



COATINGS AND ANTI CORROSION ENGINEERING REVIEW

October - November 2025 | Volume 16 Issue 4 | ₹ 100



Corrosion monitoring and integrity management



Interview
Mr Subbu Venkatachalam
*Head of Defence & Aerospace,
Carborundum Universal Limited*

Technical Feature
**Waterproofing – an essential treatment during
new building construction and maintenance**

Driving a technological **REVOLUTION** in paint and coating Solutions



PLURAL COMPONENT MACHINE

Key Features

Safe & simple operation, Consistent material quality, Processes viscous materials, More Flow capacity, Saves money by using less cleaning solvent, Integrated Automatic Re-circulation system

Applications:

Tanks, Pipes, Marine/shipbuilding, Bridges, Wind towers, Railcars, Water towers, Wastewater treatment, Manhole, Sewer reconditioning, Secondary containment, Structural steel, Refineries, Roof coatings



SMART PAINT KITCHEN

Key Features

Lower waste & downtime, Lower energy use, Smart paint recovery technology, Reduced carbon foot- print, Higher ROI with reduced disposal cost, Minimum contamination

Applications:

Trial paint for new projects, unique/Special colors, Development of custom shades, Production in batches, Color changing



POLYUREA SPRAY MACHINE

Key Features

The innovative ELECTRIC Polyurea & PU foam system, high-quality coating, extreme temperature resistance, fast processing time, high elasticity.

Applications:

Swimming pools, Pond linings, Drinking water reservoirs, Chemical-proof tanks, Wind turbines, Ship decks, Submarines, Loading areas, Construction.



Smart Innovation



Extensive Range



Proven Expertise



Quality Assurance



Global Reach



24x7 Support

A COAT OF PROTECTION FOR EVERY APPLICATION



AEROSPACE & DEFENCE (AS 9100 certified)

- GOST spec products
- BS spec products
- MIL spec products
- Coatings for missiles & aircraft



HIGH PERFORMANCE INDUSTRIAL COATINGS

- Zinc silicate primers
- Epoxy primers & finishes
- Vinyl ester coatings
- Heat resistant coatings
 - Bituminous coatings
 - Polysiloxane coatings
- Hi-gloss polyurethane finishes
- Chlorinated rubber



PIPELINE COATINGS

- Heavy duty coatings for chemicals & petroleum industries
- Coating systems for thermal power, wind & nuclear power plants
 - Food grade epoxy linings
 - Gas flow epoxy coatings
 - Jet Fuel coatings



OEM COATINGS

- Quick drying primer & top coats, low bake & stoving systems
 - Thermosetting acrylics
 - Hi gloss polyester top coats
 - Low bake polyurethane
- Casting sealers & unicoat epoxy chassis black



MARINE COATINGS

- Marine enamels & epoxy coatings
 - Prefabrication primers
 - Ballast tank coatings
 - Under water coatings
 - Antifouling coatings



Architectural Coatings

- External coatings
- Internal coatings
- Hygiene coatings
- Anti carbonation coatings



FLOOR COATINGS

- Penetrating Primer
 - Screed
- Solvent less Epoxy
- Solvent less PU



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QUV
Weathering Tester



Q-Sun Xe-8
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Q-Fog SSP & CCT



Q-Fog CRH



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PosiTector 6000
(DFT)



Ultrasonic Thickness Gage (UTG)



Soluble Salt Tester (SST)



Holiday Detector (HHD)



Pull off Adhesion (AT-A)



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Precise Gloss, Haze & Opacity Measurement



Novo-Gloss Trio (20/60/85) Glossmeter



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Abrasion Testing for Long- Lasting Surface Protection



Rotary Platform Abrasion Tester - Model 1700



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Electrochemistry Redefined for Precision and Performance



Multichannel Potentiostats/Galvanostats (Corrosion Studies)



Karl Fischer Titrande



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doubles capacity with
new state-of-the-art plant
in Pune**

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COATINGS AND ANTI CORROSION ENGINEERING REVIEW

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The unfortunate thing about corrosion is its autocatalytic nature, once corrosion commences, and then that is it. In practice, the best way to prevent the spread of corrosion is to prevent it from starting at all! Given the cost of engineering, procurement and construction of process installations, the ultimate successful facility is one that remains in the intended service for as long as possible.

In this issue, we discuss how 'corrosion and integrity management' is a systematic approach to protect assets from material degradation, ensuring their safe, long-lasting, and reliable operation. It involves developing and implementing a Corrosion Management Plan (CMP) that includes procedures, risk assessments, and performance metrics, all within an organization's overall management system. The goal is to minimize life cycle costs, meet safety and environmental goals, and prolong the life of critical assets like pipelines and storage tanks.

It's also high time we look at asset integrity management as a value enabler, rather than a compliance tool. New technologies use AI to analyze data from sensors and images to predict corrosion, identify it earlier and more accurately than traditional methods, and recommend preventative actions. This leads to more efficient, proactive, and cost-effective corrosion control strategies. AI models can analyze historical and real-time data to predict where and when corrosion is likely to occur, enabling proactive maintenance and preventing costly failures.

But all this would be of no use if the people are not well acquainted or aware about what they are supposed to do. Or, simply are not trained. Asset owners must invest in their people, train them, and build a culture of innovation and technology. You can have all the technology, but you need to have trained people who need to put in the data, analyse the data, and work on that data. If you feed garbage, it's simply garbage in, garbage out!

Henry Ford, the famous American industrialist and business magnate, and founder of the Ford Motor Company once said: "The only thing worse than training your employees and having them leave is not training them and having them stay!" This applies to all trades including corrosion.

As the year comes to a close, let me take this opportunity to wish each and every reader, advertiser and well-wisher a great festive season and a wonderful year ahead!!!

Jolly Lonappan
Editor-in-Chief



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GOOD BYE CORROSION & ABRASION WEAR

Now Increase Equipment life and
Control Operating Cost

CORROSION, ABRASION & CHEMICAL ATTACKS destroy crores of rupees worth equipment every year. Worldwide research shows that nearly 70%-80% equipment failures are purely due to their surface erosion. The need for effective preventive maintenance therefore is imperative.

The time has arrived for ceramics to finally take centre stage. Jyoti Ceramic Industries has specially developed ceramic filled polymer based coating compounds, "Aluma Coat® -BR" brushable / sprayable and "Aluma Coat® -TW" trowelable.



VERSATILE INDUSTRIAL APPLICATIONS



Motor Shaft
Coated with
Aluma Coat - BR



Butterfly Valve
Coated with
Aluma Coat - BR

Aluma Coat® - BR

A brushable / sprayable easy to apply coating designed to protect surfaces from severe turbulence, corrosion, erosion and chemical attacks. It gives a satin smooth, high-gloss surface finish and can withstand maximum service temperature up to 150°C/302°F



Aluma Coat® - TW

A trowelable, easy to apply protective coating, comprising of sintered sapphire-hard ceramic micro beads, doped in polymer resins designed to resist corrosion, abrasion and moderate surface impact. It gives a rough textured surface finish and can withstand maximum service temperature up to 150°C/302°F.



VERSATILE INDUSTRIAL APPLICATIONS



Mineral Crusher
Coated with
Aluma Coat - TW



Inner Base of Dust
Collector Coated with
Aluma Coat - TW

Contact us :

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Elcometer launches the 215 Oven Temperature Profiling System

Elcometer, a global leader in blast, spray and inspection equipment announces their new Elcometer 215 Temperature Profiling System, designed to provide manufacturers in the coatings, automotive and metal fabrication sectors with unmatched visibility into their oven and product temperature cure profiles, notes a press communiqué from the company.

PHOTO: ELCOMETER



The Elcometer 215 Oven Temperature Profiling System streamlines this critical process with cutting-edge thermal analysis that helps users validate performance, guarantee compliance and reduce costly rework.

Accurate temperature monitoring is necessary to ensure coatings cure within their required parameters. The Elcometer 215 streamlines this critical process with cutting-edge thermal analysis that helps users validate performance, guarantee compliance and reduce costly rework.

The Elcometer 215 tracks and documents cure cycles providing traceable reports that audits and QA documentation in compliance with key national, international and customer specific requirements, including the following specifications:

- QUALICOAT for architectural powder coatings
- ISO 20482 (metallic coatings – oven curing)
- ASTM D2485 (high-temperature resistance of coatings)

□ ISO 9001 traceability requirements for QA documentation professional temperature profile reports.

Key features of the Elcometer 215 include: 8-channel temperature logger that captures thermal gradients across large components or multiple substrates for accurate profiling; advanced thermal barrier protects instrumentation for extended

periods; multiple profiling cycles; real-time data acquisition; immediate feedback to support in-process adjustments and troubleshooting ElcoMaster® Software Analyse, archive and share profiling results with intuitive

reporting tools. The compact & rugged design is built for harsh factory environments whilst remaining portable and comes with USB connectivity for efficient data transfer for productivity-focused operations. Bluetooth connectivity enables remote data logging and wireless downloads, without opening the thermal barrier – minimising heat loss and handling risk.

The Elcometer 215 boasts an impressive measurement range of -200°C to 1300°C (-328°F to 2372°F) and can connect up to eight thermocouple probes of various types (K, T, J, N, S, E, B, R).

With a memory capacity of 1,000,000 readings, it can perform up to 40 profile runs before returning to a PC. The Elcometer 215 is also dust and waterproof, equivalent to IP6X.

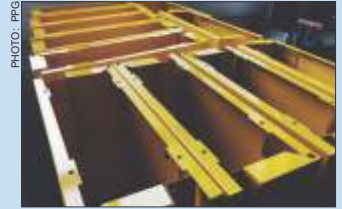
PPG launches PPG ENVIROCRON Extreme Protection Edge Plus powder coating

PPG has announced the launch of PPG ENVIROCRON® Extreme Protection Edge Plus powder coating, a patent-pending, one-coat innovation that advances edge-protection technology, according to a press communiqué from the company.

Building on the proven performance of PPG's first-generation high-edge formulation, this latest breakthrough provides exceptional corrosion protection on hard-to-coat sharp edges, angles and recesses common in heavy duty equipment, HVAC, electrical and general industrial applications with an improved, smoother finish.

The coating is engineered to minimize powder retraction and shrinking during curing. This helps to ensure more complete coverage for enhanced corrosion resistance and safety in handling because the coated edges are smooth to the touch, eliminating the need for mechanical edge rounding or blasting.

Testing performed by PPG indicates that PPG Envirocron Extreme Protection Edge Plus coating provides coverage that outperforms currently available one-coat and two-coat powder systems. It also significantly reduces the orange-peel texture that is common with standard high-edge solutions. With efficient and economical one-coat application and a smoother, more finished appearance, it sets a new benchmark for edge-protection performance.



Engineered to minimize powder retraction and shrinking during curing, ENVIROCRON® Extreme Protection Edge Plus ensures more complete coverage without the need for mechanical edge rounding or blasting.

“Since launching our first-generation high-edge powder in 2019, our scientists have continued to refine the formulation to optimize corrosion performance and elevate the appearance of the finish,” said Marizeth Carvalho, PPG global powder platform lead and general manager Latin America South, Industrial Coatings. “This innovation illustrates our commitment to helping our partners solve their toughest coatings challenges and improve the durability and longevity of their products.”

PPG Envirocron Extreme Protection Edge Plus coating delivers exceptional first-pass transfer efficiency and is highly durable, even in the most demanding exterior and industrial settings. It is available in a wide spectrum of standard and custom-matched colors including micas and metallics and is compatible with both manual and automated powder coating systems for application flexibility.

PPG Envirocron Extreme Protection Edge Plus coating is ideal for end-use applications that have complex metal features such as louvers, blades and other laser-cut parts.

High Performance Foam & Polyurea Equipment



For Spray Foam & Polyurea Applications



Reactors



Reactor 3 E-XP2

- **Katalyst** full system communication and control
- **Supply Pump Shut-down** automatically when you run out of material.
- **Power Management** - Select desired heater wattage
- **Independent Hose Control** - Control A and B materials to different temperatures
- Auto pressure balancing
- **Smart Supply**- Automatically monitors and adjusts fluid inlet pressures
- Touchscreen Advanced Display Module (ADM)



Reactor 3 H-XP2

- **Hydraulic System** - Increased yield and high output spraying
- **Reactor Connect** - Communication and Control at Your Fingertips
- **Advanced Control Modules** - Handles power fluctuations
- Quick and Easy Troubleshooting
- **NEW Hydraulic Cooling System** - Powerful fan to maintain optimal oil temperature for longer oil life



E-10 HP

- **Save time** – get smaller jobs done fast without sacrificing performance
- **Self-contained system** – no transfer pumps required
- **Easy to use** – single knob motor operations
- **Provides consistency** – uses standard spray guns you're familiar with
- **Uses standard residential electrical outlets** – no generator needed

Fusion Guns



Fusion Air Purge

- Easy Cleaning
- Less Downtime
- Quick-Release Fluid Housing
- Hand-Tightened Front Cap
- Ergonomic Handle
- Build for all day comfort



Fusion FX

NEW

- The lightest gun on the market
- Easiest to service and maintain
- Easy access to the mix chamber without having to remove the fluid housing
- Switch between Clear Shot and Air Purge mode

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Scan for more information



Chemetall's new Gardolene® D provides superior corrosion protection and improves battery performance

Chemetall's new Gardolene® D products, such as Gardolene® D 6701 and Gardolene® D 6702, are the first chromium-free and fluoride-free passivation solutions for copper foil in the world. This pioneering solution is unique in the industry and offers superior corrosion protection as well as improved performance of copper foils used in electric vehicle battery packs, energy generation and storage systems, notes a press release from the company.



Chemetall launches first global chromium- and fluoride-free Gardolene® D passivation solution for copper foils to the market.

The new Chemetall Gardolene® D is fully compliant with the European Union's new Battery Regulation (EU 2023/1542), which mandates carbon footprint declarations, digital battery passports, and strict limits on hazardous substances. Gardolene® D directly enables superior battery performance in the end product. A key feature of the new Gardolene® D for copper foils is the improvement of surface energy, which enables better adhesion of anode active materials and reduces electrical resistivity, which results in higher battery efficiency.

They thereby significantly

improve the eco-friendliness of the entire battery value chain in a way no other products can. The new solutions are compatible with existing equipment and suitable for both electro-deposited and rolled annealed copper foil substrates used in the production of batteries for electric vehicles and a wide range of other energy generation and storage applications. This innovative technology delivers superior heat and corrosion resistance compared to existing solutions.

"The new Gardolene® D passivation solutions for copper foil are a pioneering innovation for the market.

Our dedicated research and technology teams across the globe have intensively analyzed available solutions and market needs. Based on our comprehensive expertise in surface treatment and close exchange with our customers, we were able to push boundaries and develop this one-of-a-kind global solution for copper foil pretreatment. It ensures stable copper foil properties, improved electrode conductivity, and supports manufacturers in meeting evolving regulatory and sustainability requirements compared to standard passivation processes," says Arjan Termaten, Head of Global Technology at Chemetall.

Excelitas introduces ruggedized Phoseon FireLine FL400-i UV LED curing system for harsh industrial environments

Excelitas®, a leading provider of advanced, life-enriching technologies that make a difference, serving global market leaders in the life sciences, advanced industrial, next-generation semiconductor, aerospace and defense end markets, has announced the launch of the Phoseon



The new FL400-i introduces a ruggedized housing and enhanced sealing to ensure reliable operation in harsh, high-contaminant environments such as pipe coating and metal finishing.

