

INOCON

Technology Overview

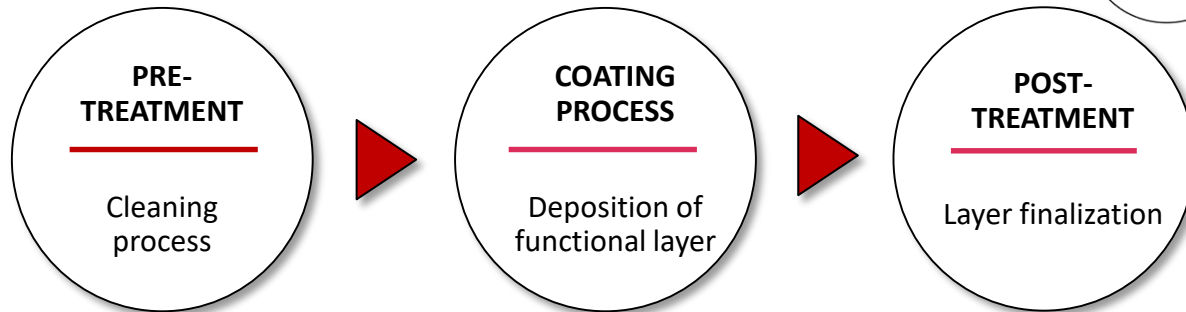
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1. Powder based coatings (μm -scale) \rightarrow Zn, Cu, TiO₂, Al₂O₃,...
2. Silicon based coatings (nm-scale) \rightarrow HMDSO

Primary applications

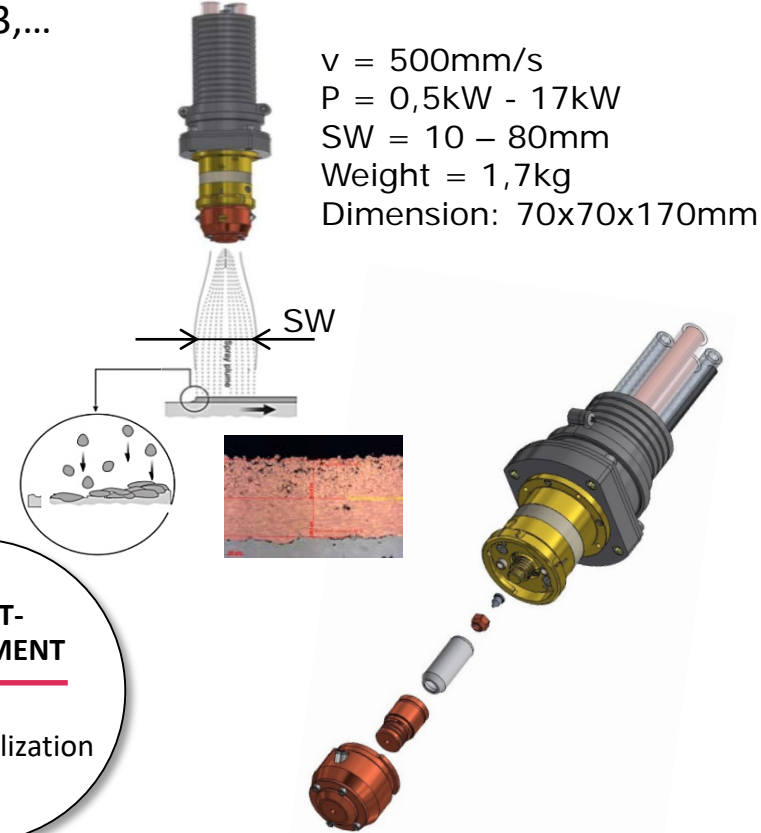
- Conductive layers
- Thermal / wear resistant layers
- Biocidal layers
- Interlayers (joining)



Atmospheric Pressure Plasma
Isopropanol, ultrasonic cleaning,...

