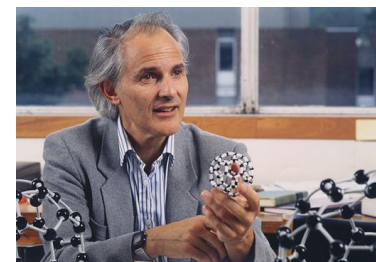




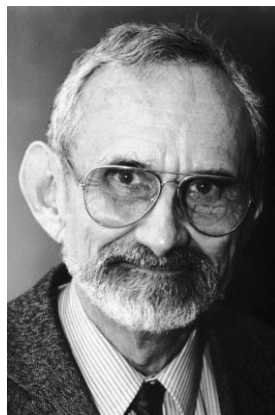
What is
Buckminster
Fullerene ?



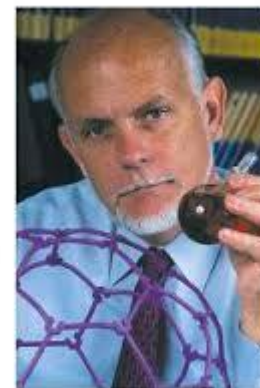
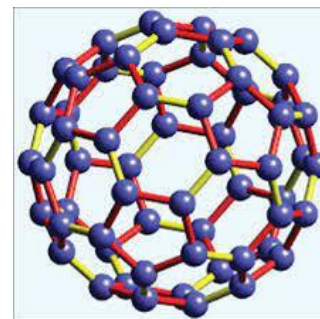
In 1985 a new
allotrope of carbon
(C₆₀) was discovered.
Sixty carbon atoms
form the shape of a
ball like a football with
a carbon atom at each
corner of the **20**
hexagons and **12**
pentagons.



Prof. Sir Harold W.
Kroto
(British chemist)



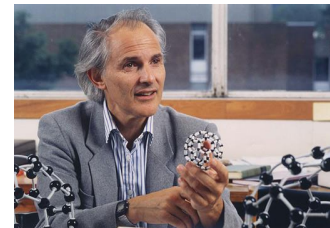
Robert Floyd Curl, Jr.,
(American chemist)



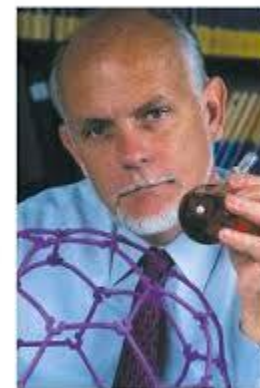
Prof. Richard E.
Smalley
(American
Chemist &
Physicist)



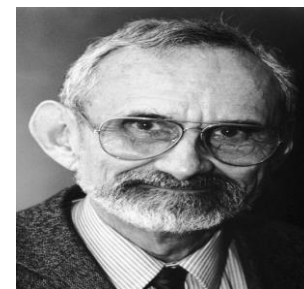
This form of carbon was named after the American architect Buckminster Fuller, who was famous for designing a large geodesic dome which looked similar (sort of) to the molecular structure of C₆₀.



Prof. Sir Harold W. Kroto
(British chemist)



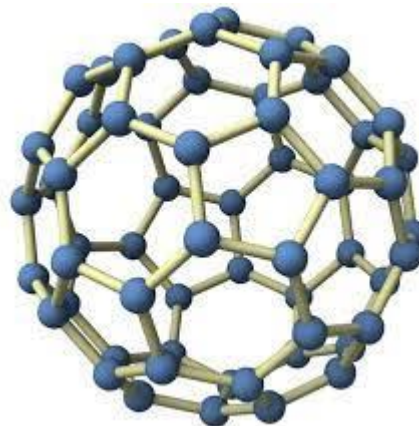
Prof. Richard E. Smalley
(American Chemist
& Physicist)



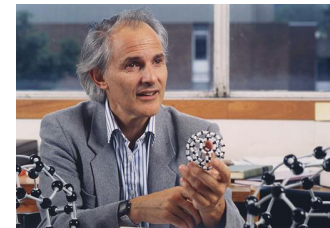
Robert Floyd Curl, Jr.,
(American chemist)



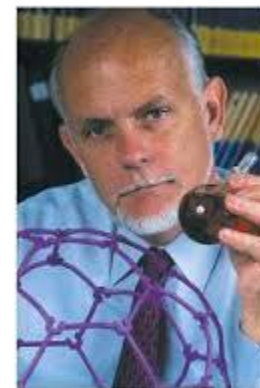
STRUCTURE



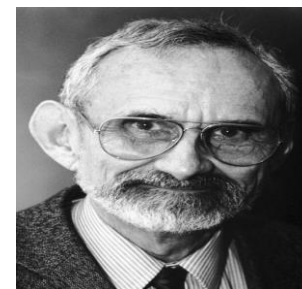
The basic C₆₀ structure consists of 60 carbon atoms that link together to form a hollow cage-like structure. The structure consists of 32 faces of which 20 are hexagons and 12 are pentagons.



Prof. Sir Harold W. Kroto
(British chemist)



Prof. Richard E. Smalley
(American Chemist
& Physicist)



Robert Floyd Curl, Jr.,
(American chemist)



1

Each carbon is sp^2 hybridized and it is connected to other carbon atoms by one double bond and two single bonds.

