will keep you informed in due course. I look forward to returning in 2022 to hear the latest developments and updates from the industry and to catch up with many of you once again.

Our LinkedIn Groups have continued to thrive and members and non-members are engaging more via the groups. If any of our member companies have any events, news, company updates etc which they would like Chemicals Northwest to promote then please email.

Please keep an eye on our website for upcoming events, news, industry updates, careers information and the latest Elements magazine <https://www.cia.org.uk/chemicalsnorthwest/>

Take care, stay safe and continue to look after those around you.

Alex Abraitis - Member Services and Events Manager

About us...

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

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

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

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

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



Annual Awards Dinner - During the annual CNW awards programme we are privileged to witness the many achievements made in our local 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. Up to 300 guests from across the industry gather on the night and everyone can see for themselves the amazing achievements made by our people and organisations.

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.



Breakfast

Networking - Chemicals Northwest is gaining a growing reputation for high quality breakfast networking events. With no specific theme, delegates are encouraged to make new contacts and some will make short pitches about their company, its products and services plus news announcements! The breakfast meetings have proved to be very popular and currently run on a 2 monthly basis attracting an average of 40 people each time. New contacts can lead to new opportunities and new business. All are welcome.

Common Interest Groups - Chemicals Northwest's **REACH** group has followed closely the developments within this complex and long term piece of legislation. The initiative allows the sharing of experience, best practice and knowledge between manufacturing, supply chain and support service providers, all with a keen interest in REACH. The group meets three times a year and now has a membership of over 50 companies.

CNW started the **Brexit** user group straight after the referendum in 2016 and it is gaining more and more support from membership. Whilst there is still uncertainty, many businesses will be looking to the future impacts, so we are enabling all interested parties to meet and discuss in more detail their common issues and concerns. Up to date information, expert insights and reports form the basis of each agenda, which will run parallel to the national work carried out by CIA.

Elements magazine - CNW produces an informative quarterly magazine called Elements which contains the latest round up of member news, specialist features and 'spotlights' on new member companies. This is a great opportunity to establish an association between your organisation and important sector issues, by contributing free editorial and press releases. Companies who do business in the chemicals sector may also wish to look at advertising options. The CNW sector directory is now integrated into Elements.

Website - Visits to the CNW website have almost doubled in the past 12 months. The website is regularly updated with industry news and the events programme. Companies are increasingly using it for enquiries and advertising. There is an efficient "e-shot" function which allows direct messaging to our contacts list. Viewers of the directory pages can search the whole of our supply chain providers to find where to buy products and services.

LinkedIn - The Chemicals Northwest LinkedIn group has an ever increasing membership, with over 1700 members now connected. The 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.

Twitter - The CNW Twitter account is growing, so to hear about the latest news from CNW and the wider sector, why not follow us. In addition we'd be happy to re-tweet any news or updates that members themselves tweet.





RISK & HAZARD MANAGEMENT

Understanding and facilitating the effective management of risk is our core business. Our expertise covers the full range of risk assessment and management services.

"We cannot solve our problems with the same level of thinking that created them." Albert Einstein



Safety Risk



Business Risk



Environment Risk

Only when the risk facing an organisation is well understood can it be effectively managed. Key to the successful identification, assessment and management of risk is engagement with the right people, using the right processes at the right time. We believe we are different to many of our competitors and our approach is distinctive, we don't always walk the well-trodden path but look at each client's particular risk context and develop a tailored solution, working in partnership with our client.

We work across all aspects of risk, from Quantitative Risk Assessments and Predictive & Consequence modelling, through to the 'softer' risks which may affect an organisation's reputation.



Cogent assured providers –
Process Safety Management for Operations (PSMO)

BowTieXP
visual risk assessment

Authorized distributor for CGE Risk –
BowTieXP software

RAS look forward to sharing knowledge and experience at ChemUK

As restrictions are lifted, we are looking forward to (safely!) being able to do more of what we do best – getting out there, talking to clients and exploring their sites and systems to help them identify solutions for risk management.

We are also looking ahead to the opportunities presented by in-person conferences and expos like ChemUK. These events allow us to catch up with existing connections, to make new connections, and most importantly, to share our experiences. We have a wealth of experience and knowledge across risk management in the high hazard industries, and we appreciate that others have their own insights and specialities too; this makes for a great setting to collaborate. The mix of disciplines and interests at industry events makes for innovative and holistic solutions, perhaps the most valuable take-away. After all, we might have different roles to play, but we all have the same goal, safe operations.

Our hot topic for ChemUK this year is understanding risk criteria. It sounds straight forward but it represents one of the most crucial aspects of risk analysis and management; the 'so what?' part of the process. We have worked out our risk, but what does it mean – are we good to go, or do we need to think about further control measures? Having criteria to compare our results against is vital for decision making and ensuring our efforts are focussed in the right places, but time and time again we have seen them misunderstood and misapplied.

The criteria we use should be dependent on the type of risk we have calculated, or we could end up comparing apples and pears. For example, the Tolerability of Risk 'Carrot' (which

outlines the boundaries between broadly acceptable, tolerable if ALARP and intolerable risk) defines the criteria for Individual Risk. If you have risk ranked an event in a HAZOP, estimated the risk of a scenario in a LOPA or focussed on a single piece of equipment, however, you haven't calculated Individual Risk. The 'Carrot' isn't an appropriate benchmark. Examples such as HAZOP, LOPA and risk analysis for single pieces of equipment look at societal, or group risk. Societal Risk analyses the number of people that can be harmed by a scenario, whereas Individual Risk looks at all of the scenarios impacting on a single person.

It is easy to see where the confusion comes from, when the more well known criteria is the 'Carrot', and some of the most frequently used hazard identification and analysis techniques are HAZOP and LOPA. Compounding on this, we often see operators using criteria that have been adjusted and handed down through the company, within a corporate risk matrix for example, with little understanding or corporate memory of where those criteria came from. It can come as a surprise when we challenge the status quo and dig deeper into their origins, but it is important to be confident in our criteria. We can make adjustments and calibrations to our criteria, we just need to be sure what it is we are looking at first.

There is a lot riding on the decisions we make for managing risk, so we need to make sure those decisions are based on a solid foundation. We are looking forward to sharing our thoughts on this, plus other aspects of process safety, at ChemUK. Even more so, we look forward to hearing the thoughts and experiences of others to see what we can learn and, hopefully, find opportunities to collaborate and deliver pragmatic risk solutions. See you there.

Jenny Hill and Carolyn Nicholls - enquiries@ras.ltd.uk



The future of the UK Chemicals Industry



Department for
International Trade

After the devastating impact of a global pandemic, businesses are working hard to recover and are looking for opportunities in the UK and abroad. The crisis highlights just how important it is to keep trade flowing and supply chains open.

Free trade and resilient supply chains through open markets will be crucial to the global economic recovery and the Department for International Trade (DIT) is at the heart of the UK government's agenda to deliver this. One of DIT's main objectives is to secure UK and global prosperity by promoting and financing international trade and investment, whilst also helping UK business take full advantage of trade opportunities.

Read below our interview with **Richard Carter, former Managing Director BASF UK, former Chair NWBLT and currently independent industry consultant, about the future of the UK chemicals industry and opportunities for UK business.**

1. What are the advantages for companies to be located in the North West Chemicals cluster in the UK?

The North West is one of four chemical clusters we have in the UK and it is by far the largest in accordance to Gross Value Add, making it strategically the most important by size and structure. Clusters have the advantage that they are built around an eco-system, which provides a skilled workforce, innovation and R&D establishments of which there are a significant number in the North West including e.g. the Region's Universities, GEIC, Sci-Tech Daresbury, Offshore Wind Innovation Hub and Alderley Park. The NW has the largest concentration of advanced manufacturing in the UK of which the chemical industry, ranging from petrochemicals, pharmaceuticals, and fine chemicals is a key contributor. This gives the area a strong footprint, making it a magnet for inward investment and investment in this future oriented sector.

2. Do you agree that the focus on sustainability and the decarbonisation of industry is the right way forward and is part of the future for the chemicals sector?

Sustainability and decarbonisation is absolutely the right way forward because there is no viable alternative. The global goal of achieving net zero by 2050 is a necessity to protect our living environment. Some of the most recent natural disasters across the globe underscore the need to reduce global warming. A recent International Energy Agency (IEA) Report highlights scenarios and a roadmap to net zero by 2050. However, areas of the NW have more ambitious CO₂ reduction



goals e.g. Greater Manchester has set the target of 2038. This shows that there is also a strong political commitment in the region to support the necessary investments, technologies and skills associated with the challenge. This highlights the ambition of the region, thus attracting cutting edge investment and commensurate skills and putting the region in an advantageous position. The establishment of the Energy Innovation Agency in Manchester to support the 2038 plan is an excellent example. The required reduction in CO₂ emissions will not happen without significant changes in behaviour from all of us, both personally and professionally. This can however only take place in a clear policy framework which e.g. incentivizes recycling and domestic retrofit measures for housing to name but two. A major challenge is to prevent "carbon pricing", which in one form or another is inevitable, from exacerbating divisions in society and between nations. Government, together with business need to recognise this potential risk of disproportionately impacting the less well-off and work on policy solutions.

The chemicals sector provides the solutions for the challenges of today and tomorrow. The mega trends that we see need innovation to provide solutions. Examples include: battery solutions be it for electric vehicles, for buildings or for power storage. Climate change and resulting food shortages are issues where chemistry has solutions. The chemical industry is very reliant on competitive energy for key processes, which means that the energy source of the future has to be renewable. The UK is a world leader in this sector with the NW being close to offshore power generation, an excellent prerequisite for e.g. green hydrogen. The region has the pipelines and infrastructure in order for people to benefit from this energy source as well as technology R&D for the future, for example the Hydrogen Fuel Cell Unit in Manchester. In addition, the NW is well placed to capitalise on Carbon Capture and Storage using depleted oil and gas fields off the coast. Focussing on the development and commercialisation of these opportunities are several strong alliances in the region, these include: High Net, NW Hydrogen Alliance, LSR Liverpool City Region Low Carbon Group and Cheshire Energy Hub.

3. How do you see the current and future relationship between the UK and Germany?

It is a very positive relationship. The changed situation of Brexit does not erase communality of the people, in culture or in business. Both are large trading nations, Germany is UK's major European market and we are both facing the common challenge of decarbonisation. At a national level we realise that the relationship has changed as Germany is a key partner in the EU but I am convinced that new bilateral relations will develop. Below the national level there are great opportunities for regions and cities in both countries to collaborate and partner because the regions and cities are focused on specific situations. These are not just business related but also cultural and educational. I believe we should put particular emphasis on developing opportunities for our youth, be it exchange programmes, culture and language, school and university exchanges, all of which are areas where we can deepen the relationship.

4. The work you are currently doing with the region, including perhaps the planned GMCA/RVR partnership.

With the British German Association I am strongly supporting the GMCA partnership with the Ruhr Metropole in Germany because there is a common heritage, common challenges and opportunities for people and business to learn from one another, to innovate together and find solutions. We need to facilitate these types of exchanges and there is scope for more, for example the Liverpool City region is also looking to develop a similar strategic partnership with the maritime city of Hamburg.

5. In your opinion what do UK companies in the chemicals sector need to do and focus on, to stay competitive and to continue trading with the EU?

We are experiencing a very disruptive phase, may it be because of the pandemic, Brexit or decarbonisation and Net

Zero. For business the key is to be agile, to adapt and really look ahead to the long-term future. Business models need to be reviewed and adapted to ensure they are robust for future growth. Companies need to review their way of working, which can mean harnessing digitalisation, exiting certain businesses and where advantageous relocating certain parts of the business to maybe Europe. We have seen the pandemic disrupt supply chains globally. Where there is disruption there is opportunity! Onshoring key parts of the Supply Chain is one such opportunity. Chemicals companies in the NW that agilely adapt to the changed market environment via onshoring and other measures to get closer to their customers, suppliers and partners will be successful. This in turn can support our net zero goals.

Further information for businesses

- Check [great.gov.uk](https://www.great.gov.uk) for ways that DIT can help your business grow internationally
- Find out how new Brexit rules apply to things like travel and doing business with Europe on [gov.uk/brexit](https://www.gov.uk/brexit)
- The HSE website ([hse.gov.uk/reach/brexit.htm](https://www.hse.gov.uk/reach/brexit.htm)) explains some of the steps you may need to take to comply with EU and UK REACH rules.

Interested in the German market?

DIT's team in Germany offers expertise and contacts through an extensive network of specialists in the UK, and staff in the British Embassy in Berlin and offices located in Dusseldorf and Munich. You can get in touch with the local DIT team via DITGermany.Enquiries@fcdo.gov.uk.

Follow DIT on social media:

- **Twitter** [@tradegovuk](https://twitter.com/tradegovuk) and [@tradegovukDEU](https://twitter.com/tradegovukDEU) (for Germany)
- **LinkedIn** at [Department for International Trade \(DIT\)](https://www.linkedin.com/company/department-for-international-trade)
- **Facebook** [@uktrade](https://www.facebook.com/uktrade)



Richard Carter - Former Managing Director BASF UK

Developing a Hydrogen Economy in North West England

by Darryl Nevitt, Business Development, Otto Simon Limited

It is inescapable; global warming, climate change and the quest to reduce our carbon footprint have at last permeated our collective consciousness. We remain indebted to luminaries such as Greta Thunberg and David Attenborough who have helped us grasp the seriousness of the situation by alerting us of the impending disaster to the natural world should we fail to implement immediate remedial action. Fortunately, theirs are no longer the lone voices scrutinising myopic short-termism and inept complicit politics.

COP26, to be held in Glasgow in November 2021, will showcase global measures and initiatives to combat climate change. The UK can unveil its green credentials via projects which include tidal barrages, wind farms, CCUS, and energy-efficient domestic heating. Hydrogen has a crucial role to play in the Government's strategy to be net-zero by 2050, as it can be used to replace natural gas and its combustion does not produce CO₂. Being colourless, odourless and invisible, CO₂ has received less investigation than the emission of particulates. The North West of England produces 40million metric tonnes of CO₂ emissions each year and acknowledges it is part of the global problem. But now the North West is at the vanguard of implementing regional solutions.

The development of a 'hydrogen economy' in the North West is a win-win situation. Not only will we begin to reduce CO₂ emissions by 10 million tonnes per annum, which will have invaluable environmental benefits, but it could also see a £4billion investment by 2030, creating 6,000 to 33,000 jobs—depending on which projections you believe. It is further predicted that the North West hydrogen economy could generate £17billion in G.V.A. A road map to develop these ambitious aspirations is being upgraded to meet a net-zero target.

HyNet is arguably the most high-profile project of its kind in the UK. It has two principal objectives: firstly, to supply hydrogen to large industrial consumers of natural gas which will entail building pipelines, and upgrading plant and fired equipment; and secondly, to capture CO₂ from industry, compress, pipe and store it in the depleted gas fields of the Irish Sea where an estimated 130 million tonnes can be safely contained. The UK government has recently awarded £33 million to HyNet to further develop this project which was supported by a further £39m of private funding from the HyNet consortium.

