Aluminium coated plastic foils are widely used in packaging of foodstuffs due to their excellent barrier properties. However, coating is only possible on really particle-free foils with strong sustainably stable activation. With these requirements, known pretreatment methods quickly reach their limits.

The development of linear plasma sources and their associated wideslot jets make it possible to use the effectiveness of Openair®-Plasmas for any width required. High processing speeds up to 400 m/min can be achieved.

- Plasma achieves a very high surface activation. The treated foils can be stored.
- Pretreatment only on the side treated with plasma is guaranteed. Due to the physical principle involved, treatment of the reverse side is not possible.
- Risk of excessive treatment of the foils is low due to the plasma’s relatively low treatment temperature.
- Additives such as gas are not used since the plasma sources operate by high voltages interacting with the air.
- By selecting specific segments partial activation can be achieved very simply.
- The foil is electrostatically discharged during treatment; consequently electrostatic corona-induced reverse side effects are avoided.

In our new Plasmatreat Technical Centre the different plasma installations offer the most varied capacity ranges on a wrapper for further experiments with Openair®-Plasma:

Rolls of plastic and metal foil as well as paper and textiles up to a maximum width of 500 mm and a diameter of 600 mm can be treated on one or both sides with speeds up to 400 m/min and varying capacity densities.
Openair®-Plasma is capable of reacting short molecular hydrocarbons with atmospheric oxygen and of breaking up long molecular chains for the addition of functional groups. In addition the surface energy can be raised to 72 mN/m thus increasing the wettability of surfaces, an important precondition for using water-based systems.

Facility design up to 50 m/min
Rotating plasma generators with pretreatment widths of 100 mm are used. In this situation the individual plasma source is moved with a relative speed of up to 600 m/min across the material to be treated; during this process the intensity of the plasma is measured and evaluated optically online. The engineering technology is robust and reliable and we have many years of experience in operating the jets.

Facility design up to 400 m/min
At speeds over 50 m/min the plasma sources are aimed at the material without any additional relative motion. The material is pretreated to a high level. Homogeneous results are ensured by using the correct plasma generator covering. Laboratory tests on narrower samples can simply be scaled up to any track width required; this means that when planning the production system high degree of investment certainty is achieved.

Surface Design!
Openair®-Plasma technology, as never before, makes it possible to effectively coat surfaces with atmospheric plasma. Coating thicknesses of several hundred nm can be achieved that can completely change the properties of the material. For the first time both hydrophilic and hydrophobic water repellent coatings are possible. The basic principle is simple: an additive in the form of a vaporised liquid is administered to the dispersing plasma the energy of which leads to fragmentation of this material causing it to be bonded to the surface.

Become informed about PlasmaPlus® – the atmospheric plasma polymerisation from Plasmatreat!!