FireLine™ FL400-i Industrial UV LED Curing System, designed specifically for demanding industrial coating and adhesive applications. Building on the proven performance of the FireLine FL400, the new FL400-i introduces a ruggedized housing and enhanced sealing to ensure reliable operation in harsh, high-contaminant environments such as pipe coating and metal finishing, notes a press release from the company.

Delivering the same industry-leading optical uniformity and high dose performance as the original FL400, the FL400-i system features a newly engineered IP66-rated enclosure with robust endcaps, advanced window sealing and optional sacrificial glass to shield the primary optics from heat, dust and impact.

"The FL400-i was built from the ground up to address the unique challenges of aggressive industrial environments where standard digital inkjet solutions fall short," said Tad Bozdech, Product Manager,

Excelitas. "This system brings the durability required for metal and pipe coating applications, while preserving the exceptional UV LED performance and uniformity our customers rely on."

Additional features include:

Versatile connectivity: Straight or barbed water fittings and CDA (clean dry air) ports help manage condensation in high-heat conditions.

Flexible control options: Supports analog, RS485, and Modbus TCP protocols for seamless integration and remote system monitoring.

Environmentally responsible: Mercury-free, ozone-free operation and high energy efficiency contribute to a safer workplace and reduced operating costs.

With patented SLM array and cooling technologies, the FL400-i ensures long LED lifetimes and consistent high-performance output. It is ideal for system builders, integrators, and coating formulators seeking robust, high-throughput UV LED solutions for industrial applications.



World class testing Instruments for Paint, Coating & Corrosion testing
In the silence of the lab, our instruments speak volumes.



Versatile Sand-Milling Dispensing-agitator



Super high speed dispersing Machine



Versatile Sand-Milling Dispensing-agitator - Electrical motorised lift



Lab basket mill



Triple roller mill



Intelligent line drying time recorder



Automatic Cupping tester



Automatic film Applicator



Wet abrasion scrub tester



MFFT



Haze meter



Intelligent Touch-screen glossmeter



Portable Spectrophotometer



Benchtop Spectrophotometer



DFT meter



Analytical Balance



Moisture analyzer



Benchtop pH meter



Micro-Analytical Balance



Karl fischer titrator



UV weathering Tester



Xenon Test Chamber



Humidity cabinet



Programmable salt spray tester



Cyclic corrosion tester



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Non-contact layer thickness measurement with the Coatmaster Flex

Coatmaster Flex is a cutting-edge coating thickness gauge designed for precise, non-contact measurement immediately after application. This advanced device is ideal for measuring wet and cured/dried powders and paints across various substrates, including metal, paper, rubber, ceramics, glass, plastic, and wood, notes a product write-up from their authorized distributors in India, Komal Scientific International Pvt Ltd.

By enabling early measurement in the coating process, the Coatmaster Flex helps manufacturers reduce material consumption, improve quality, and minimize rework and scrap. Its non-destructive, contactless operation ensures efficiency and safety while maintaining high accuracy in industrial environments.

Analyzing coating thickness early in the process allows you to document and control your in-line coating processes. As well as dramatically reducing coating material, it helps you to produce coatings with high accuracy so you can maintain optimal quality standards.

With total control over your coating thickness measurements, you'll avoid the need for frustrating and costly rework and rejects, detecting and correcting deviations before they become a problem.

The Coatmaster Flex rapidly offers attractive return on investment, slashing environmental footprint by reducing material consumption by up to 30%. Customers tell us this has saved them up to \$6,000 per month on coating material,



Coatmaster Flex is ideal for measuring wet and cured/dried powders and paints across various substrates, including metal, paper, rubber, ceramics, glass, plastic, and wood.

per production line, the write-up notes.

The Coatmaster Flex is easy to use, built for accuracy, reliability and convenience, the device requires minimal calibration, plus it's insensitive to the angle and distance of measurement.

More details:
komalscientific.com

SIOResin launches nano silicone resin SIO-521 for anti-graffiti coatings

SIOResin® (Guangzhou SIO New Material Co., Ltd.) has introduced a new high-performance nano silicone resin, SIO-521, developed to provide durable anti-graffiti and surface protection for a wide range of industrial and architectural substrates, notes a press release from the company.

The newly launched resin combines excellent stain resistance, weatherability, and long-term gloss retention with simple, eco-friendly application. Designed as a single-component, moisture-curing system, SIO-521 forms a transparent protective film that delivers anti-graffiti Level

Controlled climate, lasting protection: The science behind durable coatings

The success of any anti-corrosive coating depends not just on formulation or surface preparation, but on the environmental conditions during application. High humidity, fluctuating temperatures, and condensation can cause flash rust, blistering, poor adhesion, and early coating failure.

For structures like tanks, pipelines, and reactors, maintaining controlled temperature, humidity, and dew point is essential. Specifications recommend keeping RH below 55%, maintaining a -5°C dew point differential between the air and the steel surface, and a -12°C dew point differential between the air inside and outside the tank. Without this, even the best surface prep can fail.

Engineered dehumidification systems, particularly desiccant-based units with integrated blowers and condensing modules, help create stable conditions—regardless of season or geography. These systems prevent rust bloom, reduce downtime, and can extend coating life by 1.5–2x. Remarkably, they represent a very low portion of the total treatment cost for corrosion-preventive painting, while delivering substantial returns in reliability and reducing the need for rework.

Solutions like those offered by TDS have supported contractors in achieving year-round reliability in coating projects. For technical assistance, write to tds@pahwa.com.

1 performance and exceptional surface durability.

According to the company, the coating exhibits a water contact angle of approximately 110° and an oil contact angle of around 30°, allowing contaminants such as ink, paint, or grease to be easily wiped away. Its film reaches 9H pencil hardness with an adhesion rating of 0,

offering outstanding wear resistance and mechanical strength.

Unlike many conventional polymer coatings, SIO-521 maintains high clarity and gloss even after prolonged UV exposure or chemical contact. The resin withstands boiling water, 300°C heat, and exposure to solvents such as alcohol, PMA, and thinner, while remaining resistant to acids, alkalis, and everyday stains like vinegar, red wine, and cola.

The coating is suitable for use on metal, stone, wood, GRC, plastics, advertising panels, and powder-coated surfaces. It provides waterproofing, oil repellency, and easy-to-clean properties, restoring aged or damaged coatings and improving surface appearance. The formulation's low odor, non-flammable nature, and moderate curing speed also make it practical for field and workshop applications.



SIOResin's nano silicone resin SIO-521 features 9H hardness, excellent UV stability, and easy-to-clean hydrophobic performance for durable anti-graffiti coatings.



National Accreditation Board for
Testing and Calibration Laboratories

CERTIFICATE OF ACCREDITATION

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ISO/IEC 17025:2017

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Issue Date: 26/10/2025

Valid Until: 25/10/2029

This certificate remains valid for the Scope of Accreditation as specified in the annexure subject to continued satisfactory compliance to the above standard & the relevant requirements of NABL.
(To see the scope of accreditation of this laboratory, you may also visit NABL website www.nabl-india.org)

Name of Legal Entity: Komal Scientific International Private Limited

Signed for and on behalf of NABL




Anita Rani
Director


Chakravarthy T. Kannan
Chief Executive Officer

Jotun announces the latest edition to its fire protection range: Jotachar 1709 XT

Jotun, a global leader in protective coatings, has announced the launch of Jotachar 1709 XT, the latest innovation to its industry-leading Jotachar range of trusted intumescent fire protection coatings for the oil and gas industry. Engineered for fire performance in the most demanding environments, delivering competitive loadings and installation cost, Jotachar 1709 XT is optimized for UL1709 projects and strengthens the recognized Jotachar range with products suited for all types of project scenarios, notes a press release from the company.



Jotachar 1709 XT is optimized for UL1709 projects and strengthens the recognized Jotachar range with products suited for all types of project scenarios.

Ensuring the safety and integrity of steel assets is critical, especially as the industry faces increasing challenges — from reducing the carbon footprint, to limiting the risks of fires and cryogenic spills. In the face of hazards or the pressure of tight schedules, time is essential and trusted performance is everything.

“Jotun revolutionized the intumescent fire protection industry when it launched Jotachar JF750 in 2013, as the industry's first mesh-free application solution for all hydrocarbon fire scenarios. Now Jotun enhances the Jotachar range with its latest edition, Jotachar 1709 XT — developed and optimized for

onshore new construction projects requiring UL1709 certification,” said James Irving, Global R&D Manager for Fire Protection in Jotun.

As a patent pending all-climate capable fire protection coating, developed for the most extreme environments, Jotachar 1709 XT enables efficient installation for projects with all levels of complexity, the press release notes.

“Jotachar 1709 XT assures efficiency in projects through lower material consumption, delivering significant cost savings making it a relevant solution for energy projects worldwide. Our Jotachar range will now provide value to the industry whether delivering application efficiency with low applied weight and cost, or enabling fast on-site completion of connections, block-

outs and maintenance scopes.”

Jotachar 1709 XT will deliver uncompromised reliability, ensuring consistent application and project efficiency, with its demonstrated first-class application properties:

- Consistent and proven application performance across challenging environments in-shop and at site
 - Excellent and reliably robust application efficiency, regardless of conditions
 - Fast thickness build-up with an extended workability window of 15–20 minutes, even at high steelwork temperatures up to 50°C
- Jotachar 1709 XT has also

Coating thickness gauges: Essential tools in corrosion protection

Khushboo Scientific, in partnership with DeFelsko, provides a complete portfolio of coating thickness gauges engineered to deliver accurate, non-destructive measurements across industries. Each model is tailored to specific applications, ensuring reliability in both field inspections and production lines.

For coatings on ferrous and non-ferrous metals, the PosiTector 6000 offers unmatched versatility. With no calibration required for most applications, it's ready to measure immediately. Its 2.8-inch color touchscreen, rugged IP65-rated body, and ruby probe tip make it durable for challenging environments, while USB, WiFi, and Bluetooth connectivity enable seamless reporting through PosiSoft software.

When corrosion inspectors need fast, economical checks, the PosiTest DFT delivers. It provides 60+ readings per minute with high repeatability, features onscreen averaging for up to 99 readings, and comes with a ruby-tipped probe for durability. Its auto-rotating display ensures clarity in any position, making it ideal for on-site corrosion surveys.

Not all coatings are applied on metal. The PosiTector 200 is designed for wood, concrete, fiber glass, plastic, polyurea, asphaltic, neoprene and it excels in measuring multi-layer coatings.

Powder coatings are a

undergone comprehensive third-party testing and is fully certified by leading regulatory bodies. Additional extensive testing includes long term



Khushboo Scientific, in partnership with DeFelsko, provides a complete portfolio of coating thickness gauges engineered to deliver accurate, non-destructive measurements across industries.

popular choice in corrosion protection. The PosiTector PC, with its non-contact ultrasonic technology, predicts the cured thickness of uncured powder coatings. It measures up to four times faster, supports scan mode for large areas, and stores 999 readings, making it ideal for powder coating shops and production facilities.

The PosiTest is a mechanical pull-off gauge for coatings on steel. Built with a carbide probe and rugged housing, it withstands shocks, solvents, and acids, conditions common in corrosion control. V-grooves ensure accurate positioning on cylindrical objects, while audible and visual indicators confirm precise readings.

Compact and lightweight, the PosiPen is perfect for measuring coatings in hard-to-reach, small, or hot surfaces. Rugged and unaffected by mechanical shock, chemicals, or dust, it is a reliable tool for inspectors working in challenging field conditions.

More details: khushbooscientific.com

durability, adhesion, char stability, and mechanical integrity have been proven through certified testing protocols.

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Corrogard 6 in 1 by Aerol: The all-in-one maintenance spray

As industrial maintenance continues to prioritize safety, speed, and sustainability, multi-functional aerosols like Corrogard 6 in 1 will continue to play a central role in shaping efficient, reliable operations

In industrial maintenance and repair operations, the demand for fast, efficient, and versatile tools is constant. Traditional methods often involve multiple products to perform individual tasks, cleaning, lubrication, rust prevention, or releasing stuck components. This segmented approach is time-consuming and inefficient in modern work environments. Multi-functional products, particularly in aerosol format, are increasingly preferred for their simplicity and practical value.

Corrogard 6 in 1, manufactured by the Delhi-based Aerol Formulations Pvt Ltd., is an integrated maintenance spray formulated to address six common industrial issues in one ready-to-use solution. Developed for diverse use, from factory floors and workshops to garages and homes, it reflects the changing approach to preventive maintenance in India.

What Corrogard 6 in 1 offers

Corrogard 6 in 1 combines multiple maintenance functions into a single formulation. Delivered

through a pressurized aerosol can, it is designed for quick application and precise control of usage. The product performs the following roles:

Rust penetrant: Loosens seized components by cutting through rust.

Lubricant: Reduces friction in moving parts.

Moisture displacer: Repels water from electrical or metallic surfaces.

Squeak eliminator: Resolves friction noise in joints and hinges.

Corrosion protector: Leaves a protective film to prevent oxidation.

Release agent: Helps free jammed or tightly fixed parts. This multi-functional nature allows users to replace several single-purpose sprays with one standardized solution.

Key benefits of aerosol-based maintenance

The aerosol packaging of Corrogard 6 in 1 enhances its usability in industrial and home maintenance settings. Aerosol systems offer:

Factory-sealed packaging, preventing contamination or adulteration.

No need for additional tools such as spray guns or compressors.

Reach into difficult areas without dismantling equipment.

Controlled spray pattern, minimizing overuse or spillage.

Portability and ease of access at the point-of-use.

Spill-proof and tamper-proof container design.

These advantages simplify fieldwork, reduce maintenance time, and support standardized safety protocols.

Areas of application

Corrogard 6 in 1 supports a range of use cases in different industries. Some typical applications include:

Electrical and electronics: Used for treating junction boxes, circuit boards, terminal studs, and relays where moisture or dust accumulation can cause malfunctions. The spray displaces moisture and prevents short circuits without requiring disassembly.

Mechanical and automotive: Applied to gears, levers, hinges, chains, and control mechanisms in cars, bikes,

and industrial equipment. It reduces squeaks, eases movement, and prevents rust after exposure to outdoor conditions.

Maintenance tools and fixtures: Helps maintain vices, hand tools, and clamps in

workshops. Regular spraying prevents seizure, rust formation, and wear due to dry operation.

General facility maintenance: Used in homes and institutions on sliding doors, locks, metal grills, and fans to ensure reliable functioning without the need for major repairs.

Suitability in Indian working conditions

“India’s industrial and environmental conditions are often harsh on equipment. High humidity, coastal salinity, and frequent dust exposure accelerate metal degradation and electrical failures.

Corrogard 6 in 1 is formulated to function reliably in such conditions,” said Mr Sanjay Malhotra, Managing Director, Aerol Formulations Pvt Ltd.

“The product is especially helpful during monsoon months, where moisture ingress can affect both mechanical and electronic systems. Its ability to dry, protect, and lubricate in one step makes it well-suited for climate-sensitive operations across the country.”

Simple and quick application process

Corrogard 6 in 1 is designed for ease of use by technicians of all experience levels.

