

# Yesterday, today, tomorrow

## POLYMER BONDING AND SEALING: Looking back and ahead

**CROSS-SECTOR – A lot has changed in the POLYMER BONDING AND SEALING sector since the journal DIGHT! came into being ten years ago – this article on surface treatment is an extract from the overview of subsectors.**

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Surface treatment has become increasingly important in recent years as more and more materials require pretreatment before bonding or coating. Priorities regarding the type of pretreatment used have also shifted in line with market requirements. In developing atmospheric pressure plasma, our vision from the start was to create a new generation of plasma systems which could be used easily and universally on an industrial scale for the pretreatment of material surfaces before bonding or coating. We achieved this in 1995 with Openair plasma nozzle technology. Prior to this, plasma was produced only in a vacuum for industrial purposes, a very expensive process which is unsuitable for high throughputs. The challenge was to modify surfaces, i.e. trigger a reaction at the surface only, but without altering the material, so no fusion; the total resulting in a very rapid and easy to integrate in-line process for series production. The next breakthrough came in 2006 with the development of PlasmaPlus polymerization

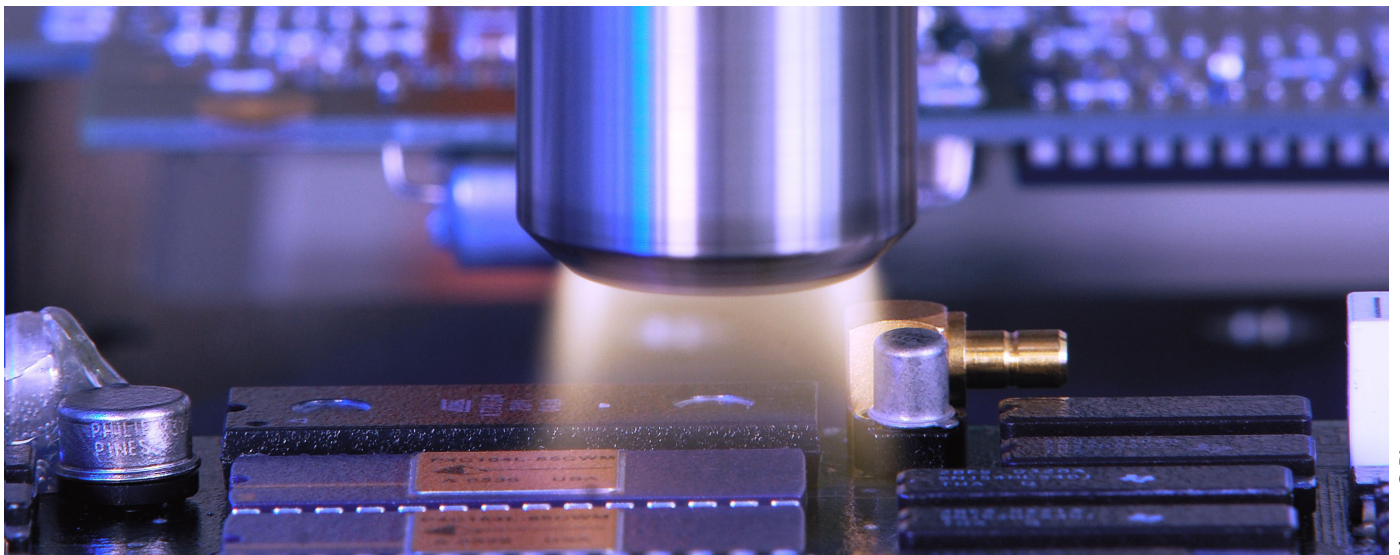
technology. From then on, for the first time atmospheric pressure plasma could be used not only for the microfine cleaning and activation of surfaces, but also to apply functional, area-selective nanocoatings.

**“In the near future every specialist should know that plasma can be used to generate completely new surfaces and that the technology is a suitable industry standard.” – Dipl.-Ing. Christian Buske, CEO and President, Plasmatreat Group**



In the light of these developments, applications have increased enormously during the past ten years, thousands of our systems are in use and research is being conducted in countless different fields. And there's no shortage of surfaces; the potential – across all sectors – is enormous. Lightweight construction, electronics and medi-

cine are current emerging markets which constantly bring new challenges. The advantages of today's plasma systems are that they can be integrated affordably into automated manufacturing systems and that the process is environmentally friendly. Since it uses only compressed air and electrical energy, VOC emissions are avoided from the outset. Tons of solvent are also avoided. Unfortunately, some users are still unaware of the benefits of this technology. Changing this is without doubt one of the challenges facing us in the coming years.



Picture: © Plasmatreat