



Andrea Tonin

COMEM optocon: Where the gallium meets the arsenide

Interview with Andrea Tonin, General Manager at COMEM optocon and Group Chief Technology Officer, and Nicola Tomanin, Head of Marketing and Sales at COMEM Group

What is the latest news you want to share with us?

Nicola Tomanin: This month marks the official inauguration of our rebranded production unit for fiber optic technology in Dresden, Germany, which we acquired in March 2024. This acquisition not only expanded the COMEM portfolio but also broadened our business scope by fully entering the sensor and optical systems sector.

The inauguration signifies a new chapter in Optocon's 25-year legacy of innovation, precision, and reliability in optical sensing.

Why was the rebranding of the Dresden unit important?

Nicola Tomanin: The rebranding reflects our strategic vision to unify its operation

unit under a single, globally recognized COMEM brand identity.

With the Optocon acquisition, we also have expanded our market coverage through existing Optocon distributors, who have renewed their trust in the new organization and will become COMEM Authorized Partners. With this relaunch, we are reinforcing our position in the global market and are closer to our customers.

Andrea Tonin: This rebranding is more than just a name change; it reaffirms our commitment to innovation and excellence.

COMEM optocon brings advanced manufacturing capabilities and a highly skilled team to our organization.

The Dresden unit will serve as a hub for production and innovation, with plans to expand Research and Development (R&D) activities and strengthen collaborations with local academic and industrial partners.

Dresden is your new location in Germany. Why is it so important for COMEM?

Andrea Tonin: Germany is synonymous with engineering excellence and quality, and our Dresden facility embodies that tradition.

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Located in Dresden, Europe's unique technology hub, also known as Saxony Valley, the site is equipped with state-of-the-art manufacturing technologies and adheres to the highest quality standards. What sets us apart is the integration of precision engineering with agile production processes.

We cover the whole value chain, from concept and design to prototyping, manufacturing, and market deployment. This integrated approach ensures agility, quality, and speed to market.

Our R&D activities in Germany are a cornerstone of our innovation pipeline. Whether it's improving sensor accuracy, enhancing data analytics, or exploring new materials.

Our team is composed of highly qualified and talented professionals, from R&D engineers and software developers to production specialists, each bringing deep domain knowledge and passion for

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innovation. Their expertise, creativity, and dedication drive our innovation and enables us to maintain the highest standards of quality and performance.

Nicola Tomanin: Let's also speak about servitization; having a base in Germany is crucial. It allows us to tap into a key market and collaborate more closely with our German customers. The local presence enhances our ability to deliver new services, like the MeDICA service agreement, and ensures we can effectively support our customers.

What does the Optocon product represent for COMEM?

Andrea Tonin: COMEM has enriched its own portfolio with fiber optics that is suitable for monitoring. It fits perfectly into our mission to redefine how critical assets are monitored and protected.

Optocon's fiber optic technology measures temperature based on changes in the optical properties of a gallium arse-

nide crystal (GaAs). In simple words, the temperature is monitored with light. It is a very fast, precise and reliable measurement that is repeatable and can be monitored remotely and continuously. It performs well in environments with microwave radiation and high-frequency interferences. It can be used for high voltage applications, magnetic fields, and aggressive industrial settings, providing very accurate temperature monitoring to protect your supplies and assets where traditional metal temperature sensors cannot be used.

Nicola Tomanin: The Optocon product, also known under its product brand name FOTEMP, represents COMEM's commitment to technological innovation, precision, and reliability.

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It embodies the company's vision of delivering world-class solutions that go beyond transformer applications, enabling smarter, safer, and more efficient monitoring across a wide range of industries.

What industries are you targeting with this renewed focus?

Nicola Tomanin: We aim to be closer to transformer end-customers (end-users) by providing detailed insights into the health of their assets. We want to empower them to make informed decisions about maintenance and upgrades. Our approach aligns with our growing focus on service, allowing us to offer tailored solutions and services rather than just products.



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Furthermore, this acquisition opened new markets and applications, presenting an excellent opportunity for differentiation and development of collaborative strategies across technical, marketing, sales, and communication areas.

How do the fiber optic systems meet the needs of the transformer industry?

Andrea Tonin: Fiber optic integration is a transformative leap for the transformer industry. It enables precise, real-time temperature monitoring, significantly enhancing transformer reliability.

Our fiber optic technology is well-suited to meet these needs, particularly in environments where traditional sensors may struggle to perform effectively.

