

L@b Brief | July 2023

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Hello again,



According to US market research company, ReportLinker, the global steam autoclave market is expected to grow from \$2.77 billion in 2022 to \$3.03 billion in 2023, over 9% and is expected to reach \$4.35 billion in 2027 at compound annual growth rate of 9.4%. North America was the largest region in the steam autoclave market in 2022 but Asia-Pacific is predicted to be the fastest-growing region in the near future.

So things are looking positive for autoclave manufacturers, provided they can buy parts at a reasonable price. But with some of the major UK lab companies due to post results in the next few weeks, results so far this year have been rather a mixed bag at a time when anything less than a 10% growth indicates in reality a reduction in sales volumes.

So where to look for increased sales volumes? Big molecule work and academia are the areas cited for good growth by GAMBICA Lab Board members. Another ReportLinker report recently drew attention to the growing market for laboratory proficiency testing, in which a laboratory's results for a certain purpose are compared to the reference value for that purpose.

North America was the largest region in the laboratory proficiency testing market in 2022 with main technology in laboratory proficiency testing including cell culture, PCR, immunoassays, chromatography and spectrophotometry.

The most popular standard for the competence of laboratories has just been updated, taking into account the latest changes in laboratory practice. ISO/IEC 17025:2017 specifies the general requirements for the competence, impartiality and consistent operation of laboratories.

Never have we been more acutely aware of the importance of reliability when it comes to laboratory testing. The standard helps lab customers identify general risks of contamination, or failings in processes and, importantly inadequate equipment.

Perhaps drawing attention to this standard could be useful for your sales staff?

Toodle pip!

Jacqueline

UK News

Chromatography and mass spec advocates assemble

SOLUTIONS IN Science, held for the first time in July in Cardiff, came about as a result of a request from the Royal Society of Chemistry (RSC). For many years the RSC had been holding special interest group meetings around the country. Wouldn't it be better, they thought, to hold one big meeting where all our specialisms



could come together, have more opportunities for cross-fertilisation of ideas and be more sustainable by having fewer separate trips to different destinations, when many of the same individuals sit on more than one committee.

The RSC called in the International Labmate team to run the event and the result was a three-day molecular characterisation event led by a heavyweight scientific committee, with Professor John Langley of the University of Southampton in the chair and a good showing of academics from across the Benelux region also heavily involved. The event had a major focus on networking opportunities (there was a two-hour lunch break each day and evening get togethers) and a pertinent supporting exhibition.

The programme, although focused mainly on in-depth discussions of the benefits of various methodological options for the use of mass spectrometers and chromatography equipment, it also included some first rate 'how to' sessions from equipment



suppliers including GAMBICA members Andrew James of Ellutia, who talked about the need for targeted analysis of Nitrosamines for the pharmaceutical industry, Mark Perkins of

Element, on automated SIFT-MS and Arianne Soliven of Avantor who talked about the use of short 10mm columns for rapid LC-MS analyses.

“We like this event because it brings the disciplines together,” said Professor Langley, “We have different problems but we use the same solutions – it’s a great cross fertilising learning opportunity.” Pragmatism was definitely at the heart of the event. “Once you have a method that’s fit for purpose – use it! Don’t keep striving for perfection,” Langley told the gathering. He also made a plea for more open access solutions: “Every year one-third of researchers are new. They need training.”

The exhibition for this first event was fairly small with 13 exhibitors. Around 200 people attended. Planning for the next event, at the same venue in 2025, is underway.

For more information about the Solutions in Science event visit the ILM exhibitions site [here](#).

More vacillation over the UK’s return to EU Horizon science programme

THE UK’s return to the EU’s £85bn Horizon science research programme appears to be in peril after a request from the UK to quit the associated atomic research organisation, Euratom.

In early July, all the signs were positive that the UK was going to re-join but negotiations appear to be stalled again with no sign of final agreement on Euratom or rebates the UK had sought to compensate for its late association with the programme.

According to sources quoted by [Research Professional News](#), the European Commission has offered the UK the option of either exiting from Euratom or a financial adjustment but not both.

The British government has pushed to pay less than originally agreed, arguing that the freeze-out had caused lasting damage to UK R&D.

The two sides are understood to have edged closer together, with the remaining differences hinging on how long it would take for the UK to return to former participation rates in Horizon Europe—a key issue behind the UK’s request to lower its membership fee.