Application involves minimal preparation:

Shake the can – Ensure the solution is well mixed.

Spray from 15–20 cm distance – Target the specific surface or joint.

Wait for penetration – Allow the spray to act on rust or moisture.

PHOTO: CORROGARD



Corrogard 6 in 1 is an integrated maintenance spray formulated to address six common industrial issues in one ready-to-use solution.

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TECHNICAL SPECIFICATIONS

PARAMETERS	DRAGON 1:1	DRAGON 2.28:1	DRAGON 2.33:1	DRAGON 2.35:1	DRAGON 2.5:1	DRAGON 2:1
Pressure ratio	73:1	58:1	58:1	58:1	57:1	57:1
Discharge/cycle (th)	302 CC	377CC	377CC	377CC	395CC	339CC
Pump combination	Ø350 - (151/151)	Ø350 - (145-113/113)	Ø350 - (151-113/113)	Ø350 - (151-113/113)	Ø350 - (169-113/113)	Ø350 - (113-113/113)
Max inlet air pressure	6 BAR	6 BAR	6 BAR	6 BAR	6 BAR	6 BAR
Max output pressure	438 BAR	348 BAR	348 BAR	348 BAR	342 BAR	402 BAR
Mixing ratio	1:1	2.28:1	2.33:1	2.35:1	2.5:1	2:1
Supply	415V/3Ø/50HZ	415V/3Ø/50HZ	415V/3Ø/50HZ	415V/3Ø/50HZ	415V/3Ø/50HZ	415V/3Ø/50HZ
Reference Intumescent material	Jet char 1709, Carboline 3000SP, Carbolinethermo lag-E100, Chartek- 2218	PITT CHAR -NX	PITT CHAR -XP, Chartek 7E, Chartek-1960CSP	Jotun Steel Master 1200HPE	Hempafire XTR 100	Firetex M90/02

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Wipe if necessary – Remove any excess for clean results. No need for mixing, measuring, or additional equipment.

Supporting preventive maintenance

“Preventive maintenance is critical for prolonging the life of machinery and reducing breakdowns. Corrogard 6 in 1 supports this effort by allowing fast and regular upkeep of vulnerable parts. Moisture-sensitive electronics, exposed metal frames, and moving joints all benefit from routine application. This proactive approach helps avoid equipment downtime and ensures operational continuity,” said Mr Malhotra.

One of the challenges with traditional maintenance methods is chemical handling and surface contamination. Aerosol-based sprays reduce these risks through sealed containment and precision application. Corrogard 6 in 1 provides a safer alternative by minimizing exposure and mess.

Its formulation is suitable for indoor use, with controlled vapor release and low residue. Cleaner operations also result in fewer house-keeping needs and better worksite safety.

Supporting sustainable practices

Modern aerosols are designed to meet regulatory benchmarks for environmental safety. Corrogard 6 in 1 is packaged in recyclable containers and uses formulations that are safer for users and ecosystems alike.

By consolidating six maintenance steps into one product, it also reduces waste from multiple containers and applicators. Facilities benefit from simplified inventory, reduced packaging waste, and streamlined purchasing.

Faster maintenance and on-the-go use

In maintenance situations where response time is critical, such as equipment shutdowns or electrical faults, technicians often rely on tools that can be used immediately. The portability of Corrogard 6 in 1 allows it to be included in toolkits or mobile maintenance kits, ready for use at the site of a problem.

This reduces delays associated with tool preparation, transportation of multiple chemicals, or the need to dismantle parts for cleaning or lubrication.

Clear labeling and direct instructions printed on the can make Corrogard 6 in 1 easy to use. Functions, safety instructions, and usage guidelines are accessible, reducing errors and misuse. This design approach ensures that even less experienced operators can use the product effectively. In shared facilities, this standardization supports smoother workflows and improves accountability in maintenance routines.

Corrogard 6 in 1 reflects the evolving approach to industrial maintenance in India. With its six-in-one functionality, ease of use, and relevance across sectors, it simplifies routine tasks and supports preventive care. The aerosol-based delivery system offers speed, precision, and portability, qualities that match the demands of modern work environments. “As industrial maintenance continues to prioritize safety, speed, and sustainability, multi-functional aerosols like Corrogard 6 in 1 will continue to play a central role in shaping efficient, reliable operations,” said Mr Malhotra.

Aerol Formulations Pvt. Ltd. was established in 1989 with a dedicated focus on manufacturing aerosols, specialty lubricants, and

chemical preparations for industrial maintenance, inspection, and repair. Founded by Mr Sanjay Malhotra, who began formulating silicone-based products in 1984, the company started with the production of silicone spray for use in injection

molding and welding. Over time, Aerol expanded its product line to include anti-splatter sprays, rust removers, corrosion preventives, contact cleaners, conformal coatings, and zinc sprays, all developed in-house. Headquartered in Delhi, with a manufacturing facility in Haryana, Aerol now offers over 100 aerosol products and is a leader in the Indian industrial aerosol segment. The company also provides private-label manufacturing for major auto care brands and is approved by top OEMs. With a strong presence in North and East India, Aerol serves over 3000 registered industrial customers and aims to double its business in the next five years.

Aerol is ISO 9001 & ISO 45001 certified. It employs nearly 100 people.

Some of the products manufactured by Aerol include:

Corrogard Wax Film Spray: Provides a non-drying wax film that uniformly coats complex surfaces, meeting IS 1154 corrosion standards and passing a 96-hour salt spray test. Used for temporary protection of machined parts, molds, dies, bearings, etc. Available in multiple grades (222, 223, 225, 226, 310, 313) depending on film type and heat resistance.

Corrogard 6-in-1 Multi-Functional Oil Spray: A



By consolidating six maintenance steps into one product, Corrogard 6 in 1 also reduces waste from multiple containers and applicators.

versatile spray for rust and corrosion protection on freshly machined components, bearings, dies, threaded joints, and for facilitating disassembly of rusted parts.

Rust Remover Fluid (Grade 9970): A viscous acid-based formulation for removing rust from iron, steel, and ferrous metals. Suitable for immersion or wipe-application; leaves a temporary protective coating post-treatment.

Cold Zinc Galvanizing (Zinc Spray, Grades 3060 & 3070): An aluminium-zinc enriched aerosol spray ideal for repairing galvanized surfaces. Offers weather resistance and corrosion protection comparable to hot-dip galvanizing, with temperature resistance up to ~200°C.

Clear Coat / Acrylic Lacquer Spray (Grade 3090): A fast-drying, flexible, transparent acrylic coating providing a moisture-proof and anti-corrosion film. Free of ozone-depleting substances. Commonly used as conformal coating on PCBs, battery terminals, engine parts, and decorative surfaces.

Battery Terminal Protector Spray: Specially formulated for protecting battery terminals from corrosion and maintaining conductivity.

Conformal Coating Spray: Designed to insulate and protect electronic assemblies from moisture, dust, and chemical exposure. Typically transparent and non-sag.



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CUMI building self-reliant supply chains for high-performance defence materials

In a chat with C&ACER, Mr Subbu Venkatachalam, Head of Defence & Aerospace, Carborundum Universal Limited, talks about how the company is supporting the country's goal of reducing foreign dependency and scaling high-value defence exports

India's defence sector has reached a pivotal moment, with production hitting ₹1.5 lakh crore this year and long-term targets set at ₹3 lakh crore. Mission Sudarshan Chakra, the country's most ambitious indigenous air defence programme, will require a full ecosystem of advanced materials, thermal systems, and integrated platforms.

Carborundum Universal Limited (CUMI), part of the 125-year-old Murugappa Group is positioned at the core of this shift. It is among the few Indian companies producing zirconia-based thermal barrier coatings for jet engines, ceramic armour for naval helicopters. All of this is delivered within India, supporting the country's goal of reducing foreign dependency and scaling high-value defence exports.

In a chat with C&ACER, Mr Subbu Venkatachalam, Head of Defence & Aerospace, Carborundum Universal Limited gives us an insight into how India is building self-reliant supply chains for high-performance defence materials besides a first-hand view of how CUMI's technologies are supporting jet propulsion, and naval protection, amongst other things.

What are some of the products manufactured by CUMI, especially related to high-performance coatings and ceramics, and their USP?

The USP of engineered ceramics is their ability to combine advanced protection with exceptional performance. This is especially critical in aerospace where civil and military aircraft, especially, are put through some of the most gruelling routines. Our range of technical ceramics goes far above traditional materials when compared on parameters such as mechanical strength, wear resistance, thermal stability, chemical inertness, and electrical properties.

An apt demonstration of our expertise in ceramics for defence applications is in armour. With ballistics becoming highly sophisticated and lethal, the best way to bring protection up to speed is to take innovation right to the grain. By engineering ceramics that can withstand highly destructive ballistics, like those from an AK-47, for instance, ensures that military personnel, civilians, vehicles, and assets are ably safeguarded.

Right from controlling the particle size and microstructure, our customisable ceramics for

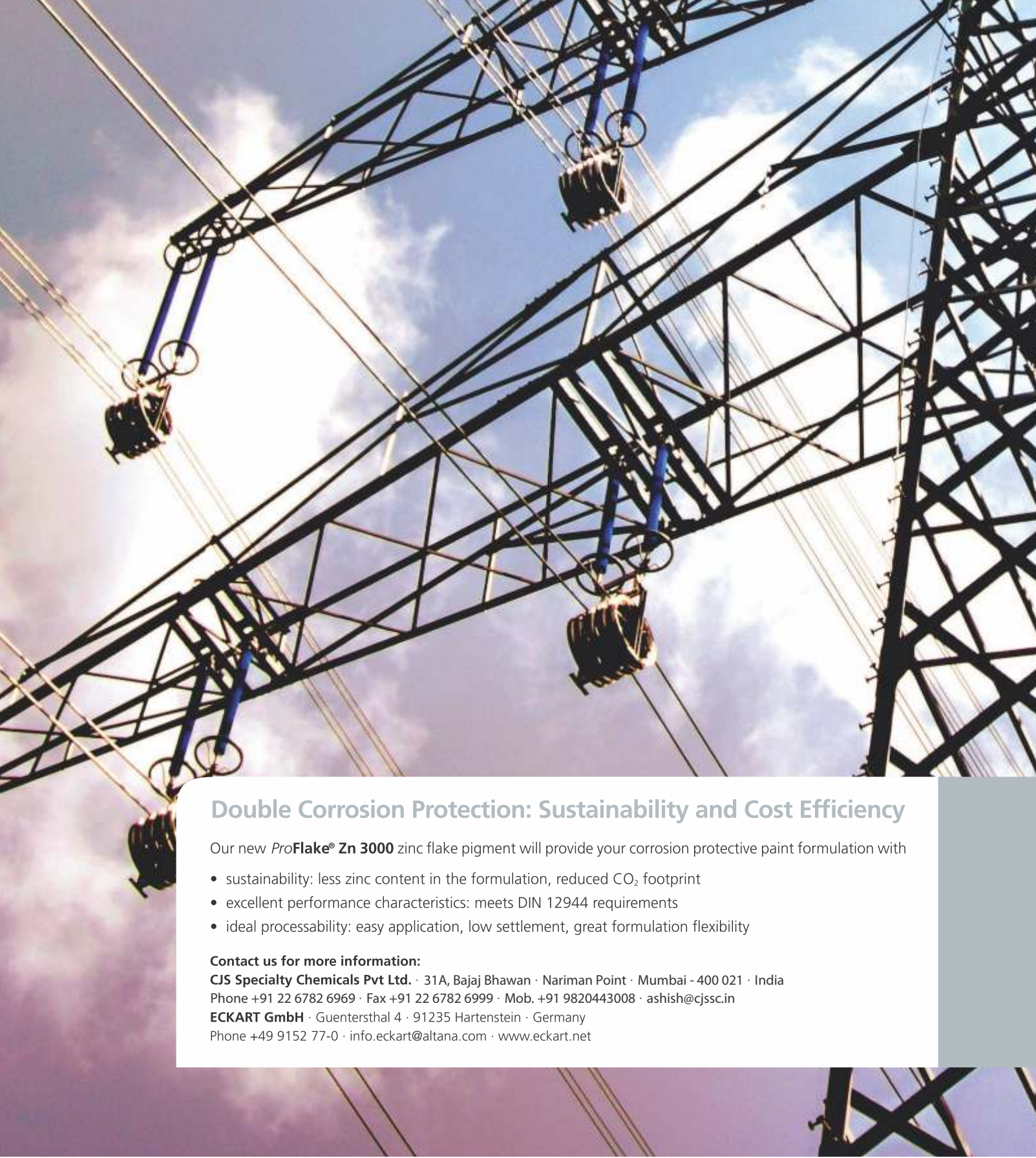


Mr Subbu Venkatachalam, Head of Defence & Aerospace, Carborundum Universal Limited.

body armour deliver on ergonomics, hardness & toughness with the ability to shatter projectiles without harming the soldier, maintain structural integrity even in extreme environments, while being extremely lightweight.

Our Reaction Bonded Silicon

Carbide, Zirconia Toughened Alumina, and high-purity Alumina ceramics are benchmarked in line with the US Department of Justice NIJ (National Institute of Justice) global standards. We have also patented our Zirconia Toughened Alumina-based



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composite armour panels that function as add-on armour, especially for combat and other military vehicles. These have been certified as per NATO's STANAG 4569 qualification and offer added protection for areas vulnerable to projectile hits.

High-performance ceramic coatings are invaluable for applications in aerospace, especially to protect critical components in the 'hot section'. Operating at extreme temperatures for prolonged periods, these components – turbine blades and vanes, combustion chambers, turbine housings, exhaust manifolds, and nozzles – are highly susceptible to oxidation, creep, wear & tear, and corrosion. Frequent maintenance, repair, and overhaul can result in unplanned downtime while being prohibitive on the cost front. Hence, robust protection with thermal barrier coatings and wear-resistant coatings can help them function at optimum capacity in harsh environments, without compromising on component health. Our thermal spray powders, the raw material for these coatings, are produced under the CUMIPLAS brand. They include Zirconia-based and Alumina / Alumina-Titania powders. Their USP – low thermal conductivity / high thermal insulation, corrosion resistance, and good thermal shock resistance.

With India's defence ambitions on one end of the spectrum and growing demand on the other, CUMI is well-positioned to fulfil one while helping achieve the other.

Can you elaborate on CUMI's role in building self-reliant supply chains for high-performance defence materials?

The greatest challenge to manufacturing high-performance materials as we look to indigenize and modernize our defence systems is a strongly interconnected domestic supply chain. Self-reliance is all about helping make connections and bridge gaps across the ecosystem so that wide-ranging parameters – whether it is material supply, innovation, cost, tech advantage, or sustainability – can all be addressed.

The most crucial role we play here is by being fully backward integrated. This allows us to be self-reliant right from the start – by producing raw material (grains and powders) for different applications across defence & aerospace in India at our state-of-the-art factories. This is especially true for mission-critical materials for which India still relies on imports – 100% in some cases, such as Yttria-stabilized Zirconia, the base material for thermal barrier coatings.

Secondly, challenges such as materials processing significantly drive up costs in the absence of expert processing capabilities. We are also closing the gap in this area, enabling OEMs, integrators, etc., to benefit from such cost advantage.