Investigative works are underway to prove the feasibility of producing and supplying sufficient volumes of Hydrogen to satisfy industrial demand, whilst preparatory work continues in respect of the capture and storage of CO₂. Information about HyNet, which is a collaboration between numerous industrial giants and Cadent in the North West, can be found at <https://hynet.co.uk/>

Central to the development of a Hydrogen economy is the North West Hydrogen Alliance; an inclusive organisation bringing together business, industry, academia and local government to champion and publicise all things hydrogen (www.nwhydrogenalliance.co.uk).

The preparedness for the hydrogen revolution is in part driven by the funding from BEIS. Fuel Switching studies and trials have commenced in which practical assessment will qualify the suitability of hydrogen as an alternative to natural gas. This includes evaluating the introduction of 100% hydrogen into furnaces and fired equipment whilst parallel events have taken place, assessing the effects of blending 20% hydrogen in natural gas for commercial and domestic use. An active member of the North West Hydrogen Alliance, Otto Simon is working at the forefront of technical innovation for the Hydrogen market. Using our extensive experience in gas processing, gas cleaning and managing the process safety standards and requirements, Otto Simon is involved in Fuel Switching at NSG's gas furnace in St Helens. Prior to this, Otto Simon was involved in the HyDeploy project at Keele University, which has been a Cadent led landmark hydrogen blending trial supported by the knowledgeable team from Progressive Energy.

NETZERO North West (<https://netzeronw.co.uk/>) provides a voice for those who advocate a paradigm shift away from venting CO₂ to atmosphere. It calls for investment for new infrastructure necessary to transport and store the by-products. Seldom does a landlord merit praise, but it must be acknowledged that Peel has contributed much to the North West Hydrogen economy. The region is making great efforts to effectuate positive change.

Otto Simon Ltd | www.ottosimon.co.uk | eng@ottosimon.co.uk



Perception or reality: how does the safety concern of Hydrogen compare with other fuels?

There is significant debate within society about the use of Hydrogen as a future fuel to meet decarbonisation targets. Most discussion relates to green versus blue Hydrogen and how industry can develop a truly sustainable form of energy. While discussions are dominated by the environmental aspects of producing, storing, and using Hydrogen it is important not to lose sight of safety.

To some, Hydrogen creates the perception of danger and large explosions, no doubt through historical events such as the Hindenburg disaster. Is Hydrogen particularly unsafe? Is it appropriate as a fuel used by the general population? The answer of course is that “it depends”.

The environmental benefits of Hydrogen are largely dependent upon the detail. For instance, if Hydrogen has been manufactured by reforming methane and then compressed using grid electricity made from burning coal then no environmental benefit is derived. Should renewable electricity be used to generate Hydrogen from water and then further used in compression, then there are potential environmental benefits. Similarly, the risk is dependent upon the context of how it is made and used along with its storage. Risk itself is best understood not by looking at Hydrogen in isolation but establishing how it compares to competing technologies such as Natural Gas or Petroleum.

From a technical perspective, Hydrogen is neither substantially more nor less “dangerous” than many other competing fuels. It is just different, and it is these differences which need to be understood so that effective safeguards can be implemented. Those who have worked with Hydrogen can point to the extremely low ignition energy required to ignite it in comparison with other fuels. This has minimal impact on the risk when you recognise that most of the typical ignition sources can ignite Petroleum or Natural Gas anyway. Hydrogen could also be considered “more risky” due to its wide flammable range, typically high storage pressures and containment issues due to its ability to easily find leak paths. Although true, Hydrogen also has great buoyancy and can ventilate away easily if the location of use is designed correctly. Competing fuels, such as Natural Gas or Petroleum, would generate flammable clouds which could persist for longer periods while Petroleum would create low level

vapours. The wider flammable range of Hydrogen also doesn't necessarily mean that there is greater risk. Hazard ranges from a flammability perspective are driven by the lower explosive limit (LEL) rather than the flammable range. In this respect, Hydrogen is similar to competing fuels such as Natural Gas, while Petroleum actually has a lower LEL. Again, this is not about better or worse, just a different problem which requires a different solution.

From a risk perspective, the likely dominating factor in the move towards Hydrogen fuels in non-industrial settings is the end users. This can be understood on two levels: perceived risk, and actual risk. The public are likely to perceive the risk of Hydrogen as larger than it is, given the unfamiliarity in comparison with known, existing technologies. This high perceived risk is a good thing. Currently, incidents within the Hydrogen industry are infrequent, no doubt due to accumulated experience and competence of the industry and its people. However, familiarity can breed contempt and there are trade-offs between experience and complacency. The challenge when using Hydrogen as a future fuel is to transfer the knowledge and competence to the users, during which a higher perceived risk by the public is undoubtedly a good thing.

As society moves towards a more extensive use of Hydrogen as a fuel, considerations are needed to ensure risks are reduced to appropriate levels. From a safety perspective we should ask ourselves:

- How does the introduction of pressurised Hydrogen impact upon hazard ranges for the facility/installation?
- Is the ventilation suitable in design and sufficient in capacity to prevent an accumulation of Hydrogen gas?
- Do we have an optimal layout to minimise risks at the design stage?
- Is equipment suitably rated for Hydrogen service from an ignition risk perspective?
- To what degree do specific issues such as Hydrogen embrittlement, fatigue and the ease of Hydrogen leakage affect the risk profile?
- What additional competencies will be required both within industry and the general population to safely use Hydrogen?

Author – Kris Ellenthorpe, Principal Consultant, SLR
kellenthorpe@slrconsulting.com



FLP catalysis: the smart new approach to hydrogenation?

Could chemical industry's reliance on transition metals be vanquished by organo-catalysis? This article explores the field of frustrated Lewis pairs (FLP) catalysis which has been used to activate small molecules such as hydrogen or carbon dioxide, bears the advantage of avoiding costly rare earth noble metals such as Rhodium, Ruthenium, and Iridium, and has progressed to levels starting to rival conventional transition metals approaches. In an economic context setting out to build on circular hydrogen economy, FLP catalysed hydrogenation reactions are surely a key tool to the future fine chemical industry and hydrogen waste stream valorisation.

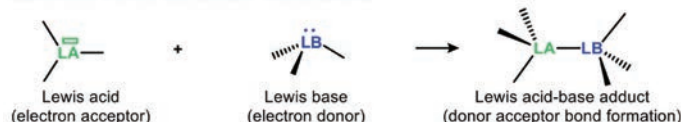
Noah Wright from the Greater Innovation for Smarter Materials Optimisation (GISMO) project at Lancaster University is conducting research into novel catalytic processes to develop a circular hydrogen economy and sets out the opportunities this presents.

Hydrogenation is an ever-present pillar in chemical industry. The materials science, polymer, pharmaceutical, agrochemical and foodstuffs industry all require catalytic hydrogenation systems for partial or full reduction of unsaturated bonds in their products. These transformations have been achieved in a variety of ways, however, as the 20th century saw such groundbreaking developments in transition metal (TM) hydrogenation chemistry the dogma meant that ultimately industry has almost exclusively used TMs to hydrogenate their compounds. The costs, toxicity and rarity of these precious TMs has led, since the turn of the century, to the development of new metal-free catalytic hydrogenation systems.

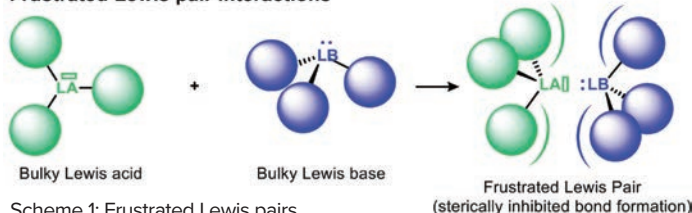
In 2006 Douglas Stephan and his group developed a reversible metal-free hydrogen activation system using $(C_6H_2Me_3)_2P(C_6F_4)B(C_6F_4)_2$. This sterically encumbered phosphine and borane combination (scheme 1) with the inability to quench one another is the reason for naming them 'frustrated' Lewis pairs (FLPs). It was quickly realised that the reactivity could be generalised to Lewis acid/Lewis base combinations given the steric constraints are sufficient to

prevent adduct formation and can emulate the TM electronic interactions. The last 15 years has seen major progressions in the field to the point where FLPs can start to compete with traditional TM catalysts. The scope of functional groups that have been reduced by various optimised FLP systems has seen rapid expansion from the initial imines in 2008 to now include N-protected nitriles, aziridines, enamines, alkenes, allenes, N-heterocycles, ketones, aldehydes, enones, ynone, polyaromatics and alkynes. A large number of studies have also probed the abilities of FLPs to activate a wide variety of small molecules as well as the original H_2 , these include CO_2 , CO , NO , SO_2 , and N_2O . Activation of these compounds has seen particular interest for industrial activation as this can lead to catalytic hydrogenation and capture of greenhouse gases. The last 5 years of FLP research has really seen a focus on heterogenous and asymmetric FLP catalysis with a range of approaches to achieve both.

Standard Lewis acid/base interactions



Frustrated Lewis pair interactions



Scheme 1: Frustrated Lewis pairs

Hydrogen is also becoming a much greater part of our energy consumption in order to phase out fossil fuels. The hydrogen economy is an envisioned future of hydrogen as a fuel for heat, vehicles and energy storage for long distance transport. With this in mind the goal of future projects should be to coordinate with industries already using hydrogenation and create a variety of novel FLP catalysts and develop these into optimised systems for application in their industry. The developments of new reactions using these new catalysts using hydrogen or hydrogen waste streams is key for the future of reducing energy consumption and achieving a more circular hydrogen economy.

For more information, please contact Noah Wright at [Lancaster University n.wright4@lancaster.ac.uk](mailto:n.wright4@lancaster.ac.uk). For details of the support available from the GISMO project, please visit www.smarter-materials.co.uk

GISMO is part-funded by the European Regional Development Fund.



Climate Change and Flood Risk

Flooding can have a devastating impact on industrial facilities in terms of safety, the environment, asset damage and operational downtime. In the UK, flooding is the most frequent and widespread natural hazard, and with climate change, flooding is expected to become more of an issue in the future.

The UK Climate Projections in 2009 (UKCP09) stated that the UK should expect to see an increase in the frequency of intense rainfall events. Whilst it is difficult to attribute individual extreme weather events to climate change, recently observed floods are consistent with the UKCP09 predictions. This was further corroborated in the 2018 update of UK climate predictions (UKCP18), which confirmed that the UK should expect:

1. warmer, wetter winters,
2. hotter, dryer summers, but with increases in the intensity of heavy summer rainfall events, and
3. increases in frequency and intensity of extreme events.

The implications of increases in rainfall intensity and frequency are of the most concern. Urban drainage systems are typically designed for 1 in 50-year events, so as the frequency and intensity of extreme events increases, so will the flood risk, to the point when an extreme event becomes a likely event within the lifetime of a typical facility.

Flood Preparedness is recognised by both Government and industry as a high priority, with recent flooding affecting several major hazard establishments that are subject to regulation under the Control of Major Accident Hazards Regulations (COMAH) 2015. Flood preparedness has, accordingly, been designated a strategic topic by the COMAH Strategic Forum.

How can an Industrial Facility Prepare?

Flood management should be risk-based, and fundamental to this is a sound understanding of the variables in the risk balance. ABS Group has been assisting the facility operators for many years in risk assessment, mitigation and emergency response planning for flood risk. Based on our experience, the key steps a facility should address include:

1. It is important that the facility operator understands the flood hazard for their location. This should include not just the water level, but flow velocity, hydrostatic loads, potential debris, contamination, flood duration, etc. The return period is fundamental to the understanding,

- but climate change is creating some uncertainty here. Sensitivity studies can be applied to the hazards to identify potential cliff-edge effects.
2. Map out the expected threat timeline from warning through to floodwaters affecting the site. This will help establish what mitigation can be implemented beforehand and during any flood event.
 3. Understanding the potential consequences, considering the impact on: property, equipment, raw materials, finished products, etc. This requires specific knowledge on water ingress mechanisms, flood defence effectiveness and equipment vulnerability.
 4. Estimate potential business interruption by considering: operational downtime, clean-up/decontamination, start-up/commissioning, supply chain issues, workforce availability, etc.
 5. Estimate potential safety and environmental impacts by identifying flood-induced losses of containment.
 6. If there are potential major accident scenarios related to the flood risk, ensure the risk assessment considers:
 - a. vulnerabilities in: fixed plant and piping, EC&I systems, utilities and shut down systems,
 - b. flood barrier effectiveness/reliability and cliff edge effects,
 - c. human factors associated with planned / emergency operator actions, and
 - d. the effectiveness of internal and external emergency response.

Flooding can have a devastating impact on industrial facilities and local communities, but the risk can be managed with a good understanding of the hazard, the potential consequences and a robust risk-based methodology.



FLOOD WARNING



FLOOD WARNING



FLOOD WARNING



FLOOD WARNING

For further details please visit
<https://www.abs-group.com/>

New materials offering New Platform Technology

On first consideration, a porous liquid, a liquid with CO₂ gas filled holes is nothing new; champagne is a great example.

However, if the gas capture capacity of a liquid can be enhanced by addition of a porous solid, while retaining the liquid advantages of a mobile, cyclable material, a porous liquid, then the possibilities for gas capture on an industrial scale are extensive. If the gas can be released from the porous liquid simply and sustainably, by physical means of recycling through a recovery and return loop, then the economic and environmental advantages over solid fixed-bed systems become extremely exciting. If that gas capture capacity is greater than existing industrial systems and the solid can be designed as shape and size selective, then we have a technology that will have remarkable advantages over existing technologies. We have a Type 3 Porous Liquid. Of course, it is difficult to put the gas back in champagne and there probably would not be much point, but with new porous liquid technology, the ability to charge and discharge gas simply by pressure and temperature swing is remarkable and easy.

The idea was the brainchild of Stuart James, Professor of Inorganic Chemistry at the Queen's University Belfast who together with David Rooney, Professor of Chemical Engineering discussed the potential for gas capture by suspending a stable, inert, porous solid in a carrier solvent that could not enter the pores, to form a porous liquid. The concept was generalised and published in a paper in 2007¹, then followed up by demonstration of actual materials in 2015, in an article in Nature². This latter work was a collaboration between Queen's and Andy Cooper, Professor of Chemistry at University of Liverpool and research groups in Argentina, France and Germany. Porous Liquid Technologies Ltd was formed in 2017 to exploit the industrial potential of these novel materials.

Porous Liquids offer a tailorable new platform technology with many applications:

- Have up to 20% porosity
- Have much higher gas solubilities than non-porous solvents
- Flow – can be circulated
- Can be made at scale without expensive synthesis
- Have excellent selectivity
- We can design PLs for purpose using a wide range of porous solids and benign, readily available solvents - even water!

