



# JOSEPH VON FRAUNHOFER PRIZE TO DR. JÖRG IHDE AND DR. UWE LOMMATZSCH FOR FUNCTIONAL PLASMA COATINGS

At the annual meeting of the Fraunhofer-Gesellschaft on May 8, 2012 in Stuttgart, which was this year held under the motto "Living and working in the city of the future", Dr. Jörg Ihde and Dr. Uwe Lommatzsch were awarded the Joseph von Fraunhofer Prize for their novel, atmospheric pressure plasma coating process. A special honor since the prize was for the last time presented by the outgoing President of the Fraunhofer-Gesellschaft, Prof. Dr. Hans-Jörg Bullinger.

Nano coatings can provide protection against rust, scratches, and moisture or modify the adhesion: The new plasma process allows these nano-coatings to be applied more easily, faster, and at lower cost – on an industrial scale.

The innovative process developed by the team of Jörg Ihde and Uwe Lommatzsch, from the Plasma Technology and Surfaces PLATO department at the Fraunhofer Institute for Manufacturing Technology and Advanced Materials IFAM, in collaboration with Plasmatrete GmbH, is based on an atmospheric pressure plasma nozzle in which the outflowing plasma is relaxed in a controlled way. For layer deposition, a polymerizable material is introduced into the relaxing plasma. The special nozzle design means that very high deposition rates and excellent layer qualities are achieved. Customized surface properties can be set. For example, layers for corrosion protection, adhesion promotion, or anti-stick properties are deposited.

Features of the process are its eco-friendliness, low investment costs, and production efficient usage of resources. It may be readily integrated into production lines, can be automated

– thus is controlled using robots – and further involves low chemical usage. High processing rates also lower the costs. The technology is already being successfully used in industrial production – for example, in the car manufacturing industry and energy technology sector – and provides amongst other things protection against corrosion and aging.

## CONTACT

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**1** *Dr. Jörg Ihde and Dr. Uwe Lommatzsch (left to right) developed a new resource-efficient method for the high-rate deposition of functional nano coatings using atmospheric pressure plasma technology.*