Being fully backward-integrated allows CUMI to be self-sufficient right from the start - by producing raw material (grains and powders) for different applications across defence and aerospace in India at their state-of-the-art factories.

Further ahead, through R&D – in-house at our labs and actively with our academia partners – we are helping develop innovations for Indian prototypes. Through Transfer of Technology (ToTs), we are helping commercialize new technologies at scale for defence. We also ensure all our products are validated, tested, and certified as per Indian and global benchmarks & standards.

During the course of manufacturing, our partner-MSMEs who support us with associate components also benefit and scale with us. We collaborate with start-ups to identify areas for the intersection of pioneering materials and future tech.

Beyond component manufacturing, we have also been involved in supporting our OEM partners with forward integration, owing to our

intimate knowledge of the product and its application.

So, we play several roles to connect the dots across the ecosystem so that ultimately, the greatest advantage is for our soldiers at the frontlines – the most advanced protection that helps save lives.

How does CUMI's advanced materials support aircraft performance and naval protection?

Our solutions, powered by materials science, span a wide range of protective applications across land-based, aerial, as well as naval systems and platforms.

When we look at aircraft performance, this is keenly linked to engine health and capabilities. Ensuring the engine functions at high efficiency, offering superior performance, means protecting critical, high-stress

BYK Additives

Protection with high impact

Hot summers, heavy rain, and cold winters make long-lasting corrosion protection challenging. As infrastructure projects increase and the demand for sustainable solutions grows, high-filled and high-built coating systems are crucial. BYK's additive building blocks – featuring wetting and dispersing additives to reduce mill base viscosity, rheology additives to adjust sag resistance, and defoamers to prevent imperfections – ensure flawless corrosion protection even under challenging conditions.

byk.com

components that help the engine perform reliably.

Operating temperatures in the hot section of civil and military aircraft can touch 2000°C in combustion chambers, and even higher with afterburners. CUMI's thermal barrier coatings on 'hot section' components allow engines to operate at elevated temperatures without degrading the underlying or base materials. By enabling high thermal insulation, they ensure minimized heat transfer and thermal stress, support better engine efficiency, lower fuel consumption and reduced emissions. Our dense and tough wear-resistant coatings protect components from oxidation, creep, corrosion, and frequent wear & tear. This directly fulfils two key priorities – keeping occupants safe and extending component life, reliability, and durability.

As engine tech becomes increasingly sophisticated, these coatings address the most significant challenges of high cost and frequency of component replacement.

In the area of naval protection, ceramics provide the dual advantages of lighter weight, with a high strength-to-weight ratio, and anti-corrosion (in harsh marine environments) when compared to steel. The lighter weight advantage will result in greater manoeuvrability and speed. They are also highly resistant to fire, bullets, and blasts, making them ideal for extremely tough and demanding maritime environments.

The range of applications of our products extends from blast- and fire-resistant

infrastructure for naval bases and shipyards, retrofitting as well as building modern warships with robust ballistic protection, using improved fabrication techniques to design large, complex structures, as well as lightweight armour for amphibious and armoured vehicles used in naval security operations, anti-skid coatings, and abrasives for naval workshops.

Our innovations in fire protection also involve passive measures, including specially fabricated space- and weight-sensitive thermal ceramic blankets. Murugappa Morgan Thermal Ceramics (MMTCL) supplies this product to all major shipyards in India for thermal and passive fire protection of bulkheads, ship decks, engine rooms, exhaust manifolds, and cabin doors.

All this not only helps secure ships and crew but also extends the life of expensive components and equipment, making naval operations more agile and efficient.

What is your take on public-private alignment across R&D, procurement, and certification in the defence sector?

Over the last decade, since Make in India took shape, powered on by several government-led innovation initiatives in defence, public-private alignment has steadily grown. This could be through routes like transfer of technology, collaborations to expand R&D between the triad of government, academia, and industry, partnerships to innovate and refine prototypes, as well as fast-



With a legacy and know-how of over 70 years, CUMI has steadily strengthened their R&D ecosystem over the years, blending scientific thinking into their processes to drive innovation and sustainable value creation.

tracking efforts to test and validate as per globally recognized standards. While challenges do exist, there is, across the board, a better understanding and co-operation of the role and expertise of different players in the ecosystem. This has resulted in more aligned working partnerships, enabling faster turnaround cycles and more Indian defence-specific innovations.

What is CUMI's R&D role in developing these products?

With a legacy and know-how of over 70 years, we have steadily strengthened our R&D ecosystem over the years, blending scientific thinking into our processes to drive innovation and sustainable value creation.

We hold 100 patents, 525 trademarks, and 62 designs collectively across CUMI.

So, our team of scientists, researchers, and other experts plays a key role in developing these products by closely working with OEMs as well as end users to assess different criteria. Since we are fully backward integrated, we have strict, complete control over raw material quality. In fact, our R&D team has

developed and patented techniques, machines, as well as material formulations to internally evaluate for precision, quality, based on use. We also collaborate with Centres of Excellence across reputed research institutes to actively discover new products, improve formulations, or determine new use/applications.

Are there other uses for these defence related products, especially in the industrial protection sector?

Absolutely! Advanced ceramics such as Reaction Bonded Silicon Carbide find applications in components for semiconductors/power electronics, chemical processing, furnace/kiln internal parts, feed chambers, pipes, tubes, & chutes conveying abrasive particles, break liners, pipelines carrying highly corrosive material, mechanical seals and bearings, components in coal/power generation.

Similarly, Zirconia Toughened Alumina finds applications in manufacturing/metalworking in cutting tool inserts, punch and die components, as well as for cutting & drilling. It also finds use in mining & mineral



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FROSIO is a member organisation established in 1986 by the industry to meet a growing demand of qualified and certified personnel on all levels within management, production and inspection of work within corrosion protection and surface treatment. FROSIO acts through formulation of quality requirements for surface treatment and coating inspectors.

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3. FROSIO Operator Scheme (Blaster & Painter)
4. FROSIO Company Qualification Guid - Corrosion Protection

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With 20 manufacturing facilities across India CUMI's expertise spans diverse industries including engineering, fabrication, auto and auto components, infrastructure, steel, glass, power generation and distribution, defence and aerospace.

processing (wear liners, grinding media), cement & power plants (coal mill components, flue gas system parts, kiln furniture), chemical & petrochemical industry (pump parts exposed to acidic conditions, nozzles, plungers & liners in high-wear fluid systems), automotive components (sensors and insulating parts, valve components, sealing faces, wear-resistant inserts), medical industry (hip implants, joint prostheses), surface finishing / polishing (de-burring media, shot peening and polishing beads), and emerging areas like the construction industry

(flooring in high-traffic / footfall areas).

What is the future of paints for the defence sector (stealth-paints, etc.)

There is significant potential for paints that is being explored by the public as well as the private sector.

This could be in the area of stealth (graphene and other nanomaterials) to reduce radar signatures, as well as in the area of protection (paints that heighten corrosion resistance, abrasion resistance, enable self-healing, de-icing/anti-icing, hydrophobicity, improve durability at sea and against

UV rays, etc). With defence modernization progressing at a rapid pace, coupled with the integration of new-age tech and advancements in materials, the use of multifunctional paints will prove revolutionary for the sector.

A brief history of CUMI...

Carborundum Universal Limited (CUMI) is part of the 125-year-old Murugappa Group, which has been recognised among the top 10 business conglomerates in India. Established as a tripartite joint venture in 1954, CUMI is a leading materials science engineering solutions provider.

We are listed on the NSE and BSE.

As a fully backward integrated company, our operations include mining, power generation, fusion, manufacturing, marketing and distribution. Our global team of over 6,200 employees collaborates, innovates, and develops high-quality material solutions across our core businesses – abrasives, electrominerals, industrial ceramics, refractories and energy storage materials – forming the backbone of critical sectors across the globe.

With 20 manufacturing

facilities across India, our expertise spans diverse industries including engineering, fabrication, auto and auto components, infrastructure, steel, glass, power generation and distribution, defence and aerospace. We have manufacturing operations across 7 countries and serve customers in over 60 geographies.

With over seven decades of expertise in materials science, our mission in the defence sector is rooted in a simple but compelling goal: to engineer advanced materials that help save lives on the frontlines. Our high-performance ceramic solutions – designed to meet global standards – are designed for use in body armour and vehicle armour, to protective systems for naval vessels, aircraft carriers, and Air Force helicopters.

As India accelerates its defence modernization, we're focused on building self-reliance through innovation and indigenization of critical materials. This approach ensures not only global quality and precision manufacturing but also cost competitiveness. We're also working hand-in-hand with government agencies and industry partners to co-develop solutions tailored to the specific needs of Indian defence platforms and prototypes.

While we're aligned with the country's long-term strategic ambitions, our immediate priority remains clear: to equip every soldier with the best in protection.



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Prof. A. S. Khanna
Director

As per the new requirements all labs under NABL, must have a Registered Entity. As a result SECC a proprietorship company needed to be changed to a Pvt. Ltd. company. With effect from New Financial Year starting from April 1, 2024, SECC is renamed as Khanna Paint Testing Laboratory (OPC) Pvt. Ltd. We have now 54 different paint standards approved by NABL. These 54 standards include IS, ASTM, DIN, ISO, NACE, and AWWA standards. Details can be see on our website which is now www.kptllab.com The lab has the most modern, fully calibrated equipment with well-educated and trained staff.



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Jaguar Equipments Pvt Ltd doubles capacity with new state-of-the-art plant in Pune

With its strong foundation in research and development, the company has established itself as a trusted partner for customers seeking efficient and high quality solutions

Jaguar Equipments Pvt Ltd, a leading manufacturer of innovative painting and fluid handling solutions, has successfully inaugurated its new state-of-the-art plant in Bhosari Industrial Area, Pune. "The new facility doubles the company's production capacity, enabling it to better serve its growing customer base and meet increasing demands for its products," said Mr Paritosh Pradhan, Managing Director, Jaguar Equipments Pvt Ltd.

The new plant, spread over 25,000 sq feet, is equipped with cutting edge technology, including a latest machining center, quality control lab, and design facility with advanced software. This expansion is a testament to Jaguar Equipments' commitment to innovation, quality and customer satisfaction.

As part of the inauguration ceremony, the company also launched two new products:

the Electrical Polyurea Spray and Foam Machine by Prof Anand Khanna, Ex-IIT Bombay, Mumbai, and the Highest Capacity Airless Spray Machine by Mr Meghan Manjarekar, Director, National Institute of Coating Technology, Pune.

Prof Khanna, at the launch commented, "The Electrical Polyurea Spray and Foam Machine is a game changer in the industry. Jaguar Equipments' dedication to R&D and customer satisfaction is evident in their products and new facility, providing high quality solutions at an affordable cost with excellent service support."

Mr Manjarekar, noted, "I'm delighted to launch the Highest Capacity Airless Spray Machine and congratulate Jaguar Equipments on their new facility. Their commitment to innovation and quality is truly impressive,



Prof A, S, Khanna speaking at the inaugural function of Jaguar Equipments Pvt Ltd's new state-of-the-art plant in Pune.

and their products offer affordable cost and comprehensive service support."

"We are thrilled to take this significant step in our journey," said Mr Pradhan. "Our new facility and products proudly Made in India will enable us to provide even better solutions to our customers. Our Electrical Polyurea and Foam Machine offers precise application and

improved productivity, while our Highest Capacity Airless Spray Machine handles high viscous materials with ease, reducing labor costs and improving efficiency. We are poised to solidify our position as a leader in the industry."

"With its enhanced capabilities, Jaguar Equipments is poised to take on new challenges and opportunities in the manufacturing sector."



The Jaguar Equipments' team.



The new Electrical Polyurea Spray and Foam Machine from Jaguar Equipments Pvt Ltd.

PHOTOS: JAGUAR EQUIPMENTS PVT LTD



The new facility doubles the company's production capacity, enabling it to better serve its growing customer base and meet increasing demands for its products.

Headquartered in Pune, Jaguar Equipments Pvt Ltd is a renowned manufacturer of painting and fluid handling solutions, offering a wide range of products and services to various industries. The equipment manufactured include pneumatically operated airless spray machines, electrical airless sprayers, internal and external customized pipe coating systems, diaphragm pumps, paint booths, paint agitators, pressure feed containers, air assisted guns and other accessories.

The ISO 9001 – 2015 and CE certified company has four other manufacturing units, totalling three of which are located in Pune, and the other two in Shirampur near Ahilyanagar (earlier known as Ahmednagar) In Maharashtra.



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Corrosion monitoring and integrity management

Corrosion monitoring, inspection, and testing are critical to identifying degradation mechanisms, ensuring asset integrity, and preventing unexpected failures

The unfortunate thing about corrosion is its autocatalytic nature, once corrosion commences, and then that is it. In practice, the best way to prevent the spread of corrosion is to prevent it from starting at all! Given the cost of engineering, procurement and construction of process installations, the ultimate successful facility is one that remains in the intended service for as long as possible.

Corrosion and integrity management is a systematic approach to protect assets from material degradation, ensuring their safe, long-lasting, and reliable operation. It involves developing and implementing a Corrosion Management Plan (CMP) that includes procedures, risk assessments, and performance metrics, all within an organization's overall management system. The

goal is to minimize life cycle costs, meet safety and environmental goals, and prolong the life of critical assets like pipelines and storage tanks.

The key components of a Corrosion Management Plan are:

Objectives and policies: Establishes the overall goals and framework for corrosion control.

Procedures and practices: Outlines the specific working methods for managing corrosion.

Risk assessment: Uses techniques like Risk-Based Inspection (RBI) to identify and quantify potential threats and prioritize mitigation efforts.

Performance metrics: Defines Key Performance Indicators (KPIs) to track the effectiveness of the management system.



Corrosion and integrity management is a systematic approach to protect assets from material degradation, ensuring their safe, long lasting and reliable operations.

Implementation: Puts the plan into action through activities like monitoring, inspection, and maintenance.

Continuous improvement: Uses a "Plan-Do-Check-Act" cycle to review performance and make necessary updates to the strategy.

Why is CMP so important?

Safety: Prevents failures and leaks that could lead to accidents.

Reliability: Ensures that critical infrastructure can operate without interruption.

Cost reduction: Minimizes the costs associated with asset replacement, repairs, and downtime over the asset's life cycle.

Environmental protection: Prevents spills and releases of hazardous materials.

Compliance: Helps organizations meet regulatory requirements and industry standards.

Look at asset integrity management as a value enabler

Corrosion costs definitely more than what the management thinks it does, and that's what corrosion mitigation professionals would agree. "It's high time we look at asset integrity management as a value enabler, rather than a compliance tool," said Mr Rahul Kejriwal, CEO, Senosco, a global Software as a Service (SaaS) leader in asset integrity management.

He, along with the others were speaking at the Technical Interactive Forum on Corrosion Monitoring and Integrity Management at the CORCON 2025 held in Jaipur recently.

"First, it is important to start with the challenge. Once we know that, we can move on to the opportunity. So, what is the challenge? I have spoken to inspection teams, integrity teams, etc., at most of the



On-site inspection of a storage tank.

major assets around the world and in India, and one always hears aging assets, rising risk, and in many parts of the world very tight margins. It's always about pressures of the work, pressures of the job and always running behind the curve."

"One of the reasons is that integrity data is still in silos. It is still very manual. In most cases, it is capturing the past, rather than giving us insights for the action to be taken in future."

