www.scerox.de

we deliver HIGH PRECISION manufacturing services

Scerox is a renowned industrial company specializing in the production of high-precision parts for the medical technology and semiconductor industry as well as for the automotive and aerospace industries. Our products are critical to these industries and require the highest precision and quality standards.

Our technology portfolio includes a wide range of state-of-the-art technologies - metalworking processes such as eroding, turning, milling, ultra precision milling, grinding and PECM - designed to maximize efficiency, accuracy and performance in machining.
After the precise machining of the parts in our production, we carry out a thorough quality control on Zeiss measuring machines (tactile and optical). In this way, we guarantee compliance with the strictest standards and the absolute accuracy of the customer's products. Subsequently, the workpieces are cleaned in our clean room and optional in our plasma cleaning device as well according to the individual customer requirements and packed sterile.

We manufacture components according to the specifications of ASML Grade 2 and carry out the corresponding cleaning according to the established guidelines.

Our manufacturing processes are strictly regulated according to the internationally recognized standards DIN ISO 9001 and DIN ISO 13485 . Compliance with these standards is a top priority for us to ensure that our products meet the highest quality standards and meet the requirements of our customers.

scan for more information

PECM SINKING

CHRISTIAN STUMPF

PRINCIPLE

The PECM-technology is used in industrial manufacturing, especially for high-precision machining processes for electrically conductive materials such as metals. The PECM process is based on electrochemical processes in which an electrolyte and electric current are used to remove material precisely. Unlike conventional mechanical machining methods, where tools physically remove material, PECM uses chemical reactions to dissolve material at the atomic level.

ADVANTAGES

A key advantage of PECM is its ability to process even complex shapes and fine details with high precision without causing mechanical stress or deformation. This makes the technology particularly suitable for the production of components with tight tolerances and complex geometries, as they are needed, for example, in the aerospace, medical and automotive industries. Furthermore, PECM enables the processing of materials that are traditionally difficult to process, such as super alloyed metals or heat-resistant alloys.

PRODUCTION CONSTRAINTS AND LIMITS

- **Material selection:** only electrical conductor's materials
- **Material thickness** may affect efficiency and accuracy
- **limited in length depth ratio**
- **Electrode geometry** poses additional challenges for complex shapes

KEY VALUES

- Precision
- Surface quality
- Material saving
- Material diversity
- Complexity of geometry

DISADVANTAGES

A disadvantage – apart from the cost – is the limited scope of application of PECM compared to other manufacturing technologies. Although PECM is very effective for certain applications, such as the manufacture of complex, high-precision components, it may be less suitable for other applications

APPLICATION AREA'S

- **Medical devices and implants:**
  Precision components for implants, surgical instruments and medical devices with high precision and surface quality
- **Electronics industry:**
  PCBs, microcomponents and other electronic components with high resolution and complex geometries
- **Aerospace industry:**
  Precision components with high precision and fineness
- **Tool and mould making:**
  Mold inserts and dies with complex geometries and fine surfaces
- **Automotive industry:**
  Precision components for engines, transmissions and chassis with tight tolerances and high surface finish

www.KSCconference.nl