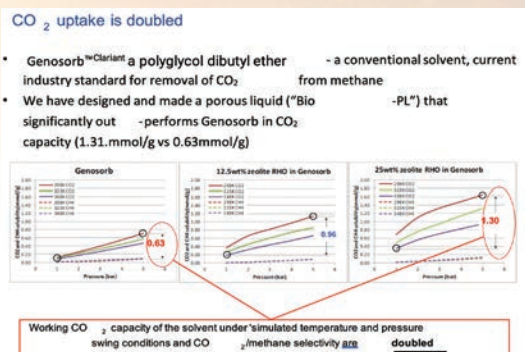
The full potential of porous liquids cannot be reviewed in

a short article, so only the most remarkable properties are discussed below.

CO₂ Capture

The CO₂ uptake of current industrial solvents can be doubled using porous liquids, leading

to overall operational cost saving of 23% confirmed by independent techno-economic analysis, due in large part to the lower methane loss. We believe that with further work, this performance could be considerably enhanced.

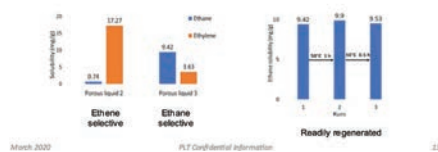


Gas Separation and Recovery Ethane/Ethene

Other gases can be separated, for example ethane and ethene mixtures. Separation of these gases is usually achieved by expensive, energy-intensive, cryogenic distillation. Porous liquids can be designed to be selective to either ethane or ethene and the ethane/ethene can easily be recovered to regenerate the porous liquid.

Ethane-ethene separation

- Very difficult to do, similar sizes, boiling points, polarities...
- Costly cryogenic distillation
- Conventional solvents not selective
- PLs offer a lower energy solvent-based alternative



Other Potential Uses

Over 500 porous liquids have been made so far from diverse components including zeolites, organic cages and hypercrosslinked polymers dispersed in a range of solvents including liquid polymers, water, non-volatile organic solvents and even edible natural liquids such as olive oil.

They can be designed to be size- and shape-specific to capture volatile organic compounds (VOCs, e.g. solvent emissions from chemical processes) and perform liquid/liquid extractions such as MEG/Water separations.

Who we are

Materials Innovation Factory

An exclusive joint venture between PLT, Queen's University Belfast and the University of Liverpool

Solving problems and creating new opportunities

Chemistry and Chem. Eng. Dept.

PLT Confidential Information

For further information, our business and technical team can arrange individual presentations, contact Dr Tony Bastock at tony.bastock@porousliquidtechnologies.com

¹ N. O'Reilly, N. Girardot, S. L. James, Chem. Eur. J. 2007, 13, 3020.
² G. Li, C. De Francesco, G. Bellaghi, R. L. Chenoweth, K. R. Reddy, T. Koschke, L. Post, M. F. C. Gomes, A. Cooper and S. L. James, Nature, 2016, 527, 216.

Finding the right formula for the challenges ahead

As the UK begins to emerge from the pandemic, looking beyond 2020 means focussing budgets and resources on a new set of challenges. With the industry facing the need to digitalise and decarbonise, the mass electrification of the sector requires tried and tested thinking around electrical infrastructure resilience to meet this new challenge head-on.

According to a recent report from the CIA, the chemical sector has reduced its direct emissions by 80% over the last 30 years. One of the biggest tools at its disposal will be the mass electrification of the industry. The sector relies not only on wholesale electricity becoming more competitive, but also new ways to reduce and produce its energy on-site. This move to electrification however also poses new risks for organisations who may be adding unforeseen electrical stress onto their facility as the move away from gas continues.

Siemens has a very strong presence within the industry. Its customers range from major corporations like BASF, Dow, DuPont, Ineos and Akzo Nobel but they also support the many thriving small and medium enterprises who also make a huge contribution to the sector.

“The concept of electrical infrastructure resilience is nothing new for the chemical sector; the industry has had a good level of awareness for decades, simply because of its energy intensive nature,” said Siemens’ Head of Chemical Industry, Ian Elsby.

Siemens’ involvement in this space hinges on three key areas in the drive for decarbonisation and mass electrification of the industry: reduce, produce and procure. Ian said: “For us, reduce refers to being as energy smart and efficient as you possibly can. Our thinking is that if it can be measured, it can be improved. Second, we have produce, which relates to on-site generation. While local generation may not cover the entire site’s needs, it may be enough to be stored and used to offset periods of heavy use at peak time. With the grid decarbonising at such a rate, the third area is procure, and for a lot of organisations that has been the easy part so far.”

Ian added: “Finding ways to help all industry with energy pricing over the coming years while meeting the UK’s carbon neutral targets is obviously key. But being as energy smart and efficient as you possibly can be at your plant can and will make a major contribution to the bottom line. With additional, visible data they can identify individual production processes which could be more energy efficient. Even a relatively small company which is using a process like electrolysis might have an annual electricity bill that runs into the many tens of thousands.”

Measure for success

For many global customers in this sector Siemens is also

there to deliver high-level, strategic advice in terms of their future infrastructure and what are the most appropriate energy sources. The first step for organisations is understanding how much of their site contains legacy equipment and quickly dating electrical infrastructure. For a major company, it might own older ‘legacy’ sites within a portfolio which might be four decades into service and they will not be particularly energy efficient.

This doesn’t just apply to multi-site owners. Siemens also works with smaller SMEs creating bespoke solutions for their facility. When you work with Siemens you get the advantage of liaising with the OEM who understands the entire energy picture rather than simply an installation and service supplier.

Ian concluded: “When you work with Siemens you get the advantage of speaking with an OEM who understands the big picture; everything from industrial automation and manufacturing processes paired with 170 years’ of electrical infrastructure expertise.”

Find the answers to your energy resilience questions or book a site visit to discuss your challenges with our technical team here: www.siemens.co.uk/energy-resilience



With more than 20 years’ experience gained within the process sector & automation business, Ian holds a wealth of chemical industry-specific knowledge. As Head of Chemicals, Siemens UK & Ireland, Ian’s current role sees him responsible for liaising directly with the Global Chemical Sector HQ advising on the industry challenges faced by UK manufacturers, OEMs and engineering businesses to ensure Siemens develops value-based solutions and technologies for its clients.

Ian is engaged within several UK chemical industry networks, offering insights around the following themes: The Internet of Things, automation, digitisation, Industry 4.0, productivity, and Connected Manufacturing.



Image Source: Siemens

The 2021 Business of Science Conference will be held at Millennium Point, Birmingham on Thursday 7th October 2021. Exploring and celebrating the “Commercialisation of Science”, the Conference will explore the key topics of “Science, Innovation and Skills” and how they provide both commercial and societal benefit.

BoSC21 will be opened by Andy Street, the recently re-elected Mayor of the West Midlands, followed by several keynote presentations from organisations who can clearly demonstrate the benefits that their involvement in Science & Innovation have realised. These include BASF, InnovateUK and Thomas Swan Ltd, along with William Blythe Ltd, Domino UK Ltd, IVE, 2M, Graphene @ Manchester, Nexus, the Caburn Group, and the University of Salford.

The Conference will continue with three breakout sessions discussing STEM skills, The Science of Wellbeing, and the Use of Advanced Materials to support Sustainability, before moving into the afternoon session where the Conference will hear a keynote presentation about “Innovation and Societal Benefit”.

This has been a key aspect of our lives over the last 15-18 months and the rapid development of the Covid vaccines has clearly demonstrated the “Commercialisation of Science” in a way that none of us could have anticipated only two years ago.

The future of Science and Innovation will also be explored through a stand-alone careers session for the 40-50 students who will be attending the Conference, giving them the chance to attend a full ‘business’ conference, interact with the other 200+ delegates and help them to identify STEM careers which may appeal to them in the future.

As part of an “Advisory Session”, AGBI and HGF will be providing delegates with practical advice and support regarding IP protection, the use of R&D tax credits and access to other Innovation Finance along with advice about other legal matters to consider when developing and taking a product or service to the marketplace.

Full details about BoSC21 can be viewed at [The Business of Science Conference 2021](#) through which tickets are on sale. The event will close with presentation of the Innovation Awards in the three categories of Primary, Secondary and 18+ to those entries that have best described their exciting “Science Dream” and how they would like Science to change what and how we do things. Entries for these awards are welcomed at [The Innovation Awards 2021 | Business of Science](#).

The evening beforehand, at the pre-conference dinner, the annual BoS Leadership Awards, supported by PZ Cussons, will be awarded in four categories. If you or someone you know has demonstrated outstanding business leadership in science and innovation, please consider nominating them at [Leadership Awards - Business of Science](#).

Key Partners of BoSC21 include Road3, Incaloop, WISE, Wakelet, the WOW group, Greater Birmingham Chamber of Commerce, the West Midlands Innovation Alliance, STEM Learning and TransitionPlus Ltd, British Coatings Federation and “Lookout” who will again be providing the research to develop the annual Business of Science Survey; [Business of Science Survey Report 2019 - Business of Science](#).

Steve Bennett, Founder of the Business of Science Conference and the associated events commented: “I am delighted to be bringing the event to Birmingham after the postponements of the last 18 months and to add the strengths and opportunities of the West Midlands to the existing BoS community which has been developed across the Northwest and further afield. Collaboration and Partnership is essential to the success of the Commercialisation of Science and within this increasingly important national agenda.

The Conference will again celebrate the value of Science and Innovation to society, business and individuals and I look forward to welcoming everyone to the event. BoSC21 could not take place without the many sponsors and partners of the Conference who have stuck with the event over the last 15-18 months and their ongoing support and encouragement over the last few years since the inaugural event in 2016 has been invaluable.”

**Steve J. Bennett, Founder & MD
Business of Science Ltd
e-mail: steve@businessofscience.co.uk
Phone: (07946) 650120**

Advanced Manufacturing & Engineering Training Centre

In 2020 Warrington & Vale Royal College was awarded £656,000 by the Cheshire & Warrington Local Enterprise Partnership (LEP) to support the transformation of digital and advanced manufacturing and engineering skills across all sectors of business in Cheshire and Warrington.

The award, from the LEP's Local Growth Fund, allows the college to develop their curriculum and facilities, supporting the college's plans to serve the region as a specialist centre for materials measurement, testing and analysis, and enhance the provision of digital and manufacturing skills training. The specially-equipped AMET centres will enable local employers to engage in cross-sector collaboration and transform their business practices.

In the initial stage of the project, the college transformed the ground floor of their Winsford campus, installing specialist facilities housing the latest engineering and manufacturing equipment. This stage was completed in time to be utilised by new students who were beginning their engineering studies at the start of a new academic year. Newly installed equipment included: Colchester lathes, a XYZ Protorn SLX 1630 CNC lathe, a XYZ SMX2500 vertical milling machine and a horizontal milling machine.

Meanwhile, the college's Warrington campus, which already offers a wide range of engineering qualifications and apprenticeships, has seen investment throughout 2021 as it gears up as deliver the enhanced curriculum from September 2021.

As part of a five-year plan, the Warrington & Vale Royal College AMET centres will continue to be equipped with 'core' equipment that supports the skills required for smarter manufacturing techniques and accelerates the adoption and use of Industrial Digital Technologies (IDTs) such as robotics, industrial control and digital intelligence. The equipment is designed to mirror and augment workplace manufacturing and engineering practises and processes, enabling trial, fault finding, diagnosis and innovation. Utilising this equipment will enhance the skillset of local employers, driving increased productivity and competitiveness.

Local employers have highlighted their aspiration for growth and competitiveness and, more specifically, to digitalise manufacturing processes and upskill their employees in parallel. The Warrington & Vale Royal College AMET centres will support and enable this growth and the move towards digitalisation. The college aims to become a 'centre of excellence' for advanced manufacturing and engineering, whilst serving as a hub for local employers who aim to raise levels of productivity and innovation within their workplaces.

Tiger Trailers, local employer to the Winsford AMET centre, stated: "We envisage the (AMET) facility will increase skills in the local area. This will hopefully, in turn, increase our productivity and improve business and prospects for growth."

The investment from the LEP will enable the college to deliver bespoke skills training packages for local employers and expand on the range of technical qualifications and apprenticeships offered to learners.

This project serves to recognise the need to support circa 45,000 jobs in advanced manufacturing and engineering across Cheshire and Warrington and the need for small and medium enterprises (SMEs) to scale up their productivity to secure growth.

Employers cite a lack of required skills and lack of experience as barriers to productivity. Local employers will have flexible access to the various facilities, equipment and resources provided by the AMET centres. Their employees (and prospective employees, such as apprentices) will have the opportunity to engage in a range of local skills training packages, education and research. This will enable employers to:

- Upskill their workforce without the need to travel 'out of area'
- Recruit to 'hard-to-fill' vacancies, especially at the higher skill levels
- Improve productivity and secure growth
- Create new jobs and apprenticeship opportunities.

The college are keen to hear from any engineering, manufacturing or allied services organisations or sector specialists local to their sites who may be interested in getting involved with or utilising the equipment to help develop their workforce.

To discuss your business needs, or to arrange a tour of these exciting new facilities, please contact the college's Employer Engagement Team on: 01925 494271 or email: employers@wvr.ac.uk. The team are on hand to discuss how these new facilities could support you and the growth of your business.

Apprenticeships, vocational, professional and higher education qualifications are all available through the college, who specialise in providing hands-on, vocational training. If you would like to view the full range of opportunities available, please visit: wvr.ac.uk.

Performance adhesives and coatings: *the case for polyurethanes*

It was in 1902 that ITAC's founder, John Marcus, discovered tyre scrapings dissolved in solvent made an excellent rubber adhesive. When painted on to the outside carcass of a tyre, this formed an ideal primer coat to which the tyre tread could be bonded. This marked ITAC's beginnings as the "Indian Rubber & Tyre Company". However, developments in tyre manufacturing eventually resulted in the company needing to find a new outlet for its products, and in the 1930's ITAC found opportunity in Manchester's raincoat industry. To be fully waterproof, the seams of coats required treating with a varnish like coating covered with a piece of tape made from the same material as the coat. ITAC thrived with this until World War 2 when materials diminished.

It was not until 1954 that polyurethane technology was introduced to the business. ITAC mixed polyurethane granules with solution which was then sold on to the textile clothing industry to provide a waterproof coating for the sector's end products. When applied to fabric, the coating solution dried to a tack-free film to render the whole garment waterproof, not just the seams. From there, ITAC's performance coatings and adhesives portfolio has grown to provide an increasing array of effects that provide solutions to many problems within and between industries. From chemical resistance properties to varying tack and grab strengths, this growth can be largely attributed to the evolution of polyurethane technologies and associated capabilities.

Polyurethane has been described by many as a material that defines the word versatile! Isocyanates, the chemical blocks that form part of a polyurethane's makeup, along with the polyols they are combined with, are wide and varied. Consequently, the polyurethane-based materials produced to address specific requirements can be equally diverse. This provides manufacturers with opportunities for customisation; a core competence essential for successful business transactions and relationships. This versatility can be further enhanced by using additives, modifying processing techniques, and improving formulations through effective R&D. With polyurethanes the possibilities seem limitless, which makes it the material of choice for many applications.

Adhesives

Polyurethane-based adhesives can be precisely formulated to meet a product's specific requirements,

and also modified to provide the required performance characteristics for another. For example, due to the reactivity of the isocyanate component in the polyurethane, fast cure rates can be obtained in applications such as structural joints. However, this can be slowed down where required through altering the level of catalysts used in the formulation.

