

AVVISO DI SEMINARIO

06 Aprile 2011, h. 10.00
Presso INRiM
Strada delle Cacce 91, Torino

Investigation of the electronic properties of crystalline and disordered polycrystalline graphite

G. Speranza

ITC-IRST, I-38050 Povo (Trento), Italy

Summary

Carbon atoms can assume two well distinct hybridizations corresponding to graphite and diamond respectively. The different hybridization leads to markedly different physical, chemical, optical and electronic properties. As an example, thin amorphous carbon (a-C) films describe a class of materials in which the two different hybrids can coexist. The different amount sp^2 (graphitic-like) hybrids and of the sp^3 (diamond-like) hybrids will affect the macroscopic properties of the film. Given a generic plasma deposited a-C film, it is always desirable to describe the system properties starting from that of the crystalline systems taken as references. To do this a careful description of carbon arranged in the two crystalline systems is mandatory. Here we focus on the properties of HOPG graphite with the aim to understand its electronic properties and how they change when the crystalline structure becomes amorphous.