Steinhagen, May 8th, 2023

**Durable, reliable and efficient batteries - Plasmatreat at the Battery Show Europe**

Plasmatreat’s plasma applications optimize numerous processes in battery manufacturing

**The next exhibition event is just around the corner: Plasmatreat GmbH will be live on site at The Battery Show Europe in Stuttgart, Germany. The company is the international leader in the development and manufacture of atmospheric plasma systems for the pretreatment of various substrate surfaces. From 23 to 25 May, Plasmatreat and its partner Krüss GmbH, manufacturer of systems for the analysis and measurement of surface properties, will be available in Hall 8, Stand A50 for exciting live demonstrations and discussions on the topics of e-mobility, battery cell manufacturing and plasma surface pretreatment.**

Mobility-related changes mean that the need for high-performance batteries for e-vehicles – and thus demand for Plasmatreat’s area of expertise as well – is rapidly increasing. Plasma pretreatment is the key technology for microfine cleaning, surface activation and nanocoating of practically all materials. When plasma, with its high energy level, comes into contact with materials, the surface properties of those materials change – for example, a hydrophobic surface may become hydrophilic. Excellent use can be made of this in the various steps of battery manufacturing. This can be used to great effect in the various stages of battery production, and can be achieved with Plasmatreat's systems and equipment for activating, cleaning and coating surfaces.

**Plasma treatment in various process steps of battery manufacturing**

These days, Plasmatreat’s plasma technology is used for all kinds of batteries: prismatic, cylindrical and pouch cells. The areas of application are extremely wide. For example, optimization of electrical insulation can be achieved via plasma cleaning prior to coating or the covering of individual cells with PET film. In cell-to-cell bonding, meaning adhesion of individual cells to the battery module, plasma treatment activates the cell surfaces after application of the coating or the film covering, thereby improving adhesion and thus thermal conductivity. The adhesiveness of structural bonding in a battery module, e.g. of the side walls, can be increased through plasma treatment of the components. Plasma technology is also used for cleaning battery terminals before contact (wire bonding) as well as for coating the overall housing of the battery module for active corrosion protection or treatment of power electronics prior to application of the protective coating (conformal coating).

**Clear demonstration of plasma technology for battery applications**

At the battery trade show in Stuttgart, Germany, the company will bring various equipment and systems to demonstrate Openair-Plasma surface treatment: In a special system, the Plasma Treatment Unit (PTU), equipped with a robot, the surface treatment experts will demonstrate plasma treatment for various battery types and sizes. Plasmatreat partner Krüss GmbH will also be on hand to demonstrate the effects of plasma treatment with its equipment and analysis systems. Using a Scara Janome, Plasmatreat will demonstrate the treatment of a prismatic cell prior to painting and subsequent stacking, focusing on the different handling options - whether inline system, robotic nozzle guidance or robotic component guidance. "With the wide range of different nozzles and generators and the different handling systems we use for plasma treatment, we can offer our customers exactly the solution they need for their particular process and production environment. With the Scara Janome, for example, there is now also a simple method for pretreating geometric products, such as the treatment of prismatic cells," explains Lukas Buske, Head of Plasma Applications at Plasmatreat.

**Systems and components that can be integrated well, are highly reproducible and are less harmful to the environment**

Plasmatreat’s plasma systems and system components for atmospheric plasma nozzle technology (Openair-Plasma) can be integrated into existing production lines and require only pressurized air and electricity for operation. In many cases, they represent an alternative that is less harmful to the environment. In battery manufacturing, for example, they replace solvent-containing processes in adhesion or aggressive chemical processes that are used to protect against corrosion, such as galvanization. Supplemented by the high-tech plasma control unit (PCU) and innovative add-on modules for monitoring and diagnosing all process parameters, Plasmatreat offers its customers seamless process controlling, consistently high quality and precise reproducibility of applications.

"We have gained extensive experience in battery production over the last decade and know the critical points. With our knowledge, we support our customers with the various requirements that arise in the respective process steps - contributing to better battery performance, leaner manufacturing processes and lower costs," explains Lukas Buske, in conclusion.

More information is available at: [www.plasmatreat.de](https://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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**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.

More information is available at: [www.plasmatreat.de](https://www.plasmatreat.com/)

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**Images:**



Surface activation of the black foil of a prismatic cell before cell-to-cell bonding.

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Coating of a battery housing with PlasmaPlus technology AntiCorr to prevent infiltration corrosion due to environmental influences.

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