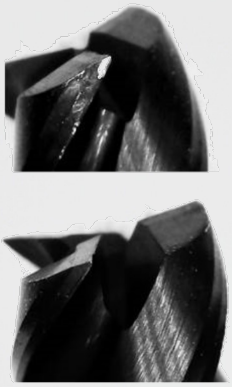
nano4ENERGY

Tribological coatings

Diamond Like Carbon on metals, plastics and ceramics

Insulating substrates
(Plastics, glass, etc..)

Metallic substrates with
sharp edges



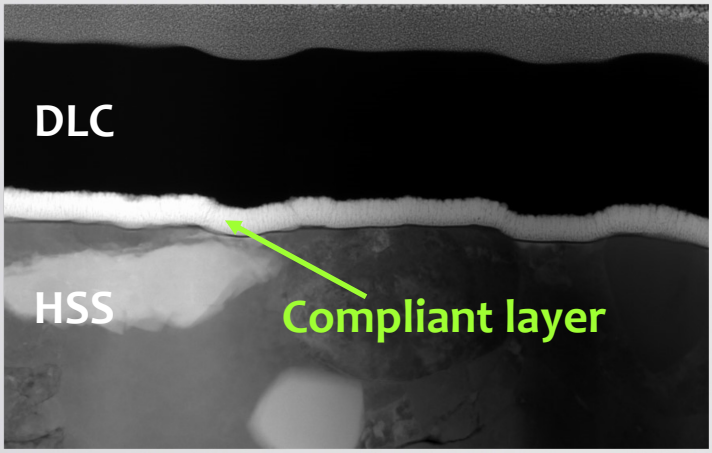
No sample Bias required!!!

No flank delamination!

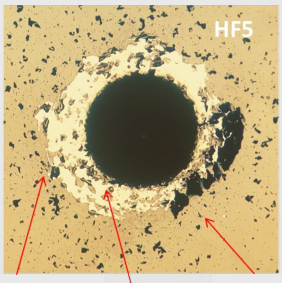
- Magnetron sputtered-DLC deposition using Positive Ion bombardment to enhance film mechanical properties.

- The use of magnetic and electric field and substrate location arrangements enables the control ratio of positive ions and electron bombardment on the substrate in order to control hardness and stress levels in the coating.

-The deposition method has been successfully applied to DLC deposition of a variety of substrates such as tools, glass or plastic surfaces.