According to the source, speaking to Research Professional News on condition of anonymity, the “distance between the two teams is small” and there is a “landing zone”, but compromise is needed from both sides. “It is toss-of-a-coin stuff on whether we get a deal or not.”

Under the EU-UK trade and cooperation agreement, British contributions were to be based on research funds awarded to UK projects from 2019. The UK argued that contributions should be based on success rates in 2023, which would be much lower given the reduced applications to the fund due to the uncertainty over membership.

Before Brexit the UK was one of the top beneficiaries of the Horizon programme and scientists are still eligible to apply for funding, which is underwritten by the UK government.

However, the uncertainty over the UK’s membership and its inability to lead pan-EU research while outside the programme has dealt a blow.

Data from the European Commission shows a huge drop in awards to British science programmes since 2019. In that year, €959.3m (£828.8m) went to the UK in 1,364 grants, compared with €22.18m in 192 grants in 2023 to date.

GAMBICA will be renewing it's lobbying of Ministers on this important deal.

GAMBICA members invited to participate in F-Gas review

AS YOU may be aware, the current Great Britain F-Gas regulation is being reviewed.

The review is being led by the Department for Environment, Food and Rural Affairs (Defra). As part of this process Defra announced on 5 July that they will conduct a survey of industry which will have a direct impact on the future F-Gas legislation likely to be in place by 2025.

The following sectors have been identified as needing more information:

- Commercial refrigeration (7.5kW to 20kW)
- Industrial direct expansion refrigeration (20kW to 100kW)
- Residential heat pumps (including air to air, <12kW)
- Small VRF systems (~50kW)

The main focus of the survey is to gather information about the cost of using various low GWP refrigerants, particularly:

- Equipment cost
- Installation cost
- Energy/carbon cost (specifically COP or sCOP data)
- Lifetime costs (eg. maintenance)

Evidence does not need to be a point estimate. Ranges or percentage differences are also acceptable and there will be the opportunity to enter information on either or all of these options.

Paddy Delany, from Huber has drawn this consultation to our attention and has already been in touch with the researchers to ask to participate and has suggested that GAMBICA be included as the industry trade collective to ensure a broad spectrum of responses so a realistic overview is obtained. In response the researchers have suggested a meeting.

If you would like to be involved let me know, Jacqueline.balian@gambica.org.uk.

If you prefer to respond directly, please contact Mark Adams (mark.adams@defra.gov.uk).
For a copy of the survey.

EU likely to water down REACH controls of hazardous chemicals after industry pressure

ACCORDING TO documents leaked to *The Guardian* newspaper, the European Commission's plans to ban all per- and polyfluoroalkyl substances (PFAS) 'forever' chemicals as part of the REACH requirements are unlikely now to proceed. The leaked documents report that as little as 1% of products containing hazardous substances could be prohibited after a change of heart provoked by intense industry lobbying.

However, separate plans exist from the European Chemicals Agency, ECHA to ban the use of up to 12,000 substances in saleable products. There is no word yet on the progress of the two committees examining the environmental and social cases for the ban. Companies have been asked to provide individual responses to the consultation setting out cases in which there is no substitute available for PFAS substances. The ECHA consultation is currently independent of the REACH changes and its proposals will be presented to the European Commission probably in 2025. It is not clear what impact the likely changes to the REACH requirements will have on the ECHA.

It is believed that many hundreds of documents have already been lodged with ECHA.

Meanwhile the leaked documents about the REACH regime's impact on PFAS proposes three options that would restrict 1%, 10% or 50% of products containing hazardous chemicals currently on the market.

The leaked 77-page impact study forms part of a revision of targets in the EU's Reach regulation covering chemicals law, which is due to be launched by the end of this year. It estimates that health savings from chemical bans would outweigh costs to the industry by a factor of 10. Reduced payments for treating illnesses such as cancer and obesity would amount to €11bn-€31bn (£9.4bn-£26.5bn) a year, while adjustment costs to businesses would be in the range of €0.9bn-€2.7bn a year.

An EU official speaking to *The Guardian* on condition of anonymity said efforts to dilute the legal revision were helped by "a complete change in the wave of support for consumers and the environment" in Brussels, as MEPs in EU president Ursula von der Leyen's European People's party (EPP) became queasy about environmental reform.