It not only provides accurate real-time data but also enhances the reliability of transformers. It will enable transformer end-users to improve data analytics for asset health management, facilitate real-time hotspot monitoring, and support predictive maintenance.

This technology is gaining popularity in the transformer industry because it enables timely temperature mapping in critical areas of the transformer, thereby increasing its lifespan and accurately predicting its degradation over time, which allows for the application of appropriate corrective actions.

Nicola Tomanin: I would like to add to what Andrea just said that the Optocon fiber optic technology aligns perfectly with our mission to support transformer end-users during the entire transformer lifecycle.

Fiber optic technology is empowering our integrated monitoring system, which we call MeDICA. With the Fiber optic temperature measurement system, we are adding very precise and punctual data coming from the critical inner components of the transformer (windings) to the data collected from the external sensors. By integrating and interpreting data from online monitoring and offline testing, we can collaborate with the customer to develop a sustainable maintenance strategy and extend the transformer's life.

How does fiber optic integrate with your MeDICA offerings?

Andrea Tonin: The MeDICA platform was developed with a dual purpose: on the one hand, to empower the customers with the ability to collect and analyze comprehensive data from their transformers, and on the other hand, to provide a tailored service that monitors the transformer's health in real time, carry out time. This enables timely, specific,

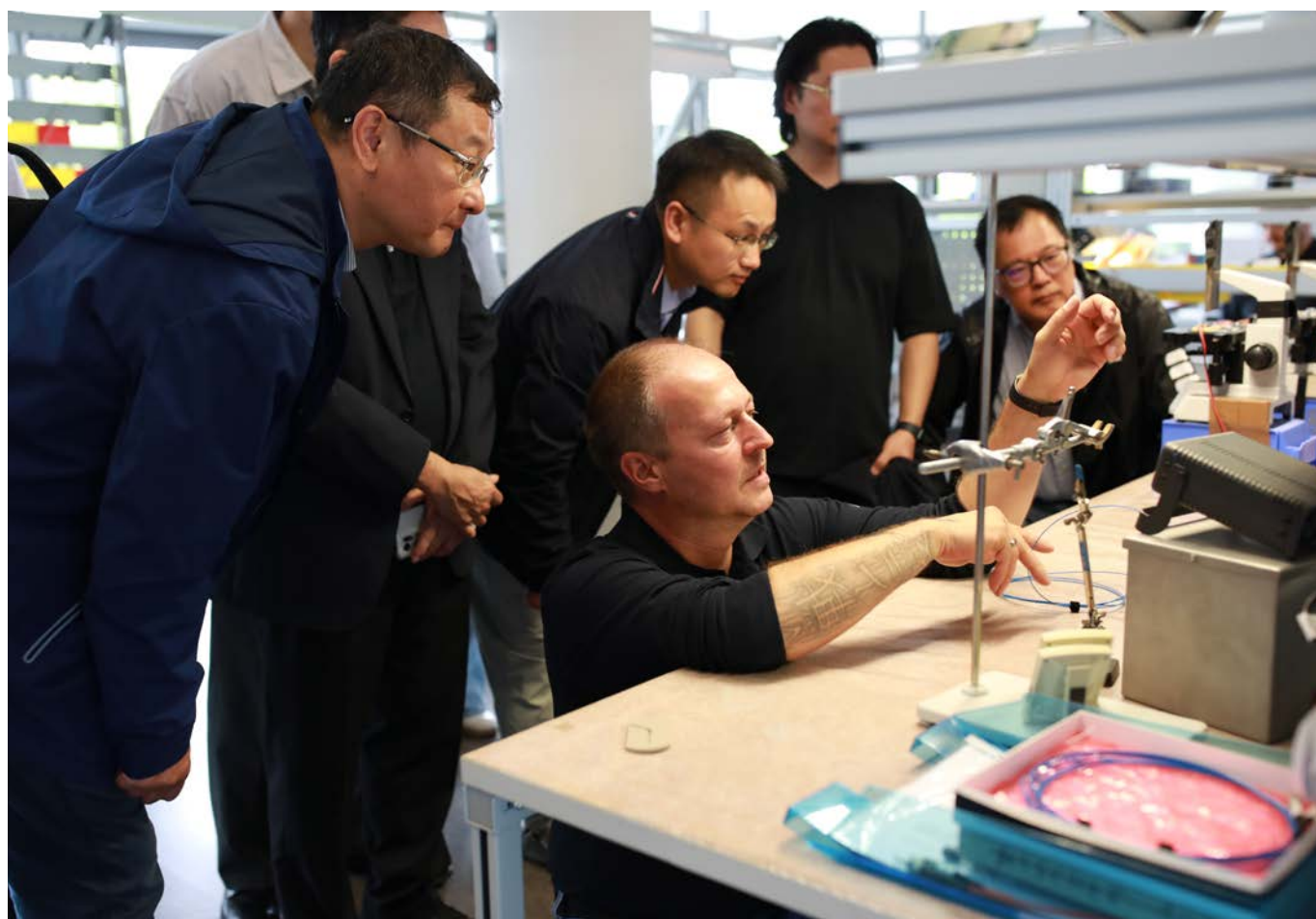


and customizable recommendations that address each customer's specific operational needs.

By integrating a fiber optic temperature measurement system into our monitoring portfolio, we have added the capability for continuous, direct hot spot temperature measurement in transformer windings – one of the most critical parameters for assessing transformer health.

Why is hot spot monitoring such a critical feature in transformer diagnostics today?

Andrea Tonin: Hot spot monitoring is essential because it provides real-time insight into the most thermally stressed areas of a transformer. These hot spots are often the first indicators of potential failure. By using fiber optic sensors, we can measure temperature directly at the winding level, a level that traditional sensors cannot reach. This enables operators to detect anomalies early, optimize



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load management, and prolong the lifespan of their assets. It is a proactive approach that aligns perfectly with the industry's shift toward predictive maintenance.

Nicola Tomanin: Moreover, services and consulting expertise included in our MeDICA service agreement help customers extend the life of their transformers, reducing waste and the need for premature replacements.

Our MeDICA service agreement connects our analytics capabilities with the services provided, allowing us to offer a comprehensive suite that monitors transformer health and performance. It enables us to extend transformer cycles and promotes sustainability, which is increasingly important in our industry.

How do you see your sustainability strategy evolving with the new offices and product line?