Polyurethane-based adhesives can be used to provide strong bonds between different material substrates for example, metal, plaster, cork, plastic, and wood. They are therefore highly sought after in the construction, automotive and aerospace industries where such a versatile range of materials are used. Their excellent bond properties also make polyurethane-based adhesives suitable for the manufacture of various types of packaging where resilience and strength are key factors in the safe transportation, storage, and display of finished goods.

Coatings

Performance coatings are normally designed to have a decorative or protective purpose, or often both. They can increase product lifecycles, enhance appearance, and facilitate ease of use and maintenance for the end user. Polyurethane-based coatings form a large part of material engineering from consumer goods sectors to construction, aerospace, and civil engineering.

Like adhesives, polyurethane-based coatings are extremely versatile in their application due to their multifaceted properties. They are formulated with either aromatic or aliphatic isocyanates, the latter being preferred for more demanding applications where strong resistance to oxidation, UV radiation, temperature extremes, and pollution are required. Due to their durability, versatility, and practicality, polyurethane-based coatings hold a large portion of market share within the performance coatings sector.



Polyurethane adhesives

ITAC recognise that one adhesive or coating does not fit all! Further information on ITAC's technical solutions and application expertise can be found by calling 01204 573736 or emailing info@itac.uk.com

An Interview with Faye Allison, Team Leader for Chemicals North at SRG

Despite the initial shockwaves of last year's pandemic causing unprecedented disruption to the sector, most UK chemicals companies are now well on their way to recovering pre-COVID revenue and profit levels. With the industry slowly getting back on its feet, the chemicals recruitment market is once again starting to flourish.

To take stock of the current recruitment climate within the North West chemicals sector, we gathered the thoughts of Faye Allison, Team Leader for Chemicals North at the STEM recruitment agency, SRG.

1) What impact has COVID-19 had on the North West chemicals sector? COVID initially caused a huge slowdown due to delays and shortages of raw materials. In response, most companies halted their recruitment processes, with many utilising the government furlough scheme or making redundancies. Some even had to enforce temporary shutdowns.

Overall, though, the sector has emerged favourably from the pandemic. From H2 2020 onwards (and especially throughout 2021), the industry experienced a phenomenal recovery. Companies have quickly adapted working practices and diversified products when certain raw materials have been unavailable.

This dynamism has caused the number of job vacancies to rise significantly, particularly within segments that have been supplying raw materials to the vaccine effort (such as speciality chemicals and fine chemicals).

2) What are the key hiring challenges for the sector in the post-COVID world? The main challenge, of course, is finding the right talent. With the sector recovering so quickly, competition for talent remains fierce. Attracting the right individuals and moving quickly enough to keep them engaged will increasingly be a strategic priority for hiring managers.

With the chemicals recruitment market once again being candidate-led, people can now afford to be more selective about where they move. Indeed, most candidates will be involved in four or five recruitment processes, with potentially two or three offers already on the table.

As employee responses to SRG's annual STEM Survey demonstrate, flexible or agile working is also recognised as crucial to overall job satisfaction levels (even before the pandemic). Chemicals companies that can offer some form of flexible working for employees – when practicable, of course – will therefore stand out to candidates.

This comes with one major caveat: with most chemicals work being laboratory-based, offering flexible working requires striking a balance with operational efficiency.

3) Which factors do chemicals companies need to consider when looking for talent? Aside from forcing salaries up, the rising number of vacancies is casting a spotlight on factors such as flexibility, benefits, working environment, and progression prospects. Companies therefore need to consider what makes them attractive when hiring. They need to keep recruitment processes moving forward without big gaps between interviews, and, crucially, temper expectations when it comes to the calibre of candidate they are able to attract.

Waiting for the perfect technical fit in the current climate could mean waiting forever. In the long run, it may prove more cost-effective and beneficial to target people based on cultural fit, and then invest in upskilling and training to hone their technical capabilities.

4) Which trends will shape the industry in the near future? Based on recent hiring trends and common industry talking points, sustainability will be a huge driver of change as companies of all sizes strive to tackle the ongoing climate crisis.

A domino effect is taking place. As more firms adapt to societal trends and evolving industry standards, larger multinationals are beginning to streamline their supply chains and select chemical suppliers based on their sustainability credentials.

This sustainability drive can also be seen in companies switching their attention to Green Chemistry, which involves cleaner energy production (hydrogen evolution), bio-produced chemicals, plant-based chemicals, recycled plastic, and the commercialisation of bi-products.

5) Why does working in chemicals represent a great career choice? Even before COVID, the chemicals industry was a major contributor to the UK economy and a key part of the country's manufacturing output. Post-COVID, the industry will continue to boom and demonstrate just how crucial it is to society.

The robust and innovative nature of the sector means constant change and technological advances are inevitable, creating a genuinely exciting and dynamic environment for scientists to learn from and contribute to at any stage of their career. Chemicals is unlikely to disappear anytime soon, so offers real longevity for STEM graduates entering the job market.

SRG is the leading recruiter of permanent and temporary STEM talent for the UK, Europe, and the US visit [srgtalent.com](https://www.srgtalent.com) for more information.

Faye Allison



A Brief History of Air Jet Sieving for Particle Size Analysis of Powder

The name Hosokawa has been synonymous with powder and particle processing innovation for more than a century, pioneering techniques and equipment to meet the evolving needs of chemical manufacturers, academia and research establishments. Jack Owens, from Hosokawa Micron Ltd, takes a look at the history of pneumatic dry sieving technology for particle size analysis.

Determining particle size distribution is an important technique for chemists who create or handle powders and is essential for quality control. Commercially, it is used by industries including chemicals, pharmaceuticals, cosmetics, food, agrochemicals and minerals – who use it to help manage the efficient, consistent production of products and powder-based ingredients. For academic and scientific purposes, particle size analysis comes into its own for R&D, testing and materials control.

There are lots of other ways to analyse powder – from laser diffraction and image analysis, to x-ray sedimentation – and many ways to characterise particles through sieving, including horizontal, tapping, sonic, wet and throw action. Air jet sieving offers the most accurate method of determining particle size.

Air jet sieving utilises directional blown air to create an efficient sieving action and automatically captures the weight of oversized particles which cannot pass through the sieve. The sieve mesh size is incrementally reduced in size for each pass until a full set of particle size distribution data is obtained. Air is forced upwards through the base of the sieve via a rotating nozzle, and suction on the underside of the sieve ensures that all particles, which are small enough, will pass through the sieve into a collection vessel, ready for the next pass. The engineered airflow also breaks up agglomerated material to ensure the most accurate data possible is obtained.

Pneumatic dry sieving using air was invented by Hosokawa back in the 1950s and the first model made was the Air Jet Sieve A200 LS. The ground-breaking technology was devised to mitigate the issues of very fine powders agglomerating while being analysed, which is a common problem. The

desktop instrument was a revelation. Efficient, economical, accurate and reliable, it became popular in laboratories around the world. For quality assurance purposes, the Air Jet Sieve was able to effectively explore reproducibility, as well as replaceability.

Since the first Air Jet Sieve A200 LS was introduced in 1953, there have been several major technology upgrades, but the cosmetic design and basic principle has become an industrial design classic that has changed little over the past seventy years. In fact, the original Air Jet Sieve remained largely unchanged from 1953 until 1994, when an electric control panel was introduced, which made analysis quicker but its footprint less compact.

Fast forward six years and the technology and capabilities developed even further, while the footprint reverted to more or less the compact size of the original (37cms wide), with the (now) touchscreen control panel better integrated and conveniently sighted. Today, the latest version has similar streamlined looks, but the technology at its heart is infinitely more powerful and sophisticated.

Tighter industry standards have led to its software and design being validated to ISPE, GAMP, FDA, ISO, ASTM and ATEX standards, plus the integration of more automatic processes and wider capabilities – such as sieve set management, manually adjustable under pressure, analysis of results against set-point specifications and

parameter management, audit trails, e-signatures, language settings and password management – demonstrate just how far the Air Jet Sieve technology has advanced to meet the needs of its users.

The success of Hosokawa's air jet sieving methodology continues. There are approximately 15,000 Hosokawa Air Jet Sieves in circulation, with components and digital technology to meet the needs of toxic and non-toxic materials that require accurate, reliable micro-precise analysis, batch control, continuous process, raw material control and classification methods. Seventy years on, results are categorised by Hosokawa's, industry-standard, particle size analysis measurements, which are internationally recognised.

Hosokawa Micron Ltd is exhibiting at ChemUK 2021 (stand B12) and will have an Air Jet Sieve 200 LS to view. For further details about air jet sieving, please contact Jack Owens, Sales Engineer, on +44 (0)1928 755293 or email JOwens@hmluk.hosokawa.com





HOSOKAWA MICRON LTD

At the Forefront of Powder Processing Technologies for the Chemicals Industry

Hosokawa Micron has more than 100 years of powder and particle processing innovation experience. We design, manufacture, install and service a comprehensive portfolio of market-leading containment and processing equipment – including complex, bespoke process systems – for customers worldwide.

From tailor-made downflow booths, gloveboxes, isolators, nano containment, aseptic process systems, mills and mixers, to laboratory instrumentation – such as air jet sieves and powder characteristics testers – our specialist processing equipment for the chemical, pharmaceutical, cosmetics, agrochemical and nuclear industries is complemented by in-house contract manufacturing and specialist laboratory testing, particle design, analysis and R&D services, as well as our digitalisation service, Hosokawa Gen4 – combining digital transformation solutions and unique intelligent software for data-driven manufacturing.

For further information, advice or a quote, simply get in touch – we would be delighted to help.

hosokawa.co.uk



Follow us



Visit us
Stand B12
CHEMUK 2021
15th-16th Sept 2021
NEC Birmingham
UK



Rivington Road, Whitehouse Industrial Estate, Runcorn, Cheshire, WA7 3DS, UK | +44 (0)1928 755100 | info@hmluk.hosokawa.com

LABORATORY & PILOT PLANT • NANOTECHNOLOGY • R&D • CONTRACT MANUFACTURING • ANALYTICS • INTELLIGENT SOFTWARE • MAINTENANCE • TRAINING

Optimise Your People, Processes, Productivity and Profitability

Hosokawa Gen4's digital toolkit converts live data from sensors and controls into a flexible, scalable and secure solution to optimise production processes, reduce energy bills and achieve tangible business benefits that will drive business growth.

Hosokawa Micron's portfolio of industry-leading particle and powder processing equipment and process systems can now be Hosokawa Gen4-enabled



HOSOKAWA GEN4
Data Driven Manufacturing

Intelligent Software by Manufacturing Experts

| +44 (0)1928 333139 |

info@hosokawagen4.com

Stepan named CIA Chemical Company of the Year

Surfactant manufacturer Stepan UK is celebrating a double win at the 2021 Chemical Industry Awards including the CIA's highest accolade, the Company of the Year.

- Stepan Stalybridge manufactures surfactant, the primary ingredient in fabric softeners
- The Chemical Industry Awards are the chemical industry's most prestigious awards.
- The Special Responsible Care Award for Process Safety recognises the chemical site that demonstrates excellence in the way it protects its people and hardware and enhances the reputation and sustainability of the industry.
- The Company of the Year can only be entered by companies shortlisted in other CIA categories and recognises growth and a sustainable contribution to the UK economy.
- The results were announced on 17 June 2021 at a virtual event featuring all sponsors and nominees.

Stepan UK, part of the Stepan Group, a global manufacturer of chemicals, is celebrating a double win at the Chemical Industry Awards (CIA), the industry's premier awards. At a virtual event for nominees and sponsors held on 17 June, the company's Stalybridge site won the Special Responsible Care Award for Process Safety. The award follows significant investment in and implementation of a range of process safety and environmental system improvements that enhanced the reputation and sustainability of the industry.

"We are extremely proud of the fact that there have been no reportable process safety incidents at the site for 10 years," said George Forrest, Site Manager at the Stalybridge Site. "We are conscious that there is never room for

complacency. We see this award as validation of our focus on continuous improvement, ensuring our people, processes and equipment are constantly reviewed and optimised to ensure the Stepan Stalybridge site remains a safe place for our workers and neighbours."

Company of the Year

In addition to the Process Safety Award, Stepan UK was also shortlisted for the CIA's Health Leadership category and the dual nomination meant the company qualified for consideration - and ultimately won - the most prestigious category of all: the Company of the Year.

The CIA notes that the winner of this Award will be, "In the view of the judges, the most outstanding CIA member company - demonstrating growth of its business and a sustained contribution to the UK economy."

Over the past year, Stepan UK has achieved record growth, record production levels and record batch production times. The site received the company's own President's Flag award for achieving 12 months without a single injury. And the site invested £3.5 million on capital projects designed to increase production capacity and protect and improve safety - all factors which led to Stepan's win.

"Stepan UK is honoured to have collected numerous awards in recent years," explained George, "but the Company of the Year is an accolade of which we can be especially proud, because in celebrating growth and contribution to the UK economy, it touches on all the aspects of the site that make us who we are - from process efficiency to innovation, working safely to putting our people first.

"To say we are thrilled is a huge understatement."

Visit <https://www.stepan.com/> to find out more.



Steering a new direction for the chemical industry through innovation as recognised by the Royal Society of Chemistry, and the Queens Award

As featured in previous publications, Bitrez Ltd are still pushing ahead of the curve with an outstanding and established track record for innovation in the design, development and manufacturer of specialist polymers that meet the highest standards of regulatory compliance. With a long history of developing products that comply with global food and packaging regulations, pioneering products to eliminate substances of high concern, and bring new technology to market. The business has many years' experience of overcoming hurdles and ensuring product continuity in the face of adversity.

The next chapter in Bitrez's journey is in promoting and working with technologies that meet the United Nations 17 Sustainable Development Goals. With new developments in sustainable feedstocks that do not impact the food chain or contribute to deforestation, Bitrez is developing more biobased products that enable the formulation of specialist coatings, adhesives and matrix systems for the protection, fixture, or manufacture of components.

Featuring in current affairs-style documentary series 'Chemistry for a Better Tomorrow' produced by ITN and the Chemical Industries Association (CIA), and most recently, Business Reporters 'Best of British' feature, they are proactively changing the face of sustainability and regulatory reform in the chemical sector in the UK and on an international scale.

Led by Paul H. Jones FRSC, Director of three successful UK businesses, Anacarda Ltd, Bitrez Ltd and Chemical Processing Services Ltd, they have been recognised for yet another Queens Award win for Enterprise in Innovation this year (Anacarda Ltd) alongside Bitrez's previous win in 2019.

Paul commented on the recent Queens award win, "I am delighted that Anacarda has won the Queen's Award for Enterprise for Innovation. The design and development of technically advanced products that are free from volatile organic materials, substances of very high concern, and derived from sustainable feedstock is at the heart of the Anacarda business ethos. With greater interest in creating and maintaining a circular economy, we set up this business purely to develop 'bio-based' materials. Our range of products not only offers performance benefits, but provides safer, cleaner, and more environmentally friendly products. It is extremely gratifying to receive this honour and this award celebrates the loyalty of our much-valued customers who trust in our expertise and commitment to develop innovative products to aid compliance with environmental and regulatory reform. Having identified the target requirements, we brought these materials to market with Cardamine, now recognised as the leading high-performance product in this class of chemistry, and it is an honour to be recognised with this award."

