

Press release

Sustainable automotive production: Oerlikon Balzers' coating solutions contribute to innovative plastics concept award for premium car manufacturer

Balzers, Liechtenstein, 16 December 2021 – **Oerlikon Balzers, a leading provider of advanced surface solutions, supplied coating equipment and solutions for the metallisation of plastic parts to the BMW Group Plant Landshut. The ePD technology developed by Oerlikon Balzers enables innovative functions and designs, and complies with REACH environmental regulations. In September, the BMW Group won the Grand Award for its innovative plastics concept of its all new full-electric compact SUV, the BMW iX. Both the sustainable sensor-transparent coatings and the coatings for the moulding tools from Oerlikon Balzers for the production of the newly designed kidney grille contributed to the award.**

Sustainability and environmental protection are key aspects of the Oerlikon Group strategy. As one of its competence brands, Oerlikon Balzers develops coating solutions and systems for its customers in order to implement this strategy and play an essential part in conserving resources and significantly reducing CO2 emissions. Innovative features and designs have a crucial role to play in the development of future generations of automotive vehicles, and the BMW Group uses the sustainable ePD technology from Oerlikon Balzers for its new full-electric BMW iX.

ePD – a clean, REACH-compliant process with low energy consumption

ePD™ (embedded PVD for Design parts) is a pioneering, eco-friendly coating process which can be used wherever high-quality metallic-looking surfaces are required on plastic components with smart functionality. The three-layered structure composed of UV lacquers and an embedded PVD coating is a ground-breaking approach for new designs of plastic components used in fully electric or hybrid vehicles. Designers and engineers can combine ePD with other technologies such as digital, screen and pad printing and laser marking to increase the range of possibilities even further.

The ePD™ process consumes very little energy and does not produce special waste, making it both an eco-friendly and cost-effective option – which is particularly valued by businesses focusing on sustainable production processes. It also complies with the REACH regulation introduced by the European Union, which aims first to restrict the use of harmful substances such as cobalt salts, boric acid and nickel, and finally to ban them entirely.

Innovative new features for the next generation of automotive vehicles

With the INUBIA coating system, which meets the requirements of the automotive industry and can optionally be seamlessly integrated into series production, the BMW Group offers its customers high-quality

metallised plastic parts. Interactive communication between vehicles will have a much bigger role to play in autonomous driving, and the ePD technology is a solution which enables vehicles to “talk” to each other while offering attractive designs. One example of this is radar-transparent coatings for driver assistance systems, which make it easy to install radar sensors behind grilles coated with ePD in order to measure the distance from the vehicle in front. This special manufacturing technology can also be used to produce capacitive or translucent components with invisible functionality in order to complement the design of modern vehicles. The coatings are long-lasting and scratchproof and can be made transparent, allowing symbols to be added to backlit buttons.

Coated forming tool for the kidney ensures high process reliability

Oerlikon Balzers also coats the mould of the new BMW iX front kidney, which is manufactured by Summerer Technologies. In cooperation with the forming tool manufacturer, BALINIT FUTURA NANO has been selected as the preferred coating. Due to its high hardness and ductility, it offers very high scratch and wear resistance. In addition, the coating achieves a brilliant surface quality through improved mould filling and easy demoulding. Maintenance costs are thus reduced and, despite the high thermal exposure, the mould can even be cleaned much more abrasively without scratching the surface. As a result, the entire production process benefits from high productivity, economic efficiency and process reliability.

At the 20th “SPE Automotive Awards”, the BMW Group won the plastic exterior production Grand Award for the innovative concept used in the BMW iX kidney grille.

For more information about ePD technology, visit <http://www.oerlikon.com/balzers/epd>



Image: BMW Group

The BMW Group won the Grand Award for the innovative plastics concept used in the BMW iX kidney. The eco-friendly coating allows various sensors to be integrated including radar sensors to measure the distance from the vehicle in front.

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About ePD and INUBIA coating systems

Developed by Oerlikon Balzers, ePD stands for “embedded PVD for Design parts” and is a pioneering, eco-friendly coating process. Wherever high-quality metal surfaces are required for plastic components, ePD is the sustainable alternative to today’s conventional manufacturing technologies. INUBIA is a fully automated, user-friendly system for ePD-based coating. The integrated system, developed and produced by Oerlikon Balzers, allows high-volume mass production to meet the requirements of the automotive sector.

Today’s automotive industry faces the global challenges of lightweight construction, smart components and high levels of customisation, in addition to strict laws and regulations on the automotive manufacturing process to reduce energy consumption and protect our environment. The ePD technology from Oerlikon Balzers helps manufacturers meet these high demands. As well as producing coatings with conventional chrome plating, the INUBIA system offers eco-friendly technology which comfortably meets the national standards for sustainable production and emits no harmful substances in the production process.

About Oerlikon Balzers

Oerlikon Balzers is one of the world’s leading suppliers of surface technologies that significantly improve the performance and durability of precision components as well as tools for the metal and plastics processing industries. Extremely thin and exceptionally hard coatings, marketed under the BALINIT and BALIQ brand names, reduce friction and wear. The BALITHERM brand opens up a broad range of heat treatment services, whereas BALTONE comprises coatings that are available in a full range of elegant colours, perfectly suited for decorative applications. BALIMED ThinFilm coatings, with wear-resistant, biocompatible, antimicrobial and chemically inert properties, have been developed especially for medical applications. Under the BALIFOR technology brand the company has introduced technologies which provide tailor-made solutions for the automotive market, while ePD allows the metallisation of plastic parts with a chrome look.

Worldwide, more than 1’300 coating systems are in operation at Oerlikon Balzers facilities and its customers. Equipment engineering and assembly of Balzers’ systems are processed in Liechtenstein, in Langenthal (Switzerland) and in Bergisch Gladbach (Germany). Oerlikon Balzers operates a dynamically growing network of more than 110 coating centres in 36 countries in Europe, the Americas and Asia. Oerlikon Balzers is – together with Oerlikon Metco and Oerlikon AM – part of the Surface Solutions Segment of the Switzerland-based Oerlikon Group (SIX: OERL).

About Oerlikon

Oerlikon (SIX: OERL) is a global innovation powerhouse for surface engineering, polymer processing and additive manufacturing. The Group’s solutions and comprehensive services, together with its advanced materials, improve and maximise the performance, functionality, design and sustainability of its customers’ products and manufacturing processes in key industries. Having developed pioneering technology for decades, everything Oerlikon does is guided by its passion to help its customers achieve their goals and to foster a sustainable world. The Group is headquartered in Pfäffikon, Switzerland, and operates its business in two divisions: Surface Solutions and Polymer Processing Solutions. It has a global footprint of more than 10,600 employees at 179 locations in 37 countries and generated sales of CHF 2.3 billion in 2020.