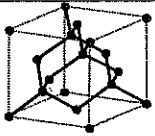

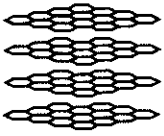

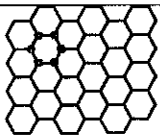







2.1.1 General Introduction to Carbon Materials

Table 2.1 Examples of carbon allotropes.

sp^3 bonding carbon				
dimension	allotropes	structure	ilustration	discovery
3D	diamond			ancient times
sp^2 bonding carbon				
3D	graphite			ancient times
2D	graphene		 [26]	2004, Novoselov, et al. [19]
1D	carbon nanotube			1991, Iijima [27]
0D	fullerenes			1985, Kroto et al.[28]
sp^3 and sp^2 bonding (mixture) carbon				
3D	amorphous carbon		 [29]	NA

² This figure shows amorphous carbon film on silicon substrates.