Goods consignors made responsible for safety

NEW GUIDANCE from the Driver and Vehicle Standards Agency, places responsibility for load safety not just on the freight companies and their drivers, but on those consigning goods to their care. Everyone involved in loading a vehicle or managing a transport operation, the new guidance says, is responsible for making sure the load is:

- safely loaded and unloaded, and
- secure during transport

Consignors must give information about the load and how it's been secured to drivers, if the driver has not seen the load themselves. Planning the load is important, particularly if they have more than one delivery, so that the various consignments can be loaded and unloaded safely.

Manufacturers and consignors of equipment have a legal requirement when loading unloading of goods vehicles to ensure they are safe for use.

The new updated information for HGV and Goods vehicles loading and securing is available [here](#).

Do you provide scanners?

Omega Diagnostics is looking for a bespoke scanner and possibly software solution to read results for a Food Detective product, details [here](#). Initially this would be manufacturing QC purposes but could be rolled out to a worldwide customer base. It would read little blue spots (semi-quantitatively) that is indicative of a reaction on a white tray. For information contact [Jag Grewal](#)

New portal for grants

THE CABINET Office is promoting a new UK-wide online portal for accessing central government support, which it says will make it easier for firms to find and obtain grant support. The portal “could save [the taxpayer] up to £270 million through increased efficiency and preventing fraud”, it says.

Firms can also register for a weekly update through the “*Find a grant*” portal.

Use of the portal is being offered to local/regional and devolved governments. There is no indication from government at this stage as to the extent to which that offer will be taken up. The portal, *Find a grant*, can be accessed [here](#).

Go-ahead for Canary Wharf Life Science Tower



THE 23-STOREY life-sciences tower, planned for London, featured in the December issue of L@b Brief has been given planning permission.

Expected to be Europe’s largest and most technologically advanced life sciences building, a joint-venture between Canary Wharf Group and Kadans Science Partner the North Quay building is expected to be the first phase of the creation of a world-leading centre for health and life sciences on a 3.5 hectare site, with the capacity to deliver 3.5 million sq ft of laboratory and affiliated space. The building has been designed to allow up to 60% of laboratories, with the ability to provide chemistry and high containment facilities.

Questions&Answers

Q: WE PROVIDE stability storage rooms for the pharma industry which are not normally occupied. Staff only enter the rooms to place and remove samples. The rooms are lit with LEDs and we also have an emergency light above the door. We have a client who

is stating that two emergency lights are required, which is a new one to us. He has sent an excerpt of a standard, but the excerpt states 'should'. Does this not mean that it's not mandatory?

A: A response from the Lighting Industry Association says:

"BS5266-1 is installation guidance / best practice, and not an actual standard. Even so, if a company wishes their installation to be installed in accordance with BS5266-1 then it is considered best practice to have 2 luminaires so that, in the event of a failure, the second emergency luminaire remains active. Additionally, there should be 1 luminaire within 2 metres of the emergency exit from the room (this can be one of the two luminaires, not an additional luminaire).

"The dimensions of the room will make a difference because if the persons visiting the room are some distance from the entrance and may not find it in total darkness (failure of the current single luminaire), then a second luminaire should be installed. People can become "lost" in a surprisingly small room in total darkness.

The wording of the extract from BS5266 Pt.1 says that the risk to occupants "should" be minimised, not that 2 luminaires "should" be installed. Since the company has duty of care for the occupants anyway, the need for two luminaires must be considered through risk assessment.

The obvious questions are: is there emergency lighting illuminating the room from any other source or is the room sealed to light? Also is the room illuminated to at least the required minimum illuminance level by the one luminaire currently installed?

If there is a possibility for the persons visiting the room becoming disorientated and not being able to find the exit in total darkness then, to minimise the risk to the occupants at least 2 luminaires are required as the standard states."

So as you've interpreted, not mandatory but considered best practice...

Research round-up

Lollipop-based saliva collection system

RESEARCHERS HAVE developed a lollipop-based saliva collection system to capture bacteria for testing. In a study, CandyCollect showed comparable accuracy to conventional methods and was preferred by participants, highlighting its potential for convenient at-home testing.

A lollipop might be a sweet reward for a kid who's endured a trip to the doctor's, but now, this candy could make diagnostic testing during a visit less invasive and more enjoyable.

