

Plasma Technology in the Medical Sector at MedtecLIVE

At MedtecLIVE in Nuremberg, relyon plasma GmbH, based in Regensburg, presents new trends and developments in the field of atmospheric plasma applications in medical technology. The focus lies on Piezoelectric Direct Discharge technology (PDD technology). This technology is predestined for biomedical and medical technology applications due to its particularly compact plasma generation with low thermal stress.

Regensburg. MedtecLIVE, the new event for the supply chain of medical technology products, will open its doors for the first time in Nuremberg from 21 to 23 May 2019. The relyon plasma GmbH, based in Regensburg, will present in hall 9 on booth 451 how cold atmospheric pressure plasma can be used in medical technology.

The best known and most important characteristic of plasma for medical technology is its sterilizing and disinfecting effect. Cold atmospheric pressure plasma can be used to sterilize medical devices and equipment easily, quickly and without the use of additional chemicals. PDD technology has made it possible to effectively neutralize the methicillin-resistant *Staphylococcus aureus* (MRSA), which is classified as particularly critical, without the use of antibiotics.

Functionalization of implants in dentistry

Medical engineering materials such as zirconia ceramics or titanium and stainless steel, but also PEEK, Teflon, silicone and highly filled polymers can be effectively optimized in their wetting behavior. This property is the basis for a good adhesive bond or biocompatibility and acceptance by the surrounding living tissue. This technology has already been used for many years in order to functionalize implants in dentistry. By functionalizing the surfaces with atmospheric pressure plasma, the surface is cleaned, the implant sterilized and the risk of infection reduced. At the same time, the surface energy of the implant is increased. The improved wettability improves cell deposition on the surface of the implant and accelerates the healing process.

Ionization module for germ and odor reduction in equipment

A further property of plasma is its germ and odor-reducing effect. In order to make this advantage individually usable, relyon plasma has developed a special ionization module that can be integrated into a wide variety of equipment such as waste collectors or cabinet systems. A practical example is the Hailo ProfiLine Fresh L waste collector, which was developed in close cooperation with Hailo especially for clinical requirements. The ionization module is integrated into the lid and automatically releases active oxygen, which then neutralizes up to 99 percent of odors and molds through the principle of electrical discharge.

Another approach for the use of plasma technology in the medical field is the dermatological treatment of wounds, skin diseases or infections. The cold plasma at atmospheric pressure acts in a complex way: via UV rays, reactive compounds and electric fields. The interaction of these factors significantly slows down the growth of bacteria, which accelerates healing.

By visiting the relyon plasma booth 9-451 you will get a direct insight into plasma technology and can test it on your own sample cases on site.

About Relyon Plasma

Relyon Plasma GmbH, headquartered in Regensburg, develops innovative plasma systems. True to the motto “rely on plasma” we see ourselves as a professional service provider for individual customer issues. In parallel to our own products for the plasma treatment for industrial and medical-engineering applications, we develop customized, highly efficient process solutions for surface cleaning, surface activation and germ reduction.

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Picture credits:

MedtecLIVE

Image 1: Logo MedtecLIVE



Image 2: PEEK implant during treatment with the piezobrush PZ2



Image 3: Hailo Profiline Fresh L waste bin with integrated ionization module (Photo: Hailo)