Continuing his drive for change in the chemical industry and correcting the environmental damage wrought by industries of yesteryear, Paul H. Jones was recently recognised for his success by the Royal Society of Chemistry, winning the Chemistry World Entrepreneur of the Year award. This award was for the creation of UK business that are globally recognised for innovating speciality polymers employing green chemistry principles.

Anacarda Ltd

Anacarda Ltd is an innovative polymer designer and supplier of specialist bio-based curing agents for epoxy resins derived from sustainable feedstocks. Anacarda specialises in the manufacture of polymers derived from Cashew Nutshell Liquid.

www.anacarda.com

Bitrez Ltd

Bitrez Ltd is the UK's leading speciality polymer manufacturer, offering innovative products that focus on high performance, regulatory compliance, and sustainability. Their extensive portfolio of pioneering technologies has been designed to meet bespoke customer needs within the coatings, composites and adhesive sectors whilst maintaining high quality, flexibility, value, and service.

www.bitrez.com

Chemical Processing Services Ltd

Chemical Processing Services Ltd (CPS) is a new consultancy service in the field of polymer chemistry. With over 30 years' experience in the chemical industry, having been responsible for pioneering a broad spectrum of innovative products, CPS offers a range of services that guarantee regulatory and technical compliance. CPS translate complex legislation into opportunities for the chemical industry.

www.cps-consultancy.com



New valve maintenance facility opens in Cheshire

Having been successfully based in the North East of England for 30 years, MCE Group Plc have recently opened an additional valve maintenance facility in the North West.

Located in Warrington, Cheshire, the new facility is ideally positioned to support North West industry due to its proximity to major motorway networks.

MCE Group plc have over 30 years' experience in valve maintenance services. Having long been recognised as a F.A.S.P (Fisher Approved Service Provider) for the Emerson range of Control Valves in the UK, they have successfully gained accreditation to become an A.S.P, meaning they are now an Authorized Service Provider for Emerson's portfolio of Control and Relief Valves. They also specialize in periodic testing, overhaul, and re-certification of all relief valves, having certified approvals from ABB and Zurich.

Within their two workshops, MCE can offer blasting, machining, lapping and painting for complete valve overhauls, from single valves to full planned outages, and their fully trained, time served technicians can provide both off-site and in-situ valve maintenance support for all control, isolation and relief valves including actuation.

With a bespoke, in-house designed Valve Management

Database, valves can be tracked through the servicing process, in real time, from your own office. The database also keeps a complete record of all work undertaken on your valves for future reference and planning.

MCE are also stockists of ValvTechnologies metal-seated, severe service ball valves, offering an absolute ZERO-LEAKAGE guarantee, proven site energy savings and long-term peace of mind.

As well as holding ISO 45001:2018, MCE have successfully completed their re-certification of ISO 9001 and 14001 : 2015 standards. Further confirmation of their commitment to achieve the highest quality valve servicing and new valve products. They are proud to offer continuous support to some of the leading Chemical, Petrochemical, Pharmaceutical and Power producing companies across the UK.

If you require any further information or are interested in discussing ways in which MCE can assist with site efficiency, by way of valve overhaul, valve replacement or asset management, please send your enquiry to ukenquiry@valv.com or visit www.mceplc.com



Selwyn Jones, MCE Group's Business Development Manager, is on hand for site visits and can be contacted on 01925 202399 / 07718 560214 or e-mail sjones@valv.com. Selwyn will also be on the MCE Group stand C17 at ChemUK in Birmingham on 15th & 16th September 2021.

Dron & Dickson continue UK expansion with new branch location in Runcorn

The UK's leading hazardous area and industrial materials distributor have expanded their operations in the UK, opening a new premises to service their growing customers in the North West of England.

In addition to branches in Aberdeen, Stirling, Hull and Lowestoft the new location supports their growing UK client base and demand in the North West for hazardous area, marine grade and industrial electrical equipment.

Dron & Dickson partner with all major hazardous area and industrial manufacturers to supply an extensive range of products with market leading service levels. Uniquely, all Dron & Dickson's internal sales staff have completed the CompEx Foundation course, qualifying them as the most competent Sales Team in the industry. They are also a leading Third Party Assembler of Weidmuller (Klippon) and Hawke junction boxes and build to any spec in-house to the highest safety standards.

Dron & Dickson Runcorn Branch Manager David Minshall commented:

"Our presence in the North West of England will facilitate growth and aid diversification into new industry sectors. Our location here shows our commitment to our customers and allows us to provide the hazardous area electrical knowledge Dron & Dickson are renowned for. We are all excited to develop our existing customer base and forge new relationships."

Dron & Dickson, Unit 11 Seymour Court, Manor Park, Runcorn, Cheshire WA7 1SY



Health & Safety Award Winner at the Chemicals Northwest Awards 2021. [View Dron & Dickson's full product range here.](#) For further details contact Kari Montgomery kari.montgomery@drondickson.co.uk

Ingevity to open new Capa Innovation Centre in Warrington, U.K.

Ingevity (NYSE: NGVT) announced that it will open the Capa Innovation Centre in Warrington, U.K. This new laboratory will be dedicated to accelerating innovation and application development for its suite of Capa® polycaprolactone technologies for use in coatings, adhesives, sealant and elastomer (CASE) applications.

Located adjacent to Ingevity's existing central laboratory building in Warrington, the facility will house state-of-the-art equipment and application testing capabilities and is expected to be operational by the winter of 2021.

"By enhancing and increasing the overall laboratory space for our engineered polymers business, we can directly add even greater value to our customer partnerships," said Norman Keane, director of innovation, engineered polymers, at Ingevity. "This additional space expands the

scope and service offerings we can provide, while enabling us to better collaborate with our customers on research and development opportunities."

Ingevity celebrated the groundbreaking for the Innovation Centre in April with a small, socially-distanced gathering of six of its employees and John Turner Construction Group contractors.

"Our Innovation Centre will provide opportunities for collaboration with our customers," said Jeff McMeans, Manager, Project Engineering, Ingevity. "We're excited about enriching innovation capabilities that purify, protect and enhance the world around us."

The Innovation Centre will house four labs, a reception and lobby area to welcome customers and other visitors, office area, three conference rooms, three silent rooms, a kitchen and a library.

Learn more about Ingevity and its mission to purify, protect and enhance the world around us by visiting www.ingevity.com.



Pictured above (l-r): Mark Ellwood, Project Manager, John Turner Construction Group; Jeff McMeans, Project Engineering Manager, Ingevity; Norman Keane, Director of Innovation, Engineered Polymers, Ingevity; Steve Hulme, Vice President, Engineered Polymers, Ingevity; Graham Carr, Head of Warrington Laboratory, Ingevity; and Dwayne Taylor, Contracts Director, John Turner Construction Group.



Pictured above: Rendering of Ingevity's Innovation Centre in Warrington, U.K.

Catalyst unveils Gossage Plaque

Catalyst Science Discovery Centre and Museum has installed a blue plaque to recognise the support that Gossages Soap Works gave to the local community of Widnes.

The building where Catalyst is based, used to house Gossages Soap Works and in 1925 Gossages demonstrated their commitment to the local community by paying for a new wing at Highfield Community Hospital in Widnes.

Following the opening, the first male and female babies born in the new wing took the name Gossage with Ethel Gossage Dennett being born on 8th January 1925 and Alexander Gossage Rowse on 11th January 1925.

Mrs Mary Rowse, widow of Alexander Gossage Rowse, approached Catalyst and offered to fund the installation of a plaque in the building to commemorate the support of Gossages for the local community and to act as a lasting reminder for her family, which Catalyst was pleased to do.



The plaque was unveiled by a delighted Mrs Rowse on Friday 11th June and will remain on display at Catalyst adjacent to information boards which tell the fascinating story of Gossages Soap Works.

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

Surfachem

celebrates 40th anniversary



1981, the first London Marathon was held with 7,000 runners, NASA launched the very first Space Shuttle mission, Prince Charles and Lady Diana Spencer got married and MTV started broadcasting in the USA.

June 1981 also marked the date that Surfachem Limited was incorporated as a business. As we celebrate this milestone, we acknowledge that a lot has happened over the past 40 years. From our Yorkshire roots in the United Kingdom, we have grown to become a global leader in speciality chemical distribution.

The evolution of Surfachem's Distribution Centre

In 1981, we started with a small office and warehouse in the North of England, primarily distributing surfactants. Fast forward to 2021, and we have evolved to become a leading speciality chemicals distributor, focused on Personal Care and Cleaning applications. We employ a team of over 140 dedicated experts across 10 sites. Supporting customers all over the world, our business has fulfilled 17,500 orders and shipped 24,000MT over the past year.



Over the last 40 years, we have built an exceptional product portfolio, containing over 2,500 speciality chemical ingredients. Our knowledgeable laboratory team use the latest ingredients to create innovative formulations. With over 685 new formulations developed in the last year, and a new laboratory facility opening this year, we look forward to supporting even more customers with formulation ideas and support.

"To our current team, and to everyone that has worked at Surfachem over the past 40 years, I would like to take this opportunity to thank you all. Without you, Surfachem would not be what is today.

40 years after the start of our journey, we are still delivering chemistry for a better life. Thank you to all of the suppliers and customers that have worked with Surfachem over the past 40yrs.

Whilst celebrating this achievement in person is not currently possible, we look forward to arranging a delayed event at a later date when COVID restrictions have been fully lifted."

Greg Barton – Managing Director, Surfachem Limited.

"Surfachem became a truly international business during the last decade and our future is becoming a global one. We thank everyone who has helped the group reach this 40 year milestone and to those who will help deliver the next 40."

Dr. Richard Smith - Chief Operating Officer, 2M Group of Companies & Managing Director, Surfachem Group.

"Since joining the 2M Group of Companies in 2007, Surfachem has grown from a UK distributor into a truly international business, with numerous sites and customers all over the world.

In addition to maintaining strong customer relationships, and expanding its global footprint, Surfachem has also played a key role in promoting STEM education by sharing its knowledge and helping people of all ages and backgrounds, truly understand the endless opportunities within the chemical industry." **Mottie Kessler MBE – Chair, 2M Group of Companies.**

Whilst now is the time to reflect on Surfachem's history, it is also an opportunity to look ahead. Our world is ever-changing and as a Group, we acknowledge the importance of digital development in enabling us to grow. In addition to our commitment to digital solutions, we will continue to make strategic investments in people and infrastructure to support our growth.

We look forward to seeing what our team can achieve, driven by our pledge to **deliver chemistry for a better life.**

Visit <https://surfachem.com/> to find out more.





BRIGG SCIENTIFIC

RECRUITMENT

TEMPORARY & PERMANENT SOLUTIONS IN A SCIENTIFIC & TECHNICAL WORLD



In a people business, we provide a simple solution to an often complex problem.

We keep your production and technical projects on schedule.

Working with scientific companies throughout the UK who experience problems with finding technical skills, yesterday.

+44 (0) 161 509 3999, +44 (0)20 3929 3111

www.BriggScientific.co.uk

[brigg-scientific-ltd](https://www.linkedin.com/company/brigg-scientific-ltd)

Have you invited Human Factors to the table?

Do your safety processes integrate Human Factors when screening for Safety Critical Tasks?

There is no established definition of what a Safety Critical Task (SCT) is within COMAH regulations. The Energy Institute provides guidance on Safety Critical Task Analysis (SCTA)¹, referring to SCTs in terms of Major Accident Hazard (MAH) consequences, as a task in which a human failure could:

- Lead to a MAH consequence;
- Result in the escalation of a MAH consequence;
- Reduce effectiveness of barriers against a MAH;
- Impact the potential to recover from a MAH consequence (i.e., emergency response arrangements).

By understanding the complexity, frequency, and consequences of tasks, this ensures that sufficient time and resource is spent analysing those tasks where the operator plays an important role in maintaining safety.

Performing Human Factors (HF) task analysis on SCTs provides opportunity to identify, prioritise and eliminate or reduce the risk of a MAH occurring². To ensure a thorough and robust HF assessment is achieved, the following activities should be undertaken:

- The SCTA process needs to identify which tasks/operations are safety critical and identify which tasks therefore require assessment.
- Assess human actions or inactions that might make a MAH more likely or may result in a more severe consequence.
- Identify and implement adequate risk control measures for these SCTs, to reduce the likelihood or consequences of human failure.

HF assessments aim to ensure that systems match the physical and psychological capabilities and limitations of their users and promote error-free performance.

A holistic approach to risk management must include the integration of HF assessments within the hazard and safety assessments and engineering substantiation processes. HF assessments are an important component of the overall safety justification, producing optimised performance and a reduction in human error.

¹ Energy Institute Guidance on Human Factors Safety Critical Task Analysis, 2nd edition, 2020
² Smith, E., Koop A., King S., Guidance on Human Factors Critical Task Analysis xxii paper 54, 2011, accessed at <https://www.icheme.org/media/9267/xxii-paper-54.pdf>



**For further details
please contact
<https://www.rpsgroup.com/>**

Chemical industry innovation in the 21st century – can patents be ignored?

Innovation in the chemical industry is a fascinating phenomenon and it is a real pleasure to be immersed in it every day, to see innovation arise from an often complex mix of circumstances and driving forces. There is of course the ‘chemistry’ side of it, and the complexities presented simply by the subject matter alone are obvious. Then there are also the complexities that come from the ‘industry’ side of it.

I am talking about the regulatory, business and customer landscape; three factors that are continually challenging the status quo. These three external factors are often responsible for a large proportion of the innovation, whether due to shifting regulatory requirements, changing business conditions or new customer specifications.

These factors do not, of course, stand independently. Wide reaching themes commonly influence some or all of these factors. One major theme that continues to drive innovation is the on-going geographical shift of the chemical industry. As portions of the industry in the west continue the drift east, we are seeing western chemical companies adapt by innovating up the value chain. This shift is also leading to pressures for divestments, mergers and acquisitions as companies seek to reposition and refocus their businesses, actions that we find often spur innovation.

Another major theme driving innovation is the race toward green (/clean) technology. Regulations are being rewritten, pushed forward by strong social forces. Chemical companies are responding, and the associated innovation is accelerating. A green mandate is becoming the focus of many within the chemical industry.

It is clear then that chemical companies are being driven by a wide range of factors to continually seek new competitive edges in the market through technological innovation.

This is where patents come in. Patents are an asset class that give exclusive rights to technical innovations.

How then can patents be used to drive an innovative chemical business forward, and what are the risks associated with ignoring patents and not setting out a practical patent strategy for your business?

An effective patent strategy is all about enabling the business to make informed decisions. It is about being in a position to know which are the right innovations to protect.

In this way, a patent strategy that is aligned with business objectives can generate commercially valuable patents.

