Steinhagen, May 7th, 2025

**Plasma technology in the automotive industry - the answer to today's challenges**

Current application examples for Openair-Plasma and PlasmaPlus

**In the rapidly changing automotive industry, the focus is on technologies that increase efficiency, performance and sustainability in equal measure. Plasma technology plays a key role here, setting new standards in the production processes of vehicle components and their quality assurance.**

The automotive industry is facing major challenges: Robust and detailed processes are essential to ensure consistently high quality in the manufacture of components. Particularly for components made of modern material combinations, long-term stable, resilient joints are of crucial importance. This is especially true for the use of lightweight materials, such as fiberglass-to-plastic or plastic-to-metal bonds. Plasmatreat GmbH, based in Steinhagen, North Rhine-Westphalia, is setting new standards with its innovative plasma applications.

**Plasma Technology Combines Cost-Effectiveness, Quality and Sustainability**

Openair-Plasma (atmospheric pressure plasma), developed by Plasmatreat, offers an environmentally friendly method of pretreating surfaces of various materials. Ultra-fine cleaning of metal or glass, for example, tailored to the material and application, removes contamination from surfaces and ensures the surface energy values required for further processing. Activation of plastics significantly improves the adhesion of adhesives, tapes, paints, varnishes and sealants. Plasma applications are dry, fully automated and highly reproducible due to optimal process control. They can be easily integrated inline into existing production lines and allow direct further processing. The use of environmentally harmful chemical bonding agents (primers) can be dispensed with. Overall, they improve quality, reduce complaints, extend product life, and significantly reduce costs.

**Application examples from the automotive industry**

The automotive industry in particular benefits from the advantages of plasma technology, as shown by examples from Plasmatreat's customer base.

* **Headlights**: State-of-the-art automotive lighting systems often consist of polypropylene and polycarbonate components. Openair-Plasma treatment ensures long-term adhesion and provides reliable protection against moisture penetration.
* **Dashboard and interior trim:** Plasma-treated plastic surfaces provide optimal adhesion for laminating or painting interior parts such as dashboards or door modules. This allows for precise, solvent-free processing that is both visually and functionally impressive.
* **Batteries and cell-to-cell bonding:** In battery manufacturing, the thermal conductivity of battery cells is optimized by activating films and coatings with Openair-Plasma. This contributes to greater efficiency and shorter charging times - an important advance in electromobility.

**Optimum technology for the mobility of the future**

Plasma applications have long been an integral part of the automotive industry. They promote the use of innovative materials, optimize quality, increase efficiency and support environmentally friendly processes. "Their versatility and sustainability advantages over conventional processes make them one of the preferred technologies for future mobility. At Fakuma, we will be happy to provide information on the full range of applications," explains Joachim Schüßler, Sales Manager Germany at Plasmatreat GmbH.

For more information, visit [www.plasmatreat.com](http://www.plasmatreat.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, e.g. from hydrophobic to hydrophilic. Plasma technology requires only compressed air and electricity. Ultra-fine cleaning with Openair-Plasma® gently and reliably removes dust, release agents, additives, plasticizers and hydrocarbons from surfaces. Plasma treatment activates the surface of non-polar plastics in particular. It helps to increase the surface energy by introducing hydroxyl groups, thus improving 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. With Plasmatreat's PlasmaPlus® technology, the deposition of nanocoatings can also be used to create functionalized surfaces with defined properties, e.g. as an additional bonding layer.

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

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**About Plasmatreat**

Plasmatreat is a world leader in the development and manufacture of atmospheric plasma systems for the pretreatment of surfaces.

Whether plastic, metal, glass or paper, plasma technology is used to modify the properties of the surface to suit the process requirements.

Openair-Plasma® technology is used in automated and continuous production processes in almost all industries. Examples include the automotive, electronics, transportation, packaging, consumer goods and textile industries, but the technological, cost and environmental benefits of plasma technology are also being exploited in the medical technology and renewable energy sectors.

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

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

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**Images and captions:**



Openair-Plasma treatment enables chemical- and primer-free bonding, painting, printing and sealing and is already established in many processes in the automotive industry. (Copyright: Plasmatreat GmbH)

A close-up of a robotic arm

AI-generated content may be incorrect.

Activation of an automotive dashboard before lamination. (Copyright: Plasmatreat GmbH)