2

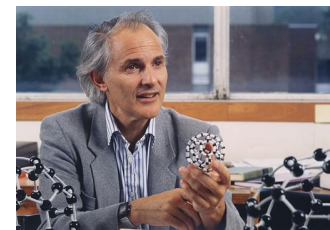
The structure of C_{60} is that of a truncated icosahedron

3

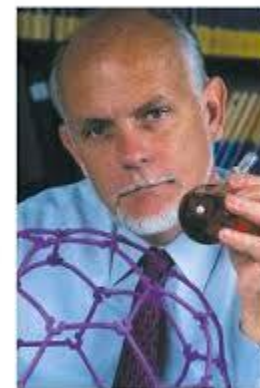
The structure of C_{60} is that of a truncated icosahedron

To draw the structure, follow the you tube video below:

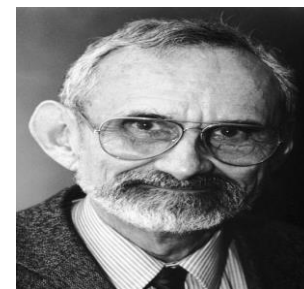
<https://youtu.be/WbmBGI4-jPY?t=113>



Prof. Sir Harold W. Kroto
(British chemist)



Prof. Richard E. Smalley
(American Chemist
& Physicist)

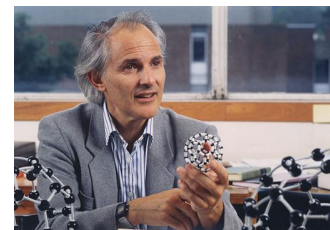


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(American chemist)

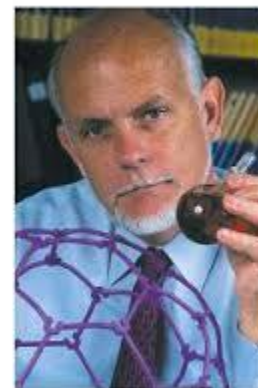


Properties Of Fullerene

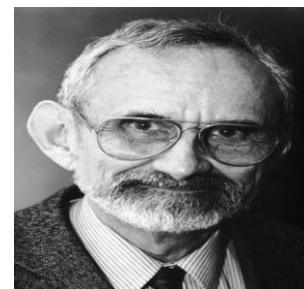
Chemical formula	C_{60}
Molar mass	$720.66 \text{ g}\cdot\text{mol}^{-1}$
Appearance	Dark needle-like crystals
Density	1.65 g/cm^3
M.P	sublimates at $\sim 600^\circ\text{C}$ ($1,112^\circ\text{F}$; 873 K)
Solubility in water	insoluble in water



Prof. Sir Harold W. Kroto
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& Physicist)



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(American chemist)



APPLICATIONS

Research and development

Automotive industry (Electrocatalyst reduce the pollution caused by automobile vehicle)

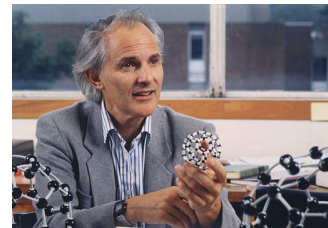
Coating and paintwork material

Cosmetics (anti-oxidant properties)

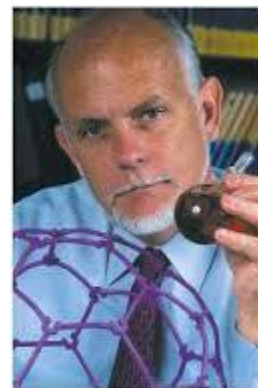
Electronics

Composite and polymeric materials

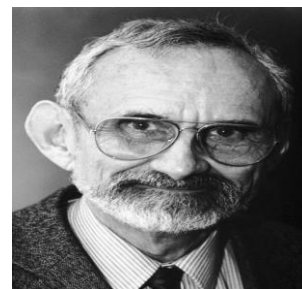
Powder metallurgy



Prof. Sir Harold W. Kroto
(British chemist)



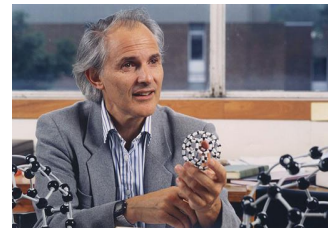
Prof. Richard E. Smalley
(American Chemist
& Physicist)



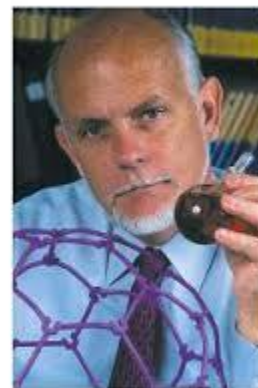
Robert Floyd Curl, Jr.,
(American chemist)



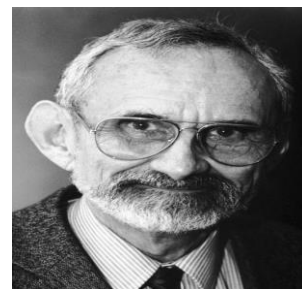
Thank
You !!



Prof. Sir Harold W. Kroto
(British chemist)



Prof. Richard E.
Smalley
(American Chemist
& Physicist)



Robert Floyd Curl, Jr.,
(American chemist)