Steinhagen, August 29th, 2024

**High-quality, high-performance fuel cells powered by**

**Openair-Plasma**

Plasmatreat presents plasma as a pretreatment method at hy-fcell 2024 in Stuttgart, Germany

**Plasmatreat GmbH, based in Steinhagen, Germany, is a leading developer and manufacturer of atmospheric pressure plasma systems. At the hy-fcell International Expo and Conference in Stuttgart on October 8-9, the company will once again demonstrate how plasma is used as a surface treatment method in the manufacture of fuel cells at booth E54 in hall 4. Trade visitors from the international hydrogen and fuel cell industry will be able to experience plasma live and see how it can be used to create more powerful and robust products.**

With the start of hy-fcell 2024, participants will gain in-depth, practical insights into the latest technological developments in the field of hydrogen and fuel cells. At the Plasmatreat booth, they will be able to experience live how surface treatment with atmospheric pressure plasma (Openair-Plasma) works on bipolar plates made of various materials such as metal or graphite. The demonstration of the plasma systems impressively shows how plasma cleans or coats the substrate surface and optimally prepares it for subsequent processes.

The use of Openair-Plasma for activation and cleaning and PlasmaPlus for coating not only improves the adhesion of sealants or adhesives between the bipolar plates, but also enables a wider range of adhesives or creates a super-hydrophilic surface.

As the fourth state of matter after solid, liquid and gas, plasma as an ionized gas changes surface properties, e.g. from hydrophobic to hydrophilic. Molecules strike the surface of bipolar plates and clean or activate them, depending on the material and the desired process parameters.

**Compact Plasma Treatment Unit for versatile applications**

At hy-fcell, Plasmatreat will present a robotic plasma treatment unit (PTU) that can be used to clean and coat both selective and large area bipolar plates. This fully automated PTU1212 requires a footprint of only 120 x 120 cm and combines all the necessary components for an effective pre-treatment process - from the generator and robot units to the Plasma Control Unit (PCU) with various quality assurance modules, as well as the plasma nozzles - one for cleaning and activation (the Openair-Plasma nozzle) and one for coating (the PlasmaPlus nozzle).

Visitors can observe how the surface is first thoroughly cleaned with the Openair-Plasma nozzle. The PlasmaPlus nozzle then applies a nano coating to the surface. This coating provides a long-lasting hydrophilic effect, which is critical for the efficiency of the bipolar plates and therefore the fuel cell. Long-term hydrophilicity is critical to the overall efficiency of the fuel cell.

**Groundbreaking solutions for optimized fuel cell production**

Lukas Buske, Managing Director at Plasmatreat and responsible for the battery market segment, emphasizes: "The various applications of plasma - activation, cleaning and coating - that we are showcasing at hy-fcell 2024 are crucial to improving the performance of fuel cells. They help manufacturers make their products more environmentally friendly and reduce their carbon footprint. With our innovative pretreatment technology Openair-Plasma and PlasmaPlus, we are setting new standards in this important segment.

Visit us at hy-fcell 2024, booth E54 in hall 4 and learn more about plasma technology in fuel cell manufacturing!

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. 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.

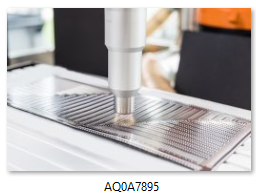
Openair-Plasma® technology is used in automated and continuous manufacturing processes in almost every industrial sector. Examples include the automotive, electronics, transportation, packaging, consumer goods and textile industry, but the technology, cost and environmental advantages of the plasma technology 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.com](http://www.plasmatreat.com)

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**Images:**



Fine cleaning of bipolar plates for durable and robust fuel cells with Openair-Plasma. (Copyright: Plasmatreat GmbH)