

Oerlikon introduces INSPIRA carbon – integrating S3p® technology to enhance productivity and quality of carbon coatings

Balzers, Liechtenstein – November 13, 2025 – **Oerlikon Balzers, a technology brand of Oerlikon and a global leader in advanced surface solutions for precision components and tools, has introduced INSPIRA carbon, a new coating platform integrating S3p® Technology. It enables high-quality carbon coatings that improve the performance and durability of precision components, extending the service life of critical parts across industries. Through INSPIRA carbon, Oerlikon strengthens its mission to deliver innovative industrial solutions that enhance customer products through advanced surface technologies. Its first model, INSPIRA carbon mega, delivers up to 25% higher batch volume than comparable market systems.**

INSPIRA carbon is designed to meet today's production demands while paving the way for future coating innovations. Its new architecture supports both established BALINIT® and next-generation BALIQ® coatings, enabled by Oerlikon's proprietary S3p® (Scalable pulsed power plasma) Technology. By combining flexible system design with precise process control, the system enables high-quality coatings that increase productivity and enhance component reliability and lifetime in use.

Tailored high-performance carbon coatings with S3p® Technology

The platform integrates both BALINIT® and BALIQ® coatings, including BALIQ® CARBOS, and ensures uniform results across diverse part geometries even at low temperatures. S3p® enables advanced process control, allowing for tailored coatings with optimized hardness, smoothness, and friction properties – delivering the balanced performance required for maximum component service life.

S3p®-enabled sputtering modules produce droplet-free carbon coatings with hardness values up to 40 GPa, eliminating the need for mechanical post-treatment. Precise thickness distribution ensures consistent surfaces and reliable friction behavior.

Enhanced productivity and efficiency

INSPIRA carbon mega delivers up to 25% higher batch volume capacity compared to comparable market systems, advancing coating productivity. This enables a greater number of parts per batch without extending cycle times. Mixed part types can be coated in a single batch, eliminating uniform fixtures. High deposition rates and stable processes ensure consistent quality, high throughput, and lower cost per part.

A smart, integrated cooling system – using a single water loop for chamber, parts, and electronics – reduces energy use and simplifies maintenance, supporting sustainable production. Robust sealing minimizes leaks, while advanced software with intuitive controls, process guidance, and safety interlocks ensures safe, efficient operation.



Image: Oerlikon

The new INSPIRA carbon coating platform from Oerlikon Balzers combines high productivity with excellent coating quality for components. Its flexible architecture is perfectly designed to meet current and future requirements for carbon-based coatings.



Image: Oerlikon

The S3p® technology (Scalable Pulsed Power Plasma) developed by Oerlikon enables droplet-free, extremely smooth and hard coatings with precise process control – ideal for components that require maximum wear resistance, homogeneous surfaces, and stable friction behavior.

For more information, please contact:

Petra Ammann
Head of Product Marketing Communications
T +423 388 7500
petra.ammann@oerlikon.com
www.oerlikon.com

About Oerlikon

Oerlikon (SIX: OERL) is a global leader in surface technologies and advanced materials. With a unique portfolio spanning surface engineering, high-performance materials, coating equipment and components, we make products better by enhancing performance, efficiency and sustainability. Oerlikon serves a wide range of industries, including aerospace, automotive, defense, energy, medical, luxury and semiconductors.

Headquartered in Pfäeffikon, Switzerland, Oerlikon together with its subsidiary Barmag operates in 38 countries with more than 12,000 employees across 199 locations, achieving sales of CHF 2.4 billion in 2024.