

Theme: Influence of parameter variation in tribological contact on  
Diamond-like Carbon (DLC) coatings

## PVD-Technology

### Topic:

Increasing demands on the energy efficiency of tribological systems and machines require continuous improvement of various components and tools. A technology for successfully increasing efficiency, e.g. in the automotive industry, is applying coatings on power train components by using Physical Vapour Deposition (PVD). This coating technology, enables the production of amorphous carbon coatings a-C(:H) (:Me/:X). These so-called Diamond-like carbon (DLC) coatings have friction and wear reducing effects in tribological systems, e.g. engine components such as tappets, piston rings and gear wheels.

### Aim of the study:

The aim of this work is the analysis of DLC coated gears and disks after tribological contact using various analytical methods. Raman spectroscopy is used to determine the influence of tribological parameters, e.g. temperature  $T$  and pressure  $p_H$ , on the structure of DLC coatings. In addition, pin-on-disk (PoD)-tests are independently performed and evaluated. The purpose is to evaluate the behavior of DLC coatings under different load conditions and to analyze their influence on friction and wear behavior.

### Conditions:

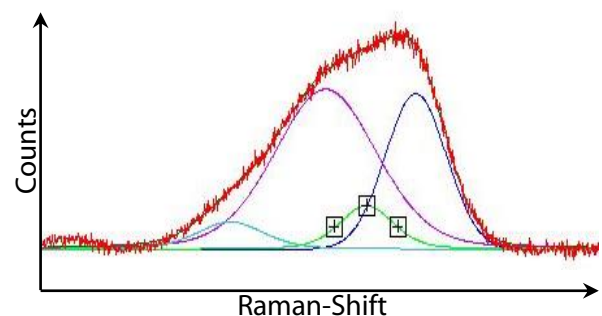
You are studying mechanical engineering, materials engineering, materials science or a comparable course of study. Are you interested in working independently and practically and in developing innovative coating systems? Then contact us by email or phone.



Porsche 911 R [www.Porsche.com]



DLC-coated gears [IOT]



Example of a Raman measurement of a DLC coating

If you are interested, we can make an appointment to discuss further details.  
Just contact me by email or phone.

### Contact:

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