Researchers publishing in ACS' *Analytical Chemistry* have shown, for the first time, that a lollipop-based saliva collection system can capture bacteria from adults and remain shelf-stable for up to a year. Study participants also preferred the candies over conventional collection systems. For more information on this story see Technology Networks, [here](#).

Packaging alert to the presence of Salmonella

RESEARCHERS HAVE created a new packaging tray that can signal when salmonella or other dangerous pathogens are present in packages of raw or cooked food such as chicken.

The prototype tray, shaped like a shallow boat, is lined with a food-safe reagent that allows a built-in sensor to detect and signal the presence of salmonella. The technology can readily be adapted to test for other common food-borne contaminants, such as E. coli and listeria.

“This is something that can benefit everyone,” says researcher Akansha Prasad, the co-lead author of a paper that describes the invention, published in the journal *Advanced Materials*. “We’re hoping this technology will save lives, money and food waste.”

The sloped sides of the tray direct juices to a sensor embedded in a window at the bottom. Users can scan the underside of the sealed package with a cell phone and know immediately whether the food is contaminated without additional lab work.

Globally, there are about 600 million cases of food-borne illness every year, largely attributed to the consumption of pathogen-contaminated food products.

The McMaster research team on the Lab-in-a-Package project — featuring 11 colleagues from the fields of biomedical, mechanical and chemical engineering, medicine and biochemistry — has worked to make the new contamination sensor as adaptable and economical as possible, knowing food producers are under pressure to keep costs low, he says.

“We can add sensing probes for other food-borne pathogens to the same system so the package will check for all of them at once. That’s the next step for us, and we’re already working on it.”

For the full paper in *Advanced Materials*, click [here](#).

Curly hair helped brains grow

CURLY HAIR may have given early humans an advantage by regulating body temperature and enabling the human brain to grow to modern-day sizes.

“Humans evolved in equatorial Africa, where the sun is overhead for much of the day, year in and year out,” said Nina Jablonski, Evan Pugh University Professor of Anthropology at Penn State. “The scalp and top of the head receive far more constant levels of intense solar radiation as heat. We found that tightly curled hair allowed humans to stay cool and actually conserve water.”

The researchers used a thermal manikin and human-hair wigs, to examine how diverse hair textures affect heat gain from solar radiation. They shined lamps on the manikin’s head to mimic solar radiation under four scalp hair conditions — none, straight, moderately curled and tightly curled.

The researchers found that all hair reduced solar radiation to the scalp, but tightly curled hair provided the best protection from the sun’s radiative heat while minimising the need to sweat to stay cool. As early humans evolved to walk upright in equatorial Africa, the tops of their heads increasingly took the brunt of solar radiation, explained lead researcher, Tina Lasisi. The brain is sensitive to heat, and it generates heat, especially the larger it grows. Too much heat can lead to dangerous conditions like heat stroke. As humans lost much of their body hair, they developed efficient sweat glands to keep cool, but sweating comes at a cost in lost water and electrolytes. Scalp hair likely evolved as a way to reduce the amount of

heat gain from solar radiation, thereby keeping humans cool without the body having to expend extra resources the research found.

“Around 2 million years ago we see *Homo Erectus*, which had the same physical build as us but a smaller brain size,” Lasisi said. “And by 1 million years ago, we’re basically at modern-day brain sizes, give or take. Something released a physical constraint that allowed our brains to grow. We think scalp hair provided a passive mechanism to reduce the amount of heat gained from solar radiation that our sweat glands couldn’t.”

For more information see the Proceedings of the National Academy of Sciences [here](#).

Upcoming GAMBICA Events

Masterclass on growing business overseas | 28 September | 10.30-12.00am | Teams

THE NEXT Business Growth Community meeting will start with a masterclass in growing your business overseas from COO of GC Biotech, Debora Marchese.

Debora will cover:

- Market entry strategies
- Market analysis and localisation strategies
- International marketing and branding
- Regulatory compliances

Debora is an experienced sales manager in the life science sector, having worked both in Asia and Europe as part of international teams. For most of her career, she has been in charge of the business growth of SMEs into global markets, by taking care of business development, marketing and sales, both for B2B and direct sales. She is now working as COO at GC biotech UK, a laboratory automation start-up, while part-time helping small companies expand to international markets.

