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## **Depowdering of rocket parts: The Exploration Company relies on ultrasonic system from Solukon**

*The international aerospace company focuses on sustainability in the production of flight systems and develops reusable space capsules. With a Solukon SFM-AT350-E with SPR-Pathfinder® software, The Exploration Company is investing in the intelligent and automated postprocessing of 3D-printed components.*

In recent years, the New Space sector has become one of the most important and highest-revenue industries for Solukon. With the Exploration Company from Planegg in Bavaria, the Solukon team has won another heavyweight in European space industry as a customer.

Senior Additive Manufacturing Engineer Maxi Strixner opted for an SFM-AT350-E with SPR-Pathfinder software for the depowdering of rocket components. The SFM-AT350 is the best-selling depowdering system for medium-sized components weighing up to 100 kg. The E-version of the depowdering system used by the Exploration Company uses piezoelectric ultrasonic excitation to clean laser-melted metal parts particularly quickly and gently. This technology, which was newly developed by Solukon, is unique on the market and enables a silent and efficient cleaning process.

### **Why intelligent depowdering is key in space industry**

The production of rocket components for the Nyx space capsule requires maximum precision in all production steps. To ensure that everything runs smoothly during the flight of the space capsule, printed components must be completely free of powder. The Solukon system more than meets these high cleaning quality requirements. "With the SPR-Pathfinder software, we calculate in advance how the component must be moved so that all the powder runs out. This enables us to achieve reliable cleaning results and clean components in series," says Maxi Strixner. Cleaning can also be pre-simulated with the SPR-Pathfinder. This allows developers to see as early as the design phase whether the component can be completely cleaned or whether the geometry needs to be adapted for better postprocessing.

### **Sustainability in rocket construction**

During the cleaning process in the Solukon system, the powder is collected without contamination and can be reused for further presses after sieving, resulting in significant material savings. In addition, piezoelectric frequency excitation offers the advantage over conventional pneumatic vibrators that significantly less compressed air is required, which enables further savings. This approach fits in perfectly with the Exploration Company's main maxim: "Our main focus is on the development of reusable space capsules for the transportation of payloads and people into space," says CEO and founder H el ene Huby.

## Figures

Figure 1: Solukon CEO Andreas Hartmann and H el ene Huby, CEO of the Exploration Company in front of the Solukon SFM-AT350-E.

## About Solukon

Solukon Maschinenbau GmbH is a German high-quality supplier of powder removal and processing systems for metal and polymer additive manufacturing. In 2015, Solukon presented the world's first system for automated depowdering. Founded by Andreas Hartmann and Dominik Schmid, the Augsburg-based company has extensive experience in the development of AM systems and related peripheral equipment, and offers a full range of industrial powder processing systems. Since 2022, Solukon has also been offering the world's first and unique intelligent software for automated simulation and (pre-)calculation of the depowdering of laser-melted metal parts, the SPR-Pathfinder<sup>®</sup>. Solukon products meet the highest functionality and safety standards and are approved for safe and reliable removal of tough-to-handle and reactive materials such as titanium and aluminum. Solukon has established itself as the market leader in the field of industrial powder removal with its powder removal systems for metal.