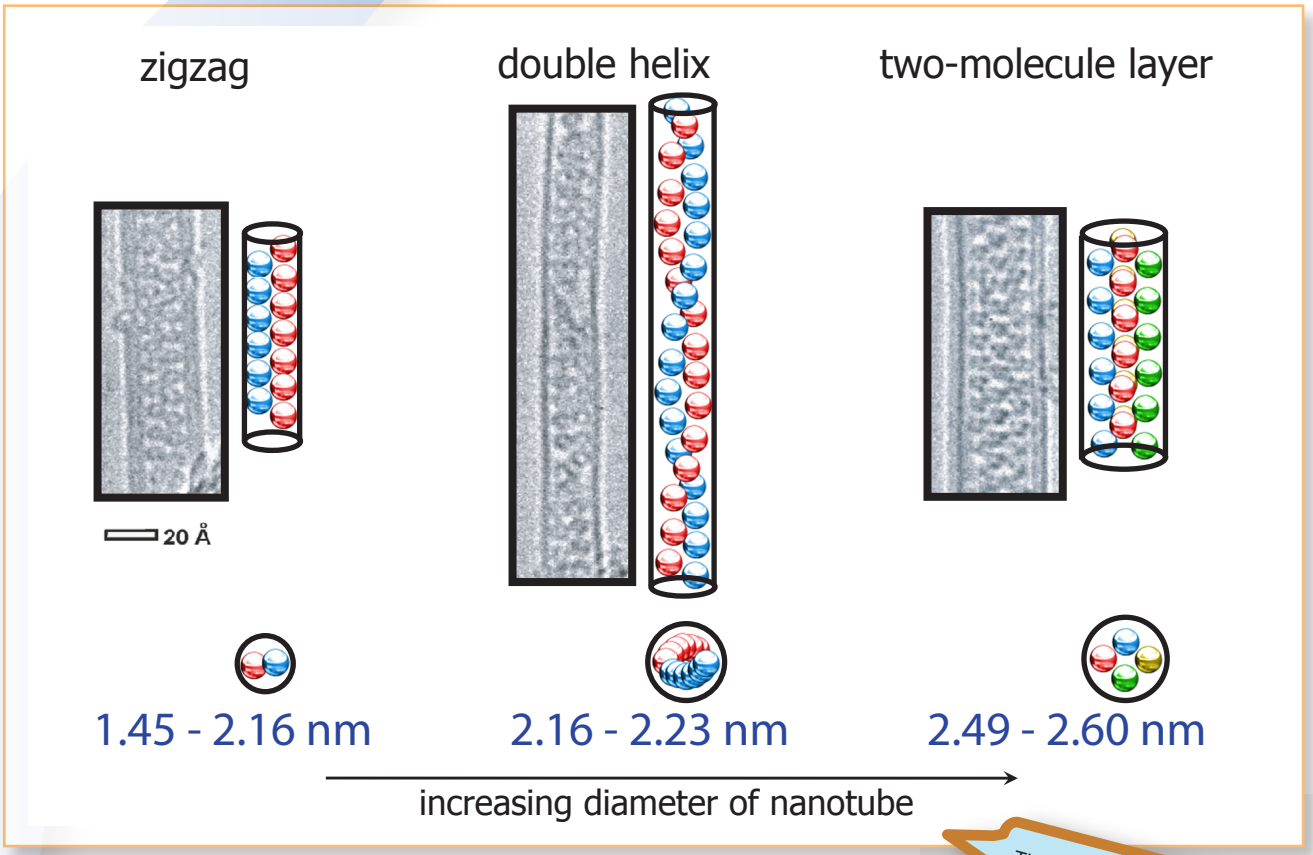
7

Packing

- molecules in nanotubes -

Carbon nanotubes can be filled with fullerene molecules. As well as simple linear structures you can get more complicated patterns with nanotubes of different width.



There are 10 ways of packing C_{60} into nanotubes, none of which can be obtained elsewhere.

The type of pattern you see can be predicted with simple maths from the ratio of the diameters: d_{ball} / d_{tube}

In wider carbon nanotubes the molecules are more free to move.

This means that the fullerenes can arrange themselves with minimum wasted space. The pattern depends on the width of the nanotube.

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Design by Dan Marsh, 2008