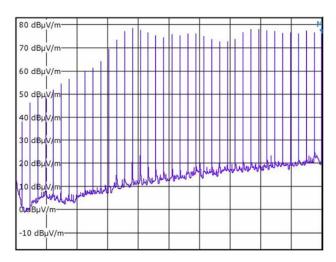


EMI SHIELDING HIGH SHIELDING PERFORMANCE

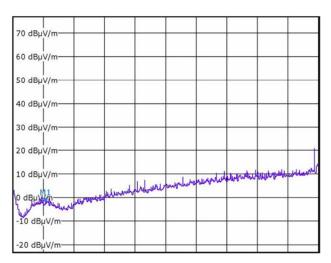
Electromagnetic interference (EMI) shielding is used for blocking strong electromagnetic fields that would otherwise interfere with sensitive devices and signals. This interference may degrade the devices or stop them from working entirely.

- Shielding of electromagnetic fields
- Customisable coatings
- Conductive coatings
- High-volume production
- Ideal for electronic enclosures and assemblies, which require high-level reliable EMI shielding performance
- · Optimised for specific requirements
- · Copper, silver, aluminium, and alloys





The frequency of electromagnetic interference in a plain plastic box.



The frequency of electromagnetic interference in a plastic box coated by Polyteknik AS with copper and silver.



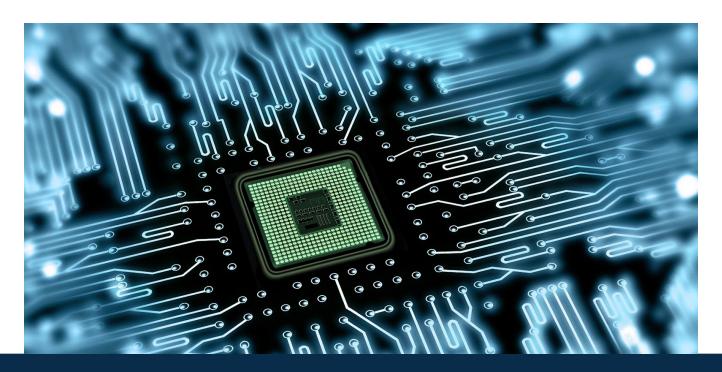
ELECTRICAL AND ELECTRONIC FUNCTIONAL THIN FILM COATINGS SUPERIOR THIN FILM SOLUTIONS

With a thin film metallised coating a consistent and reliable connection can be obtained.

- Magnetron sputtering of noble metals and alloys
- Extensive expertise with thin film solutions for electronics
- Approved supplier to medico, mechatronic, defense, and aerospace industry

Coatings can be applied on materials like:

- Plastic
- Metals
- Silicon wafers
- Glass
- Ceramics
- Film substrates



ELECTRICAL CONTACT LAYER

- Electrical conductive coating for electrical connections
- · Adhesion and intermediate barrier layers
- · Coating materials, e.g. Al, Ag, Cu, Ni, ITO, and Au

SUPERCONDUCTIVE COATINGS

· Coating materials, e.g. Al and Nb



DIELECTRIC LAYER

· Insulating and corrosion coatings, e.g. oxides and nitrides

MAGNETIC LAYER

· Coating materials, e.g. NiFe



ELECTRODE FOR PIEZO CERAMICS

- Coating materials, e.g. Ag, Au, Ni, and Ti
- Metallised electrodes with consistent and reliable connections
- Coating of typical electrode patterns, e.g. solid, wraparound, side tab



REFLECTIVE COATINGS ADVANCED CUSTOMISED COATINGS

Reflective coatings are used e.g. to minimise losses while reflecting different light sources or to facilitate radiation sensitivity. These types of coatings are used in many industries, varying from sensors to satellites.

We provide highly reflective coatings with aluminium, gold, silver, or other less common materials like platin, palladium, and rhodium.

- Optimised for full wavelength range
- Protective top layer, which ensures outstanding ageing properties
- · Coating on various substrate materials
- Optical properties are characterised by in-house FTIR spectrometry
- Experience with various substrate materials



HIGHLY SPECIALISED MIRROR COATINGS

- Dimensions up to 200x200 mm
- · Made in cleanroom facilities
- Extremely high reflection (>98%) across the visible and infrared spectrum
- Protective ceramic top coating prevents ageing and oxidation



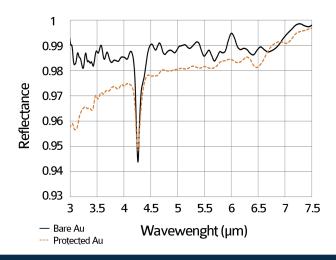
REFLECTORS

- High reflection (+85%) across the visible spectrum
- Continuous operation at 200°C (392°F) reflector temperature
- Capability to withstand environmental impact from theatrical fog (artificial smoke)
- Very good adhesion can be obtained with metallic reflector substrates



SENSORS

- 94% reflectivity at wavelengths above 1000 nm with aluminium
- 98% reflectivity at wavelengths above 800 nm with gold or silver
- Gold coatings for extremely high reflectivity in the infrared spectrum



ANTENNA, WAVEGUIDE, AND ABSORBER COATINGS INNOVATIVE THIN FILM SOLUTIONS

ANTENNA AND WAVEGUIDE COATING

Metallised components for advanced antennas, radars, and waveguides.