The company Senosco, which Mr Kejriwal heads, has developed software that gets data to do more than just documentation, but use data to unlock insights and eventually return on investment (ROI), he said. "This software enables a multi-disciplinary digital-first asset integrity platform. It's about turning data into decisions. If you don't have a strong platform, a technology backbone that is interoperable, that is comprehensive, that not only covers your integrity inspection workflows, but also covers reliability, functional safety and integrates into your Systems, Applications, and



Given the cost of engineering, procurement and construction of process installations, the ultimate successful facility is one that remains in the intended service for as long as possible.

Products in Data Processing (SAP)."

"Let me share a few data points with you. Number one, over 50% of the aging assets around the world are running beyond their original design life cycle. Next, 3X is the number of a reactive maintenance over a predictive maintenance action. In other words, it is 3X more expensive to fix something proactively than reactively," said Mr Kejriwal.

They have been using this software the last 20 years, so they have the data, he said. One of the asset, he said, that within 12 months of rolling out a proper program, they were generating almost nine times their investment in the program, i.e they were

generating nine times ROI. By year five, that had risen to 15 times ROI on a yearly basis, and by the 10th year of proper processing, capturing data, analysing data and investing in a proper program, they were generating almost 20 times ROI.

"At the end of the day, predictive maintenance is profitable because, our goal is to create profit. Our goal is to always justify what we do with real life outcomes," emphasized Mr Kejriwal.

AI/ML transforming corrosion management

"People have done a lot of work on Artificial Intelligence (AI) and Machine Learning (ML) technologies," said Mr Amish Gandhi, a chemical engineer and consultant specializing in corrosion monitoring and management, with expertise in both traditional and advanced techniques like AI/ML integration. He has worked with companies like Honeywell Automation India Limited and is currently a consultant for Metal Samples Co., focusing on using high-frequency sensor data and artificial intelligence to predict corrosion and transforming corrosion management through predictive maintenance, real-time monitoring,

and automated inspection.

According to him, these technologies use AI to analyze data from sensors and images to predict corrosion, identify it earlier and more accurately than traditional methods, and recommend preventative actions. This leads to more efficient, proactive, and cost-effective corrosion control strategies.

AI models can analyze historical and real-time data to predict where and when corrosion is likely to occur, enabling proactive maintenance and preventing costly failures. By integrating with sensors and IoT devices, AI systems can continuously monitor conditions that lead to corrosion, providing instant alerts when risk levels increase. Computer vision and deep learning models can automatically analyze images from cameras and drones to detect and map corrosion with high accuracy, even for patterns invisible to the human eye. These systems can identify corrosion severity (e.g., light, moderate, severe) and automatically create work orders for repairs.

AI can process large, complex datasets from various sources (e.g., electrochemical noise,



Certified professionals implement programs that prevent equipment failure, reduce accidents and ensure assets are maintained in a safe and reliable condition.



A Corrosion Management Plan minimizes the costs associated with asset replacement, repairs, and downtime over the asset's lifecycle.

material properties, environmental conditions) to provide deeper insights into corrosion behavior and material selection. AI can assist in developing more effective corrosion inhibitors and selecting the right materials for specific environments, improving overall protection.

AI can detect corrosion with a higher level of accuracy and consistency. Automation reduces the time and manual effort required for inspections. Shift from reactive repairs to proactive prevention, minimizing downtime and costs. Early detection in inaccessible or harsh environments can prevent catastrophic failures.

Of course, there are challenges too. For example, obtaining high-quality, comprehensive data for training models can be difficult. At times, understanding why a model makes a certain prediction can be challenging. Besides, integrating AI systems with existing infrastructure and workflows requires careful planning.

Importance of designing an asset

The design of an asset and material selection are one of the most critical phases in the

life of the asset. Major operational plant issues if envisaged at the time of the design are easier to execute when the need arises.

Most people think asset management and corrosion control measures are largely implemented at the in-service stage. Contrarily, these phenomenal are best controlled at the asset conception and material selection stage. The material has to be selected in view of the process that the asset would support. Before commencement of construction, the steel Mill Test Certificate (MTC) and factory quality documents has to be checked and confirmed that the steel materials supplied meets project specifications. Cleanliness and uniformity of supplied material are also essential.

Design and material selection are crucial in corrosion management because they are fundamental to preventing or minimizing corrosion from the initial stages of a project. A good design minimizes corrosion-prone areas, facilitates drainage, and isolates dissimilar metals, while material selection ensures the component can withstand the specific corrosive environment and



AI models can analyze historical and real-time data to predict where and when corrosion is likely to occur, enabling proactive maintenance and preventing costly failures.

stresses, leading to greater safety, reliability, and longevity.

Designs can avoid sharp corners, crevices, and areas where debris can accumulate, as these are prone to pitting and crevice corrosion. Designs should incorporate features like drainage holes to prevent moisture from collecting on surfaces. By avoiding direct electrical contact between dissimilar metals or using insulating gaskets, galvanic corrosion can be prevented. Proper design helps minimize mechanical stresses, which can lead to stress corrosion cracking.

Importance of material selection

Selecting materials with adequate chemical and corrosion resistance prevents premature failure and accidents. The right material choice is critical for achieving a long service life and avoiding operational failures caused by corrosion. Materials are selected based on their ability to perform under specific conditions, such as heat transfer, pressure resistance, and mechanical strength. While some high-performance

materials may have a higher initial cost, they can lead to significant savings by reducing maintenance, downtime, and replacement costs over time. Choosing sustainable or circular materials can reduce a project's environmental footprint throughout its lifecycle. Selecting materials based on performance data and experience minimizes the risk of failure in challenging environments like those in the oil and gas industry.

Creating and setting standards

"So that one may select the right design and material, there has to be some standards to follow," said Mr Amit Jani, Vice President, Corrosion Engineering and Static Reliability at Reliance Industries Ltd.

Standards in design and material selection involve adhering to industry-wide requirements and best practices to ensure a product is functional, reliable, and safe. This process requires identifying design needs (performance, reliability, cost, manufacturing), defining material criteria, researching potential materials, and evaluating them against the

set standards and requirements before making a final selection.

“Without standards, it may be difficult to really do a proper design that confirms to the requirements of the industry one may be working in,” said Mr Jani. “This would also help the Engineering, Procurement and Construction (EPC) contractors that they are doing a project to the right standards that has been set and the asset has been built according to it.”

The best forum to address these standard specifications would be associations like the AMPP, he said. “Associations would have no kind of commercial interest that will benefit them one way or the other. Business would be willing to share data with associations, which can be gathered and used for the common good.”

Importance of training and certifications

But all this would be of no use if the people are not well acquainted or aware about what they are supposed to do. are not trained. “My advice to the operators is to



The goal of corrosion monitoring and integrity management is to minimize life cycle costs, meet safety and environmental goals, and prolong the life of critical assets.

invest in your people, train them, and build a culture of innovation and technology. You can have all the technology, but you need to have trained people who need to put in the data, analyse the data, and work on that data. If you feed garbage, it's simply garbage in, garbage out,” said Mr Gasem Fallatah, Advisor for HRH the Saudi Energy Minister, and Vice President, Strategic Geographies – AMPP.

Training and certification are crucial for corrosion management as they equip professionals with the necessary skills to prevent failures, ensure safety, and extend asset life, ultimately reducing

the high financial and environmental costs associated with corrosion. These programs provide the technical knowledge for identifying, assessing, and mitigating corrosion through methods like material selection, protective coatings, and inhibitors, and result in a globally recognized qualification.

Certified professionals implement programs that prevent equipment failure, reduce accidents, and ensure assets are maintained in a safe and reliable condition. Proper corrosion management significantly lowers the direct costs of repairs and replacement and the indirect costs like lost opportunity and environmental damage. Training provides the knowledge to minimize corrosion, which extends the functional life of equipment and infrastructure, making it more cost-effective over time. By mitigating corrosion, training helps prevent operational disruptions that can arise from equipment failures, leading to greater efficiency. Training upgrades professionals to experts by providing in-depth knowledge on corrosion science,

monitoring, and control technologies. Certification demonstrates a commitment to industry standards and ensures that corrosion management practices are integrated into an organization's management system. A certification is often a globally recognized qualification that validates a professional's skills and knowledge to employers.

Training provides hands-on knowledge in areas such as material selection, protective coatings, corrosion monitoring, and inhibitor application. Certification emphasizes the importance of a comprehensive corrosion management system, which integrates technical practices into an organization's overall management. It is highly beneficial for both new graduates, providing them with a solid foundation, and experienced professionals, upgrading their expertise.

“You have to keep yourself updated. You cannot use old techniques and old technology for addressing present day transitions. It's training and certifications that will make a measurable difference,” exclaimed Mr Fallatah.



Training upgrades professionals to experts by providing in-depth knowledge on corrosion science, monitoring, and control technologies.

Waterproofing – an essential treatment during new building construction and maintenance

Proper design modifications and special construction materials must be used during construction and maintenance, to prevent the problems of leakages and damp walls

Prof A. S. Khanna, Retd IIT Bombay

One of the well-known defects of the residential buildings is the leaking after a few years of its construction. There are specific leaking points: below the bath rooms, kitchen area, wall having input for water pipelines, waste water etc. I have seen several buildings where this problem is seen right from the second to third year of the construction. The weather and climatic conditions are also responsible. Mumbai type climate with a long monsoon season is also one important factor. Factors such as improper cleaning of sewage lines can also be responsible. But I think all these problems are common, and cannot be fully controlled. Thus, until, a proper design modification and special construction materials are used during construction and maintenance, these problems cannot be stopped. What are these special materials which

must be used during initial construction that take care of leaking throughout the life of a structure. These are special 'water proofing' materials.

Most important material for building construction is cement or cement-sand-water mixture. Unless an optimum ratio of these is maintained throughout the construction, the building will show the tendency to leak right from beginning or at a later stage. This is mainly because the cement is a porous material and has tendency to hold and release water. Thus, continuous logging of water can broaden these pores and holding capability of water in cement increases, leading to leaking. Hence the properties of cemented structure must be modified to take care of this factor. This modification concept is called 'water proofing.' In simple language



PHOTOS: 123RF

Waterproofing is crucial for structures like roofs, walls, and basements to prevent issues like leaks, dampness, mold, and structural decay, thus increasing durability and lifespan.

water proofing is a technology in which the retaining power of water in cement is either eliminated or reduced to a minimum by the addition of some resinous material or by an additional material as a barrier layer. Most of the water proofing materials are based

on modification of cement by either one resin or a combination of one or more resins. This practice is going on for a very long time. There are several paint companies now selling water proofing compounds. The input from market is that they work in



Waterproofing methods include applying liquid-applied coatings, sheet-applied membranes, or cement-based mixtures to protect against moisture and extend the life of a structure.

some and fail in others. Of course application process can be one variable, but the second most important variable is the tendency or the mechanism of the water proofing compound to blunt or block the pore in cemented structure. And for this the best solution is nano modified resins.

What are the different technologies

Two very conventional types of water proofing techniques are: cementitious waterproofing which involves applying a mixture of cement, sand, and chemicals. The mixture forms a thick layer that prevents water from seeping through it, and the second bituminous coating, which involves applying bitumen-based materials on the surface that needs to be protected from water damage. Another type of water proofing method is the use of membranes which are applied on roofs using an adhesive.

Another technology, named as damp proofing is basically designed to prevent moisture in gaseous form from penetrating walls. It primarily protects against the dampness ascending from the

ground, which can cause structural and health issues. It involves applying a damp proof course (DPC) or damp proof membrane (DPM) within walls or under concrete slabs to block the capillary action of water movement.

Let us now discuss the latest technology of nano modified water proofing developed at IIT Bombay. The product called is DL-54, a nano modified acrylic based system. It works in three stages, for example on a leaking rooftop:

- Application of a diluted DL-54 on a fully cleaned concrete surface (free from dust and grease), resulting in reaching the product to all micro pores and making them blunt. This step is called absorption coat.
- Filling of all the visible cracks from a few centimeters and above with a paste made by equal volume of DL-54 and cement.
- After it is fully dried, a thin



Waterproofing is the process of making a surface or structure resistant to water by applying a protective barrier, which prevents water from penetrating and causing damage.

layer of DL-54 + equal weight of cement + water is applied.

- After complete drying of this layer, one additional layer of the above layer is applied.

This is now ready for putting tiles or coba (cement) layer. Such a surface would give about 10 years of leak free life. If one wants a life of 12 - 15 years on the above three layer system, then add an additional reinforced geotextile layer followed by an additional layer of DL-54 + cement paste.

The product is very good to use while construction of residential buildings, hotels, malls. Before putting tiles in the bathrooms and kitchen area, the floor should be first covered with one or two layers of DL-54 + cement. Also, the cement used to join the tiles should have 10 - 20% of DL-54.

Here I am giving the case history of a roof leak in my own flat roof. On detailed investigations, it was found that the leakage was from the bathroom of the flat above my flat where sand/cement under the tiles on the bathroom floor got concentrated and left lots

of empty space leading to water collection which seeped thru the rebars in the roof and started leaking at points where cement bonding was weak.

This problem was then solved by breaking the bathroom floor, removing all old cement, followed by the application of a cement layer, and a layer of DL-54 + cement followed by another layer of the same as discussed above. After that the tiles were placed, and for the last four years there is not a drop of water leaking from this roof and the roof looks like fresh roof without any defect.



Special waterproofing materials are used during initial construction that can take care of leakages throughout the life of a structure.



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Prof A. S. Khanna,
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Bombay serving for

27 years, guided 27 Ph.Ds and more than 150 Master's and B.Tech projects on topics such as organic paint coatings, smart coatings, nano-technology and graphene manufacturing. He has an extensive publication list with more than 350 papers in peer reviewed international journals, conference proceedings and technical magazines, through which he has got about 4,500 citations. He has also written three books, one on organic coatings and the other two on high temperature corrosion.

PHOTO: PROF. A. S. KHANNA

PHOTO: PROF. A. S. KHANNA

Cortec® Solutions helped city wastewater system cut corrosion costs by \$10,000+ in one year

By combining passive H₂S absorption, vapor-phase inhibitors and a protective contact film, a Midwest US facility, facing up to four failures annually halted corrosion-related failures completely within one year, achieving a massive ROI

How can wastewater treatment operators keep their sensitive, high-dollar electronics from deteriorating prematurely in a corrosive environment? The answer comes from a Midwest US wastewater treatment plant that used Cortec® corrosion solutions to halt the failure of expensive HMI (human machine interface) panels at the rate of one or two every six months. With the high price of \$15,000-\$40,000 per replacement, the plant relied on their Cortec® representative, Cortec® Global Services, for answers that can benefit any treatment plant.

Why are wastewater environments so corrosive?

Wastewater treatment environments not only face the threat of constant

moisture exposure, but also the presence of corrosive gases like H₂S. Together, these elements accelerate the oxidation of metallic components, making infrastructure maintenance a constant challenge. Even pumping stations throughout a city's sewer system are exposed to harsh environments and require special attention to slow down corrosion.

What can be done to protect electronics?

Although extremely intricate and sensitive, electronics are also relatively easy to protect with the right tools. In the case of the Midwest wastewater treatment facility with HMIs failing at pumping stations throughout the city's 258 mile (415 km) sewage system, three forms of



A Midwest US wastewater treatment plant used Cortec® corrosion solutions to halt the failure of expensive HMI (human machine interface) panels at the rate of one or two every six months.

corrosion protection were used: passive absorption, active vapor-phase protection, and active contact protection.

