Some New Insights in to the Mechanisms of Fullerene and Nanotube Formation

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In 1985 Buckminsterfullerene (the third allotropic form of carbon) was discovered during experiments designed to unravel the chemistry in red giant carbon stars. The molecule has now come down to Earth giving rise to the Fullerenes, a family of pure carbon cage molecules with fascinating properties which promise exciting new developments in 21st Century Materials Science and Technology. Fullerene molecules and their elongated nanotube (buckytube) cousins are now the subject of intense study as they promise to play major roles in almost every possible area of future technology from medicine and molecular electronics to civil engineering. However the mechanisms whereby various types of nanostructures assemble are still very poorly understood. Over the last decade or so, we have examined a wide range of methods for nanotube formation and from these studies some interesting new insights have been gained – especially with regard to metal catalysed nanostructure formation.

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