The second half of the meeting will discuss the survey developed for BGC members to use with their customers being developed by John Sargent, Navigator Research.

To reserve your place, click [here](#).

After-Sales Group meeting | 29 November | 10.30-12.00am | GAMBICA London Office

WE ARE pleased to announce that Chris Wingad of Gilson has agreed to take the chair of the After-Sales Group. The next meeting is set for 29th November, please put the meeting in your diary now. Information will be circulated soon on the meeting agenda.

Industry Events

JASIS 2023 Symposium | Japan | 6-8 September 2023

THE MAJOR event for scientific analytical systems and solutions will take place as an in-person event again this year with an online exhibition which started in July. For information about exhibiting click [here](#).

Lab of the Future congress Europe 2023 | Amsterdam | 26-27 September 2023

DESIGNED TO cater for life-science research leaders and biotech start-ups and dedicated to gaining seminar participation Lab of the Future aims to shape the ideas that drive the future. For more information click [here](#). Super early bird rate saves 800 Euros, apparently.

SEHTA and Psephos Biomedica Conference | London | 12 October 2023

SEHTA HAS also teamed up with a medical device regulatory agency Psephos to produce an update on software as a medical device. For information click [here](#).

SEHTA International MedTech Expo | London | 3 November 2023

APPROXIMATELY 220 delegates are expected to this MedTech/NHS sector event at the Tower Bridge Hotel in London. Early bird stand price is £575 plus VAT. For information click [here](#).

Future Surgery 2023 | ExCel, London | 14-15 November 2023

THE SHOW claims to offer access to thousands of surgeons and operating theatre staff, and to have over 100 exhibitors. Stands start from £1,926+ VAT. To book contact a.stewart@closerstillmedia.com

Leadership and management qualifications funded by DfE | Your offices | Timings to suit you

DfE FUNDING of 95-100% is available for leadership and management training delivered entirely in the workplace. Training is at two levels, for team leaders and first line managers and for senior managers and decision-makers. Funding available is **£4,500** for level 3 courses and **£7,000** for the level 5. [Click Here For L&M Brochure](#), [Click Here For Level 3 Details](#), [Click Here For Level 5 Details](#)

Export News

AACC re-brands to ADLM

THE AMERICAN Association for Clinical Chemistry (AACC) the US based scientific



and medical professional organisation dedicated to better health through laboratory medicine, has changed its name to the Association for Diagnostics & Laboratory Medicine (ADLM).

The new name has been chosen to reflect the association's greater reach as an advocate for a larger community who specialise in diagnostics and laboratory medicine. Two thirds of members voted for the change.

While AACC has been the professional home for clinical chemists since it began, over the years the association's programs have grown in their appeal to other specialty areas working in or adjacent to the clinical lab. Today, the association is already broadly serving those who work in or with the clinical laboratory.

Association president Dr. Shannon Haymond said: "This name change does not represent a change of direction for the association. Instead, it more accurately reflects an evolution within the field and the association that has long been underway. As we evolve into this new branding, I'd like to emphasise that the goal of the new brand is to broaden our invitation to collaborate, not narrow it."

ADLM (formerly AACC) brings together more than 70,000 clinical laboratory professionals, physicians, research scientists, and business leaders from around the world focused on clinical chemistry, molecular diagnostics, mass spectrometry, translational medicine, lab management, and other areas of progressing laboratory science.

IoD finds businesses' post-Brexit trading remains 'challenging'

NEARLY HALF of all Institute of Directors members (47%) of members are still finding the UK's trading relationship with the EU challenging and the figure increases to 59% when discounting those who do not trade with the EU.

In both 2022 and 2023, the top reason firms gave for why they were finding EU trade difficult was related to immigration, business mobility and travel. In June 2023, 72% of members cited these changes as having a negative impact on their organisation.

85% of large businesses cited changes to business mobility as a cause of difficulty, compared to 69% of SMEs. For SMEs, although mobility changes came out on top, there is a more even spread across the board, with 55% citing customs changes, and 45% citing non-tariff barriers to goods trade.

When invited to give their own comments on the situation, the most common responses from business leaders include the lack of a level playing field, regulatory divergence, exclusion from EU research funds and political instability.