Passive protection: Remove the source of the problem

One Corrosorber® cup was placed inside each compartment to absorb H₂S, thus reducing the corrosiveness in the environment.

Active vapor-phase protection: Condition an entire space

Since there was no way to completely remove the corrosive elements in the environment, each HMI panel also received a VpCI®-111 Emitter. These small self-adhesive cups filled with Vapor phase Corrosion Inhibitors are easy to stick inside electronic enclosures.

Corrosion inhibiting vapors escape through the breathable membrane on top and diffuse throughout the enclosure, "condensing" or adsorbing on metal surfaces, where they form a protective molecular layer that hinders corrosive reactions with surrounding elements as long as the enclosure stays shut.

Active contact protection: Apply a protective film

For an added layer of protection, workers powered down the HMI panels to apply a light mist of ElectriCorr™ VpCI®-239, which leaves a long-term protective film suitable for use in vented enclosures or especially severe environments.

The huge ROI of corrosion protection

After one year of protection,



These small self-adhesive cups filled with VpCI®-111 Vapor phase Corrosion Inhibitors are easy to stick inside electronic enclosures.



Wastewater treatment environments not only face the threat of constant moisture exposure, but also the presence of corrosive gases like H_2S . Together, these elements accelerate the oxidation of metallic components, making infrastructure maintenance a constant challenge.

the city wastewater system had not had any corrosion-related HMI failures, a significant drop from the typical two to four failures

annually. Instead of spending \$15,000-40,000 for an HMI replacement, the municipality experienced a huge return on investment (ROI) by paying

Simple steps to fight your wastewater corrosion problems

Wastewater treatment environments cannot help



Simple steps like placing a Corrosorber[®] cup VpCI[®] inside an HMI panel can significantly reduce the corrosive effects on critical electronics infrastructure.

less than one percent of that cost for preventative corrosion solutions.

being corrosive. However, simple steps like placing a VpCI[®]-111 Emitter inside an HMI panel can significantly reduce the corrosive effects on critical electronics infrastructure. For

wastewater treatment facilities facing these problems, Cortec[®] and its representatives are ready to come alongside in more than 100 countries to support your plant with corrosion solutions that are dramatically profitable investments compared to the expense of electronics failures.

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AkzoNobel's 2026 Colors of the Year will get your mojo working

It's time to dance to the Rhythm of Blues™ and celebrate AkzoNobel's Colors of the Year 2026 – an upbeat and versatile color family that's calming, connecting and creative.

There's a trio of shades for next year – the light blue Mellow Flow™, the dark blue Slow Swing™ and the vibrant Free Groove™ – so everyone can find a style that works for them. The harmonious collection of signature indigos is just what we need in our homes, according to the results of the company's extensive annual trend research, notes a press communicate from the company.

“With everything that's happening in the world, we see that people are reacting in various ways,” explains Heleen van Gent, Creative Director of AkzoNobel's



The colors, textures and special effects that take center stage in the Rhythm of Blues collection have been designed to strike a chord in a wide range of markets.

Global Aesthetic Center. “They're either slowing down and recharging their batteries, wanting to feel in tune with others and celebrate kinship. Or they're choosing to be bold, have fun and feel carefree.”

She adds that the three color palettes will help create living environments that fit everyone's individual decorative needs. “To reflect these various moods – and because we understand that color is emotion and therefore personal – we've chosen a family of colors for 2026. They're

centered around three different rhythms that offer endless scope for changing the pace of your space.” The colors, textures and special effects that take center stage in the Rhythm of Blues collection have been designed to strike a chord in a wide range of markets. Along with decorative paints, inspirational palettes have also been created for the aerospace, automotive, consumer electronics, metal furniture, lighting, cabinetry, flooring, building products and architecture markets.

“We pride ourselves on setting the tone together with architects, interior designers, trend specialists and product developers – who all make important contributions to our in-depth research,” says

Daniel Geiger Campos, Global Director of AkzoNobel's Decorative Paints business and member of the Executive Committee. “Our Rhythm of Blues family is perfectly in tune with evolving trends in various industries and will help us deliver market-specific solutions to customers so they can more confidently apply their own style to their projects.”

AkzoNobel's Global Aesthetic Center has been translating trends into desirable colors for more than 30 years. Its annual ColourFutures trend forecast meeting brings together in-house experts, international architects, designers and journalists to share insights into how our reactions to the world around us impact our color choices.



PHOTOS: AKZONOBEL

PPG announces Secret Safari as 2026 Color of the Year

PPG has announced Secret Safari (PPG1110-4) as its 2026 Color of the Year. A versatile yellow-green, Secret Safari balances soothing comfort with a touch of energy and vitality, making it suitable for a wide range of applications. The shade is part of PPG's 2026 global color theme, Parallels, which includes three distinct palettes: Authentic, Visionary and Expressive, notes a press communiqué from the company.

Secret Safari was selected by PPG's global team of color experts following ongoing research and collaboration across regions and industries. The annual color selection process includes analysis of international trends in architecture, design, consumer behavior and material innovation. The resulting shade is a key influence in interior design but also extends to applications in consumer goods, industrial coatings, automotive finishes and beyond.

"Secret Safari is a versatile shade that adapts to its surroundings," said Irina Hanhisalo, PPG color category lead, Architectural Coatings. "It evokes a sense of calm in natural daylight and reveals layered depth in shadowed or low-light settings, making it a versatile choice for both residential interiors and commercial spaces."

The Parallels theme explores how collective global influences result in diverse individual responses. Each of

the three palettes offers a unique design direction:

Authentic: Earthy tones and natural textures that emphasize simplicity and connection to the environment.

Visionary: Balanced contrasts and bold accents that support forward-thinking design.

Expressive: Vibrant hues and dynamic combinations that celebrate creativity and personal style.

Secret Safari complements all three palettes, offering customers a flexible foundation for color layering and spatial storytelling. Its botanical aesthetic makes it especially effective in interiors that aim to feel connected to nature. In hospitality settings, the shade creates a relaxing atmosphere, while in residential spaces, it evokes a bold, contemporary feel. The color's ability to shift with changing light adds dimension and visual interest to walls, cabinetry and soft furnishings.

In industrial design and consumer product design applications, Secret Safari is a bold yet grounded choice, eliciting emotions of tranquility, natural connection, sophistication and balance.



PPG announced Secret Safari (PPG1110-4) as its 2026 Color of the Year. A versatile yellow-green, the color balances soothing comfort with energy and vitality, making it suitable for a wide range of applications.

Its connection to nature brings perceptions of durability and freshness, making it a strong choice for products that emphasize calm and understated elegance.

PPG's color expertise extends beyond trend selection. With advanced tinting technology and a comprehensive range

of services, the company enables customers to achieve precise color matching and consistent results across applications. Whether used as wall paint, furniture finish, or decorative accent, a wide range of PPG's products can be formulated in Secret Safari to meet any design and performance need.

Back-to-back platinum: EcoVadis places Hexigone among sustainability elite

Hexigone Inhibitors has once again been recognised for its sustainability leadership, achieving a Platinum EcoVadis Medal for the second year in a row. This award places the company in the top 1% of over 100,000 businesses assessed worldwide by EcoVadis, the leading provider of corporate sustainability ratings, notes a press communiqué from the company.

The assessment, published on September 25, 2025, scored Hexigone an overall 88/100, with standout results in Ethics (94/100), Labour & Human Rights (91/100), and Environment (84/100).

This recognition highlights the company's commitment to embedding sustainability across operations, from responsible manufacturing to employee welfare and governance.

"We're incredibly proud to have retained Platinum status for the second year running," said Marc Phillips, Manufacturing & Operations Manager at Hexigone, who led the submission process.

"EcoVadis provides a robust benchmark of our sustainability practices, and this achievement reflects the hard work of the entire Hexigone team. We'll continue driving improvements in our

operations and across our value chain to ensure we not only meet but exceed global sustainability expectations."

Hexigone's innovative Intelli-ion® technology delivers exceptional corrosion protection while enabling significant cost savings and removing heavy metals from formulations. By reducing the corrosion inhibitor loadings, Intelli-ion® helps the coatings industry cut CO₂ emissions per litre of paint, supporting customers in achieving compliance and ESG goals.



PHOTO: HEXIGONE

Hexigone Inhibitors is a UK-based manufacturer of next-generation corrosion inhibitors. Its innovative product, Intelli-ion®, is designed to deliver superior corrosion protection while supporting the coatings industry's transition to more sustainable solutions.

Nouryon's new innovation center in Shanghai to accelerate localized innovation and customer collaboration

Global specialty chemicals leader Nouryon has opened its newest innovation center in Shanghai, China, a state-of-the-art facility designed to strengthen the company's commitment to localized innovation, customer co-development and sustainable growth in China and across the Asia Pacific region. The center more than doubles the space of the company's previous facility in Shanghai and significantly enhances its technical capabilities with investments in testing and analytical equipment focused on high-growth sectors like agriculture, electronics, construction and pharmaceuticals.

"The launch of our innovation

center in Shanghai marks another important milestone in Nouryon's future in China," said Charlie Shaver, chairman and CEO of Nouryon. "It deepens our commitment to innovation and customer intimacy, while enhancing our ability to co-develop high-performance, market-tailored solutions. This center will play a critical role in supporting our customers' growth across key industries and accelerating our strategic ambitions in China and the broader Asia-Pacific region." Shaver added that the center – currently the 14th in the company's global innovation network – supports rapid prototyping, performance testing and the development of solutions

tailored to Chinese industries.

The innovation center enhances Nouryon's capabilities in China and features eight specialized laboratories including one for optimizing Bermocoll for water-based paints and coatings.

The center also supports Nouryon's sustainability goals by accelerating the development of eco-friendly solutions, including low volatile organic-compound coatings, fully biobased chelates, biopolymer-based personal care products and more



PHOTO: NOURYON

Nouryon's new innovation center also supports Nouryon's sustainability goals by accelerating the development of eco-friendly solutions, including low volatile organic-compound coatings.

sustainable microspheres.

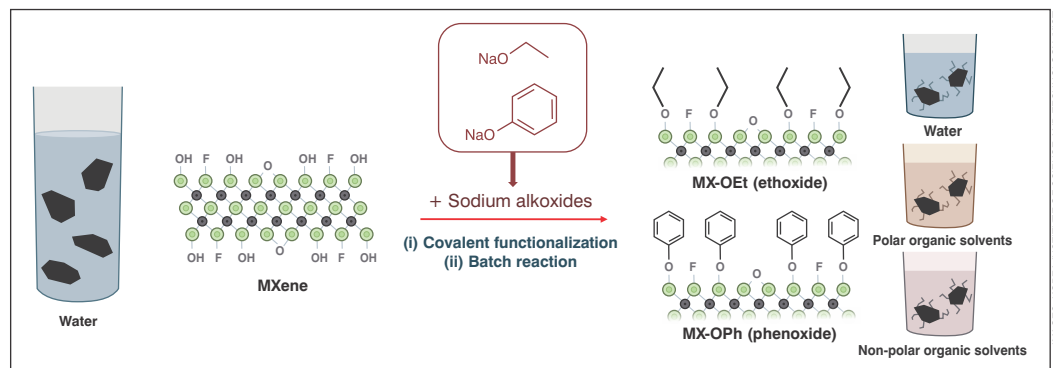
Nouryon also recently announced that in 2026, the company will open an organic peroxides innovation center in Tianjin to provide specialized polymer application capabilities for faster product development and enhanced customer support.

Date	Course	Place	Conducted by	Contact Details
NOV 24 – DEC 12, 2025	CSWIP 3.1 Welding Inspector Level II	Kochi	Blastline Institute	T: (484) 2408477 E: info@blastlineinstitute.com W: blastlineinstitute.com
NOV 24 – DEC 26, 2025	Certified Welding Inspector CSWIP 3.1	Hyderabad	Imech Institute	T: (91) 9700008685 E: training@imech.in W: imechinstitute.com
DEC 05 – 26, 2025	API Certification Course	Hyderabad	Imech Institute	T: (91) 9700008685 E: training@imech.in W: imechinstitute.com
DEC 13, 2025 – JAN 02, 2026	CSWIP 3.1 Welding Inspector Level II	Kochi	Blastline Institute	T: (484) 2408477 E: info@blastlineinstitute.com W: blastlineinstitute.com
DEC 20, 2025 – JAN 09, 2026	BGAS Grade 2 Painting Inspector	Kochi	Blastline Institute	T: (484) 2408477 E: info@blastlineinstitute.com W: blastlineinstitute.com
JAN 05 – 23, 2026	CSWIP 3.1 Welding Inspector Level II	Kochi	Blastline Institute	T: (484) 2408477 E: info@blastlineinstitute.com W: blastlineinstitute.com
JAN 13 – 31, 2026	CSWIP 3.2 Welding Inspector Level III	Kochi	Blastline Institute	T: (484) 2408477 E: info@blastlineinstitute.com W: blastlineinstitute.com
JAN 19 – FEB 06, 2026	CSWIP 3.1 Welding Inspector Level II	Kochi	Blastline Institute	T: (484) 2408477 E: info@blastlineinstitute.com W: blastlineinstitute.com
FEB 02 – 20, 2026	BGAS Grade 2 Painting Inspector	Kochi	Blastline Institute	T: (484) 2408477 E: info@blastlineinstitute.com W: blastlineinstitute.com
JAN 02 – 29, 2026	FROSIO Coating Inspector Course	Rayong, Thailand	HTS Coatings	T: (91) 9176618930 E: into@htscoatings.in W: frosiotraining.com
JAN 02 – 31, 2026	FROSIO Insulation Inspector Course	Singapore	HTS Coatings	T: (91) 9176618930 E: into@htscoatings.in W: frosiotraining.com
JAN 02 – FEB 02, 2026	FROSIO Insulation Inspector Course	Rayong, Thailand	HTS Coatings	T: (91) 9176618930 E: into@htscoatings.in W: frosiotraining.com
JAN 02 – FEB 04, 2026	FROSIO Insulation Inspector Course	Chennai	HTS Coatings	T: (91) 9176618930 E: into@htscoatings.in W: frosiotraining.com
JAN 26 – FEB 13, 2026	BGAS Grade 1 Painting Inspector - Offshore	Kochi	Blastline Institute	T: (484) 2408477 E: info@blastlineinstitute.com W: blastlineinstitute.com
FEB 09 – 27, 2026	CSWIP 3.1 Welding Inspector Level II	Kochi	Blastline Institute	T: (484) 2408477 E: info@blastlineinstitute.com W: blastlineinstitute.com
FEB 16 – MAR 06, 2026	CSWIP 3.1 Welding Inspector Level II	Kochi	Blastline Institute	T: (484) 2408477 E: info@blastlineinstitute.com W: blastlineinstitute.com

KIST develops world's first 'high-conductivity amphiphilic MXene' that can be dispersed in a wide range of solvents

Dr Seon Joon Kim and his team at the Korea Institute of Science and Technology (KIST)'s Convergence Research Center for SEIF have developed a "high-conductivity amphiphilic MXene" material that can be dispersed in water, polar and nonpolar organic solvents. This is an achievement that fundamentally overcomes the solvent compatibility limitation that has hindered the practical use of high-conductivity MXene, and is noted as a general-purpose technology that can be widely applied to high-tech industries in the future.

