

## Topic: Analysis of Tribochemically Built Reaction Layers on Titanium-Doped 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 of 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 show friction and wear reducing effects in tribological systems, e.g. engine components such as tappets, piston rings and gear wheels.



Audi R8 PD GT850 [Source: speedheads.de]

#### Aim of the work:

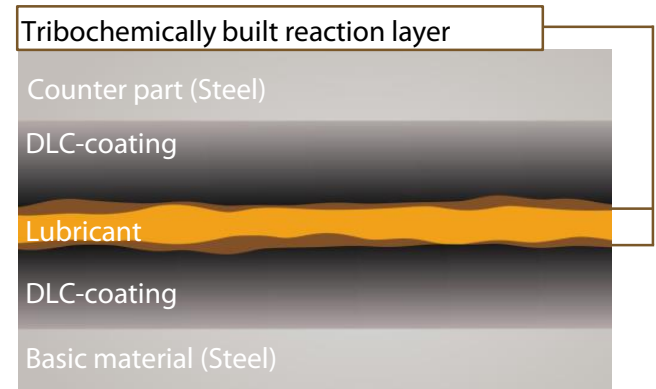
In the context of this work the interactions between lubricants/additives and titanium-doped DLC coatings shall be determined by different analytical methods. For this purpose, pin-on-disk (PoD) tribometers, double disc test benches and gear efficiency test benches will be used. The aim is to demonstrate the formation of triboinduced reaction layers and to analyze the influence on friction and wear behaviour.



DLC-coated gear wheels [IOT]

#### Conditions:

You study 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.



Schematic representation of tribochemically built reaction layers in DLC/DLC contact

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

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