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MEPEC 2024: Advancing Energy and Engineering Excellence

SPECIAL FEATURES

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KSA IS FITTING STAGE FOR KEY PROCESS ENGINEERING EVENT

MEPEC 2024 will bring together bright minds of the industry to share their thoughts, insights, and pioneering solutions to the most pressing industrial challenges of our time

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By ABDULAZIZ KHATTAK

THE Middle East Process Engineering Conference and Exhibition (MEPEC) will make its debut in Saudi Arabia, reaffirming the Kingdom's pivotal role as a global hub for advancing process engineering and sustainable energy solutions.

The Kingdom's hosting of the event underscores its commitment to driving innovation, fostering knowledge exchange, and shaping a greener, more resilient energy landscape on an international stage.

MEPEC is considered the premier gathering for process engineering professionals in the Middle East.

This is the 6th edition of the event and will be held from May 6-8, 2024 at the Dhahran Expo. The last edition was held in 2019 in Bahrain.

MEPEC 2024 will feature an exhibition space spanning 10,000 sq m, with more than 150 exhibitors and over 200 speakers providing a dynamic environment for industry professionals to connect, network, and explore the field's latest technologies and innovations.

The event is set to attract an estimated 5,000 attendees over three action-packed days, fostering invaluable connections and knowledge-sharing among a diverse and influential audience. More than 50 countries will be represented at the event.

Organised by the American Institute of Chemical Engineers (AIChE), this year's theme, 'Digitalizing Process Engineering for a Sustainable Future' will see the conference bring together some of the brightest minds of the industry to share their thoughts, insights, and pioneering solutions to the most pressing industrial challenges of our time.

Major discussions will describe how the manufacturing process industry is leveraging digitalisation to optimise operations, improve efficiency and reduce emissions to meet sustainability targets.

Commenting on the event, Wail Al Jaafari, Executive Vice-President, Technical Services at Aramco, and Advisory Committee Chairman of MEPEC 2024, says: "MEPEC has consistently played a key role in fostering collaboration and facilitating knowledge transfer among industry experts. And I look forward to another successful edition, where technical pioneers will engage and collaborate to address critical challenges, showcase technological advancements, and inspire sustainability and digitalisation in the field of process engineering."

MEPEC 2019 inaugurated by Shaikh Mohamed bin Khalifa Al Khalifa, then Minister of Oil for Bahrain

THREE DAYS PACKED WITH KEY DISCUSSIONS

MEPEC is known for its industry-leading content, featuring eminent speakers, insightful panel discussions, technical sessions, and interactive workshops.

The conference will see three days of intense and important educational sessions enhanced by productive discussions.

The event will be set in motion by key keynote speeches by Aramco officials on all three days.

Walid Al Naeem Vice President & Chief Engineer, Dr Khalid Al-Qahtani Senior Vice President, Engineering Services, and Dr Ali Abdullah Al-Meshari Senior Vice President, Technology Oversight and Coordination, will provide invaluable insights into Aramco's strategic vision and its commitment to driving sustainable progress on a global scale.

On Day 1, Elise Nowee President, Shell Catalysts and Technologies will take the stage on the first day to unveil the company's trajectory towards its sustainability goals, underlining the company's core beliefs and its revamped energy transition strategy.

The session will offer a nuanced understanding of the region's unique challenges and opportunities as it navigates the energy transition while remaining steadfast in its commitment to driving energy security.

PROCESS EXCELLENCE

This will be followed by a strategic panel discussion titled, 'Role of Process Excellence in Driving Sustainability'.

Sultan Albigishi, Acting CEO of Adnoc Refining and Ebubekir Koyuncu, CEO of Air Products Qudra, will talk about ways to leverage the power of process excellence to cope with the upcoming storm of global climate risks.

The timely discussion is set against a backdrop of mounting climate-related challenges and as organisations confront the urgency of reducing their carbon footprint and enhancing environmental stewardship.

Day 2 starts with a discussion that will weigh heavily at the event. It will be about how the energy sector navigates the energy transition.

Leon de Bruyn's, President and CEO, Lummus Technology, will talk about, 'A Balancing Act: Current and Future Realities in the Energy Transition Through Process Technologies and Innovation'.

The intersection of digitalisation, artificial intelligence (AI), and energy transition presents a compelling frontier for innovation.

What also is crucial for success is connecting individuals and organisations possessing diverse yet complementary capabilities and talents, thereby catalyzing transformative change in the energy sector.