MXene, a two-dimensional nanomaterial with high electrical conductivity, excellent solvent dispersibility, and excellent EMI shielding performance, is expected to find applications in a variety of fields, including secondary batteries, advanced sensors, stealth paints, and EMI shielding films. However, so far, MXene has been mostly hydrophilic, which means that it disperses well in water but is difficult to apply in various organic solvents. This has limited their compatibility with



Overview of the technology to synthesize amphiphilic MXene by reacting MXene with alkoxides (either ethoxide or phenoxide).

practical processes such as polymer composites and ink processes.

The researchers developed the world's first surface modification technology that introduces alkoxide organic monomers to the surface of MXene, making it both hydrophilic and hydrophobic, giving it amphiphilic properties. This technique enabled MXene to be stably dispersed in a wide range of solvents, from water (with a high solvent polarity index) to toluene (with a low solvent polarity index).

In addition, the developed amphiphilic MXene exhibited better coating properties and EMI shielding performance than conventional MXene.

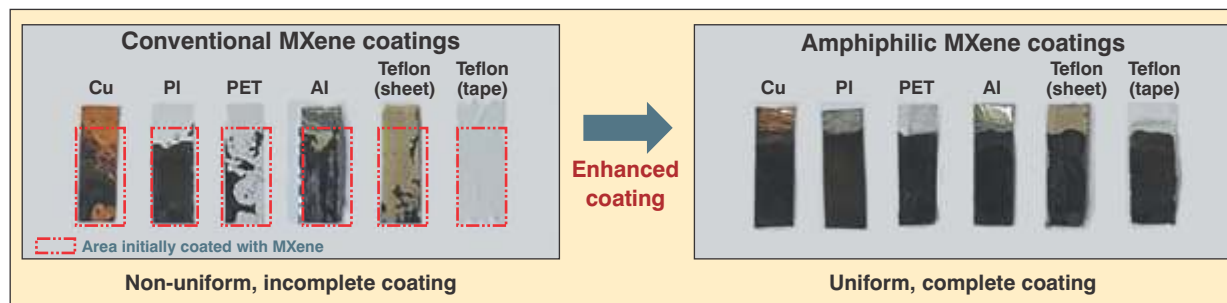
Inks formulated from amphiphilic MXene was uniformly coated on copper and aluminum substrates, which are widely used as collectors for secondary batteries, and also on commercial polymer substrates such as polyimide and PET, as well as on Teflon substrates, which have the highest hydrophobicity. It also maintained excellent EMI shielding performance in the 28 GHz region, a key frequency band used in next-generation communications, and exhibited shielding performance of more than 50 dB (blocking more than 99.999% of electromagnetic waves) even in a very thin film with a thickness of 0.01 mm.

The newly developed MXene

is a general-purpose technology that can be applied to EMI shielding materials for future mobility such as autonomous vehicles, manufacturing electrode materials for secondary batteries based on a solution process, and radio wave absorption composites for stealth unmanned aerial vehicles, and is expected to have a significant scalability and industrial impact.

"This achievement is a technological milestone that proves that MXene materials can be directly applied to industrial field processes beyond lab scale," said Dr Seon Joon Kim at KIST. "We are currently working with domestic and foreign MXene

companies to expand toward mass production-based technologies and accelerate the transition to the commercialization stage."



(Left) Conventional MXene materials result in uneven and incomplete coating on various metal or polymeric substrates. (Right) Uniform and complete coating on a variety of metal or polymer substrates for amphiphilic MXene materials.



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Researchers develop safer alternative non-stick coating

A new material developed by researchers from U of T (University of Toronto) Engineering could offer a safer alternative to the non-stick chemicals commonly used in cookware and other applications.

The new substance repels both water and grease about as well as standard non-stick coatings — but it contains much lower amounts of per- and polyfluoroalkyl substances (PFAS), a family of chemicals that have raised environmental and health concerns.

“The research community has been trying to develop safer alternatives to PFAS for a long time,” says Professor Kevin Golovin, Mechanical and Industrial Engineering (MIE), who heads the Durable Repellent Engineered Advanced Materials (DREAM) Laboratory at U of T Engineering.

“The challenge is that while it’s easy to create a substance that will repel water, it’s hard to make one that will also repel oil and grease to the same degree. Scientists had hit an upper limit to the performance of these alternative materials.”

Since its invention in the late 1930s, Teflon — also known as polytetrafluoroethylene or PTFE — has become famous for its ability to repel water, oil and grease alike. Teflon is part of a larger family of substances known as per- and polyfluoroalkyl substances (PFAS).

Various studies have linked exposure to high levels of PFAS to certain types of cancer, birth defects and other health problems, with the longer chain PFAS generally considered more harmful than the shorter ones.

Despite the risks, the lack of alternatives means that PFAS remain ubiquitous in consumer products they are widely used not only in cookware, but also in rain-resistant fabrics, food packaging and even in makeup.

“The material we’ve been working with as an alternative to PFAS is called polydimethylsiloxane or PDMS,” says Golovin.

“PDMS is often sold under the name silicone, and depending on how it’s formulated, it can be very biocompatible — in fact it’s often used in devices that are meant to be implanted into the body. But until now, we couldn’t get PDMS to perform quite as well as PFAS.”

To overcome this problem, MIE PhD student Samuel Au developed a new chemistry technique that the team is calling nanoscale fletching. The technique is described in a paper published in *Nature Communications*.

“Unlike typical silicone, we bond short chains of PDMS to a base material — you can think of them like bristles on a brush,” says Au.

“To improve their ability to repel oil, we have now added



PHOTO: SAMUEL AU

This piece of fabric is coated with the new non-stick material made via the nanoscale fletching technique. The droplets being repelled are all low surface tension oils from left to right hexadecane, tetradecane, dodecane and decane.

in the shortest possible PFAS molecule, consisting of a single carbon with three fluorines on it. We were able to bond about seven of those to the end of each PDMS bristle.

“If you were able to shrink down to the nanometre scale, it would look a bit like the feathers that you see around the back end of an arrow, where it notches to the bow. That’s called fletching, so this is nanoscale fletching.”

Au and the team coated their new material on a piece of fabric, then placed drops of various oils on it to see how well it could repel them. On a scale developed by the American Association of Textile Chemists and Colorists, the new coating achieved a grade of 6, placing it on par with many standard PFAS-based coatings.

“While we did use a PFAS molecule in this process, it is the shortest possible one and

therefore does not bioaccumulate,” says Golovin.

“What we’ve seen in the literature, and even in the regulations, is that it’s the longest-chain PFAS that are getting banned first, with the shorter ones considered much less harmful. Our hybrid material provides the same performance as what had been achieved with long-chain PFAS, but with greatly reduced risk.”

Golovin says that the team is open to collaborating with manufacturers of non-stick coatings who might wish to scale up and commercialize the process. In the meantime, they will continue working on even more alternatives.

“The holy grail of this field would be a substance that outperforms Teflon, but with no PFAS at all,” says Golovin.

“We’re not quite there yet, but this is an important step in the right direction.”



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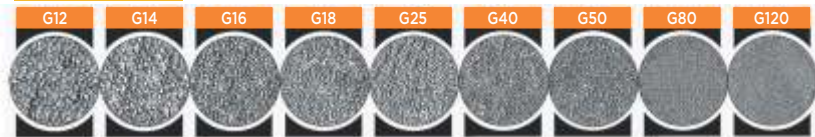


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CORCON-2025: Landmark event in the international corrosion conference arena at Jaipur

CORCON over the last 31 years has emerged as the Asia's largest and most prestigious corrosion conference on the subject of corrosion science and engineering

“Our nation is building infrastructure at an unprecedented pace! India plans to spend nearly Rs 143,000 crore on infrastructure between the years 2024 and 2030. The Union Budget of 2025-26 alone has marked a record Rs 11.21 lakh crore, which is around 3.1% of our GDP. This is towards capital investment in infrastructure alone. Over the last decade, capital expenditure on infrastructure has grown five-fold, and by 2050, India will require around US\$2.4 trillion in urban infrastructure investments,” said Mr Dipen Jhaveri, Chair, AMPP India Chapter. He was speaking at the inaugural function of CORCON 2025 at the Jaipur Exhibition and Convention Centre, on October 6, 2025. “These facts make one thing clear, that as India builds more pipelines, refineries, petrochemical units, steel plants, power plants and fertilizer units, more water

systems and urban infrastructure, the demand for robust corrosion protection technologies have never been greater.”

“CORCON brings together the best minds and organizations to address these challenges,” said Mr Jhaveri. “CORCON has grown over the last three decades into Asia’s largest corrosion conference, serving as a global platform for enhancing knowledge and best practices, showcasing innovations and technologies, building collaborations across industries, academia, and research, and also inspiring the next generation of corrosion professionals.”

This year, the 31st edition of CORCON hosted over 800 delegates, 80-plus exhibitors and a remarkable line up of eminent speakers from around India and the world.

“As the country evolves, one thing which will also evolve



Mr K. B. Singh, Chairman, CORCON 2025, addressing the gathering at the inaugural function.

with the country is corrosion,” said Mr K. B. Singh, Chairman – CORCON 2025. “If we look into the vision of what our Prime Minister has today on Atmanirbhar Bharat, we will become the third largest economy in a few years from now. So, the cost of corrosion will also increase. What does that mean? It basically implies that we have to get in new technologies, trained man power to arrest and reduce the cost of corrosion. Technologies will emerge, digital technology will emerge, artificial intelligence is also emerging. So what does that bring to all of you? It brings a huge amount of responsibility as well as a huge amount of opportunity for all of you to grow. India as we read is one of the youngest nations in terms of human population. Young engineers and scientists can use this platform to exchange ideas and foster innovations.”

Mr Juan Caballero, Chair,

AMPP Board of Director, who was the chief guest at the event, said, “I am very proud to recognize the vital role the regional chapters play in advancing solutions at the local level while shaping progress on the global scale. I look forward to seeing India as a leading example on uniting the world to fight and mitigate corrosion.”

Ms Kimberly-Joy Harris, Vice Chair, AMPP Board of Directors, noted: “This is a great opportunity to network, to meet people, learn new ideas. There’s a honest amount of exhibitors here. I love my exhibitors because they provide the resources and the technologies that’s needed for me as a owner-operator to ensure that our assets are always safe to operate.”

Spread over three days, the 25 symposia sessions (4 plenary talks; 10 keynote talks; 170 contributory papers and 18 poster presentations),



Dignitaries displaying the CORCON 2025 Souvenir at its release.



Mr Juan Caballero, Chair, AMPP Board of Directors; Ms Kimberly-Joy Harris, Vice Chair, AMPP Board of Directors; and Mr Dipen Jhaveri, Chair, AMPP India Chapter at the inaugural function of CORCON 2025.

covered topics like cathodic and anodic protection, materials and composites, corrosion monitoring and testing, corrosion in renewable energy, nuclear and power utilities, coatings linings and thermal insulation, microbial corrosion and inhibitors, corrosion control in water treatment utilities, direct assessment methodology application, corrosion in concrete and infrastructure, marine corrosion, corrosion in oil and gas sector, corrosion in petrochemical, refineries and fertilizer industry, forums for young students and scientists. There were four plenary talks, the first one being Field Lessons to Strategic Vision: AMPP as a

Lighthouse for Corrosion Management in Marine and Industrial Assets by Mr Juan Caballero, Chair, AMPP Board of Directors. The others were Corrosion Challenges in India's Water Infrastructure by Mr Hemen V. Patel, Chairman, AWWA India Association; R&D Remote Asset Integrity Monitoring by Dr Kimberly-Joy Harris, Vice Chair, Board of Directors, AMPP; and Non-Intrusive Pipeline Inspection for City Gas, Water Crossings and HDD Locations by Mr Mark Glinka, EMPIT GmbH, Germany.

The Technical Interactive Forums (TIFs) had topics like Cathodic Protection – AC/DC Interference Mitigation; Corrosion Control of City Gas



The 'Jung Se Jung' program at CORCON is an interactive forum where theoretical findings are integrated with practical experience from eminent experts in the field of corrosion science and technology.



CORCON 2025 hosted over 800 delegates from around India and the world.

Distribution; Corrosion in Petrochemical Plants and Refineries; Corrosion Monitoring and Integrity Management; and Pipeline Integrity Management Systems. A Workshop on Marine Corrosion and Corrosion in Defence Sector and a Round Table Conference on Protective Coatings and Lining Industry, besides a Poster Presentation session were some of the other highlights of the event.

CORCON 2025 was not only about heavy corrosion mitigation stiff, but also had its share of fun and mirth. The cultural program organized in the evening of the opening day had Rajasthani singers and dancers enthralling and sharing their folk culture with the delegates who had flown

in from across the globe. The dinner area that evening was converted into a village fair like atmosphere with its share of handloom and handicraft sellers, bangle makers, fortune tellers, and portrait artists.

One of the major highlights at every CORCON is the AMPP India Chapter's Corrosion Awareness Awards (AIC) presented to honor and respect individuals / institutions for their contribution to corrosion awareness and development in the field of corrosion science and technology in India. This was held on the evening of the second day of the event. AIC has so far honoured 157 scientists, teachers, engineers, professionals, 58 students' innovation and 29



Spread over three days, CORCON 2025 hosted over 25 symposia sessions including 10 keynote talks, 170 contributory papers and 18 poster presentations.



Henkel, winner of the 'Best Designed Stall in the 12sqm category at CORCON 2025.

public/private sector laboratories, etc.

This year, the award winners were Dr (Ms) Geogy J. Abraham, Bhabha Atomic Research Centre, Mumbai for Excellence in Corrosion Science & Technology in Research and Education; Mr Satendra Kumar, Welspun Corp Ltd., Anjar for Excellence in Corrosion Science and Technology in Industrial Organization; Dr C. Arunchandra, CSIR-Central Electrochemical Research Institute (CECRI), Karaikudi for Distinction in Corrosion Science and Technology in Research and Education; Dr M. Ajay Krishnan, Shell Technology Centre, Bengaluru for Distinction in Corrosion Science & Technology in Industrial Organization; Indian Oil Corporation Ltd., Faridabad for Excellent Laboratory; and Dr Gopinath S., Indira Gandhi Centre for Atomic Research, Kalpakkam, the Student Award for PhD Degree. The Lifetime Achievement Award went to Dr R. K. Malhotra, former Director, IOCL (R&D), Delhi.

Mr Premchand Bairwa, the Hon'ble Deputy Chief Minister of Rajasthan, was the chief

guest at the glittering AMPP India Chapter's Corrosion Awareness Awards function. While thanking the organizers for choosing Rajasthan's Pink City, Jaipur as the venue, he said: "In a vast and water-stressed state like Rajasthan, the biggest threat of corrosion is reflected in our water infrastructure. The reliability of our pipelines, reservoirs, and pumping systems is extremely important. Corrosion poses a double threat to these systems, leading to leakages, reduced water flow, higher maintenance costs, and a massive waste of water. Furthermore, harmful elements from corroded metal pipes mix into the drinking water, adversely affecting the health of the common public. Our effort to provide water to every household through the Jal Jeevan Mission will only be successful when we ensure corrosion-free, sustainable piping and structural systems."

