aalberts surface technologies

Vapour Deposition

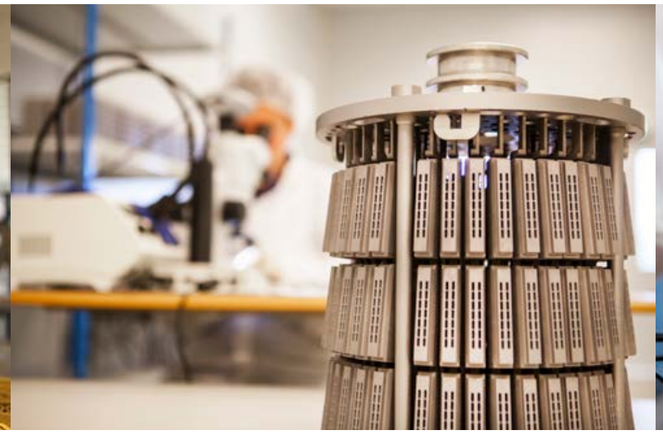
CVD / PVD

Vapour Deposition

Vapour Deposition is the English term for surface treatment through vapour. This vapour may be produced by Chemical reactions (CVD) or physical reactions (PVD). Chemical reactions occur at high temperatures (from 800 °C). Physical reactions occur from a plasma, which means that exactly through these reactions at very low temperatures (starting at room temperature), layers can be added. PVD can also be applied to all solid materials that you can think of, metal, ceramics, glass as well as plastics. These techniques originate combinations with unique properties.

Possible areas of application

- Aviation and Aerospace (Aalberts Surface Technologies Eindhoven B.V. is AS9100 and NADCAP certified)
- Automotive Industry
- Medical Industry
- Semiconductor Industry
- Graphical Industry
- Mould Industry
- General Machine Construction
- Ultra High Vacuum Technology



Physical Vapour Deposition (PVD)

The low temperature does not affect the materials to be coated in their dimensions. Typical thicknesses range from a couple of nanometers to 5µm. The possibilities for applying coatings are endless and depend on the properties you want to add to the base material. Metallic coatings can be applied that can, for example, increase the electrical conductivity, improve the corrosion properties or be used for (optical) reflection. Ceramic coatings can improve wear resistance or add optical properties to materials. Furthermore, these layers are perfectly combinable with galvanic bases originating combinations that excel in wear resistance combined with corrosion properties. Because of the low process temperature it also is possible to coat plastics. A PVD coating can be applied partially.

Chemical Vapour Deposition (CVD)

The unique properties of the CVD process of Aalberts Surface Technologies Eindhoven B.V. consist in this process with a very high penetration rate, so that everywhere on a provided surface a layer is created (even in the hair cracks). Also on undercuts and even on more complex geometrical shapes such as metallic foams and the like. The CVD process is generally used to add an improved wear resistance, corrosion resistance or increased friction properties to a component. CVD coatings can also be used for application at a high temperature or for anti-adhesive properties. All materials that can withstand the applied process temperature can be used. Think here e.g. of different kinds of steel, glass, and even graphite. Typical layer thicknesses of a CVD coating are 1-12µm. It is not possible to apply coatings partially.

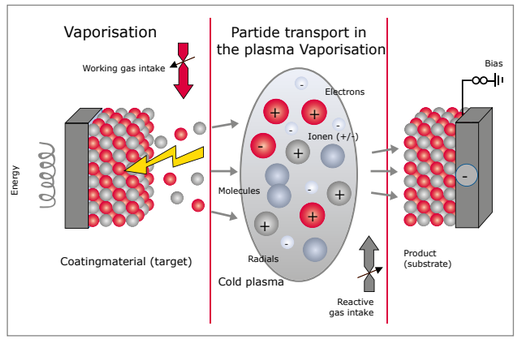
Aalberts Surface Technologies Eindhoven B.V.

Aalberts Surface Technologies Eindhoven B.V. is specialist in the field of the application of customer-specific coatings on components and has many years of experience in this field of expertise. It supplies demanding industries such as Semicon and the aviation and aerospace industries. This makes Aalberts Surface Technologies Eindhoven B.V a competent partner who may offer extensive advice on coating and application. Aalberts Surface Technologies Eindhoven B.V is AS9100 and NADCAP certified.

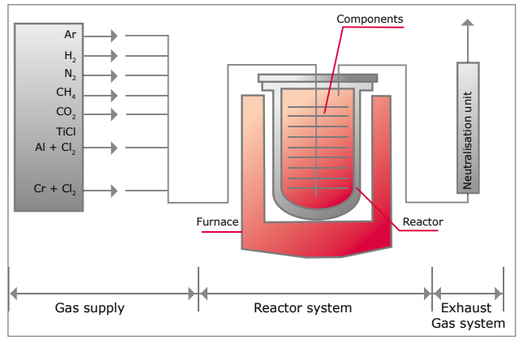
Benefits

- Very high surface hardness up to 3500 HV
- Good size and shape accuracy
- Good corrosion properties
- Suitable for vacuum use
- Conductivity application on non-conductive materials
- High wear resistance
- Partial coating possible
- Improved optical properties
- Adjustment to optimum friction properties
- Optiumisation of adhesive properties
- Electrical or heat conductive

Schematic representation of the processes



Schematic representation PVD-process



Schematic representation CVD-process

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