Topic: The need for a more efficient and sustainable use of energy is becoming increasingly important against the background of limited resources and climatic changes. A promising approach for increasing efficiency, e.g. in production engineering or the automotive industry, is the coating of components using Physical Vapour Deposition (PVD). However, conventional lubricants are not designed to interact with PVD hard coatings that replace conventional steel surfaces. The goal of reducing friction through the use of coatings is often missed by undesired interactions between PVD coating and lubricant.

Aim of the work:
In the context of this work, the known interactions between steel surfaces and lubricants are transferred to the coating/lubricant system. For this purpose, triboactive (Cr,Al)N+X coatings (X = Mo, W) are modified with Fe. The (Cr,Al)N+X+Fe coatings are developed on an industrial coating plant. The analysis of the developed coating systems is carried out by means of the analytics available at the Surface Engineering Institute (IOT). The results of the investigations concerning the formation of triboinduced reaction layers enable the modification of (Cr,Al)N+X hard coatings with the aim of a friction-reducing interaction with lubricants.

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

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