



# SFB at IKV

## Transregional Collaborative Research Center – Plasma technology

Plasma technology is used in many technical areas and has been described as one of the key technologies of the 21st century. Alongside traditional fields of application, this technology is also being increasingly used in the finishing of plastics. Nevertheless, a number of questions still remain unanswered, for example regarding the fundamental relationships between plasma physics and material properties.

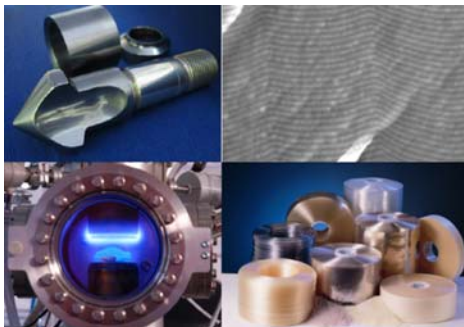
The IKV has therefore joined forces with research teams from RWTH Aachen University and Ruhr University Bochum with the aim, through the application of a trans-regional research (SFB/TRR 87), of examining fundamental problems in the development of plasmasupported layers. This SFB bears the title "Pulsed high-power plasmas for the synthesis of nano-structural functional layers".

At its meeting on May 18, 2010, the Senate of the German Research Foundation (DFG) finally approved sponsorship of the SFB/TRR 87. The first phase will begin in July 2010. The spokesperson for the SFB is Professor Dr.-Ing. Peter Awakowicz who holds the Chair of General Electrical Engineering and Plasma Technology at Ruhr-Universität Bochum.

The SFB, initially financed for four years, is divided into three research areas. The first covers layer systems on metal substrates for tribological applications (project area A), the second deals with new functional layers for increasing the barrier effect on plastic substrates (project area B), while the third will support the first two areas with studies on elementary principles of plasma processes (project area C).

In close cooperation with its partners, the IKV will perform research in two sub-projects of project area B: the development of large-area strain-tolerant barrier layers on PET films and, based on the example of PP, the influence of material properties – e.g. orientations and internal stresses – on the plasma process.

This SFB will bring together scientists from the fields of plasma physics, plasma technology, material science, material technology, mechanical engineering and chemistry. They will research the influence and the potential of high-performance plasmas, starting with the atom in the gaseous phase to the performance characteristics of new, theoretically conceived material systems.



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