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Plasmatreat GmbH presents live lead frame and surface cleaning at productronica 2019

In today's world of electronics, semiconductor components are essential. For the manufacturing of these components the cleaning of metal surfaces before wire bonding or injection molding of the semiconductor housing is still an important and necessary step. Contaminated and oxidized metal surfaces can cause low wire bond strength and lead to failures due to interruption of the electrical contacts. At productronica 2019 Plasmatreat GmbH will be presenting its Openair-Plasma technology for cleaning surfaces live to the audience of experts.



Lead frame with plasma treating



lead frame without plasma treatment

Low pressure plasma processes can remove oxide layers and weaker organic contaminants, but equipment costs and long process times are a drawback. With Plasmatreat's reducing Openair-Plasma, these surface impurities can be removed in a single process. A special combination of gas mixture and a new type of nozzle makes it possible to create a strongly reducing atmosphere around the sample during treatment. The number of active radicals and ions per volume unit is by magnitudes larger than in a low-pressure hydrogen plasma and allows for very short treatment times.

The combination of nozzle and gas mixture makes it possible to treat metal surfaces, such as copper, which can normally only be treated in low-pressure plasma or in a protective atmosphere. Copper is particularly sensitive to oxidation at high temperatures. With the reducing Openair-Plasma treatment, copper lead frames can be cleaned very quickly. A PlasmaPlus coating will prevent the copper to reoxidize.

"After cleaning with Openair-Plasma, no discoloration of the copper frame is visible. Thanks to the geometry of the nozzle, the treated parts are subjected to less thermal stress than with comparable reducing atmospheric plasmas. This means, for example, that circuit boards on plastic or metal cores can be processed without thermal damage. Ceramic and LS switch carriers can also be treated after die bonding and before wire bonding," explains Nico Coenen, Business Development Manager Electronics Market at Plasmatrete GmbH. Plasma is electrically neutral, which eliminates chip damage caused by electrostatic charges.

In addition to semiconductor applications, the process can also be applied to LED housings and substrates. "Thanks to the process speed, reducing Openair-Plasma is a great alternative to low-pressure plasma processes and can be regarded as an ecologically sensible substitute for wet cleaning processes. The process not only saves equipment costs, but also reduces cycle times," continues Coenen.

Plasmatrete will be presenting its Openair-Plasma technology at productronica 2019 in hall B2, booth 103. The live demonstrations for surface cleaning will take place regularly throughout the entire trade show in short intervals.

About plasmatrete

Plasmatrete is the worldwide market leader in Atmospheric plasma applications for cleaning and activation of all kind of surfaces. You can find the Openair-Plasma applications in automated production lines in almost any type of industry. Plasmatrete has production centers in Germany (headquarter), USA, Canada and China and has more than 30 subsidiaries and partners around the world.

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