The strategic panel on 'Accelerating the Energy Transition with Digitalization and Artificial Intelligence' will look at the best use cases in the field and how to connect with the right capabilities and talent.

Some key Ideas will be shared by Tim McMinn Vice-President Process Engineering and Products, ExxonMobil Technology and Engineering Company (EMTEC), Bart Boesmans Chief Technology Officer, ACWA Power, and Dave Parillo Vice President of R&D, Dow Industrial Intermediates & Infrastructure R&D in this discussin.

On the final day of the event, industry leaders, such as Dr Rajesh Gattupalli, Vice-President - Energy and Sustainability, Solutions (ESS), Honeywell UOP, Menahi Al Utaibi Vice-President of Manufacturing, Saudi Aramco Jubail Refinery Company (SASREF), and Mariano Delpozo, Vice-President, Engineering and Technical Services, SATORP, will take the stage to explore the hydrocarbon plant of the future.

They will examine what the next generation of refineries and chemical plants look like, what they produce, where will they be, in addition to how they will decarbonise.

The dialogue will attempt to unravel the blueprint for the future, offering insights into the transformative technologies, processes, and products that will characterise the next wave of hydrocarbon plants.

MEPEC 2024 will also feature nearly a hundred informative technical presentations, on a wide range of topics in process excellence, new energies, decarbonisation and energy transition, and digitalisation.

In addition to the thought-provoking sessions, the exhibition will provide a platform for leading companies, technology providers, and service providers to showcase their cutting-edge products, solutions, and services.

The event is backed and trusted by key brands in the industry. These include Aramco (Exclusive Host); satrop, Sasref, S-Chem (Platinum Sponsors); Honeywell, luberef, slb, Yasref (Gold Sponsors); Atlas, Axens, CLG and ART Hydroprocessing, EnergyTech, naizak, NITI, Shell, Grace (Silver Sponsors); and ASTM International (Standards Partner).

Other supporting organisations include AACE Kingdom of Saudi Arabia, Chemical Research and Innovation Society, Gas Processors Association - GCC Chapter, Gulf Downstream Association, Project Management Institute - KSA, Society of Petroleum Engineers - KSA Section, World Federation of Engineering Organisations (WFEO), WPC Energy

OGN energy magazine of Bahrain's Al Hilal Group is the Official Regional Publication for MEPEC 2024.

Taking a balanced approach to navigating energy transition

In essence, the realistic journey towards a sustainable energy future demands a delicate equilibrium between the needs of today and the imperatives of tomorrow, Leon de Bruyn tells *OGN*

HOW the energy sector navigates the energy transition is a balancing act. Current energy demands continue to drive parallel endeavours for producers, who work in both the traditional and sustainability environments. But can we do both?

"This is a topic that will weigh heavily at the Middle East Process Engineering Conference (MEPEC 2024), and one that I look forward to discussing and hearing about during the conference," Leon de Bruyn, President and CEO, Lummus Technology, tells ***OGN*** energy magazine.

He adds: "At Lummus Technology, we are taking a balanced approach where we reconcile the demands of today with the imperatives of tomorrow."

Leon de Bruyn … taking a balanced approach to transition

EFFICIENCY, ECONOMICS, ENVIRONMENT

In 2023, Lummus commercialised or acquired new technologies and entered partnerships that evenly weighed energy efficiency, economic viability and environmental stewardship.

Lummus acquired rights from Air Liquide to license and market acrylic acid and acrylates technologies.

Also, Lummus kept expanding in polymers, namely high-density polyethylene (HDPE) through a partnership with TexploreTM, which is part of one of Asia's largest operators, SCGC.

These are two examples of the company strengthening and expanding its portfolio in traditional monomer and polymer technologies — important in meeting consumer demands today.

Lummus also addresses the environmental imperatives for tomorrow. Here are some examples: Lummus established a partnership with RWDC, a biotechnology company that uses plant-based oils to produce polyhydroxyalkanoates (PHA), which can be recycled, reused or returned to the carbon cycle.

Lummus commercialised ethanol-based SAF technology, offering a commercially demonstrated pathway to reduce the aviation industry's carbon footprint.

The company also entered a partnership with Toshiba combining Lummus' post-combustion carbon capture technology with Toshiba's advanced amine-based solvents designed to reduce emissions.

Several acquisitions or partnerships from last year are a mix between traditional and sustainable technologies.