Emma Rowland, Trade Policy Advisor at the Institute of Directors, said:

"Anecdotally, the consensus from many businesses, particularly large ones, is that they are starting to get used to some of the regulatory barriers to trade, such as customs controls and labelling. However, our latest data shows there are still issues that need to be addressed.

"For some businesses, the issue lies in how much friction there is to travel for work. For others, it's about getting visas to work in the EU. For the majority, the biggest challenge seems to be filling skills gaps in the UK without the option of the EU pool of 500 million potential candidates.

"There are clearly many aspects of the Trade and Cooperation Agreement (TCA), signed between the UK and the EU in January 2021, that are proving detrimental to business. The fact is trade between the two is no longer completely seamless. The review of the TCA, which is due to take place in 2026, should provide an opportunity to address some of these pain points, depending on how much the EU is willing to negotiate."

To what extent is your organisation finding the UK's current trading relationship with the EU challenging, or are you not finding it challenging at all?

	June 2023 (834 respondents)	July 2022 (671 respondents)
Very challenging	19%	22%
Quite challenging	27%	25%
Not very challenging	15%	15%
Not at all challenging	12%	13%
We don't trade with the EU	22%	20%
Don't know	0%	4%
N/A	5%	0%

Which aspects in particular? Please select all that apply. (834 respondents, June 2023)

	SME	Large
Changes to immigration/travel/mobility of people arrangements	69%	85%
Customs changes	55%	66%
Maintaining ease of access to EU research and funding streams, or academic collaboration activities	32%	32%
Non-tariff barriers for services trade with the EU (licensing, authorisations etc.)	43%	34%
Non-tariff barriers to goods trade with the EU (technical standards, customs disruptions, labelling etc.)	45%	36%
Rules of origin	23%	25%
VAT accounting changes	27%	25%

Company news

New member, IS Instruments brings Raman to gas analysis

IS Instruments, a micro SME which has just joined GAMBICA was started in 2010 by Dr Mike Foster and Dr Jon Storey, both had backgrounds in space physics and expertise in robust instruments for analysis in really hostile environments. This quickly became a specialism of interest to the nuclear industry among others, and the team at IS Instruments became known for their versions of key equipment, produced in a modular way so that some of the more delicate parts of the instruments could be located outside of the most hostile areas.



With expertise in Raman spectroscopy, the company at first concentrated on developing its equipment. The design has been improved a great deal since the first incarnation and the team has honed the design to achieve a high throughput of light, resulting in more intense peaks.

In conversation with different universities and pharmaceutical companies, it became clear that fluorescence free Raman was particularly useful for biological samples. When using deep UV, the Raman and fluorescence spectral details become separated making it possible to see previously unseen detail. As well as the removal of fluorescence, deep UV also amplifies the Raman signal in complex biomolecules, chromophores, and aromatics through resonance effects.

But their most recent break-through was developing a Raman spectrometer for the analyses of gas samples. Raman spectroscopy is an accepted technique for the analysis of liquids and solids, but until now has been inappropriate for the analysis of gases outside of laboratory settings. However, because Raman is a non-destructive technique, it is particularly appropriate for in-line testing and for testing of hazardous or costly gases. So, ISI initiated a collaboration with the



Optoelectronics Research Centre (ORC) at The University of Southampton and Jacobs with the help of funding from Innovate UK.

Raman spectroscopy is generally considered too 'weak' for testing gas samples due to the diffuse nature of the molecules in the sample. To combat this, gas Raman results can be successfully achieved using a high-power laser (>5W) and/or by extending the sample pathlength. However,

these options can be costly and can only be used by trained personnel, additionally when using a high power laser there can be safety implications. ISI, the ORC and Jacobs collaborated to find a safer way to analyse gases using Raman



spectroscopy, by utilising pioneering technology by the ORC to increase the pathlength but using only microlitres of sample. The very low volumes of gas involved, as well as the <1W power excitation laser are important safety features of the equipment.

The ORC had already developed a hollow core - microstructured optical fibre (HC-MOF) which measures just 40 μ m in diameter. The HC-MOF centre can be filled with the test gas, and act as a wave guide for the laser. ISI were able to incorporate this fibre type into the spectrometer as the sensing medium. During the development, HC-MOF lengths between 1 and 15m have been used and can be varied dependent on the gas being analysed and the required limit of detection (LoD). Recent testing resulted in methane detection with an LoD <10ppm, the team aim to improve this with continued development.

