PLASMA HAND DRYER

Ref-No: TA-MBM-CPA-1886-HAWK

BACKGROUND

The hand dryer offers a hybrid function, it dries and disinfects the hands at the same time. The number of germs on the hand surface as well as in the ambient air is reduced. This is especially useful in areas with strict hygiene restrictions like the food industry or in hospitals.

PROBLEM

Hand washing is not only performed to clean them from dirt but also to prevent the spreading of infections. Especially during the common cold high season, hand washing is the single most important protective measure. Unfortunately, using a common jet hand dryer blows a huge amount of new germs onto the newly washed hands and additionally distributes further germs into the ambient air. Paper towels offer a better hygiene but are wasteful and have to be constantly refilled which is cost expensive. One can treat the hands with a disinfection solution but this harms the skin of the hands on the long run making it even more susceptible to infections.

SOLUTION

The mentioned problems can be solved by implementing a plasma treatment. The developed device dries the hands with a stream of warm air as usual but in addition the hands are treated with an atmospheric-pressure plasma. The plasma is created by a plasma jet as well as a dielectric barrier discharge. The treatment kills up to 91% of the bacteria on the hand surface. Additionally, the hand dryer is designed as a closed system, no water can splash into the surrounding area and only a small amount of ambient air is used. As a result, 40% less bacteria are found in the ambient air. The device can be used as easily and comfortable as existing jet hand dryer.
A possible implementation of the plasma hand dryer. (Source: Silke Grimmelmann, Kevin Momoh, Till Papendorf und Fabio Vogel, HAWK)

**ADVANTAGES**

- Simultaneous drying and disinfecting
- Reduction of germ contamination on the hand
- Reduction of germ contamination in the ambient air
- No consumable material

**SCOPE OF APPLICATION**

- Public rest rooms
- Especially suitable for use in food industry or in hospitals