Lummus' acquired water and wastewater treatment technologies from Siemens Energy.

"This 'outside the box' acquisition has given us sustainable, integrated water solutions that support waste reduction and efficiency goals of petrochemical producers," says de Bruyn.

Another 'outside the box' partnership was with NET Power, a company that has developed a near-zero emissions power generation process.

Lummus developed a unique heat exchanger system for NET Power plants to produce clean and economical power.

When S-Oil broke ground on the Shaheen Project in South Korea last year, Lummus became the first licensor to advance fully integrated crude-to-chemicals technology.

This complex is the first commercial deployment of TC2CTM, converting crude oil into mostly high-value petrochemicals. Saudi Aramco is the majority shareholder of S-Oil and technology partner in TC2C.

The technologies, strategies and innovations that balance energy efficiency, economic viability, and environmental stewardship will drive the energy transition.

"In essence, the realistic journey towards a sustainable energy future demands a delicate equilibrium between the needs of today and the imperatives of tomorrow," de Bruyn concludes.

Tupras deploys Cenosco solution to manage reliability and safety

TUPRAS, a leading producer in Turkey's refining sector and the country's largest industrial enterprise, supports its operations with reliable, high-performing safety software, as well as making risk performance accessible company-wide with one interface for all refineries.

Tupras manages its safety instrumented functions (SIFs) using SIFpro by Cenosco, a Dutch company that delivers solutions for asset integrity.

As a multi-faceted and comprehensive program, SIFpro enables Tupras to review and analyse more than just SIFs including instrument failure rates, maintenance task interval optimisation, perform layer of protection analyses (LOPAs) and safety integrity level (SIL).

Tupras operates four oil refineries, with a total annual crude-oil processing capacity of approximately 30 million tonnes.

According to Dogus Uzun, Process Control Superintendent at Tupras İzmir Refinery: "Each of our refineries has between 2,000 and 3,000 SIFs in place to protect our people and equipment. Cenosco's program is robust and easy to use; it eliminates daily problems and gives us peace of mind."

Tupras manages risk by using one interface for all its refineries

THE APPROACH AND RESULTS

Throughout the collaboration between Tupras and Cenosco, the teams worked together to create valuable feedback–upgrade cycle.

This ensures that the software always meets Tupras's needs as well as complying with all international standards, including IEC61508/61511.

The SIFpro software shows users all the key information they need on a single dashboard and provides clear links between process safety and reliability issues.

Moreover, the latest versions of SIFpro are hosted on a central server, avoiding any delays in downloading or uploading information.

@SIFpro is constantly being improved, so, even if our processes change, we know we can rely on the software. SIFpro has long been essential to our daily operations at Tupras. That's a big advantage in our eyes," says Uzun.

Following the successes, the teams at Tupras and Cenosco are planning to grow their partnership, with more upgrades in the pipeline.

Expressing satisfaction, Uzun say: "Cenosco listens to our feedback and understands our concerns. Safety processes are paramount, but better safety is closely linked to maintenance cost optimization, reduced downtime, and other efficiencies. Over the years, we've provided a lot of feedback on the different features of the program and on the overall dashboard, and with every upgrade we can see how it has all been taken into account."

The overall goal is to increase the visibility of the intricate relationships between safety processes and equipment maintenance and reliability.

Smart tech adoption in the EU&R industry is imperative

With critical developments at play, like global warming and the effects of a shrinking water supply, the industry must actively incorporate AI and automation into their organisations, Carol Johnston tells *OGN*

THE energy, utilities and resources (EU&R) sector continues to prioritise digital transformation to drive meaningful operational efficiencies while meeting the growing rise in energy demand and tackling climate change.

"The sector is accelerating its digitalisation with integrated systems and leveraging disruptive technologies such as AI and automation," Carol Johnston, Vice-President of Energy Utilities and Resources, IFS, tells ***OGN*** energy magazine.

She offers valuable market insights and outlines the technologies that will have a profound impact on the EU&R landscape.

INCREASE IN DEMAND FOR INTEGRATED SYSTEMS WITH EMBEDDED AI AND AUTOMATION

Digital transformation continues to be a central point of focus for the industry. In a recent PWC report, digital transformation ranked second only to hiring and retaining talent as a top growth driver for the industry.

This makes good sense, especially with the rapid adoption of AI, IoT, and other intelligent technologies.