"We are also investing heavily in our basic infrastructure, whether it is Greenfield projects, expressways, urban development projects, or water supply networks. We are laying a strong foundation



Rajasthani singers and dancers share their folk culture with the delegates at the Cultural Program evening, CORCON 2025.

for the future of Rajasthan. However, in the path of this rapid development, corrosion is a serious and silent danger. This is not just a technical problem; it is an economic burden that affects the lifespan of assets, public safety, and the prosperity of the nation," he said.

"The time has now come for us to move beyond the old mind-set of repair and replacement and adopt a strategy of prediction and prevention. The solution to these challenges of corrosion will not come from temporary measures. Instead, we need long-term solutions based on advanced material science, cathodic protection, and advanced coatings. I call upon all global leaders, researchers, and award winners of the AMPP India Chapter to become partners in our journey. The Government of Rajasthan needs your expertise!"

The expo area featured around 80 stalls, not only the leading names in the industry from across the country, but all over the globe exhibiting their latest innovations, products and processes. Awards were also given to the best designed stalls. Henkel

was awarded the Best Stall and Alleima, the runner-up in 12 sqm category. Vee Kay Vikram was awarded the best stall and DEHN India, the runner-up in 9 sqm category respectively. This year viewer's choice for the best stall was the given to Electrotherm India Pvt Ltd. Besides these, awards were also given to the best papers and poster presentation at the valedictory function. The valedictory function was graced by the foreign dignitaries who glorified the experience of this CORCON and wished the India Chapter to grow from strength to strength.

The meeting concluded with a Vote of Thanks by Mr Denizil D'Costa, Treasurer of AMPP India Chapter. He thanked the event manager, master of ceremonies and the hotel management for the sumptuous meals and the facilities provided. He also mentioned the tireless work done by the staff Mr Manoj Mishra, Mr Rishikesh Mishra, Mrs Anita D'Souza, Ms Ankita Rane, Mrs Manisha Rewale for the huge success of CORCON 2025.

CORCON 2026 will be held in Goa next year. The dates will be announced shortly.

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PaintExpo 2026: Where the global coating industry meets

The newly appointed PaintExpo Project Director, Ms Carmen Bender, talks about the forthcoming event and the efforts in bringing about fresh impetus and a push to further internationalizing of the event

The PaintExpo trade fair is the world's leading event for industrial coating technology, taking place every two years in Karlsruhe, Germany. It covers the full spectrum of the supply chain for industrial coating: from spray guns and application systems, through cleaning and pre-treatment, drying/curing, coatings (wet and powder), automation and conveyor technology, to testing/quality assurance and services.

For the 2026 edition, the dates are April 14 – 17, 2026 at Messe Karlsruhe (Halls 1-3).

The newly appointed Project Director, Ms Carmen Bender, talks about PaintExpo 2026 in a chat with C&ACER

What is new at PaintExpo 2026?

- There are visible changes in the brand appearance: a new design focusing on brighter, more vibrant colors to emphasize the "Paint" in PaintExpo.
- The next edition has already achieved very strong registration: six months ahead of the trade fair, 350 companies had secured around 28,000 m² of exhibition space – already more than 89% of the previous event's space.
- The 2026 edition continues to build on the strong international profile: current exhibitor mix includes approximately 53% from outside Germany, with exhibitors already from Italy,

Turkey, India, China and even Egypt, Vietnam, Cyprus among others.

- For the first time, PaintExpo will host a New Talent Day on the final day of the trade fair. Students and graduates from universities around Karlsruhe are invited to discover the industry through guided tours, meet potential employers, and attend a keynote and on-site presentations at exhibitor stands. It's a unique chance to connect young talent with leading companies in the coating technology sector.

How is PaintExpo different from similar events?

There is no similar event like PaintExpo.

- *Global reach & industry leadership:* PaintExpo is the



PaintExpo Project Director, Ms Carmen Bender.

world's leading trade fair for industrial coating technology, reflected in its high level of international exhibitors and visitors from across the entire value chain.

- *Full value chain coverage:* The trade fair covers every stage of industrial coating operations: from pre-treatment and coating materials to automation, quality assurance and recycling.
- *Decision-maker audience:* At previous editions, a large share of visitors was from outside Germany and many had investment or procurement influence, making it a high-quality meeting place.
- *Launching platform for innovations:* It is not just an exhibition but a "trend barometer" where new technologies and sustainable solutions are showcased.
- *Live, global networking hub:* Users (in-house coaters, job-shops, OEMs) and suppliers gather under one roof – which enhances business opportunity.



The trade fair covers every stage of industrial coating operations: from pre-treatment and coating materials to automation, quality assurance and recycling.

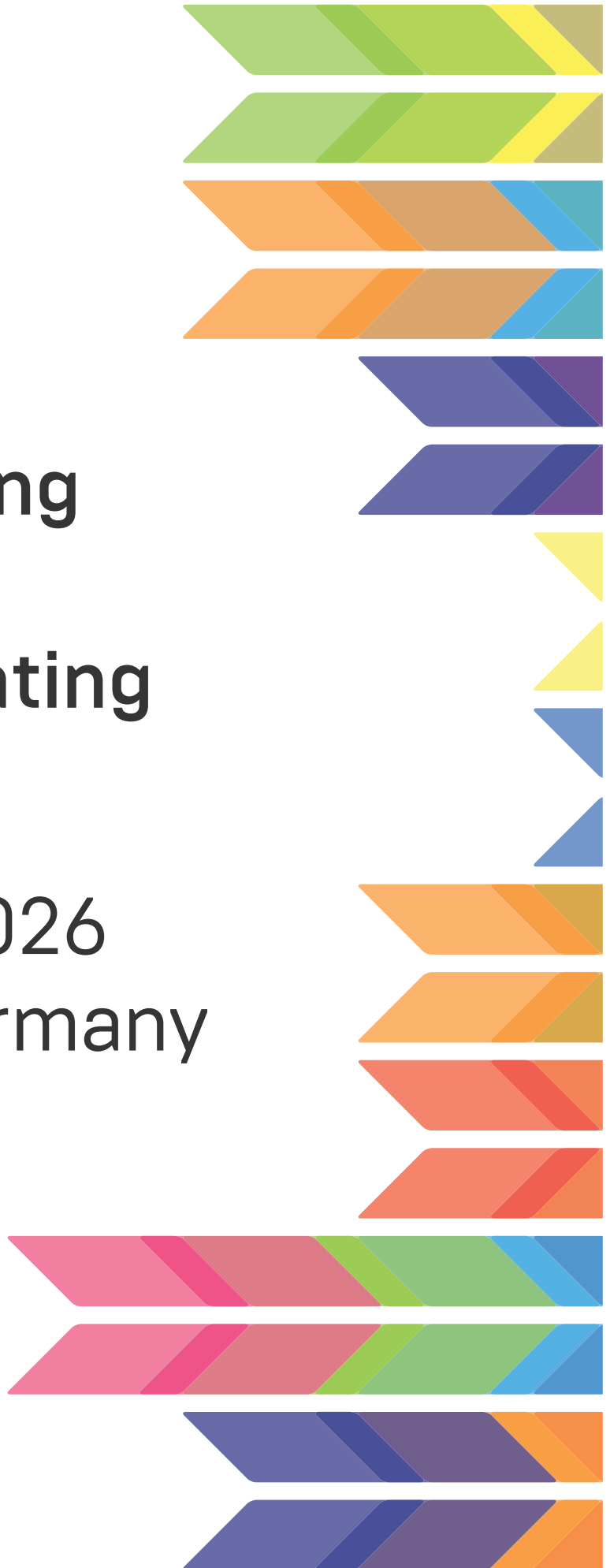


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14 – 17 April 2026
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What are the paradigm shifts you see within this industry?

□ **Sustainability & efficiency:** Coating processes are increasingly judged by energy use, material efficiency, and environmental impact. For example, for the 2024 edition some exhibitors emphasized solutions for sustainable coatings.

□ **Automation & digitalization:** The move towards smarter systems in surface treatment (robotics, conveyors, sensors, digital monitoring) is evident. The fair emphasizes application systems, automation and testing in its scope.

□ **Globalization & supply-chain complexity:** The exhibitor and visitor base is increasingly international; also markets such as India are explicitly referenced among exhibitors.

□ **Service-oriented business models:** The trade fair's portfolio includes services, training and vocational education: signaling that raw equipment sales are no longer the only focus.

What are the new technologies/products being launched at PaintExpo 2026?

□ The fair is the most important platform for global product launches, trends, future technologies and innovations in all aspects of industrial coating technology.

□ In the 2024 edition there were world premieres, sustainable and energy-efficient coating processes showcased.

□ So visitors to 2026 can expect a concentrated showcase of latest developments in:

- Wet and powder coating materials with improved performance (durability, substrate adhesion,

environmental credentials)

- Application and automation systems (robotic spray, conveyor integration)
- Pre-treatment and cleaning technologies for modern multi-material parts
- Quality assurance, digital monitoring, data-driven coating processes
- Recycling, environmental & exhaust-air technologies, cleaning and resource efficiency (these are part of the standard scope).

□ Details of concrete launches at PaintExpo 2026 will be announced in the beginning of 2026.

Why is PaintExpo a must for the industry?

□ It brings together suppliers, system integrators, paint manufacturers and end-users from across the globe in one place. PaintExpo is therefore ideal for benchmarking technologies and sourcing new solutions.

□ Especially for companies aiming at global competitiveness, including Indian manufacturers and exporters, this trade fair gives exposure not only to German or European technology but to a global network.

□ Because the event covers the full process chain, visitors can capture synergies: e.g., how pre-treatment affects coating quality, how automation boosts throughput, how new coatings meet sustainability demands.

□ It is a trend barometer: many industry observers regard PaintExpo as where the next generation of coating technologies is first shown.

□ The international nature (e.g., more than one in three visitors at 2024 came from



PaintExpo 2026 is the most important platform for global product launches, trends, future technologies and innovations in all aspects of industrial coating technology.

outside Germany) means you meet decision-makers from all over the world.

□ For buyers, engineers and R&D professionals, visiting PaintExpo may enable them to make more informed investment decisions, explore partnerships and upgrade their coating operations.

What are the key take-aways you are hoping for at PaintExpo 2026?

□ Insights into the latest coating systems and materials that can drive higher quality, lower costs and improved sustainability for Indian production.

□ Exposure to automation and digitalization trends in surface treatment which may inform modernization of factories.

□ Opportunity to network with leading global suppliers and technology innovators: potentially enabling collaborations or sourcing.

□ Benchmarking of international best-practice in coating: both wet and powder, and for in-house vs contract coating

□ Understanding of global export-oriented coating technology: how coatings are specified and applied in Europe (and how that

compares to India) useful for Indian manufacturers targeting export markets.

□ A selection of possible equipment-investment leads, enabling budget planning and supplier meetings while the fair is live.

□ Trends and discussions on sustainability, regulation, material efficiency – increasingly important for Indian industry as well.

Why should the Indian industry consider attending PaintExpo 2026?

For India's industrial coating, finishing & surface-technology sector, PaintExpo 2026 in Karlsruhe offers an outstanding opportunity. If you are involved in manufacturing, coating operations, OEM supply chains, contract coating or R&D, this trade fair gives you exposure to leading global innovations, access to decision-makers, benchmarking against global best-practices, and direct supplier-engagement all under one roof. Given the strong international participation (including from India already) and broad coverage of technologies, attending PaintExpo 2026 can be a strategic investment for growth, export readiness and technology upgrading.

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Date	Event	Venue	Organizer	Contact Details
NOV 24 – 26, 2025	GULF COATINGS SHOW 2025	Expo Centre, Sharjah, United Arab Emirates	NürnbergMesse GmbH	E: matthias.janz@vincentz.net W: www.gulf-coatings-show.com
NOV 25 – 27, 2025	CHINACOAT 2025	Shanghai New International Expo Centre (SNIEC), Shanghai, China	Sinostar	E: info@sinostar-intl.com.hk W: www.chinacoat.net
DEC 09 – 11, 2025	ASSET INTEGRITY CORROSION AND COATINGS CONFERENCE	Baku, Azerbaijan	Aldrich Energy	T: +971 4837 4300 E: register@aicccaspian.com W: aicccaspian.com
JAN 26 – 27, 2026	MARITIME MAINTENANCE AND COATING CONFERENCE & EXPO	Kempinski Al Othman Hotel Al Khobar, Saudi Arabia	Aldrich International	E: marketing@marinecoat.com W: marinecoat.com
JAN 26 – 29, 2026	5th MECOC EXPO	Abu Dhabi, UAE	Aldrich	T: +971 4 837 4300 E: register@mecocmiddleeast.com W: mecocexpo.com
FEB 03 – 06, 2026	SURFACE ENGINEERING COATING & CORROSION WORLD EXPO 2026	Bombay Exhibition Centre, Mumbai, India	Chemtech Foundation	T: (+91 22) 40373636 E: sales@jasubhai.com W: chemtech-online.com
FEB 19 – 21, 2026	PAINTINDIA	Bombay Exhibition Centre, Mumbai, India	NürnbergMesse India Pvt. Ltd	T: (+91 22) 62165323 E: paintindia.expo@colorpub.in W: nm-india.com
FEB 26 – 28, 2026	SURFA COAT INDIA EXPO	Codissia Trade Fair Complex, Coimbatore, Tamil Nadu, India	Business Live Trade Fairs	T: (+91) 9003195607 E: info@bltf.in
MAR 15 – 19, 2026	AMPP ANNUAL CONFERENCE + EXPO	Houston, Texas, USA	AMPP	W: ace.ampp.org
APR 06 – 08, 2026	INDIA PAINT & COATING EXPO	Bangalore International Exhibition Centre Bengaluru, India	Media Day Marketing	E: expo@mediaday.co.in W: paintandcoatingexpo.com
APR 08 – 09, 2026	MOBILITY MANUFACTURING & MATERIALS EXPO (3ME)	Autocluster Exhibition Centre, Pune, India	Threefold	T: (+91) 9910760143 E: islam@threefold.in W: 3mexpo.com
APR 14 – 16, 2026	MIDDLE EAST COATINGS SHOW	Dubai Exhibition Centre, Expo City Dubai, UAE	dmg events	T: +971 4 4453773 E: paddyoneill@dmgevents.com W: asiapacificcoatingsshow.com
APR 14 – 17, 2026	PAINTEXPO 2026	Karlsruhe, Germany	Leipziger Messe	M: +91 9166565118 E: b.verma@leipziger-messe.de W: paintexpo.com
MAY 05 – 07, 2026	AMERICAN COATINGS SHOW AND CONFERENCE	Indiana Convention Center, Indianapolis, Indiana, USA	American Coatings Association	E: cmatthews@paint.org W: american-coatings-show.com
MAY 05 – 07, 2026	SURFACE TECHNOLOGY GERMANY 2026	Stuttgart Exhibition Centre, Stuttgart, Germany	Deutsche Messe	E: info@messe.de W: messe.de
JUN 11 – 13, 2026	EXPO PAINT AND COATINGS 2026	Chennai Trade Centre Chennai, India	Toredo Fairs India Pvt Ltd	T: +91 9341928011 E: info@expopaintcoating.in W: expopaintcoating.in

Please note, schedules are subject to last minute changes.

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