Simply by existing, the patents produced can then deter competitors from launching products that share the beneficial effects of the innovation, that share the competitive edge. They can silently steer competitors down different paths, away from the company’s interests. Patents also find a lot of value as a business tool – whether that is via direct revenue generation through licencing/sale, or to attract investment. Done right, they can also facilitate collaborations by helping to manage expectations.

On the other side of the coin, an effective patent strategy can also help the business navigate the patents of competitors – to avoid wasting money on product development where the way is blocked, or to help clear the way where possible. An effective strategy can avoid the nightmare of a competitor showing up out of the blue with a strong relevant patent for seemingly old rope.

With all of that in mind, it is interesting to consider why some chemical companies appear to take a head-in-the-sand approach until it is too late.

Well, it can take time for a newly innovative business to appreciate the importance of patents, which is understandable. From the outside, patents can come across as overly complex and expensive, and the value return can be unclear. It’s easy to keep knocking “form a patent strategy” down the priority list. We also find that some undersell their work, with inventors stating - “well what I did was obvious”. It is true that an innovation must not be obvious to secure a patent, but this is a legal assessment, and in some ways the inventors are worst placed to make that assessment.

Capturing an innovation within an effective patent strategy may only lead to a 5-minute discussion to decide that no further action is needed, but, alternatively, it could be the break that transforms a company’s prospects.

I look forward to talking about this topic at CHEMUK 2021. If you would like to hear more, please join us on Stage 2 at 10:00 for my talk: Patents – can you continue to ignore them?



Chris Mason

chris.mason@applyardlees.com

Website: www.applyardlees.com

LinkedIn - Applyard Lees IP LLP

Twitter - @ApplyardLees

Facebook - @ApplyardLeesIPLLP

Homecare is going vegan

By 2025, it's estimated that a quarter of people in the UK will have chosen a vegan lifestyle. As well as welfare concerns, growing awareness around the environmental impacts of the meat and dairy industries have accelerated the country's move towards veganism. But how are homecare brands responding to the challenge to find more ethical products?

Both larger brands and SMEs are looking to get involved in the plant-based revolution, so the vegan homecare market is becoming increasingly crowded. Consumers often stick with products that they trust, so finding a way to compete with these established names can be challenging for newcomers. Therefore, real innovation is needed to stand out.

Patent protection is essential in a growing market, offering brands a competitive edge. However, it will take more than switching out an animal ingredient for a known vegan alternative to obtain this type of commercial protection. To ensure their product is patentable, companies must be able to prove that it is truly new and inventive.

One way to do this is to start from scratch. Pipper Standard's European patent (EP3046425) uses fermented fruit as a cleaning formula. A pineapple solution is fermented in lactic acid bacteria, meaning the product is made entirely from natural vegan ingredients.

Other innovators have taken a more eco-friendly approach. Method's patented liquid cleaning products (EP2346976) for example contain plant-based ingredients and are not tested on animals. Comprising a surfactant system, water, a solvent system and an enzyme, these highly-concentrated formulations provide effective cleaning with lower doses of the active ingredients. Thanks to the reduced-weight formulation, less packaging is required and energy consumption during transportation is also reduced.

Solid versions of homecare products are also being created to benefit the environment. Blueland's pending US patent application (US2020/377827A1) for a laundry detergent in a concentrated tablet form uses entirely vegan ingredients and removes the need for single-use plastic. At three times smaller than average laundry detergent pods, the whole-life carbon footprint of the product is significantly lower than non-vegan alternatives. Solid formulations require a considerably different approach to liquid solutions, making the innovation truly inventive.

Every brand should have an IP strategy, and patent protection is an essential part of this, offering a 20-year exclusivity period during which a company can recoup its upfront investment



in R&D. However, when competition is high, a more multi-dimensional IP approach may be necessary. For example, trade secrets are sometimes used in partnership with patents to protect the innovation in the early stages of development. To ensure the secret's safety, non-disclosure agreements can be implemented, and the trade secrets stored in a tamper-proof and time-stamped digital form to prove their existence at a certain date.

A strong brand identity is also particularly important in a crowded market. For larger companies, this can involve acquiring smaller, more established vegan businesses to avoid competing with them when bringing new products to market. These SMEs are likely to have a cruelty-free record, meaning consumer trust will be secured more easily.

Nevertheless, new larger brands are also evolving rapidly, developing new vegan formulas for a variety of consumer products. A range of alternative ingredients are already available, making product development a fairly straightforward process. However, the challenge comes with proving that the brand is now dedicated to a more ethical approach to business. Trade marks can be an important part of this change, with new slogans and logos aligning the brand with veganism. Seeking accreditation from associations such as the Vegan Society, can also enhance the company's credibility in this space.

Should a new product be inventive enough to be patentable, an application must be filed as early as possible. Doing so minimises the risk of early disclosure, and helps to give the business a competitive edge. If the innovation holds an environmental benefit, which vegan products commonly do, the UK's Green Channel could be used to accelerate the patent application process. In a dynamic market, speed to market can be critical as competitors may be working on something similar, for example.

With many consumers now favouring cruelty-free products, businesses must get creative to meet this demand. As such,



the development of a comprehensive IP strategy is more important than ever for homecare brands that want to win a place in consumers' shopping baskets in the future.

Dr Joanna Thurston is a patent attorney and head of the Homecare group at intellectual property firm, Withers & Rogers LLP www.withersrogers.com

Patenting research outputs – generating supporting data

Before making the leap into patent law as part of WP Thompson's chemical and life sciences team, Dr Ian Wilson worked and studied in academia for over a decade. In the second part of our series highlighting the key considerations for researchers thinking about patenting an invention, Ian investigates the use of data to support a patent filing.

Anatomy of a patent

As we all know, scientific journal articles can broadly be broken down into subsections (Introduction, Results, etc.). Patents are no different. Patent specifications are broken down into sections including: a background, which provides context for the invention; a summary of the invention, which details the broad concept of the invention; a specific description, which provides details and includes a discussion of any associated figures, data or examples; and the claims. While the claims define the scope of the invention that is protected by the patent once it has been granted, the rest of the specification supports the claims and should ensure that sufficient detail is provided to allow someone to put the invention into effect.

The role of data

When presenting scientific conclusions, you need proof in the form of data-led results. You would be unlikely to deliver a presentation saying, "We found X. We have no supporting data, but you can trust me" (although I have seen it happen). In much the same way, unless the effect of the invention is readily apparent from a mere descriptive statement, a patent application should include sufficient rationale and/or evidence that the claims are feasible, i.e., that a claimed product be produced, and that a claimed product or method yields the technical effects set out in the specification. In many fields it may be necessary to provide evidence of at least one way in which an invention may be put into effect, although broader and more robust patent protection may be justifiable from the inclusion of more data.

Data types

Perhaps unsurprisingly, the type and extent of data and examples required depends largely on the invention. Chemical and life sciences patents often disclose in vitro data although, depending on the field, in vivo data may be required. A healthy way to look at it is through the eyes of a reviewer for a journal. If a patent claim would not be an acceptable statement in a research article without data, what data would make it allowable? Consider carefully what features of your invention you want to claim and plan any experiments accordingly.

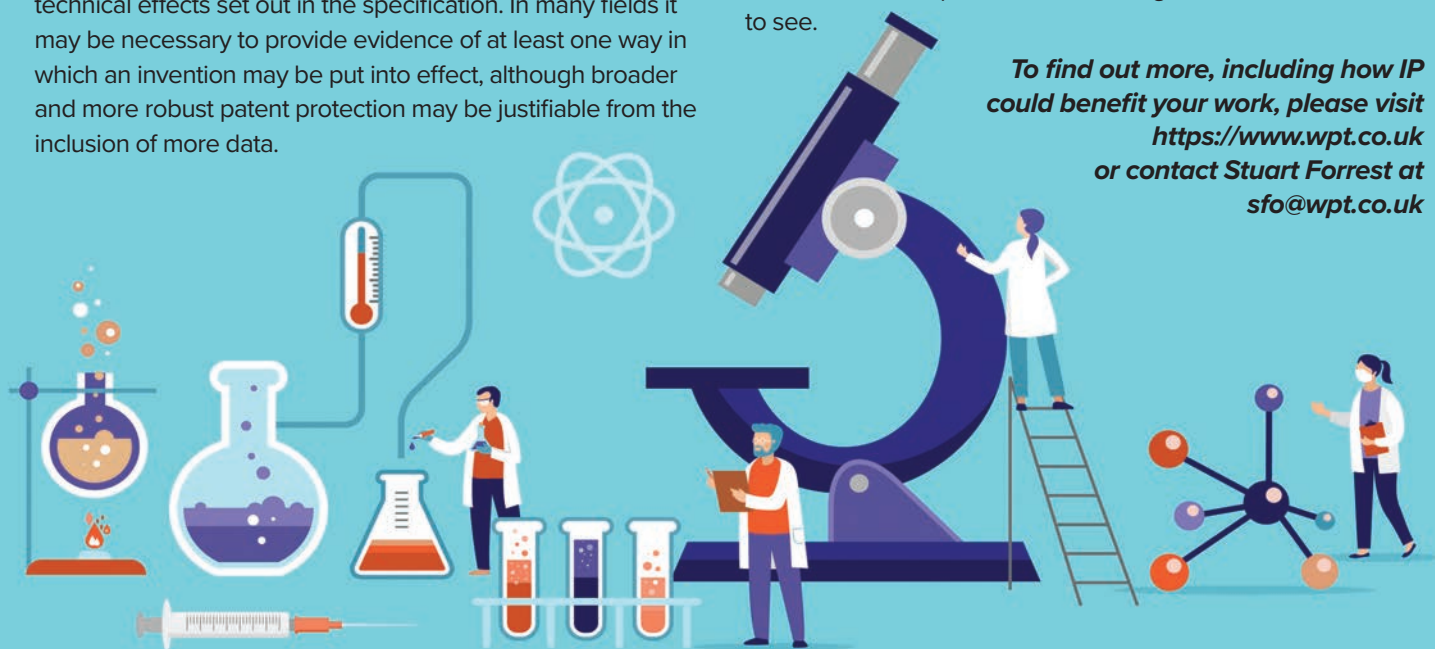
Choosing components

When planning experiments, also think about the components you will use. Scientific methods often describe particular components as essential to their success. However, listing unnecessarily specific components in a patent claim may reduce the scope of protection, and even provide routes for competitors to circumvent the claims of your patent. Of course, finding out later that undisclosed components are actually crucial to your invention could leave a patent in jeopardy if it cannot be put into effect in any other way. It is, therefore, critical to cast a skilled-eye over any experiments to ensure that the specification includes any reagents, solvents and/or conditions that could feasibly be used in those experiments and plausibly still enable the invention to be worked.

Planning ahead

As you will have noticed, planning is key in the fast-moving world of intellectual property. There is a fine balance between filing a patent application before problematic publications or competing patent applications may be filed, and ensuring you have sufficient data to support the invention set out in the patent application. Working out what data are required and how to generate them is essential to getting this balance right. There are risks inherent in any strategy but planning correctly can lead to a well-protected, rewarding invention for the world to see.

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



New £210 million centre to advance AI and quantum computing

A £210 million five-year programme has launched, giving the public sector and industry access to cutting-edge computing for innovative research.

The new Hartree National Centre for Digital Innovation (HNCDI) will bring together world-leading expertise with innovative artificial intelligence (AI) and quantum computing technology, to benefit industry and the public sector.

The collaboration between the UK's Science and Technology Facilities Council (STFC) and IBM, a leading global hybrid cloud and AI company, will be housed within STFC's Hartree Centre.

The government, via UK Research and Innovation (UKRI), has agreed to invest £172 million over five years, met with a £38 million in-kind contribution from IBM.

Science Minister, Amanda Solloway, said:

"Artificial intelligence and quantum computing have the potential to revolutionise everything from the way we travel to the way we shop. They are exactly the kind of fields I want the UK to be leading in, and this new centre in the North West is a big step towards that. Thanks to this fantastic new partnership with IBM, British businesses will have access to the kind of infrastructure and expertise that will help them boost innovation and grow the economy – essential as we build back better from the pandemic."

Supporting UK innovation

The HNCDI will support UK businesses and the public sector by reducing the risk of exploring and adopting innovative new digital technologies, such as AI and quantum computing.

It will do this by breaking down practical barriers to innovation such as access to infrastructure or digital skills gaps within their organisation.

By increasing the pace at which businesses can take advantage of new digital technologies, the collaboration will:

- enhance productivity
- create new skilled jobs
- boost regional and national economic growth.

Professor Mark Thomson, Executive Chair of STFC, said:

"The HNCDI programme will foster discovery and provide a stimulus for industry innovation in the UK. By allowing industry to access a ready-made community of digital experts and cutting-edge technology, it will provide momentum for new ideas and solutions. This programme has the potential to transform the way UK industry engages with AI and digital

technologies, to the benefit of not just research communities but all of society."

Boost to the economy

The centre is based at STFC's Daresbury Laboratory in the Liverpool City region and will create vacancies for an additional 60 scientists, plus further interns and students gaining hands-on experience.

With £28 million of government investment already agreed for the first year, work is underway to get the centre up and running as soon as possible.

To boost discovery and develop innovative solutions to practical problems raised by UK industry, the team of experts will apply:

- AI
- high performance computing and data analytics
- quantum computing
- cloud technologies.

The centre will work across sectors including:

- materials
- life sciences
- environment
- manufacturing.

This will include collaboration with academic and industrial research communities, including:

- start-ups and SMEs
- public sector
- government.

Possible industry applications from this new programme include optimising complex logistics. For example, picking and packing orders in large warehouses for supermarkets, traffic routing, energy distribution. Also improving design and manufacturing processes across automotive sectors.

Its objective is to:

- turn ideas into practical digital solutions to maximise benefit for UK industry
- find the right technologies needed for projects to succeed and make businesses more competitive
- provide training and skills to staff, in order to take full advantage of digital technologies
- support industry investment in emerging technologies to make businesses more resilient.

Dario Gil, Senior Vice President and Director, IBM Research, said:

"The world is facing grand challenges which demand a different approach towards science in computing, including AI and quantum computing, to engage a broad community across industry, government, and academia to accelerate discovery in science and business. This partnership establishes our first Discovery Accelerator in Europe driven by our two UK-based IBM Research locations in Hursley and Daresbury as they contribute to our global mission of building discovery-driven communities around the world."

www.hartree.stfc.ac.uk

Making sense of inspection and testing data

Axiom Engineering Associates has been serving the high hazard process industries across the UK, including key operators within the North West, specialising in Asset Integrity Management. During the Covid pandemic, economic conditions have proved more challenging than we could ever have imagined, with the need to delay capital spend and closer scrutiny of assets approaching or exceeding their original nameplate life.

The interest in Big Data and data analytics has increased dramatically and the challenge is, as always, to extract meaningful information from this data. In the process sector, such information has value because it can – amongst many other things – be used to postpone capital spend or extend the life of assets, but how do you set up systems to support the extraction of meaningful information? Axiom's best practice suggestions may help you:

Decide what questions to ask

It is impossible to decide exactly what questions to answer at a later date, however it is possible to identify particular themes or areas that you may be interested in knowing about. These may include the remaining life of a set of particularly vulnerable components, or the risk of a particular damage mechanism throughout the asset fleet.

