Media Release

Fighting COVID-19: Oerlikon Balzers partners in joint research project for antibacterial and virucidal coatings in the aerospace sector

Balzers, Liechtenstein, 23 November 2020 – **Viruses such as the SARS-CoV-2 virus can survive for a long time on plastics, which are particularly widely used in aircraft. Not only do Oerlikon Balzers' PVD coating solutions protect tools and components: the company's engineers also have many years of experience and wide-ranging expertise in developing solutions for specific applications in the medical industry. As a partner in an international research project, Oerlikon Balzers is now using this expertise, the result of longstanding partnerships with medical experts and universities and university clinics, to develop antibacterial and virucidal coatings for plastic components.**

The more people there are in one place, the greater the probability that different surfaces are contaminated with microbes which include bacteria and viruses. Viruses such as the SARS-CoV-2 virus can survive for a long time on plastics in particular, which are widely used in aircraft components – and regular cleaning, even with disinfectants, only helps for a short time.

A number of studies have been conducted on how long viruses can survive on different surfaces. It has been demonstrated that they can survive for a long time (up to three days) on plastics, longer than on cardboard and metals. This is a challenge for the aerospace industry, as plastics are used in a large number of components in order to reduce the weight of aircraft, make them more efficient and reduce their carbon footprint.

"The solution would be to give certain coatings antimicrobial and virucidal properties. For bacteria, three approaches have already been tested: coatings that gradually release antibacterial products but have a limited lifespan; bacteriostatic coatings, which prevent the deposition of bacteria and limit their proliferation; and finally, bactericidal coatings that kill bacteria by contact. One solution could therefore be an antimicrobial coating on plastic components that are likely to be touched by passengers, such as shelves, luggage compartments and so on – in short, all the possible points of contact that they're likely to encounter during a flight", explains Alain Denoirjean, Research Director CNRS / HDR at the Institut de Recherche sur les Céramiques (IRCER), who is leading the RELIANT international research programme with which Oerlikon Balzers has partnered.

The RELIANT project (researching metallic coatings to protect against contamination of plastic surfaces by SARS-CoV-2) is developing a durable virucidal and antibacterial solution to protect plastics used in aircraft. It is an interdisciplinary project and a multi-year programme conducted by the joint research laboratory “PROTHEIS”, which has been established by the CNRS (the French National Centre for Scientific Research), the University of Limoges, Safran (a major player in the aerospace and defence sectors) and Oerlikon, a leading global technology group that engineers materials, equipment and surfaces. One of the main focuses of RELIANT is biological testing on real SARS-CoV-2 viruses, using the expertise of the P3 security lab at the University Hospital and University of Limoges.

Once the coating has been developed and successfully confirmed in the test laboratories, it can also be utilised in many other industries in which Oerlikon Balzers is operating, including the automotive industry, the medical industry and the plastics and food processing industry.

“We are very proud to be involved in this pioneering project, which will not only benefit our customers and partners in the aerospace industry, but will also have a direct positive impact on the health of mankind in the long term”, says Gilles Widawski, President of Oerlikon France.


(Image: iStock)

As a partner in an international research project, Oerlikon Balzers is now using its expertise, the result of longstanding partnerships with medical experts and universities and university clinics, to develop antimicrobial coatings for plastic components in the aerospace sector.

Additional information:
Press Release: Safran, Oerlikon, CNRS and the University of Limoges create a joint research lab and technology platform for surface treatment in southwest France (June 2019):
https://www.oerlikon.com/en/company/media/press-releases/safran-oerlikon-cnrs-and-the-university-of-limoges-create-a-joint-research-lab-and-technology-platform-for-surface-treatment-in-southwest-france/

For further information, please visit our website at www.oerlikon.com/balzers/

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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 1'100 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) engineers materials, equipment and surfaces and provides expert services to enable customers to have high-performance products and systems with extended lifespans. Drawing on its key technological competencies and strong financial foundation, the Group is sustaining mid-term growth by executing three strategic drivers: addressing attractive growth markets, securing structural growth, and expanding through targeted mergers and acquisitions. A leading global technology and engineering Group, Oerlikon operates its business in two Segments – Surface Solutions and Manmade Fibers – and has a global footprint of more than 11'100 employees at 182 locations in 37 countries. In 2019, Oerlikon generated CHF 2.6 billion in sales and invested around CHF 120 million in R&D.