**Chapter 9 – Bonding, Surfaces and Nanoparticles**

**Key Knowledge**

* Models of bonding.
* Limitations of the bonding models
* Behaviour of surfaces
* Application of surface chemistry in nanotechnology

**Chapter Outcomes**

* Identify the bonding present in a substance on the basis of the type of elements present.
* Predict the physical properties of a substance on the basis of the elements present.
* Explain why surfaces of materials have special properties.
* Relate the surface energy of a material to the strength of the forces between particles.
* Relate the concept of surface energy to the degree to which different liquids will wet different surfaces.
* Identify some of the ways in which the behaviour of nanoparticles differs from that of larger particles.
* List some of the applications of nanotechnologies.