The technology has been extensively tested and used to analyse numerous gases, including hydrogen, methane, ethane, oxygen, carbon dioxide, solvent vapours and much more. The collaboration has led to research articles being published, the 'Development of a gas-phase Raman instrument using a hollow core anti-resonant tubular fibre' was written by a team consisting of ISI, the ORC and Jacobs. The equipment is currently at technology readiness level 5/6 and all companies hope to achieve level 7/8 with their current funding.

Like with ISI's other instrumentation, the gas Raman is a modular design, and allows for electronic/expensive hardware to be separated away from any hazardous environments. The team hope to compete with the gas chromatography (GC) market and be present in any university or laboratory where non-destructive testing is required. The benefits of using Raman spectroscopy rather than traditional gas chromatography include:

- Considerably less waste gas, because it is a non-destructive technique, the gas can be returned to the process post testing.
- Simultaneous analysis of multiple gas species within a sample, without the need for additional hardware.
- No waste from additional columns as none are required.

Now the company works extensively with Innovate UK and often finds clients through Innovate projects and by word of mouth. Business development manager, Jessica Gabb, has worked extensively in the nuclear industry. After studying Chemistry at Cardiff University, she did a masters

and then moved to Warrington to join AMEC's graduate scheme. She became a nuclear chemist, looking at issues related to the lifetime of nuclear plants, including corrosion and fault finding. She was working in that role when AMEC's successor, Wood, sold its nuclear activities to Jacobs, now famously the primary contractor supporting the UK Nuclear Regulator, but which also works in advanced manufacturing and space.

Working for a SME has real advantages according to Jessica, who had already done some business development but who now gets a chance to also do, health and safety, chemistry, project management and business development as part of her role. Based in Tonbridge, Kent, the firm has remote workers around UK and over the last two years the firm has started to grow, slowly taking on additional staff and beginning to get its name known. Now the focus is moving from further development of the equipment and more towards developing commercially.

IS Instruments regularly take part in exhibitions to find customers, including the Nuclear Decommissioning event, CHEMUK and Nu-Tech - which takes place this year in Warrington. They will also be at Lab Innovations.

In the future, the company is looking at developing in the nuclear fusion field: "It is an interesting sector and we hope to be getting much more heavily involved in fusion work both in the EU & US," says Jessica.

"We want to offer something genuinely customised to our clients. In developing instruments, we are always questioning how it can be made better, so we are always developing. That's what really makes this job fun, everything is customisable!"

Jessica will be joining the Business Growth Community and the Flammable Atmospheres Group so hopefully you will meet her there shortly, if not, she will be in the Start-up zone at Lab Innovations.



Grant Instruments moves to new premises



GRANT INSTRUMENTS has moved to a new high impact manufacturing facility in Royston, Hertfordshire, to enable its next stage of growth. The site is a much more environmentally sustainable building and will lead to a much lower carbon footprint which is a key focus for the business.

“The new site offers us so much opportunity to grow and support our customers’ future growth and ambitions. It will enable us to innovate and manufacture at a much faster rate and in a more sustainable way, which aligns very much to our ethos and that of the scientific community we serve,” commented CEO, Mark Davison.



Grant Instruments is a longstanding component of the Cambridge tech ecosystem, and is a sustainability first organisation, from its product design and development through to driving fundamental workplace changes including a 4-day working week. The new facility is called ‘Evolution House’ reflecting the changes that are expected to continue.

“Over the past year we have made huge changes at Grant Instruments. The new site is the most visible of these but the move to four-day working has been arguably as revolutionary. The positive impact on staff morale and workplace practice has exceeded our expectations. The changes don’t stop here and we will continue our evolution and growth,” said Mark.

Additional to the new facility, the company is also launching its new state of the art cryopreservation system known as CRFT. The technology is produced at the new site and offers a more sustainable and safer approach to the freezing and thawing of highly sensitive biological samples for scientific research.

“Our new CRFT system is an exciting product for us to launch. The new version was driven by feedback from our customers. They wanted a system that allows precision, accuracy and flexibility in cryopreservation. We are incredibly happy to be able to launch this multi-format device to the scientific community and we look forward to hearing about the excellent research outcomes this enables in the future,” said Mark.
