

Hirtenberger. Ingenuity. Engineered.



**hirtenberger**  
Engineered Surfaces



# SURFACE TECHNOLOGY

SURFACE TREATMENT AND  
INNOVATIVE COATINGS

# ENABLING FUTURE TECHNOLOGY WITH KNOWLEDGE-BASED SURFACE MODIFICATION

Hirtenberger Engineered Surfaces is an E2E process provider and technical partner for innovative functional metallic surfaces. The surface of a component is typically of critical importance for its industrial application. Deploying knowledge-based development instead of trial and error, we provide unique surfaces that meet challenging demands. Fast and reliable application of new processes to customer production facilities is ensured by our comprehensive solution approach.

## ABOUT US

### FUNCTIONAL SURFACE TREATMENT AND INNOVATIVE COATINGS

As an integrated innovation and process partner, we provide advanced surfaces for the world's leading companies in the areas of energy, machinery, smart sensor systems, additive manufacturing, medical technology and light metal finishing. We use resources carefully and are constantly deepening our core competences, to:

- Strengthen our position as the European technology leader in pulse plating and related technologies
- Become the worldwide No. 1 producer of high quality nanowires for the next generation of sensors, medical devices and high-end electronics
- Create new sensor systems as essential components of automatization and autonomous traffic concepts



# PRODUCTS

Our products are grouped into four business fields - multifunctional pulse plating-based coatings for the highest protection of various metallic substrates, high-quality nanowires, processes and finishing modules for AM metal parts, and part-integrated sensor surfaces.

Our portfolio is supplemented by extensive options for process control, layer characterization and failure analysis. With Austria's largest galvanic laboratory, we provide comprehensive services for surface engineering and the industrial implementation of new galvanic process solutions.



## PART-INTEGRATED SENSOR SURFACES

*Durable and reliable sensors integrated into the active component.*



## PROTECTIVE COATINGS

*Multifunctional coatings based on pulse plating for the highest protection of various substrates.*



## NANOWIRES

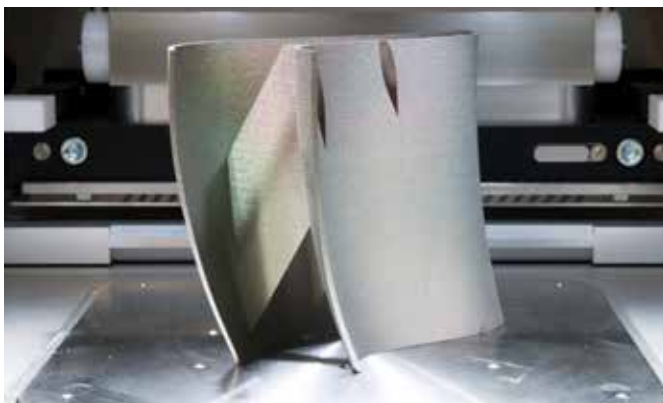
*International expertise center for high quality nanowires.*



## HIRTISATION SURFACE TREATMENT OF 3D-PRINTED METAL PARTS

Our newly developed Hirtisation technology is a powerful tool for treating 3D-printed parts. With it, sintered-on particles and support structures are removed and the surfaces smoothed.

Hirtisation is suitable for all metals and alloys commonly used in 3D printing. A fully automatic finishing module for Hirtisated 3D-printed metal parts makes the process highly efficient.





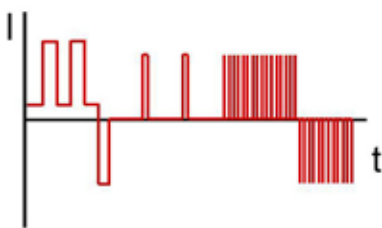


# COMPETENCES

We are an internationally recognized competence leader for nanowires and pulse plating. Our capabilities are further enhanced by collaboration with the leading universities in the field of electrochemical surface technology.

## PULSE PLATING

*High-tech surface finishing by pulsed current deposition for high-tech applications.*



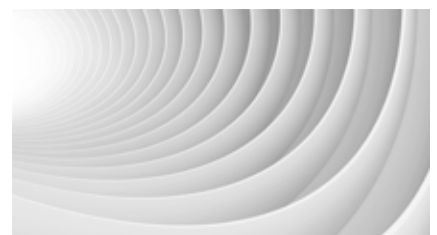
## DISPERSION COATINGS

*Adding functionality to a coating via incorporation of particles.*



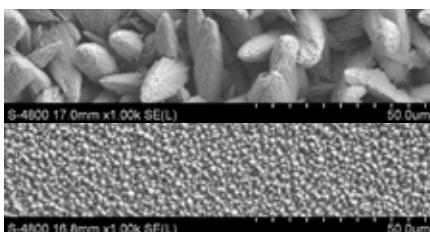
## PLASMA ELECTROLYTIC OXIDATION

*Electrochemical in-situ generation of ceramic coatings on passivating metals (Al, Ti, Mg,...).*



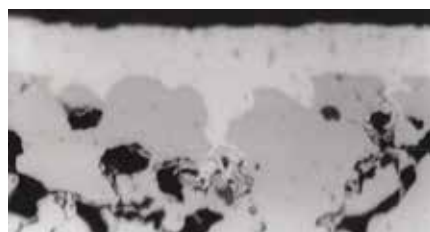
## MICROSTRUCTURED SURFACES

*Targeted adjustment of surface roughness over a wide range.*



## (ELECTRO-)CHEMICAL SURFACE PRE-TREATMENT

*Preparation of metal substrates for subsequent coating.*



## PULSED ANODIC PROCESSES

*Hard, corrosion-resistant, durable anodic coatings and powerful electropolishing processes.*



# GALVALYTICS

## MORE THAN JUST ANALYSIS – ANSWERS

Hirtenberger Engineered Surfaces operates Austria's largest galvanics laboratory, specializing in chemical process control, damage analysis of coated surfaces, and surface characterization. We offer production technology support, starting with preventative corrosion investigation and going all the way to assistance with acute production difficulties.

The determination of electrochemical material and electrolyte properties provides the basis for good material decisions and the avoidance of corrosion-induced failure in use. Our portfolio covers all engineering services, from product idea, to concepting and prototyping, to industrial-scale production processes.



### PROCESS CONTROL

*External process control of industrial galvanic lines.*



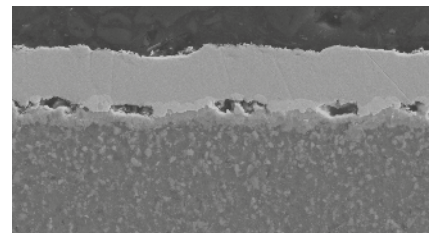
### SURFACE ENGINEERING

*Coating line design, quality management, upscaling and implementation of galvanic processes.*



### FAILURE ANALYSIS AND TROUBLE SHOOTING

*Immediate help with production problems and root cause analysis for malfunctioning galvanic processes.*



### SURFACE AND COATING CHARACTERIZATION

*Metallographic coating analysis, cross-section characterization and layer composition.*



### ELECTROLYTE ANALYSIS

*Definition of analysis routines, galvanic bath analysis.*



### CORROSION TESTING

*Part and coating testing to all applicable standards and regulations.*



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