The EU&R sector will continue to evolve towards a composable, integrated environment, one that is capable of supporting the innovation and rapid change underway within the industry.

No longer limited to supporting 'go/no-go' decision-making, intelligent systems will generate plans and recommendations to address disruptive events (outages, sick leave, supply chain issues, etc) before productivity is impacted.

The approach is comprehensive, identifying possible constraints (limited parts inventory, resourcing, etc) and other considerations within the proposed response.

For example, an intelligent system uses data from an asset performance management (APM) solution to flag that an asset is likely to fail within the next three months.

Johnston ... leveraging smart technologies

Along with an alert of the impending failure, the system also utilises data from other modules (scheduling, ERP, etc) to make resource and scheduling recommendations that optimise uptime and lower overall costs.

IFS customers leverage a data-rich environment with insights to assets, skilled workforces, parts inventories, and additional considerations, such as carbon footprint reduction and other enterprise KPIs that impact decision-making.

These integrated systems have access to full operational intelligence to ensure the business maintains and optimises productivity while delivering on its commitments across the enterprise.

INCREASE IN SENSOR AND SMART METER DEPLOYMENTS

Clean, potable water isn't a privilege; it's a life necessity. With only 0.5 per cent of water on the planet useable and climate change dangerously affecting the supply, managing this resource is one of the industry's most important responsibilities.

Yet, according to the US Department of Energy's Federal Energy Management Programme, the US loses 2 trillion gallons of treated drinking water yearly, often caused by undetected leaks due to water mains that were not adequately maintained.

The EU&R industry is under increasing pressure to manage the water supply proactively, with smart meter deployment increasing substantially to improve leak detection. This will result in an increase in revenues utilities can invest in new infrastructure and technology.

IFS utility customers are implementing a range of strategies to combat water scarcity, including:

- Reducing water usage and waste.
- Developing water filtration systems.
- Protecting wetlands.
- Improving irrigation efficiency.
- Increasing water storage in reservoirs.
- Desalinating seawater.

Utilities must also teach communities and businesses to become better stewards, sharing best practices to conserve water, including oversight to curtail excessive use and ensure demand doesn't exceed supply.

INCREASE IN CCS PRACTICES BY 30 PER CENT

Most people know that the planet's future is at risk due to global warming and climate change, primarily driven by greenhouse gas emissions.

According to the Paris Agreement, global warming must not exceed 1.5 deg C above pre-industrial levels. However, the planet is already 1.1 deg C warmer and emissions continue to rise.

Unfortunately, experts are already predicting our current efforts will not be enough.

The International Energy Agency (IEA) advises that the path to net-zero is narrowing, requiring greater ambition and implementation, with stronger international cooperation to turn things around.

New practices such as carbon capture and storage (CCS) are being implemented in an effort to get us back on track.

According to the Environmental and Energy Study Institute, increasing the storage and recycling of CO2 are critical imperatives to stabilise the climate for continued human development.

CSS involves the capture of carbon dioxide (CO2) emissions from industrial processes, such as steel and cement production, or from burning fossil fuels in power generation.

The carbon is transported from the point of production (via ship or pipeline) and stored deep underground in geological formations to prevent it from returning to the ground surface or seabed.

Within the industry, some power plants have already implemented CCS strategies.

The success of these progressive CCS programmes relies on a unified cloud platform, capable project management, and technology that precisely tracks ESG objectives in real time to meet carbon reduction goals.

NAVIGATING WHAT LIES AHEAD

The EU&R sectors have an interesting journey ahead of them. With critical developments at play, like global warming and the effects of a shrinking water supply they must actively incorporate AI and automation into their organisations.

By leveraging these technologies, organisations in the EU&R sector will be well-equipped to strategically utilise operational intelligence across all areas of their operations.

This will enable them to not only maintain optimal levels of productivity but also demonstrate a strong commitment to excellence and success across the enterprise, and while at the same time driving forward sustainable practices.

Hammertech's AquaField system qualified by Saudi Aramco

HAMMERTECH, a subsidiary of Nordic Technology Group (NTG) and multiphase flow metering solutions provider, has had its AquaField system qualified by Saudi Aramco.

This follows a previous milestone in December last year when it was pre-qualified by Aramco after a rigorously evaluation by DNV GL.

The final technical phase for the AquaField multiphase metering system involved conducting field testing on a designated Aramco asset.

