Plasma surface engineering to enhance wear and corrosion resistance of stainless steels

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Plasma Surface Engineering involves a group of techniques to tailor surface properties of many materials, in particular plasma diffusion techniques and plasma assisted coatings are nowadays efficient processes to improve mechanical properties of stainless steels and with the proper parameters, they can sustain or even increase the corrosion resistance of these alloys.

A brief description of the research lines of the Surface Engineering Group of UTN will be presented, as well as some important results obtained in the last years concerning plasma nitriding of austenitic stainless steel and different DLC carbon coatings deposited over nitrided martensitic stainless steels.

The capabilities for surface testing, in wear and corrosion situations will be also described, together with surface characterization and thin film adhesion testing. The self-designed plasma nitriding equipment and the joint work which is being carried out with a small industry partner in Argentina in the development of equipment for plasma processing will be presented.

Workshop on
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