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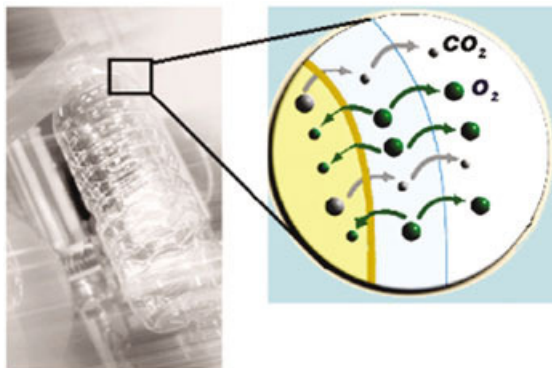
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Posted: February 14, 2007

Diamond-like carbon for data and beer storage

(*Nanowerk News*) Carbon is a very versatile element that can crystallize in the forms of diamond or graphite. There are many noncrystalline carbons, known as amorphous carbons. An amorphous carbon with a high fraction of diamond-like (sp^3) bonds is named diamond-like carbon (DLC).

Unlike diamond, DLC can be deposited at room temperature. Furthermore, its properties can be tuned by changing the sp_3 content, the organization of the sp^2 sites, and the hydrogen content. This makes DLC ideal for a variety of different applications. A "[recent article](#)" reviews the use of ultrathin DLC films for ultrahigh-density data storage in magnetic and optical disks and ultralong beer storage in plastic bottles.



10 PET has a finite gas permeability that can limit the shelf life of some food and drink products. The addition of a gas impermeable coating on the inside wall of a standard PET bottle is necessary in order to minimize the permeation of CO₂, O₂, and H₂O. (Graphic: materialstoday)

The possibility to tune the structural, mechanical, and optical properties of a-C films makes them ideal for industrial implementation. Indeed, in the era of carbon nanotechnology, nanometer-thick DLC films are the only $1\frac{1}{2}$ nanocarbon $1\frac{1}{2}$ components currently used in many every-day life applications.

Source: *materialstoday*

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