Atmospheric Plasma Spraying
(powder, Precursor)

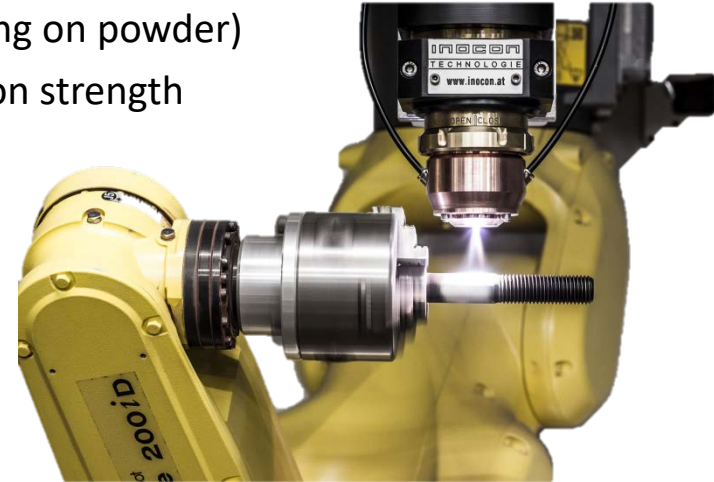
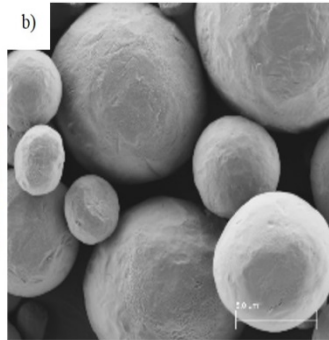
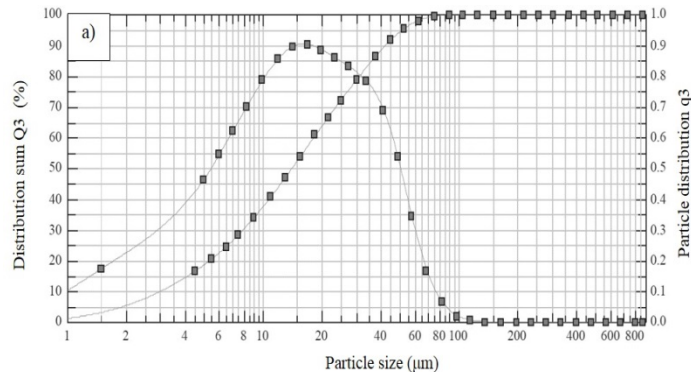
Post oxidation,
Multilayers, Inhibitors,...



$v = 500\text{mm/s}$
 $P = 0,5\text{kW} - 17\text{kW}$
 $SW = 10 - 80\text{mm}$
Weight = 1,7kg
Dimension: 70x70x170mm

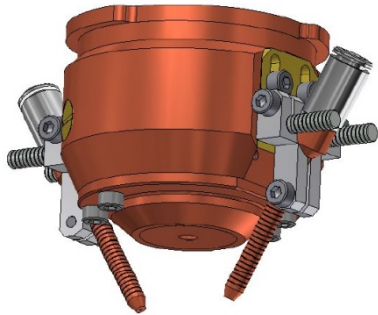
Zn, Cu, TiO₂, Al₂O₃,... [$\sim\mu\text{m}$]

- Applying functional layers on metal-, sensible-, ABS-,... substrates (parameters known)
- Powder properties:
 - Size: from 10 μm to 50 μm with linear powder feeder
 - Spherical shaped \rightarrow handling and transport
- Layer properties:
 - From 15 μm up to several 100 μm thickness (depending on powder)
 - Quick tests: Tape testing, cross cut testing \rightarrow adhesion strength

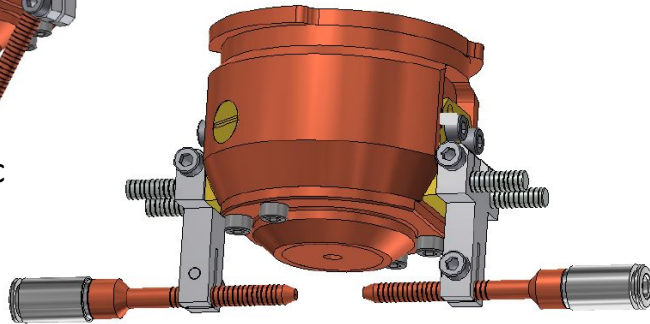


Hexamethyldisiloxane (HMDSO) [\sim nm]

