Steinhagen, Germany, September 10th, 2025

**Unique Performance and Long-term Reliability Thanks to Plasma Technology**

Plasmatreat innovations at K 2025: Shaping the next generation of plastic products

**Manufacturers in the plastics industry are under increasing pressure to reduce costs and conserve resources. However, low-cost or recycled plastics present unique challenges due to their surface structure and composition. Without proper pretreatment, the quality and durability of end products can be significantly compromised. At the international plastics trade fair K 2025 in Düsseldorf, Plasmatreat GmbH will demonstrate how to overcome these hurdles. With the motto "Enabling Surfaces for Unmatched Performance and Durability," Plasmatreat will present practical solutions using atmospheric pressure plasma in Hall 11, Booth I65. These solutions range from innovative processes, such as in-mold coating with polyurethane (PUR) systems in the automotive industry, to new material combinations for sports applications.**

Due to their surface properties, inexpensive and recycled plastics are particularly challenging to process industrially. These surfaces are often more difficult to wet, meaning adhesives, sealants, inks, paints, and coatings do not reliably adhere to them. Under these conditions, meeting high demands such as structural bonding, durability, and efficiency is difficult. Fortunately, Plasmatreat GmbH has the solution. Based in Steinhagen, North Rhine-Westphalia, the company has been developing systems and equipment for the industrial pretreatment of surfaces using atmospheric pressure plasma for 30 years. Thanks to Openair-Plasma technology, industrial processes can be made more reliable, efficient, and environmentally friendly without the use of chemicals or solvents. At K 2025, Plasmatreat will present exciting, practical, and sustainable application examples to trade visitors, who will be able to experience plasma technology up close.

**PUR In-Mold Coating: Plasma improves adhesion**

The automotive industry is interested in using standard plastics, such as polypropylene (PP), more frequently instead of engineering plastics, such as PC+ABS. However, the challenge lies in their surface properties. PP is non-polar, meaning the reactive PUR system does not adhere to it. The company is clearly demonstrating how Openair-Plasma can be used after the injection molding of the PP component and before the innovative PUR in-mold coating process. With the aid of a new, extra-wide, specially developed plasma nozzle, the entire surface of an injection-molded component (e.g., a hood) can be plasma-pretreated in a short time. In addition to physical locking due to surface roughness, the activated PP surface now forms chemical bonds with the reactive PUR coating system. This optimally prepares components for subsequent coating with PUR coating and optimizes the surface according to the required adhesion properties. Openair-Plasma is a highly efficient, large-area, and if required, selective pretreatment method because it is carried out inline, is automated, and is robot-controlled. This precisely reproducible process improves quality and replaces environmentally harmful processes, such as flaming or using solvent-based primers. Experience it live at K: Plasmatreat and its partner Neue Materialien Bayreuth have made it their mission to make this new process available to industry.

**Advancing new products and applications**

Other possible applications of Openair-Plasma that can improve industrial processes include pretreating recycled plastics to enable printing with UV inks. Plasmatreat and its partner Tampoprint GmbH will demonstrate how to achieve long-lasting, VOC-free printing on dolphins made from recycled plastics, specifically old fishing nets. Additionally, trade visitors will see how plasma activation makes previously incompatible plastic combinations (e.g., PE and PA6, TPU and PP) compatible for bonding. Various tests will also be carried out to demonstrate the effect of plasma treatment.

Plasmatreat will bring a state-of-the-art plasma system to K for EPDM or window profiles. Uniform pretreatment is carried out with high precision and exact reproducibility in an inline process during profile production, ensuring optimum adhesion properties in an efficient, environmentally friendly manner for printing, flocking, or bonding in subsequent processes.

Golf balls, Frisbees, skis, wheels, paddles, and pickleball rackets will also be featured at the Plasmatreat booth because plasma increases the efficiency and improves the performance of these sports equipment items. One notable example is the use of Openair-Plasma at Chip-Ing in Switzerland, the world's leading manufacturer of trackable golf balls, which improves performance and helps locate lost balls, reducing plastic waste in nature. Plasmatreat's plasma technology is used before painting and printing, and it is highly reproducible and capable of operating in line. Plasmatreat also impresses Chip-Ing with its customer service and operational readiness.

**Environmentally Friendly Pretreatment: Plasma makes it possible**

Plasmatreat's impressive trade fair demonstrations show how the plastics industry benefits from plasma technology. Its automatability simplifies processes, replaces various work steps, and avoids environmentally harmful processes, such as the use of chemical bonding agents (primers) or flame treatment. At the same time, plasma protects sensitive materials, such as plastics, by reducing heat input and preventing damage to components. Additionally, Openair-Plasma enables the use of a wider range of materials, including cost-effective (non-polar) plastics and previously incompatible materials, which can now be safely used and processed.

**Visit Plasmatreat at K 2025 from October 8 to 15, 2025, in Hall 11, Booth I65.**

More information: [www.plasmsatreat.com](http://www.plasmsatreat.com)

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***Info box Openair-Plasma:***

**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. Even oxide layers on metal surfaces can be reliably removed inline during the production process using plasma technology. 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. Plasmatreat's HydroPlasma® is used to remove stubborn organic and inorganic soils - an innovative cleaning method that uses only water, compressed air and electricity in an environmentally friendly manner.

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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 Fplasma 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, visit: [www.plasmatreat.com](http://www.plasmatreat.com)

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**Pictures and captions:**

A dolphin on a machine

AI-generated content may be incorrect.

A dolphin molded from recycled material is pretreated with Openair-Plasma before being printed with UV inks on the areas that will be printed later.

(Copyright: Plasmatreat GmbH)

Close-up of a machine

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This precise inline pretreatment ensures optimal adhesion of EPDM or door profiles during printing, flocking, or bonding. (Copyright: Plasmatreat GmbH)

A close-up of a device

AI-generated content may be incorrect.

Plasma treatment modifies surfaces, significantly increasing wettability and improving adhesion for adhesives, printing inks, paints, and coatings.

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