

Tribological and Decorative Coating

Tribological coatings are playing an important role in wear protection of components. This applies to all kinds of devices with moving systems; ranging from automobiles, aircraft and aero-engines, to power generation systems.

Within this session there will be special room for soliciting presentations around the Symposium on Coating Advances and Its Impact on the Future of the Vacuum Coating Industry. In context with this theme, there has been much emphasis on the future of coatings playing the major role in reduction of CO₂ emissions. Examples of applications are coatings on γ -TiAl blades for aero-engines and coatings on all kinds of automotive components. The combined effect of lubricants and coatings is a theme that is widely investigated and is of special interest to the world of tribological experts.

Stricter rules will enforce ever-reducing amounts of energy consumption, leading to reductions in CO₂ emissions. Governmental regulations, especially in the European Union, imply that excess premiums will have to be paid in the coming years, which will lead to enforced actions of the car manufacturers serving the EU market. Also, legislation in India has been made more severe.

Other consequences of this development trend are that new lightweight alloys, like Al with high Si content and austenitic ductile steel, will be needed to machine cutting and forming tools. Possible solutions are found in coating these tools to enable them to reach a certain lifetime while processing these novel materials. Decorative coatings are increasingly used today for their metallic look and shiny appearance, combining this with high wear resistance against corrosion and mechanical wear (mainly scratches in this case).

We are soliciting papers that are related to the research as well as the techniques leading to coating solutions for wear problems. This includes machine technology and plasma techniques as well as peripheral technologies for cleaning and quality control, but also IP issues, which are of major importance in steering the developments. We are welcoming presentations that address the wear problems in practical applications, especially including the approach to find solutions. It should be pointed out, that in this respect, it will not be necessary to address only the latest applications, but that the audience will also be interested in historical descriptions and the background of how coating solutions were developed in the past.

We are soliciting papers in the following areas:

- *Surface treatment for components before and after coating*
- *Developments of low friction coatings*
- *Developments of coatings with extreme high hardness*
- *Nanostructured coatings systems for components and tools*
- *High volume coating applications for automotive valve train and/or power train components*
- *Machine technology and their applications, eventually including pre-treatment and post-treatment technologies*
- *New plasma sources and their (potential) applications*
- *Heavy-duty vehicle applications*
- *Coatings for decorative applications on small consumer electronic parts*
- *Coatings on plastics and metals for decorative applications*
- *Applications of coatings in aerospace engines*
- *Coatings for cutting difficult workpiece materials*
- *Coatings for moulding and forming tools*
- *Metrology*

Tribological and Decorative Coating TAC Chair: Roel Tietema, Hauzer Techno Coating BV, The Netherlands, (31/77-3559741; rtietema@hauzer.nl) Assistant TAC Chairs: Jolanta Klemberg-Sapieha, École Polytechnique de Montréal, Canada, (514/340-5747; jsapieha@polymtl.ca); Michael Drory, Timken Technology Center, (330/471-2683; michael.drory@timken.com)