



**NEW PLASMA PECVD  
INSTALLATION  
AT POLYTECHNIC  
OF TURIN,  
ALESSANDRIA SITE**

Kolzer Vacuum Coating Technologies, reputable and well-known manufacturer of vacuum technologies, recently signed a new agreement with the Polytechnic of Turin for the development of industrial applications with PECVD technology. Within 2008, Kolzer will install a new industrial plant in the Polytechnic of Turin, Alessandria department, a DGK36" PECVD plant for R&D and industrial investigation of future application with this process, for companies located in North Italy.

The growth of thin films on a surface is carried out through chemical reaction in the vapour phase (Chemical Vapour Deposition, CVD) of composites containing the element to be deposited. Varying the process parameters, the precursors and the

shape of the reactor, the PECVD technique allows numerous materials to be deposited.

Continuous research carried out by our technicians and researcher at Polytechnic made it possible to set up specific processes dedicated to the most varied application fields. These research, only to mention a few, surface hardness, low friction coefficient, anticorrosion in acid and alkaline environments scratchproof, non stick, antiprinting and biocompatibility characteristics.

The plants consist in their main part of:

- vacuum chamber
- vacuum pumping group
- process chamber with cathodes which introduce the necessary energy to generate plasma
- feeding system and control of gas flow
- electric feeding system and plasma control
- PLC, PC and management and control software which guarantee

that the results obtained can be reproduced

- autodiagnosis safety systems.

The process area in plasma consists of cathodes which generate an electric discharge which supports the plasma. The cathodes are essentially stainless steel, aluminium or titanium plates onto which an electric feeding is applied (a radiofrequency, Mid-frequency, microwave or direct current).

The stainless steel treatment chamber contains all the parts that operate in the real process: cathodes, gas feeders, pieceholders. The chamber is internally lined with a teflon shield. The hinged door, provides complete access to the chamber.

The electrodes adhere to the chamber walls. All the other groups making up the plant are connected to the vacuum chamber: the pumping group, the vacuum instruments, the gas and electric feeders.

The vacuum chamber has a spy window to check the plasma. In the testing phase, the vacuum chamber is controlled with a helium mass spectrometer to guarantee perfect hold and tightness.