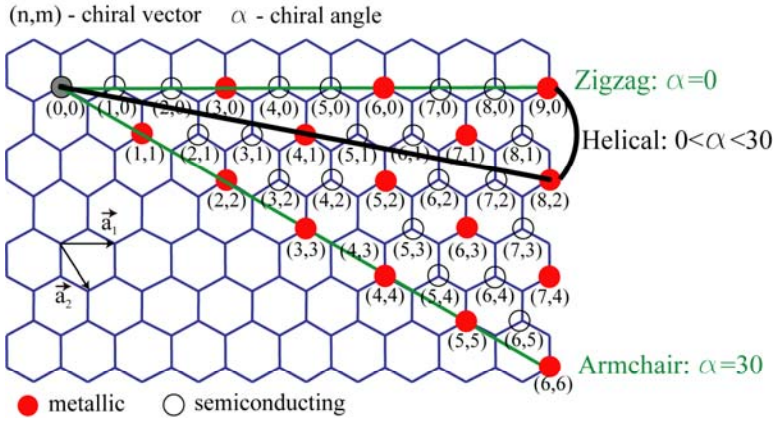
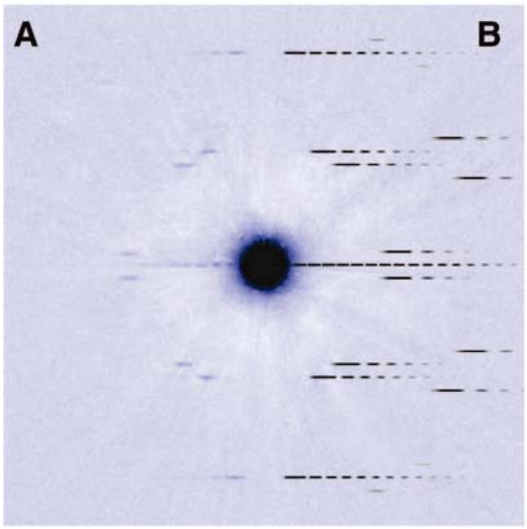
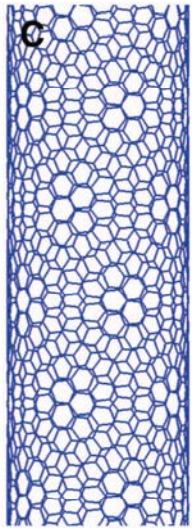
Correlating properties and structure of carbon nanotubes

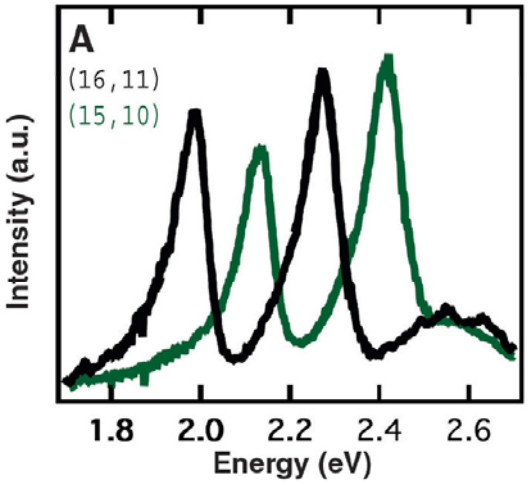
- Different nanotube structures can be formed depending on how a graphene sheet is rolled up to form the nanotube. The physical properties, for example if a CNT is metallic or semiconducting, depend sensitively on the structure. Understanding how these materials function on a basic level is key to controlling and manipulating them for future successful commercial applications.







- By combining optical Rayleigh scattering with electron diffraction experiments the electronic transitions can be matched to the exact physical structure of the CNT. For the first time it is possible to directly compare and test NT theories and validity of underlying assumptions.



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