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**Improving adhesion of coatings, further processing coated components**

Plasma processes from Plasmatreat GmbH increase adhesion in efficient, environmentally friendly processes

**Painted surfaces often be challenging for the industry. If a coating is equipped with supplementary properties through additives, e.g. for protection against environmental influences, this can impair its adhesion to the surface to be coated. Further processing of painted components, e.g. bonding, is also made more difficult. At these neuralgic points, Plasmatreat GmbH, leading developer and manufacturer of atmospheric plasma technologies and systems, offers efficient and environmentally friendly solutions.**

Plasmatreat has developed various solutions for surface treatment with plasma systems and equipment for atmospheric plasma processes (Openair-Plasma). When plasma with its high energy level comes into contact with materials, the surface properties change, e.g. from hydrophobic to hydrophilic. Plasma pretreatment is the key technology for ultra-fine cleaning, surface activation and plasma coating of almost all materials. Plasma is applied to the substrate with pinpoint accuracy using simple "open-air" compressed air and electricity through a special nozzle.

**Improving adhesion between coating and substrate**

In order for the coatings used in industrial processes to perform additional tasks such as resistance to moisture and contamination or solar radiation, special additives are added to them. However, these reduce adhesion and make environmentally harmful pretreatments of the substrate (sanding, etching, sandblasting, flame treatment, etc.) necessary. In addition, solvent-based adhesion promoters (primers) are often used. Here, pretreatment with Openair-Plasma is an efficient and environmentally friendly alternative for improving adhesion: the site-selective use of the plasma jet modifies the surface properties of the substrate precisely at the points where the paint is to adhere, instead of pretreating the entire surface. Plasma treatment takes place with electricity and compressed air, is even CO2-neutral when green energy is used, and also eliminates the need for environmentally harmful primers. Innovative control and monitoring systems from Plasmatreat ensure good process reproducibility. In addition, the plasma systems can be easily integrated into existing lines.

**Durable bonding of painted surfaces**

Plasma technology also provides effective support for the bonding of painted components, which has become an increasingly important process in many industrial sectors and requires absolute reliability. Here, too, fine cleaning (e.g. for metal and glass) and activation (e.g. for plastics) with Openair-Plasma results in an increase in surface energy that promotes strong bonding. Reliable bonding of painted surfaces can be achieved with the addition of Plasmatreat's ultra-thin PlasmaPlus nanocoating with PT-Bond, which acts as a kind of environmentally friendly primer.

"Our users include industries such as automotive, aerospace, as well as battery, electronics, watch, toy manufacturers and more. We are happy to provide advice on unresolved issues relating to the further processing of painted surfaces, especially when it comes to bonding," explains Klaus Kresser, Managing Director of Plasmatreat Switzerland AG and Global Market Segment Manager Bonding Applications at Plasmatreat GmbH.

For more information, please visit: [www.plasmatreat.com](http://www.plasmatreat.com)

***Info box:***

**How plasma technology optimizes industrial processes**

When plasma with its high energy level comes into contact with materials, it changes the surface properties, e.g. from hydrophobic to hydrophilic. Fine cleaning of metal and glass, for example, with Openair-Plasma from Plasmatreat gently and safely removes dust, grease, release agents and additives from surfaces. In the case of plastics, in addition to cleaning, an increase in surface energy is brought about by so-called activation through the introduction of hydroxyl groups into the plastic surface. In both cases, an optimized wettability of the substrate surface can be achieved and the adhesion ability significantly increased. In this way, long-term stable adhesion of adhesives and coatings is achieved. With Plasmatreat's PlasmaPlus technology, the application (deposition) of nanocoatings can additionally produce specifically functionalized surfaces with defined properties, e.g. an adhesion promoter layer.

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**About Plasmatreat**

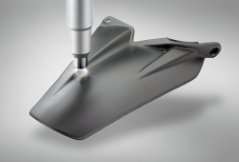
Plasmatreat is an international leader in the development and manufacture of atmospheric plasma systems for the pretreatment of substrate surfaces. Whether plastic, metal, glass or paper - the industrial use of plasma technology modifies the properties of the surface in favor of the process requirements.

Openair-Plasma® technology is used in automated and continuous manufacturing processes in almost every industrial sector. Examples include the automotive, electronics, transportation, packaging, consumer goods and textile industry, but the technology, cost and environmental advantages of the plasma technology are used in medical technology and in the renewable energy sector as well.

The Plasmatreat Group has technology centers in Germany, USA, Canada, China, and Japan. With its worldwide sales and service network, the company is represented in more than 30 countries by subsidiaries and sales partners.

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**Images**



Pretreatment with Openair-Plasma is an efficient and environmentally friendly alternative for improving adhesion. The site-selective use of the plasma jet modifies the surface properties of the substrate exactly at the points where the paint is to adhere. (Copyright: Plasmatreat)