DLC on HSS without compliant layer



DLC delaminated coating

HSS substrate surface

DLC coated surface

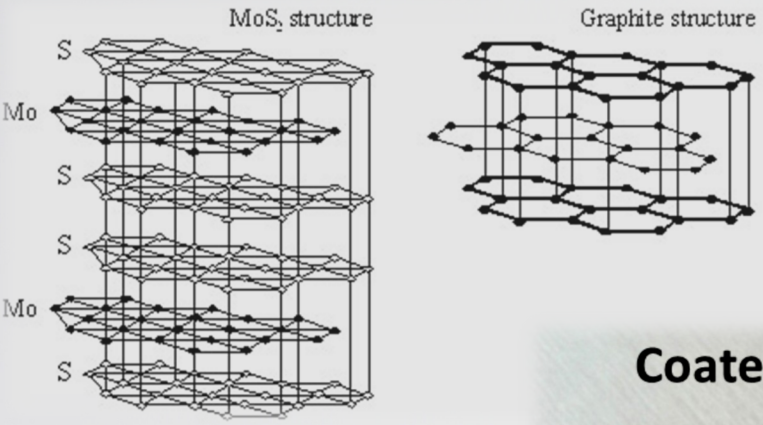
DLC on HSS with compliant layer

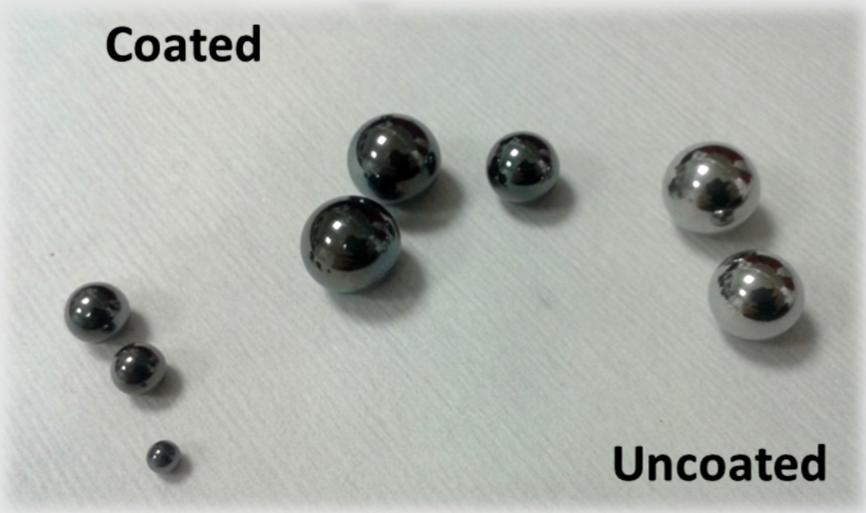
No coating delamination

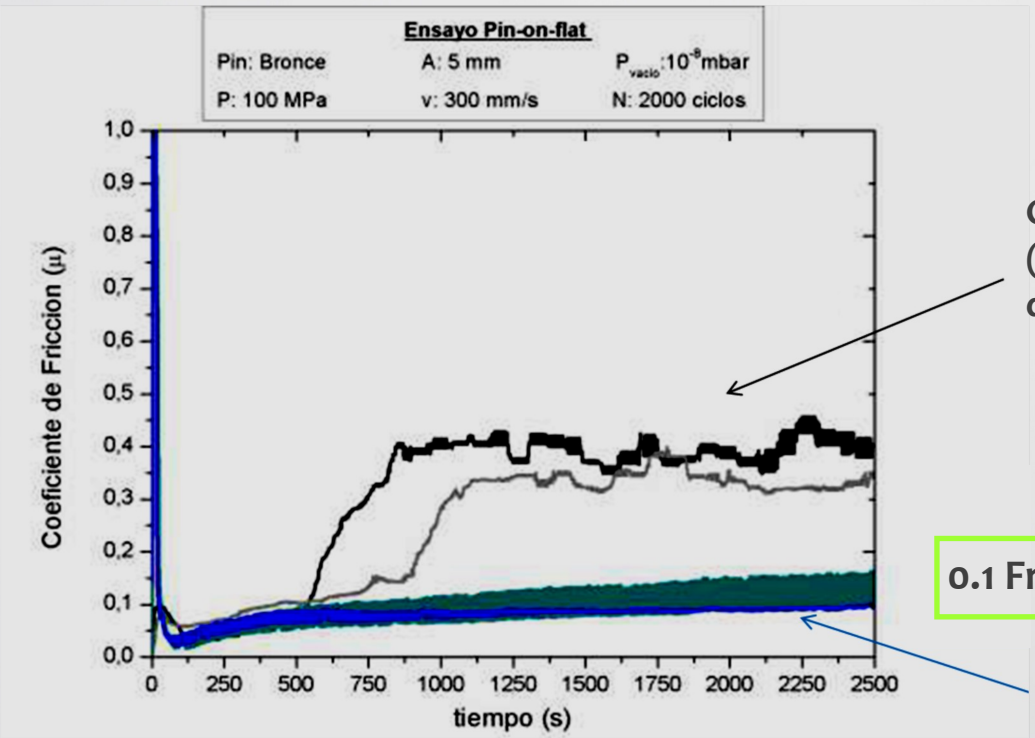
Rockwell HRC tests — 150kg — Diamond indenter with conical tip

Family	H (GPa)	E (GPa)	μ*
a-C	30	230	0.18
a-C:H	25	190	0.14
WC-C	25	210	0.25

Molybdenum Disulphide (MoS2)







Commercial MoS2 (Suffers from delamination)

0.1 Friction coefficient!

N4E MoS2

Excellent lubrication properties in vacuum compared to commercial MoS2