Seminários de Física

Centro de Física da Universidade do Minho

Research line: *Functional and smart materials and surfaces for advanced applications*

Quarta-Feira, 4 de Abril às 14:30h
Sala EC 2.30 da Escola de Ciências, Campus de Azurém

Low friction and wear resistance thin films for high temperature applications

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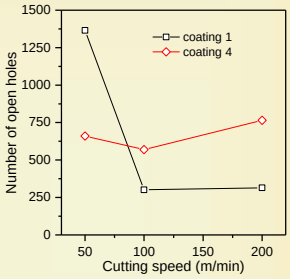

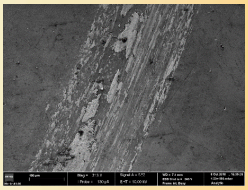

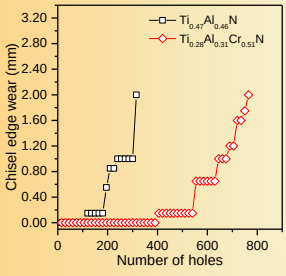

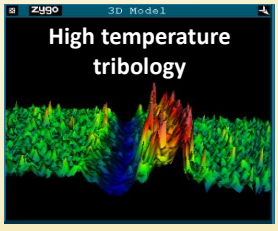

Resumo: High performance dry machining is one of the major trends in modern manufacturing. This is a very hot topic inside the tribology community; PVD tool-coaters and cutting tools costumers are seeking innovative coating solutions which could improve the performance and lifetime of tools, as well as, increase the material volume removal rates through increasing cutting speeds. Dry machining cutting conditions generate severe shear stresses and high temperature harsh conditions on the cutting zone which, consequently, lead to a premature degradation of the tool. Thus, a promising coating should exhibit simultaneously high toughness, low friction coefficient, low wear rate and thermal stability at high temperature conditions. Two solutions are being present in this work to extend the lifetime and performance of machining components: i) developing of coating systems in multilayer structure and ii) development of self-lubricant coatings with control release of the lubritious phase. In both cases the idea is to remove the use of liquid lubrication which is well known to be harmful for the environment at the same time that the tolls lifetime is increased and the machining performance extended.

Reunião da linha "Functional Coatings and smart materials for advanced applications" pelas 15:30 min (a seguir à palestra) na biblioteca do DF em Azurém.