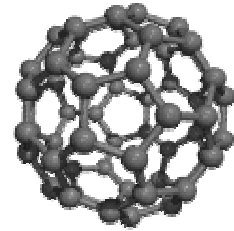


# Innovative products

- Fullerenes
- Carbon nanostructures



# Fullerenes



Fullerenes are a molecular form of pure carbon discovered in 1985. They are cage-like structures of carbon atoms, the most abundant form produced is buckminsterfullerene ( $C_{60}$ ), with 60 carbon atoms arranged in a spherical structure. There are larger fullerenes containing from 70 to 500 carbon atoms

Links to fullerenes webpage:

<http://www.science.widener.edu/bucky.html>

<http://wunmr.wustl.edu/EduDev/Fullerene/fullerene.html>

[http://www.ifw-dresden.de/iff/14/forschg/fulleren/wassindfullerene/index\\_e.htm](http://www.ifw-dresden.de/iff/14/forschg/fulleren/wassindfullerene/index_e.htm)



# Nano-technology

Carbon nanotubes are fullerene-related structures which consist of graphene cylinders closed at either end with caps containing pentagonal rings. They were discovered in 1991 by the Japanese electron microscopist Sumio Iijima\_who was studying the material deposited on the cathode during the arc-evaporation synthesis of fullerenes. He found that the central core of the cathodic deposit contained a variety of closed graphitic structures including nanoparticles and nanotubes, of a type which had never previously been observed. A short time later, Thomas Ebbesen and Pulickel Ajayan, from Iijima's lab, showed how nanotubes could be produced in bulk quantities by varying the arc-evaporation conditions. This paved the way to an explosion of research into the physical and chemical properties of carbon nanotubes in laboratories all over the world.

Links to webpages:

- <http://www.personal.rdg.ac.uk/~scsharip/tubes.htm>
- <http://jcrystal.com/steffenweber/gallery/NanoTubes/NanoTubes.html>

