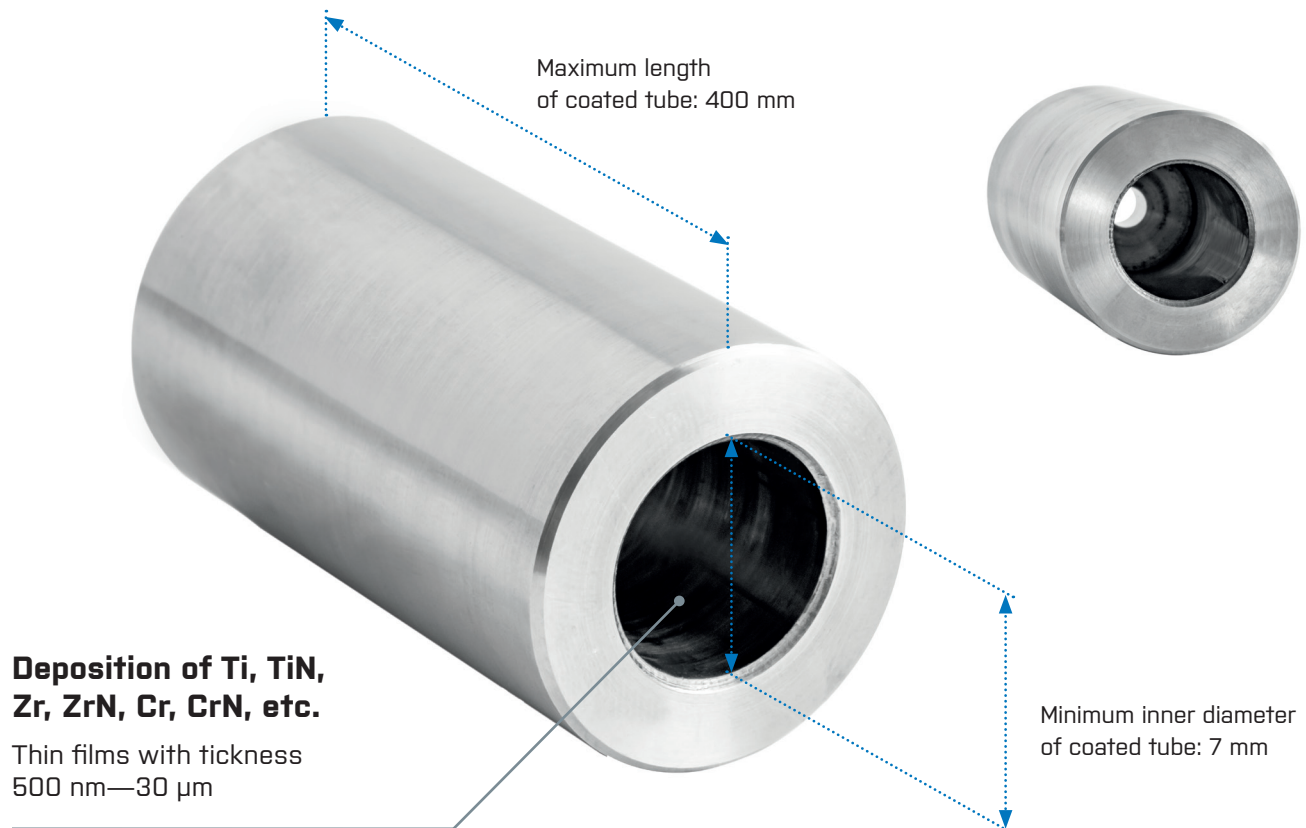


PLASMA SYSTEM FOR INNER SURFACE COATING

THE TECHNOLOGY THAT COULD REPLACE GALVANIZATION



FEATURES

Sputtering or reactive sputtering using a hollow cathode in low temperature plasma with defined ion energy

High deposition rate

No need of external magnetic field

BENEFITS

Coating inner surfaces of hollow structures down to an I.D. of 7 mm

More environmentally friendly and cost effective than galvanization

High hardness, purity and surface smoothness of deposited films

Energy efficient process compared to galvanization

Internal surfaces of ferromagnetic tubes, ceramic tubes, etc., can be coated

HOW DOES IT WORK?

A hollow cathode with pulsed bipolar discharge is used to sputter coatings on the inner walls of an object. The coating material is determined by the nozzle and is (reactively) sputtered to create the deposited layer. This system includes the option of ion scrubbing the surface before deposition and the ability to control ion bombardment of the coated surface during the deposition process.

SPECIFICATION

Deposition of Ti, TiN, Zr, ZrN, Cr, CrN, etc. thin films with wide range of thickness 500 nm–30 micron, minimum inner diameter of coated tube 7 mm

Maximum length of coated tube: 400 mm

Working gasses: Ar, N₂

Maximum applied power to the discharge: 150 W
maximum set ion energy

Bombardment of the substrate surface: 200 eV

WE OFFER

- ☒ Development of this technology to be suitable for industrial use
- ☒ Small series customized coating
- ☒ Technology licensing for those interested in their own systems

APPLICATIONS

There are a wide range of applications, some examples include:

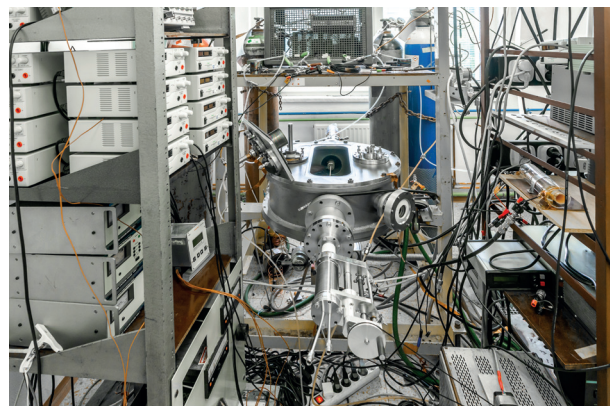
- ☒ Automotive industry
- ☒ Coating industry
- ☒ Semiconductors industry
- ☒ Mechanical engineering industry

CONTACT

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FZU Institute of Physics
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ABOUT US

Institute of Physics of the Czech Academy of Sciences is a public research institute, oriented on the fundamental and applied research in physics. It is the largest institute of the Czech Academy of Sciences with more than 1200 employees.

The present research programme of the Institute of Physics includes five branches of physics: particle physics, condensed matter physics, solid state physics, optics and plasma physics.


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