Nicola Tomanin: Sustainability is more than a value, it is a guiding principle embedded in everything we do. From the materials we use to the lifecycle of our products, we are committed to minimizing environmental impact while delivering high quality products and services.

As we introduce new products into our portfolio, we will ensure they are designed for high performance while minimizing environmental impact.

The new offices will facilitate collaboration, enabling our teams to work together on these initiatives.

How does your product roadmap align with future market demands?

Andrea Tonin: Our focus is on our customers and their needs. Raising awareness about the benefits of our latest technologies and services is essential to helping them operate more efficiently, safely, and sustainably.

We should focus on the asset. The reliability of transformers is critical for the sustainability and resilience of the entire power network. That's why COMEM has developed a comprehensive technological roadmap designed to deliver products and services that simplify operations while enhancing safety and performance. Our products always include features for serviceability, support for evaluating the condition of transformers through monitoring and analysis tools, as well as consultancy services to help optimize asset performance.

Nicola Tomanin: We are moving closer to end users by delivering deeper in-





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sights into transformer health, empowering them to make smarter, data-driven decisions about maintenance and upgrades. This customer-centric approach supports our shift toward service-oriented solutions, enabling us to offer tailored support that goes far beyond traditional products.

We are incredibly proud of how far we have come but are even more excited about where we are going

It's not just about technology, it's about delivering the right solutions, at the right time, for every customer.

As COMEM inaugurated its rebranded offices in Dresden, Germany, what message would you like to share with your customers and partners?

Andrea Tonin: We are incredibly proud of how far we have come but are even more excited about where we are going. Optocon's journey over the past 25 years has been defined by talented people driving innovation and precision; those values will continue to guide us. With our local presence in Germany, a focus

on Research and Development, and a growing portfolio of sensing solutions for transformers, we are ready to meet the customer challenges of tomorrow.

We thank our customers and partners for their continued trust and collaboration.

Nicola Tomanin: This inauguration event represents a commitment to the future. We are evolving to become more than a technology provider; we aspire to be a long-term partner in our customers' success. Whether through advanced fiber optic systems, predictive maintenance approach with digital transformer monitoring systems like MeDICA, or our growing global footprint, we're here to support our customers.

This event also gave us the valuable opportunity to welcome some of our Authorized Partners and COMEM optocon distributors. It was a unique moment to foster collaboration and share insights from diverse market-creating synergies that will drive innovation and growth across our network. ■