- ESD coatings
- · RF components on different substrates
- Copper coatings
- Protective top layer coatings
- Controlled layer thickness



ABSORBER COATINGS

Custom-made absorber coatings for dedicated wavelength ranges.

- 98% absorption within the visible wavelength range
- · Low emissivity coating



The picture illustrates the visual difference between two different absorber coatings. The outer plate is an αC coating with R~13% and the plate in the middle is an absorber coating with R~0.2% coated by Polyteknik AS.



INTERNAL COATING OF TUBES SOLUTIONS FOR SCIENCE FACILITIES

TUBE COATING

Internal thin film coating of both metal and ceramic tubes.

- Dimensions up to 3 m in length
- Wide range of materials, e.g. oxide and nitride thin films

APPLICATIONS

- Ti coating of kicker chambers
- Low SEY coating
- · Ti coating of ceramic chambers
- · Copper coating of RF waveguide tubes



CAPABILITY AND SPECIFICATIONS OUALITY AND FLEXIBILITY

SYSTEMS IN COATING SERVICE

- Daily subcontract coating service
- More than 10 different PVD systems with multiple process parameters
- From low scale to high volume production
- Proof-of-concept

CLEANROOM

Our class 1000 cleanroom facility consists of 105 sqm production area and 32 sqm service area.

- Unique advantages for thin film production
- Top-level qualification and test of our PVD thin film deposition systems
- The cleanroom enables us to comply with the highest industrial standards





ROLL TO ROLL

With roll to roll, we offer coating solutions for customers in the flexible electronics segment.

- Width up to 300 mm
- Polymer and metal foils
- Cellulose-based film

ECO-FRIENDLY MANUFACTURING

- No chemistry
- Less material usage

QUALITY AND CHARACTERISATION LAB

IN-HOUSE ANALYSIS TOOLS

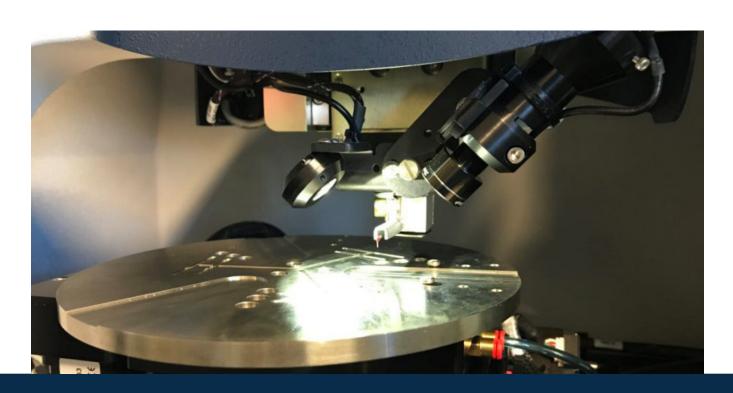
The quality and characterisation lab is equipped with a series of tools for analysis and characterisation of the deposited coatings.

- Profilometry surface stress/roughness
- · Thickness stress/roughness
- XRF for non-destructive test for thickness and composition
- · Optical properties UV-IR reflection/transmission by FTIR
- Resistivity and conductivity with 4-point probe station

ADVANCED CHARACTERISATION

If more advanced characterisation of the coated product is of interest we have access to:

- Regular scanning electron microscopes (SEM)
- SEM equipped with focused ion beam (FIB) column and EDX equipment for vertical analysis of interfaces, thickness', and local material composition
- Ellipsometer for thickness and refractive index characterisation
- SIMS and XPS for depth profiling and surface chemistry analysis
- XRD for characterisation of crystallinity





Polyteknik AS is a dedicated coating service provider with extensive knowledge of coating and substrate materials. We can handle your request from early development phase, and transition into full-scale production with quality control measures. We have multiple PVD systems in order to handle different sizes and geometry of samples.

Since the company's foundation, Polyteknik AS has been working together with science facilities and tech firms, and the company has developed a clear vision of how to succeed with these projects. This involves tight project management, which focuses on communication with the customer. With an experienced team, Polyteknik AS is the ideal partner.



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