Steinhagen, October 30th, 2024

**Game-Changing Solutions for Power Module and Semiconductor Production with Plasma Technology**

Plasmatreat will present its plasma systems for surface treatment to achieve 100% yield at electronica and SEMICON Europa

**Plasmatreat GmbH, a leader in plasma surface treatment technology, is excited to announce its first participation at the electronica and SEMICON Europa in hall C5 at booth 169. The trade fairs which take place from November 12th to 15th in Munich. It marks a significant milestone for the company as it showcases its cutting-edge Openair-Plasma technology, which is set to revolutionize the electronics manufacturing industry in the field of power modules and semiconductor manufacturing. Together with partner KRÜSS GmbH, specialist for contact angle measurement devices and other tools in the field of surface analysis, Plasmatreat will show various plasma systems in hall C5 at booth 169. Visitor can see, e.g. the REDOX-Tool for flux free and inline oxide reduction following by PlasmaPlus nanocoating to prevent EMC delamination in molding processes.**

Plasma technology is an advanced method that utilizes ionized gas to modify the surface properties of materials, e.g. metals, plastics or glass. With plasma manufacturers can achieve superior cleaning, activation, coating and reduction of surfaces without the need for harsh chemicals or solvents. This innovative approach not only enhances adhesion but also improves the overall performance and durability of electronic components in pre- and post-processes.

**Efficient and long-lasting power modules**

One of the key challenges in power module manufacturing is the effective removal of oxide layers on metal surfaces. Plasmatreat's Openair-Plasma technology solves this issue: inline, during the production process, a plasma system, the REDOX-Tool, is able to remove the oxide layer without the use of fluxes. Following this process, a nano-thin, environmentally friendly adhesion promoter layer is applied through PlasmaPlus coating technology. This layer plays a crucial role in preventing EMC delamination during subsequent molding processes. The result is a robust and high-performance power module with an impressive 100% yield.

The REDOX-Tool for automated oxide reduction will be showcase at electronica and SEMICON Europa as well as the PlasmaPlus plasma system for coating power modules before the molding process. Visitors can see this automated, dual-lane process with potential-free plasma treatment live in hall C5 at booth 169. Other benefits and aspects of the particular application process can be discussed with Plasmatreat's plasma experts on site.

**Plasma technology for activating and cleaning semiconductors and PCBs**

With the semiconductor plasma system, Plasmatreat is showing a standardized production cell for inline surface treatment in the semiconductor industry that can be seamlessly integrated into existing production lines. The system uses Openair-Plasma to effectively remove organic and silicon-based contaminants as well as electrostatically charged dust. It is used prior to key process steps such as wire bonding, die bonding, thermal compress bonding, underfill and PCB assembly. In addition, PlasmaPlus enables the creation of customized coatings that provide maximum protection and prevent problems such as epoxy leakage, reoxidation or corrosion.

According to Nico Coenen, Global Director Electronics Market at Plasmatreat, the pre-treatment of highly sensitive products with potential-free Openair-Plasma makes a decisive contribution to higher product quality, cost efficiency, increased process reliability and environmental friendliness. This plasma technology therefore offers significant advantages for semiconductors and printed circuit boards (PCBs) and creates optimum conditions for various manufacturing processes.

**Integrated Ayriis system in Plasma Treatment Unit**

Plasmatreat will be exhibiting together with its partner Krüss on booth 169 in hall C5. The company will be demonstrating the integration of the Krüss Ayriis portable contact angle measuring system into a PTU (Plasma Treatment Unit) - a fully automated plasma production cell. The focus will be on demonstrating how plasma surface treatments can increase the wettability of materials, thus improving the adhesion of adhesives, for example, and how the contact angle on surfaces can be measured. The integration of the Ayriis analysis tool from Krüss enables robotic, automated, in-line contact angle measurement. This advanced technology enables seamless quality assurance in the production line through fast and accurate measurements. This not only increases efficiency, but also ensures that joints and end products meet the highest quality standards.

Plasmatreat looks forward to meeting industry leaders and prospects at electronica and SEMICON Europa. Attendees are invited to visit the Plasmatreat booth 169 in hall C5 to learn how its innovative plasma solutions address today's electronics manufacturing challenges while promoting sustainability and efficiency.

More information is available at [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. 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.

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**About Plasmatreat**

Plasmatreat is an international leader in the development and manufacture of atmospheric pressure 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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**Images:**



Inline oxide reduction without the use of flux – REDOX-Tool from Plasmatreat makes it possible. (Copyright: Plasmatreat GmbH)



Dual-lane Plasma Treatment Unit for the cleaning of chips, semiconductors, printed circuit boards, etc. (Copyright: Plasmatreat GmbH)



Surface treatment with plasma and integrated and robotic contact angle measurement system Ayriis from Krüss. (Copyright: Plasmatreat GmbH)