Steinhagen, January 12th, 2023

**From temperature-sensitive to full-surface: Plasmatreat presents new plasma nozzles**

**The optimum plasma nozzle for every application: Whether treatment of particularly temperature-sensitive materials, wide-area pretreatment of surfaces or homogeneous surface coating. Plasmatreat GmbH, based in Steinhagen, Germany, the world market leader for atmospheric plasma technology, is launching no less than three new plasma nozzles that expand its large product portfolio to include these special applications. The nozzles were presented to the public for the first time at the K 2022 trade show last October.**

Plasma technology can be used to modify the surface properties of a wide variety of materials in order to optimally prepare materials and material combinations for subsequent processes. Plasmatreat has developed various processes for this purpose: In the fine cleaning of metals or glass, for example, with Openair-Plasma, surfaces are gently and safely freed from dust, grease, release agents and additives. This increases the surface energy and optimizes the wettability of the substrate surface. During activation, the surface of the substrate, e.g. the non-polar plastic, reacts with molecules excited by plasma. In this process, oxygen groups are introduced into the top layer of the plastic, significantly improving adhesion. This makes bonding, painting, printing or gasketing easier - or, in some cases, possible in the first place. For the environmentally friendly pretreatment, plasma is applied to the substrate with pinpoint accuracy using simple compressed air through a special nozzle. One of Plasmatreat's core competencies here is the application-specific coordination of distance, treatment width and traversing speed - and the selection of the right nozzles for the process in question. Another process, PlasmaPlus technology, uses nanocoatings to create functionalized surfaces, such as an adhesion promoter layer or an anti-corrosion coating. Here, a precursor is added to the plasma jet and a nanolayer with the desired properties is then deposited.

**RD2005PAD - unique rotary nozzle for coating of planar materials**

With the RD2005PAD, a rotary nozzle for coating with PlasmaPlus technology is now available for the first time. This process uses nanocoatings to create specifically functionalized surfaces that are tailor-made to meet customer requirements with regard to planar materials. The spectrum ranges from superhydrophobic, adhesion-promoting to superhydrophilic coatings. With the RD2005PAD, the first rotary nozzle with precursor feed, Plasmatreat is once again the pioneer. Until now, only static nozzles were used worldwide for this coating application, which had its focus in the selective modification of surfaces. The new nozzle, which rotates around a rotation axis, is now suitable for coating flat materials and now also offers the advantage of a particularly homogeneous treatment with high intensity in the PlasmaPlus process. This produces a reliable functional layer that enables optimum bonding, printing or painting of the coated surface.

**PFW10LT Openair-Plasma nozzle - for temperature-sensitive material**

With the new PFW10LT, Plasmatreat has developed a low-temperature nozzle that also activates thermally sensitive materials and surfaces with high intensity. It is designed for use at low temperatures below 60 °C and performs a particularly gentle pretreatment of plastics prior to subsequent processes, e.g. bonding. The plasma nozzle is particularly suitable for small treatment areas and contours such as boreholes or groove areas, for low-lying applications in 3D components or for medical components and products. The PFW10LT plasma nozzle is used for a treatment width of approx. 4 mm.

**PFW100 Openair-Plasma nozzle - for flat surfaces**

In order to treat flat components or surfaces at high process speeds and at the same time over a large width, the PFW100 is now available as a suitable plasma nozzle. It is particularly suitable for the pretreatment of heat-sensitive materials such as thin plastic films or textile products such as synthetic nonwovens. It can also be used for the surface cleaning of glass or metal. The PFW100 performs uniform pretreatment over a width of 100 mm per plasma nozzle at relative speeds of up to 200 m/min. The treatment width can be flexibly varied via the modular arrangement of several nozzles.

**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. Subsequent processes include bonding, painting, printing or gasketing.

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.

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

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***Info box:***

**How Openair-Plasma and PlasmaPlus optimize industrial processes.**

When plasma with its high energy level comes into contact with materials, it changes the surface properties, for example from hydrophobic to hydrophilic. Plasma technology requires only compressed air and electricity for operation. Fine cleaning with Openair-Plasma gently and reliably removes dust, release agents, additives, plasticizers and hydrocarbons from surfaces. Especially with non-polar plastics, plasma treatment achieves surface activation. It supports the increase of surface energy by introducing hydroxyl groups and thus improves adhesion in subsequent processes such as bonding, printing, painting and sealing. Plasmatreat's PlasmaPlus technology can also be used to create targeted functionalized surfaces with defined properties by applying (depositing) nanocoatings, e.g. as an additional adhesion promoter layer.

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**Images:**



The RD2005PAD is a rotating nozzle for coating of planar materials.

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With the new PFW10LT, Plasmatreat has developed a low-temperature nozzle that also activates thermally sensitive materials and surfaces with high intensity (Copyright: Plasmatreat)



In order to treat flat components or surfaces at high process speeds and at the same time over a large width, the PFW100 is now available as a suitable plasma nozzle.

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