Decide what data to collect and think about the marginal cost of obtaining it

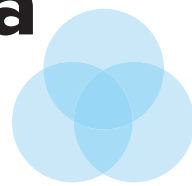
Collecting the underlying data that can yield high value information is expensive. Significant costs can be incurred during collection, extraction, or potentially, both. Focusing on the data you need, to provide the answers you want, will enable you to get the best value out of this exercise.

Decide how to structure your data

Humans look at things differently, interpret data and report differently. This is dependent on skills and experience, and also the environment an individual was in at the time the work was carried out. Studies such as the Programme for the Assessment of NDT in Industry (PANI) highlighted how human factors can affect technicians' ability to successfully test components for defects. Deciding how to structure your data allows you to minimise mistakes.

Make your data structure clear to those collecting it

If field technicians collect data but in the wrong place or take the wrong sort of data then this will skew the results. If you indicate what data is important and how it should be recorded then this can give you a more consistent picture.



Axiom

Engineering Associates Ltd

Maximising Assets - Minimising Risk

Sanitise your data, assign metadata correctly and reclassify it where you can

You will be collecting data from a wide variety of sources over a long period of time. It is significantly easier to process if you sanitise it on the way in. Low quality or low confidence data can be tagged as such or discarded. Having a consistent system for categorising data is key.

Understand, establish and record measurement uncertainty

When establishing slowly varying trends to determine equipment life, shortfalls in the accuracy, precision and repeatability of measurements can be so significant as to make such measurements meaningless when attempting to calculate retirement dates. Unfortunately, historical measurements (and even current ones for field work) do not record the uncertainty of measurement. Understanding how significant this is, will help you with your decision-making and also help you define the data collection requirements discussed.

Look for bias in your data or methods

If you are looking for a particular answer in a vast pool of data, it is quite easy to find the answer you want. You may be unconsciously compromising your objectivity in the method you devise. Look for bias in your methods.

Don't underestimate the time (and cost) of analysing your data

Data gathering, selection, sanitising and extraction takes the most time. The goals of your project need to be understood to focus your time and costs incurred. It is also possible that little meaningful data will be gained but if you have structured how you collect data then you will give yourself the best chance at the review stage.

Conclusion

Inspection and testing data is paramount to assured decision-making on critical, capital intensive plant. Axiom is ready and able to support our North West client base in unlocking the hidden value from their plant data, and capitalising on the associated business benefits.

For more details please see
<http://www.ax-ea.co.uk/>
or contact: + 44 (0)1642 732745
or email: info@ax-ea.co.uk

How Made Smarter is helping North West SMEs embrace Chemistry 4.0

MADE SMARTER

The chemical sector, like every industry, is experiencing a tectonic shift as digitalisation drives the automation of processes and products. Technology adoption is enabling businesses to overcome technical challenges, accelerate processes, improve productivity, and become more sustainable. But for SMEs the capacity and speed of adoption presents barriers, from finance and a lack of digital skills, to uncertainty of where to start and the struggle to find the time to capitalise on opportunities.

Helping SMEs keep up with the pace became the foundation of the Made Smarter Adoption programme in the North West. Launched as a £20m government-funded industry-led pilot in 2019, it has since worked with more than 1,200 businesses, including many in the chemical sector, offering expert, impartial technology advice, digital transformation workshops to help manufacturers take their first steps, a leadership programme, and funded digital technology internships.

The programme has supported 201 technology projects which are forecast to deliver an additional £150M in GVA for the North West economy over the next three years, create over 920 new jobs, and upskill 1,764 existing roles.

Some have invested in technology to integrate systems, capture and analyse data, and even create simulations of their plants and processes. Others are using 3D-printing, automation, and robotics to solve business challenges and meet increased demand.

Where to start

To help manufacturers select the right approach, how much to invest and which technologies will bring the greatest benefits, Made Smarter developed a Digital Transformation Workshop, an innovative, streamlined diagnostic of products, services, processes and people to find practical solutions to overcome challenges. The bespoke process is designed in a way that requires minimal time investment for manufacturers to turn the actions into results and leave them with an easy-to-use guide with recommended first steps and a digital roadmap.

HMG Paints, an independent paint manufacturer based in Manchester, used the process to accelerate a project to digitise its paper-based dispatch process, making it 40% more time efficient and reducing errors significantly. The timely investment also enabled the business to better cope with a surge in demand during the pandemic.

Investing in tech

Armed with a digital roadmap, Made Smarter can help

manufacturers target the right technology to grow progressively and sustainably, avoiding the wasted time, effort and money.

Organica UK, a manufacturer of environmentally friendly household cleaning products, based in Birkenhead, invested in two technology projects which have created eight new jobs and supported its ambition to increase turnover from £5m to £8m.

Sensors now capture the volumes of ingredients going into and coming out of its blending tanks and other parts of its filling process, introducing real-time monitoring and analytics which have resulted in a 20% productivity increase. A second project will create a bespoke, cloud-based ERP solution to improve how it keeps track of orders, production and stock, and is forecast to improve efficiency by 25%, reduce energy consumption by 10% per ton of product, and reduce waste by up to 20%.

Skills and leadership

Made Smarter is also supporting manufacturers to ensure they have the right skill sets to capitalise on these game-changing technologies.

The Made Smarter Leadership Programme was designed to equip SME managers and directors with the strategic view and skills needed to pursue smarter manufacturing, using a hybrid model of classroom learning and site visits.

Andrew Mooney, Managing Director of Actikem, a chemical manufacturer, based in Warrington, benefited from the programme which helped the business navigate the impact of the pandemic.

Made Smarter also offers specialist advice about organisational and workforce development, and fully funded Digital Technology Internships that enable university students and graduates the chance to work with businesses on their digital transformation.

Over 80% of SMEs working with Made Smarter to adopt technologies have seen a boost in productivity, and more than 25% reduced their carbon emissions. Businesses are also benefitting from increased revenue, profits and exports, and lower energy bills.

Such has been the success of the North West programme, it has been expanded to the North East, Yorkshire and the Humber, and the West Midlands regions, meaning more manufacturers can access support to adopt digital tools which will increase their growth, productivity, efficiency and create high value, well paid jobs of the future.

**For more information, visit www.madesmarter.uk
For all Made Smarter media enquiries contact Stuart Greer and Melanie Antao Fernandes at Antao Greer Communications on 07799 289650 or email stuart@antaogreer.com or melanie@antaogreer.com**



Could you give a young person a **Kickstart?**

Kickstart is a £2 billion Government scheme creating hundreds of thousands of Government subsidised jobs to help young people into work and support the UK's economic revival.

As an employer, Kickstart can give you access to a large pool of young people with potential at zero-cost to you. Chemicals North West and the Growth Company want to work with you to deliver high-quality placements in the Chemicals Industry.

Find out more

Visit cnw.gckickstart.co.uk
and complete a short form to
register your interest.

Responsible Sourcing

All companies are subject to their stakeholders' growing expectations on accountability, transparency, and legitimacy, arising from a range of environmental and social concerns.

Responsible sourcing (RS) is not just a buzzword; it is fundamental to raising the standards of supply chains. Government legislation is increasingly focused on ensuring that ethical business practices permeate throughout the building and construction industry. Some European Union (EU) member states have introduced, or are considering introducing, regulations on business and human rights. EU-wide due diligence legislation must clearly set out the responsibilities of businesses *in line with the UN Guiding Principles on Business and Human Rights (UNGPs) and the OECD Guidelines for Multinational Enterprises*. National legislations summary is in the figure below.

Examples of national legislation:

- 2010** - **Section 1502 of the US Dodd-Frank Act** requires disclosure of due diligence on whether products contain conflict minerals.
- 2010** - **California Transparency in Supply Chains Act** requires all businesses trading in California with a turnover of over \$60 million to report on efforts to combat slavery.
- 2015** - **UK Modern Slavery Act** requires all commercial organisations trading in the UK with a turnover of £36 million or more to publish an annual statement on action to eliminate slavery from supply chains.
- 2015** - **US Trade Facilitation and Trade Enforcement Act** prohibits companies from importing goods into the US produced by forced labour.
- 2017** - **French Duty of Vigilance Law** makes human rights due diligence responsibilities for large multinational businesses established in France obligatory, including a requirement to produce and publish a due diligence plan.
- 2018** - **The Australian Modern Slavery Act** requires more than 3,000 businesses and other entities to publish annual statements on actions to address modern slavery in their operations and supply chains on a government-administered public register.
- 2019** - **In March, the Dutch Senate voted to adopt the Child Labour Due Diligence Law** requiring Dutch companies to identify, prevent and assess child labour in their value chains.

Sustainable procurement

Companies increasingly make RS an integral part of their procurement and supply chain management processes to understand and manage risks in the supply chain- and the biggest growth in addressing RS, we have seen in the last 12 months, is Building & Construction. If you are involved in supplying this end market, paying attention to this issue will certainly be advisable.

The 2015-2017 United Nations Development Programme (UNDP) Procurement Strategy represents a commitment to realize the benefits sustainable procurement offers. UNDP procurement will focus on:

- Incorporating sustainability criteria in the organization's purchasing evaluations;
- Developing monitoring mechanisms and assessments to promote vendor compliance in the UNDP supply chain;
- Stimulating innovation through crowd-sourcing, functional specifications and piloting other innovative technologies;
- Better Integration of procurement at the project design stage;
- Promoting and utilizing public-private partnerships with companies that focus on innovation and sustainability; and
- Enhancing the already high transparency standards in UNDP's procurement activities.

Supply chains typically comprise 60 to 70% of the total sustainability footprint. Intertek is uniquely positioned to support these types of supply chain analysis. Typically, we support clients to achieve on average a 10 to 15% reduction on greenhouse gas footprint, revenue increase, brand value increase, and supply chain cost reduction. Examples of aspects and KPIs that our team uses to evaluate the maturity of a client's journey to improve their sustainability profile through RS are: Legality (adhering to laws and standards); Economising (cost efficiency), Risk reduction (avoidance of 'purchasing risk' within supply chains); Strategy (stakeholders and investors request of transparency); Leadership (future proofing and holistic reporting on sustainability).



Common misconceptions

"We responsibly source our constituent materials, packaging, stationery, and so on."

If you feel you do, what evidence is there to support this claim? Greenwashing and unsupported or misleading claims are undesirable to customers, as they not only undermine the company making them but all companies striving for improvement.

"Our customers do not ask for any information."

Unquestionably, your customers are subject to the same pressures in their business as you are; therefore, it is only a question of a very (VERY) short time before you will be outbid, outperformed and unable to grow your business. There is a clear sense of insistence of doing what needs to be done immediately, without being asked, and in the most thorough way possible to create change. Customers' pre-qualifications, your sales team's comprehension of questions pertaining to corporate social responsibility (CSR), sustainability, and RS are being demanded across all sectors regularly and with auditable monitoring attached to the specifications. The marketplace demands to know, stakeholders and shareholders demand to know, and your employees do as well.

Conclusion: Act now on RS initiatives and benefit from securing your market share and futureproofing your business for upcoming legislation in the building and construction sector, as well as other related sectors (investment, commodities supply, etc).

Katie is an Associated Director at Intertek with over 20 years of experience in responsible sourcing, carbon engineering and ESG reporting. katie.livesey@intertek.com



Disruptive Stars

rmg
recruitment
management group

Nearly every organisation has one. That confident, often bordering on arrogant, top performer who effortlessly delivers against their objectives. Purely focused on the task in hand, they will bullishly force results with little regard for how their demands affect colleagues.

Depending on individual personalities the person may be blindly unaware of their impact on others or worse still, they may be aware, but don't care.

With heightened pressures on so many small businesses given the challenges of the pandemic, it's easy to understand why we may have been more tolerant of these individuals as we have relied on them to deliver.

In our latest blog we hear from RMG's Principal Consultant within our Industrials & Chemicals Division, Anita Caldwell, who distils her advice into three practical steps.

Raise

This first step may initially feel awkward but prepare yourself because it might not be the hardest. As with any good HR practice you should tackle behavioural issues as soon as the behaviour occurs. Find a quiet room, preferably over a coffee, and get straight to the point. The usual 's'- sandwich approach is ok, but don't labour the positive elements of their performance. Be concise, explain that their behaviour is having a negative impact on others and be specific with the things that you have witnessed.

"Your contribution to [sales/X function] is exceptional, but the way you have approached [situation x] recently is having a negative effect on others."

"I saw how you approached [situation X] and I need you to know that this is not how I would expect you to behave, and I need you to do things differently."

Clarify

Help them to understand their own behaviour and encourage self-awareness. This type of performer may default to communicating by email and if this is the case, encourage them to talk directly to colleagues; emails have a place but rarely in good internal communication strategies.

Suggest that the performer looks at emotional responses from their own colleagues such as body language; does the person they are talking to look relaxed, are they engaged in

the conversation, or are they just listening and not offering anything in return?

Encouraging them to spot cues like this will provide live feedback which is far more valuable in the heat of the moment. It may be that their sharp behaviour towards colleague is born out of frustration, so as their line manager you should try to understand the reasons and

whether they are valid or not. If valid, then you should step in and help. But if the performer is being unrealistic then they need to be told.

Behaviour like this can often be down to a lack of patience or empathy so point this out to them when you see it.

Sometimes just simply reminding them how you expect them to behave is enough – but this won't always be the case. This is where coaching can play an important role.

Coach

Good management is all about follow up and it's within this step that the hardest task may come. Make sure you take time to observe the performer and I would recommend doing this discreetly to ensure you observe their natural behaviour. If they get it right, make a point of recognising it.

Change won't happen immediately so you may need to help them with their new approach and do point out those instances where their behaviour is falling short of what you expect. If the performer's own career progression is important then you should appeal to this side of them; explain that in order to progress they have to be positively engaged with all members of the team.

In some circumstances, you may find yourself in a position where you have to reassess their individual value, versus the wider cultural impact. Having disruptive stars in your business is likely to affect staff morale, leading to increased churn and ultimately a negative effect on your employer brand.

Take a step back and work out what is in the best long-term interest of the company. If your star performer leaves tomorrow, it's likely to affect you in the short term, but what if five high potential performers decide they have had enough? It's a tough decision, but sometimes you have to make that call.

Anita Caldwell
www.rmg-uk.com



HAZOP: getting started from scratch

6 Engineering are safety engineering consultants for the major hazard industries and we have recently facilitated some hazard and operability studies (HAZOPs) for a client in the chemicals industry. Their site is quite mature and unfortunately, they didn't have HAZOP studies for most of it, so they asked us for help. Normally, HAZOP studies are undertaken during the design process and should be regularly refreshed (e.g. every 5 years). However, this isn't always the case and we thought we would offer some guidance for those who may need to get started from scratch.

First of all, it's worthwhile discussing what a HAZOP is. A hazard and operability study is looking for hazards which might arise from operating a process. A HAZOP is a formal, facilitated, multi-discipline, guideword-led study. Most importantly though, it is a team effort. It follows a set methodology, although there are variations on the theme. It examines the process in detail and tests out various parameters to see if a hazard or an operability issue (which tend to lead to hazards in the long term) could arise. It is set out in a tabular format.