With both assessments yielding successful outcomes, Hammertech has been technically qualified and it has initiated the necessary administrative procedures to secure final approval from Aramco.

The rigorous evaluation process and subsequent technical qualification underscore AquaField's reliability and effectiveness enabling digitalisation in large onshore operations.

Designed to provide accurate measurements in challenging environments, AquaField has proven its capability to meet the stringent requirements of leading industry players.

According to Kaare Lunde, CEO of Hammertech: "The achievement of being technically qualified for AquaField by Saudi Aramco represents a significant new milestone for Hammertech. We are proud of the acknowledgment of our technology's reliability and performance by industry leaders like Saudi Aramco. This success further strengthens our position as a provider of innovative solutions enabling digitalisation of the oil and gas industry."

Hammertech's products are used by operators in the oil and gas industry to optimise production, increase efficiency, and reduce greenhouse gas (GHG) emissions.

The AquaField metering system was tested on a designated Aramco asset

When viewed as a vehicle for process transformation, metering opens the possibility to produce energy safely with zero carbon intensity and the least possible environmental impact, Mike Shepherd tells ***OGN***

Metering a game-changer for global energy systems

A holistic approach to metering can help organisations obtain huge operational efficiencies

THE idea of the energy trilemma has been around for nearly a generation and remains largely unsolved to date.

The central question remains: How can affordable, reliable energy with lower carbon dioxide emissions be ensure?

Mike Shepherd, Group Business Development Director, Alderley says: "One of the most overlooked areas in our energy systems that can make the biggest impact in addressing the challenge of the energy trilemma is understanding the value of energy, and this is done by metering."

He says by accurately measuring the flow of energy in either liquid or gaseous form, that is, 'flow measurement', the quantity, quality, and impact of the energy or gaseous emissions, such as CO2, in a particular system can be determined.

"But if we think of metering as a tailored solution and consider the value of the data in a measurement system rather than just as a piece of 'kit', we will be able to make serious inroads in ensuring that the energy produced in a particular system is processed, distributed, and consumed at the optimum value and efficiency."

This entails viewing metering and measurement as a vehicle for organisational and process transformation rather than simply a commodity for compliance.

It opens the possibility to produce energy safely and efficiently with diminishing or zero carbon intensity and the least possible environmental impact.

It means that the energy is the optimum quality for its purpose and is without contamination, and that the energy is transferred and distributed effectively without loss.

INTEGRATED SYSTEMS MODEL

Shepherd says the point around an integrated systems model is important because "we are talking about energy produced on a global scale".

Therefore, if energy production can be improved through efficiency measures that deliver an improvement of a few percentage points the results could be significant.

Shepherd ... focusing on an integrated systems model

He adds: "If we get this right, we can revolutionise the performance of an organisation's energy assets."

Measuring the production outputs using accurate metering systems will provide the tool to improve efficiency in terms of costs and emissions.

It is not without good reason that the Fatih Birol, Executive Director of the International Energy Agency (IEA), has consistently called for energy efficiency to be elevated as part of the energy transition.

Birol has said previously: "At IEA, we call energy efficiency 'the first fuel' – which shows the significance of energy efficiency."

Furthermore, the principle of energy efficiency covers all energy sources as global systems cannot rely on one source alone.

Renewables, hydrogen, nuclear and hydrocarbons all have a role to play in powering our modern highly industrialised economies.

When one factors in the impact of new digital technologies that can improve the measurement capability of specific instruments, it is easy to see how maximising the performance and efficiency of energy assets represent such a huge opportunity to contribute to a global energy system in transition.

Alderley's role within this is instructive; the company acts as an interface operating between end-user operators and original equipment manufacturers (OEM).

"We help our clients understand the importance of accurate metering and the associated uncertainty of measurement to provide data to improve efficiencies. This is an important contractual component of many agreements, specifications, and international regulations," says Shepherd.

What brings home metering's significance is its potential financial impact.

FINANCIAL RAMIFICATIONS OFTEN OVERLOOKED

In financial terms, the expression of uncertainty allows us to estimate the degree of exposure caused by a measurement.

For example, if a platform produces 50,000 barrels per day (bpd) measured at an uncertainty of 5 per cent, the true value of the production could be between 47,500 and 52,500 bpd.

At a price of $100 per barrel, this is a potential exposure of +/- $250,000 per day or in financial terms nearly $100 million per year.