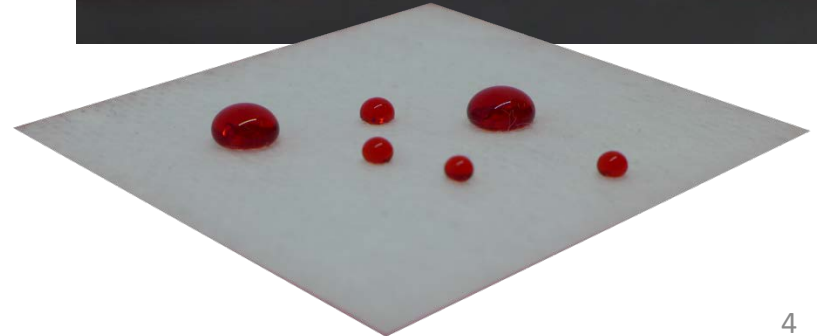
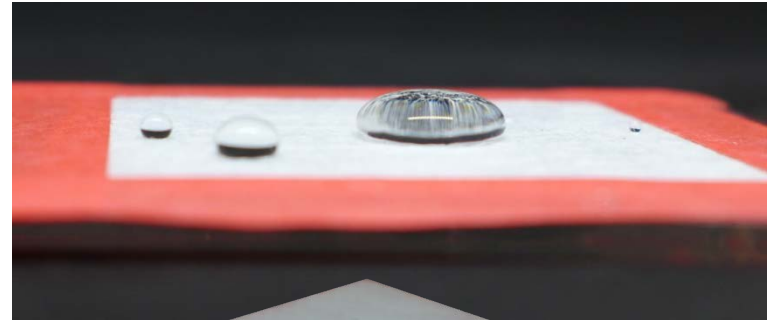
- Applying nanolayers on metal-, sensible-, ABS-,... substrates (parameters known)
- Hydrophilic vs. hydrophobic properties
- Post oxidation (POX) \rightarrow increase of wear stability
- Multilayers: e.g. Zn inhibitors + hydrophobic toplayer = biocidal coating

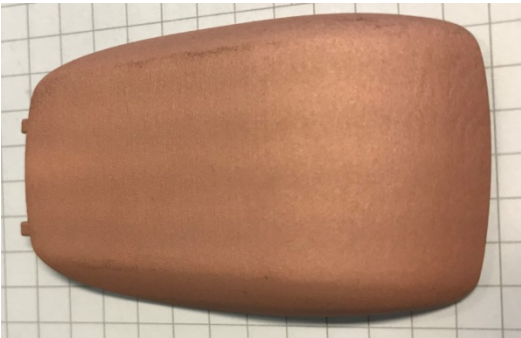
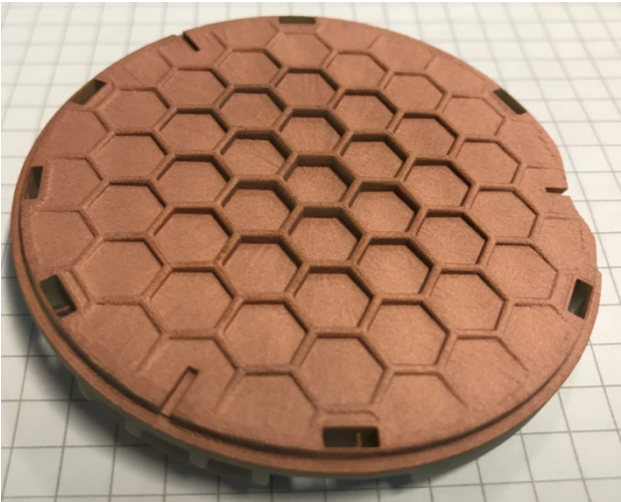


hydrophobic



hydrophilic





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Any further
questions?

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