For example:

To be able to get this far, however, requires some preparation; examples can usually be found online. Here are some hints and tips of what you will need:

1. P&IDs: for whatever process you want to examine, you will need piping & instrumentation diagrams. They need to be up to date, so take the time to walk the lines, mark up any changes and update them.
2. Operating procedures: these will help to determine the process description and therefore the HAZOP team when completing the study.
3. Supporting documentation: it is really useful to have documentation such as material safety datasheets, hazardous area classification, and other such documentation available at the HAZOP. If it isn't available, then the team may not be able to answer fundamental questions and can lead to needing to assume the plant is operating in a hazardous condition.
4. Control and instrumentation: it's handy to produce a cause and effects matrix which describes how it functions. For example, temperature transmitter TT-1234 closes valve XZ-1234 on high-high alarm at 80C. If this information isn't available, expect an action to go find it out.

5. HAZOP procedure: although your HAZOP facilitator (or chairperson) will be able to guide you through the process, it's helpful to have your own corporate HAZOP procedure. This will spell out who is responsible for what and how it will be done.
6. Terms of reference: the ToR is used to collate the information that the study will use, as well as conveying details such as when, where and who. The ToR should be issued well enough in advance of the study for the HAZOP team to be able to read it and familiarise themselves.
7. Training: at the start of every HAZOP, we ask whether there is anyone attending that has never attended a HAZOP before. If there is, we summarise the HAZOP process for them. Although the methodology is quite simple, a brief course for the attendees in advance of the study is particularly useful.
8. Software: there are various software packages about which are very powerful. However, they come at a price. We recommend sticking to basics and using Word or Excel; at least for the first few studies.
9. Reporting: a formal HAZOP report is needed, with a document number. Ask the facilitator to provide this.
10. Actions are raised where the HAZOP Team considers they are required because either insufficient information is available, or there is insufficient protection against hazards. Remember that risk reductions contained in actions aren't in place until they're completed. Actions should be formally closed out and supporting evidence provided.

If you need support, then 6 Engineering are here to help you wherever you are. Please feel free to call us on 01925 357677 or visit the website www.6engineering.co.uk



ProDecon® - Process Decontamination Systems Ltd

ProDecon® was formed in 2009 by a team of industry experts with 50 years' collective experience, 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.

Our vision set out to assure business continuity via a relentless focus on safety, quality and schedule to help customers save time and money. We understand asset integrity and the importance of tackling foulant issues before they manifest into larger, and often more complex problems.

We work across all sectors, with varying types of assets and infrastructure. We integrate early into our customers projects, supporting at every stage of the asset lifecycle, from conception through to decommissioning. Ensuring the most viable solution is designed into the process, that allow assets to operate

more efficiently with longer run times and shorter turnaround times.

Our services include;

- Chemical Cleaning
- Decontamination & Degassing of Process Equipment
- In Situ Heat Exchanger Cleaning
- Fin-Fan Performance Restoration
- On-Line Furnace Cleaning
- Turnaround & Shutdown Services
- Boiler Cleaning
- Pre-commissioning Cleaning & Steam Blowing
- Pipeline Cleaning, Flushing, Pigging & Line Drying
- Chemical Handling
- Bulk Hazardous Liquid Transfer
- Engineering & Technical Services

As a recognised industry leader, known for our safety, agility, unrivalled market leading expertise, and unbiased approach to a single chemistry or service. We provide customers with the confidence, our team can address specific needs and quickly adapt to all industrial businesses.



Contact:

Matt Calveley

E: matt.calveley@prodecon.com

ProDecon

1 Alvaston Business Park,
Nantwich, Cheshire CW5 6PF

T: +44 (0)1270 446601

E: sales@prodecon.com

W: www.prodecon.com

LinkedIn: <https://www.linkedin.com/company/5173788/admin/>

PFAS - forever chemicals in fire suppression systems - what do the new UK Regulations mean?

An increasing number of drinking water supplies globally are being found to contain fluorosurfactants used in many firefighting foams, termed per- and polyfluoroalkyl substances (PFAS). Regulations to phase these foams out are being promulgated in the UK and Europe, some coming into force on July 4th, so with widespread use of these foams to protect against flammable liquid fires, what does that mean for the chemical industry?

Within the chemical industry PFAS are used in bulk quantities in Class B firefighting foams, termed aqueous film forming foam (AFFF) and fluoroprotein foams (FFFP and FP). The new regulations mean that if a business holds more than 50 litres of foam across a portfolio of site, the composition of PFAS within it must be known to determine whether it exceeds very low thresholds values meaning it is classed as a stockpile of persistent organic pollutants (POPs). If the foam is classed as a stockpile of POPs it is then subject to further regulations where 100% containment after use is required by 2022 and the foam cannot be used by 2024.

With use of this whole class of foams being subject to further regulations, many businesses must now look at changing their

foam stocks. There are alternative fluorine free firefighting (F3) foams that are being adopted by multiple sectors, so safely transitioning away from foam containing PFAS is possible.

Unfortunately, foam transition will not be as simple as it seems. Fluorosurfactants are known to self-assemble on surfaces in crystalline lattices meaning that they coat the interior surfaces of fire suppressions systems. Flushing the system with water will not remove these layers. Following transition to F3 foams the new foam can become significantly contaminated with PFAS unless effective decontamination is done. Some F3 replacement foams have been found to be contaminated with up to 1.6 g/L of PFAS from contamination not removed during the foam changeout, so could also be classed as a stockpile of POPs.

This is where Tetra tech and ProDecon® could help, as we have teamed up to provide an effective decontamination solution using PFAScrub™ which can remove crystalline forms of PFAS from within fire suppression systems. The team also comprises fire and environment engineers to smoothly manage all aspect of a foam transition project, from dealing with fire regulations, insurers etc. to disposing of old foams and environmental compliance. For further information, please contact; mark.mcsorley@prodecon.com and/or ian.ross1@tetrattech.com

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.

Brenntag UK & Ireland

Connects chemical manufacturers and chemical users in a value-adding partnership through tailor-made distribution solutions. Offers specific application technology, extensive technical support and value-added services (i.e. just-in-time delivery, product mixing, formulation, repackaging, inventory management and drum return handling). High safety standards and strives to make served industries sustainable.

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.

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.

Education, training & skills

All About STEM

Lots of different projects to bring exciting Science, Technology, Engineering and Mathematics to schools across the region, linking them with business and industry expert volunteers inspiring the next generation of STEM specialists. Building and maintaining relationships with our schools, businesses, industry, colleges and universities so that we can strategically match-make opportunities with need.

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.

EngineeringUK

Not-for-profit organisation promoting the contribution made by engineers to society. We partner business and industry, government and the wider science & engineering community, producing evidence of the state of engineering. Sharing of knowledge and inspiring young people to choose a career in engineering.

Lancaster University

Lancaster University's award-winning partnerships and engagement team facilitates business collaborations, including student placements, access to over £45m scientific facilities, training, contract research, and multi-partner collaborative research projects. We liaise with all areas of the chemical industry, from multinational oil, chemical and pharmaceutical companies, to SMEs producing new and specialised products.

SEERIH

The Science & Engineering Education Research and Innovation Hub positively influences the experience of young people in science and engineering. Expertise in curriculum and teacher development, applied research and creation of innovative projects related to primary science and associated STEM disciplines. Inspiring excellence in teaching and learning in science education.

The Outward Bound Trust

An educational charity that uses the outdoors to help develop young people. Experts in the development of early talent and specialising in providing experiential learning and development programmes for apprentices and graduates. Identification, development and change of people behaviours in line with organisational needs.

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.

Warrington & Vale Royal College

Delivering vocational, professional and apprenticeship qualifications across science and engineering. Home to a new Advanced Manufacturing & Engineering Training (AMET) centre and dedicated science laboratories. Continually building relationships with schools, businesses and industry to help bridge the skills gap. Bespoke course and packages available. www.wvr.ac.uk

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.

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.

DHD Cooling Limited

Design, installation and maintenance solutions for industrial cooling. Our service extends to cooling system inspection, testing, service, maintenance and new equipment capability. Regulatory and reliability assessments, thermal performance improvements, turnkey projects and carbon footprint reduction.

Know your supply chains

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.

HTS Engineering Group Ltd

Process safety and safety instrumented systems, delivered with a high level of engineering and expertise with cost efficiency. Four key engineering services that can be tailored individually or as one complete solution: process control & software engineering, engineering & design, site installation and inspection services.

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.

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 3/4" to 8" nb. Dry disconnect couplings are made to NATO standard Stanag 3756.

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.

Michael Smith Engineers Ltd have been supplying pumps to the UK Chemical industry since 1971. We specialise in sealless pumps and our product range includes gear pumps, centrifugal pumps, high pressure pumps, piston pumps, side-channel pumps, vane pumps, AODD pumps and barrel emptying pumps with thermoplastic, metal or PTFE-lined wetted parts.

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.

ProDecon®

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

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

Studley Engineering Ltd

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

Swagelok Manchester

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

Yokogawa

Yokogawa is a leading provider of field instrumentation, safety systems, industrial automation and digital transformation solutions.

IIOT, OT Cybersecurity and Alarm Management are specific areas of focus for Yokogawa's Advanced Solutions team with a number of major projects currently being delivered across Europe.

Engineering project management & energy

6 Engineering

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

Atlas Copco Rental UK

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

Axiom Engineering Associates Ltd

An award-winning company specialising in the provision of UKAS accredited inspection services, backed up by a mechanical and materials asset integrity section. Acting as the design and inspection authority to many blue-chip companies, working across a broad range of process sectors such as: chemicals, petrochemicals, bulk storage, power and pharmaceuticals.

Clarke Energy

Specialists in the engineering, installation and maintenance of reciprocating engine-based Combined Heat & Power (CHP) plants. Offering ranges from supply of an engine through to turn-key installation of a multi-engine power plant. Our facilities deliver fuel efficiency, dramatically lower energy costs and help reduce carbon emissions. Carbon dioxide can also be recovered.

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.

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

EJ Peak Technology Solutions

Process control, industrial automation systems and manufacturing analytics. A unique combination of automation projects, consultancy, and performance improvement services delivered by experienced teams. FEED, process control projects, legacy asset replacements, control room and operational technology, modern manufacturing analytics solutions.

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.

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.

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.

Facilities, finance and other business services

ChemQuest Ltd

Sourcing and procurement solutions for research and development. Expertise in biochemical, chemical, nanotechnology, cell cultures, equipment, consumables and sundries. Streamlining and simplification of importing and purchasing processes.

Department for International Trade – Northwest

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.

Halton Borough Council

World renowned research facilities such as Sci-Tech Daresbury and The Heath alongside many companies at the cutting edge of science, technology and advanced manufacturing. We oversee capacity in terms of land, buildings, people and business support creating a world class location.

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.

RW Legal Ltd

Provision of pragmatic legal advice to companies in the chemical sector. Particular expertise in drafting and negotiating commercial contracts. Managing legal risk through early involvement to save time and resources in the long run. Competitive rates and flexible fees without sacrificing quality.

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.

Symmetry Law

Specialist law practice structured to provide "partner" level experts at "junior" level prices, with a focus on the 'high consequence' end of the spectrum. Legal services include: environmental, safety, regulatory, contracts, tax, construction, green incentives, litigation.

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.

Know your supply chains

REACH and chemicals services

Dr Knoell Consult Ltd

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

GlobalMSDS

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

Intertek Regulatory Services

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

Stewardship Solutions Ltd

Provision of chemicals regulatory services to organisations across many industry sectors and throughout the world. REACH and CLP compliance is a primary focus, and REACH registrations programmes are a core strength. The company has achieved significant savings in the costs of REACH compliance on behalf of many of its SME clients. Stewardship Solutions is a REACHReady-approved service provider.

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.

Recruitment

Adepto Technical Recruitment

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

Eleven Recruitment

Eleven Recruitment has been a specialist recruiter in the chemicals, energy and commodities sectors since 1999. We have a strong track record of sourcing mid and senior level talent, including C-Suite, with specialist knowledge and experience. We can provide both contingent and retained recruitment services or work with clients as an integrated recruitment partner.

Handley James Chemical

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

Millbank

With over 30 years' experience providing recruitment solutions to major clients in the chemical sector, Millbank has an extensive database of experienced candidates and contractors ready to join projects across the region. A true recruitment partner, Millbank offers services ranging from contract and permanent placements through to fully managed services.

RMG

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

Science Recruitment Group

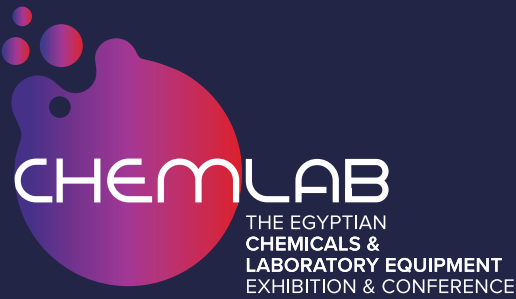
Experts in the recruitment of scientific, regulatory, quality, engineering and technical professional across all areas of the industry. Support in recruiting temporary, contract or permanent staff for your team.

Science Solutions Recruitment

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

TransitionPlus Ltd

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



9 - 11 JANUARY 2022 | EGYPT INTERNATIONAL EXHIBITION CENTER

FUTURE GROWTH OPPORTUNITIES: CHEMICAL & LABORATORY INDUSTRY IN THE MIDDLE EAST & AFRICA REGION



WHAT TO EXPECT AT CHEMLAB 2022



5,000+
ATTENDEES



150
EXHIBITING COMPANIES



4,000+
SQM EXHIBITION
SPACE



5
COUNTRY PAVILIONS

EXHIBITION

Over 3 days, CHEMLAB provides a unique platform for basic, fine and speciality chemical and laboratory equipment companies to showcase their products, latest technologies, innovations and services to manufacturers across multiple industries.

TECH TALKS

The Tech Talks bring together chemical and laboratory equipment professionals to create an excellent learning experience, addressing the latest issues, breakthrough research findings, innovative technologies and industry solutions for both chemicals and laboratory professionals.

SPONSORSHIP

CHEMLAB 2022 will attract key decision makers from across the chemical and laboratory equipment value chain providing the opportunity to reach your target customers with bespoke opportunities tailored to meet your marketing focus and strategy.

EVENT FEATURES

CHEMLAB 2022 will host an Innovation Zone focused on the latest industry 4.0 technologies, techniques and services, and a B2B match-making Programme providing an exclusive opportunity for high-level networking and face-to-face business meetings.



TO EXPLORE PARTICIPATION OPPORTUNITIES, CONTACT US AT

✉ chemlab.sales@dmgevents.com | ☎ +971 4 2483232

Media Partner



Organised by



Co-located with



SCAN TO KNOW MORE





A global leader in environmental and advisory solutions

We help businesses get the most from their assets by developing people, plant, and management processes to drive sustainable improvements in safety, environmental protection and productivity.

Find out more about how we can help improve your performance



safetyadvisoryeu@slrconsulting.com



www.slrconsulting.com