If selling hydrocarbons, for example, you could be handing over $100 million more than you get paid for; or if buying, you could get $100 million less than you paid for. The figures speak for themselves.

The role of a measurement engineer is crucial in today's changing energy system as they will ensure that the uncertainty of a given system is aligned to the agreed uncertainty in any given sales contract, production agreement or international regulations.

Understanding and controlling uncertainty is more than just compliance.

Better control of uncertainty provides a better assessment of the organisation's energy operations in terms of efficiency, performance and future improvement.

THE LOWER THE UNCERTAINTY, THE BETTER

The lower the uncertainty, the better the performance and reduced risk. This in turns equates to improved value and efficiency.

Measurement can detect deviations in performance between stations but only when the uncertainty is managed.

In the previous example, an organisation might lose nearly $100 million per year and be completely unaware of the loss.

This is even without considering the environmental impact of the unaccounted-for energy or the consequences of a similar deviation between reported and actual CO2 emissions.

So, when the performance is managed, the value of energy assets is maximised and loss minimised. Other benefits include:

- Proving compliance with regulations and agreements.
- Supporting optimal operation of products.
- Helping the detection, prevention and elimination of faults.
- Reducing opex and unnecessary intervention.
- Health, safety and environmental improvements.

What is more, for emerging technologies like hydrogen or CCUS, the potential for uncertainty is high given the relative immaturity and lack of guidelines and standards in the respective sectors.

When trust is low and technology immaturity high, industry needs partners with whom to work with to provide the best available insight and maximise value and efficiency.

That's where Alderley comes in as it offers end-to-end cost-competitive metering solutions that are designed with digital capability and performance management at its core.

It is supported in this endeavour by its fellow group company Kelton.

By focusing on a holistic approach to metering, organisations in the global energy sector will be able to focus on making huge efficiencies to their operations.

By instituting change at a systemic level, flow measurement can embed itself as a driver of change across an energy sector in transition.

Decarbonisation technologies that capture your attention

Sulzer Chemtech's separation technology is at the core of successful, value adding carbon capture projects, allowing players in key industries to turn CCUS facilities into profitable plants to generate new revenue streams

ADVANCED process technologies are key to helping the chemical industry develop and implement successful decarbonisation strategies.

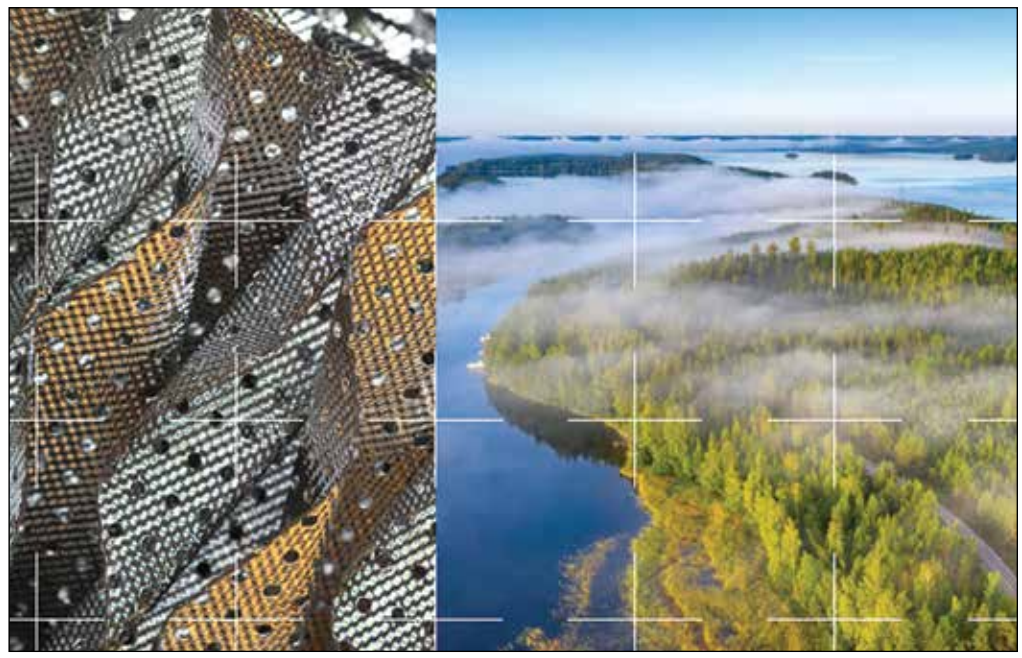
One such technology that Sulzer Chemtech offers is a complete mass transfer solution portfolio that is designed to support highly effective carbon capture, utilisation and storage (CCUS) facilities.

