

# Adhesion '19 Conference to feature paper from Relyon Plasma



Corinna Little, from our partner [Relyon Plasma GmbH](#), will be presenting her paper on “*Enhancing the bonding properties of pressure-sensitive adhesives on white goods by means of atmospheric plasma treatment*” at the **Adhesion '19 Conference**, a symposium on the science and technology of adhesion and adhesives. Her synopsis is as follows:

Atmospheric-pressure plasma can enhance adhesion on various materials, for example by activating polymer surfaces or fine cleaning of metals, ceramics, glass, etc. The following feasibility study shows that atmospheric-pressure plasma is also capable of improving the bonding quality of pressure-sensitive tapes on differently coated steel sheets, as they are used in major appliances.

Major appliances have taken on an important role in our lives and in our homes. Not only are they expected to be reliable and efficient, but also to be stylish and to canvass for their respective brands. Logos and embellishments are therefore applied to these products by many manufacturers, oftentimes by means of pressure-sensitive adhesives. However, a high quality of the bonding between the coated steel sheets and the pressure-sensitive tapes is not always possible without pre-treatment. In a highly automated production line,

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atmospheric-pressure plasma is a convenient and cost-effective means of fine-cleaning and activating substrates in preparation for adhesion processes with minimal to no effect on the throughput.

This feasibility study shows that a Pulsed Atmospheric Arc plasma system, in this case **Plasmabrush PB3** operated with compressed dry air, can help prepare the coated steel surface by significantly increasing its surface energy and maximum peel force of certain pressure-sensitive tapes by up to 68% compared to the untreated substrate. Due to the high power density of the PB3 system, a treatment speed of 1 m<sup>2</sup>/min can be demonstrated. By treating the adhesive side of the tape prior to bonding with a Piezoelectric Direct Discharge plasma, generated by **Piezobrush PZ2**, maximum peel forces can be doubled compared to the untreated tapes. Two out of the three plasma treated tapes show partial cohesive failure on differently coated steel substrates whereas the untreated samples failed only adhesively.

The whole conference programme provides myriad in-depth adhesive science presentations, and Corinna will present on Wednesday, 4 September. We will be able to send you a copy of her paper after the conference.

Visit the [Adhesion '19 Conference website](#) for more information and to book your place.

Supplied by:

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