With a proven track record of delivering advanced CCUS solutions on all scales, the leader in separation and mixing technology has developed world-class equipment for such processes.

The ever-expanding range of solutions available is engineered to maximise the removal of carbon dioxide (CO2) from flue gases with high efficiency while preventing the loss or emission of solvents into the atmosphere.

As a result, environmentally oriented players in the CPI can reduce the costs and environmental impact associated with CCUS operations.

Manufacturers and processors can leverage MellapakCC™ structured packing to set up compact yet highly effective separation units, with achievable capture efficiencies between 90 and 99 per cent.



Mellapak is the most widely used structured packing worldwide

This column component also significantly reduces pressure drops, optimising the efficiency of amine absorption units.

Thanks to all these features, the annual costs of CCUS operations processing 1,000 tons or more per day of flue gas that leverage MellapakCC™ are expected to be well below EUR45 ($48.88) per ton of CO2 captured.

This CCUS-tailored packing can also be combined with highly efficient MellaTech liquid distributors and AYPlus DC column internals. These help to properly distribute and prevent the loss and emission of amine-based solvents.

As a result, it is possible to optimise solvent utilisation, recovery and ultimately the sustainability of CCUS operations.

Besides, Sulzer Chemtech is helping companies integrate cost-effective excess heat solutions for solvent regeneration to further enhance these benefits.

Thanks to the Sulzer Chemtech's expertise and state-of-the-art separation technologies, players in key industries have been able to turn CCUS facilities into profitable plants to generate new revenue streams.

Even more, Sulzer Chemtech is helping customers develop innovative carbon utilisation solutions to drive circularity.

Petchem engineers struggle to source spare parts for plants

THE majority of petrochemical process engineers have reported issues sourcing spare parts for temperature control equipment at petrochemical plants and refineries, potentially disrupting operations subject to seasonal demand.

According to a survey by Aggreko of over 600 engineers from the UK, Germany, France, Belgium, the Netherlands and Luxembourg, an average of 52 per cent of respondents cited issues sourcing spare parts for cooling, heating, steam and compressed air equipment.

These findings, gathered by independent research partner Censuswide to inform Aggreko's new whitepapers, titled 'Process Matters', identify multiple operational challenges in the sector.

This includes ageing existing process and temperature control equipment in all markets questioned, with solutions being five years old on average and many being even older.

According to Jordi Camanyes, Petrochemical and Refining Sector Leader – Europe for Aggreko, these findings, combined with other market pressures, could pose challenges for the sector.

"The European petrochemical sector continues to be affected by multiple fluctuating factors, including rising feedstock costs and volatile oil and gas pricing," he explains.

Yet certain constants remain, including that it will get colder in the winter. Petrochemical plants should, therefore, adapt their temperature control arrangements accordingly.

"However, as our most recent reports clearly identify, the heating and cooling equipment currently used in refineries are of advanced age, with all the wear-and-tear and potential downtime that entails. Yet though problems sourcing spare parts may create a more challenging situation, there are also clear opportunities for improvement," says Camanyes.

Stakeholders looking to upgrade existing equipment also need to consider sustainability-minded legislation such as the EU's transition pathway for petrochemicals, and the bloc's new Energy Efficiency Directives for industry.

With legislation and greener energy solution technologies continuing to advance rapidly, Jordi is advocating adjusting equipment procurement strategies to include short-term bridging solutions, especially given enthusiasm from the report's respondents for sustainable solutions.

Souring spare parts for petrochemical plants and refineries is a challenge

"The reason for our new Process Matters reports and the research behind them was to explore ways to improve process performance and competitiveness at European petrochemical plants. To that end, the insights we have uncovered from surveying such a broad cross-section of sector engineers has been invaluable," says Camanyes.

For instance, despite current industry challenges, 95 per cent of respondents said they were willing to pay 25-50 per cent extra for greener utility solutions, and 94 per cent expected their suppliers to have a robust environmental and social responsibility strategy.

Camanyes says this will clearly have huge ramifications on how process and temperature control equipment is procured in the future.

"Suppliers must, therefore, ensure they can not only provide solutions on a dynamic, modular hire basis that suits the fast-moving petrochemical sector, but also that these technologies are efficient and sustainable."