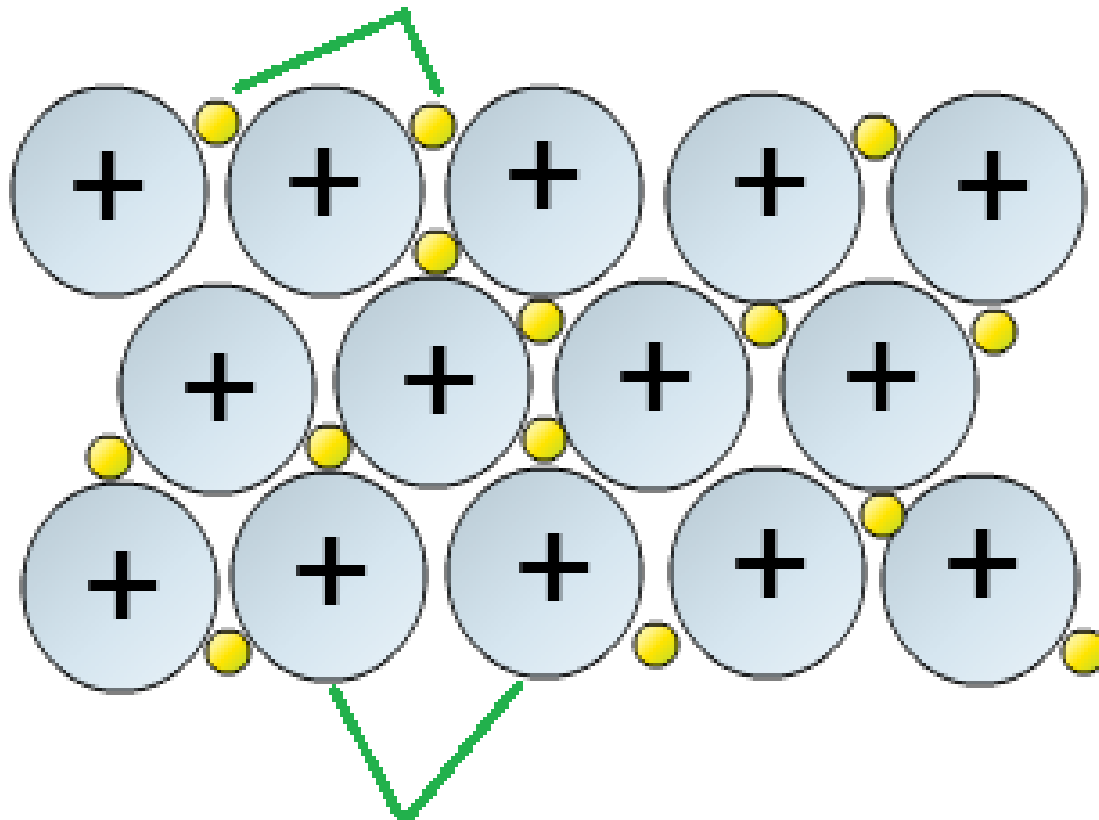


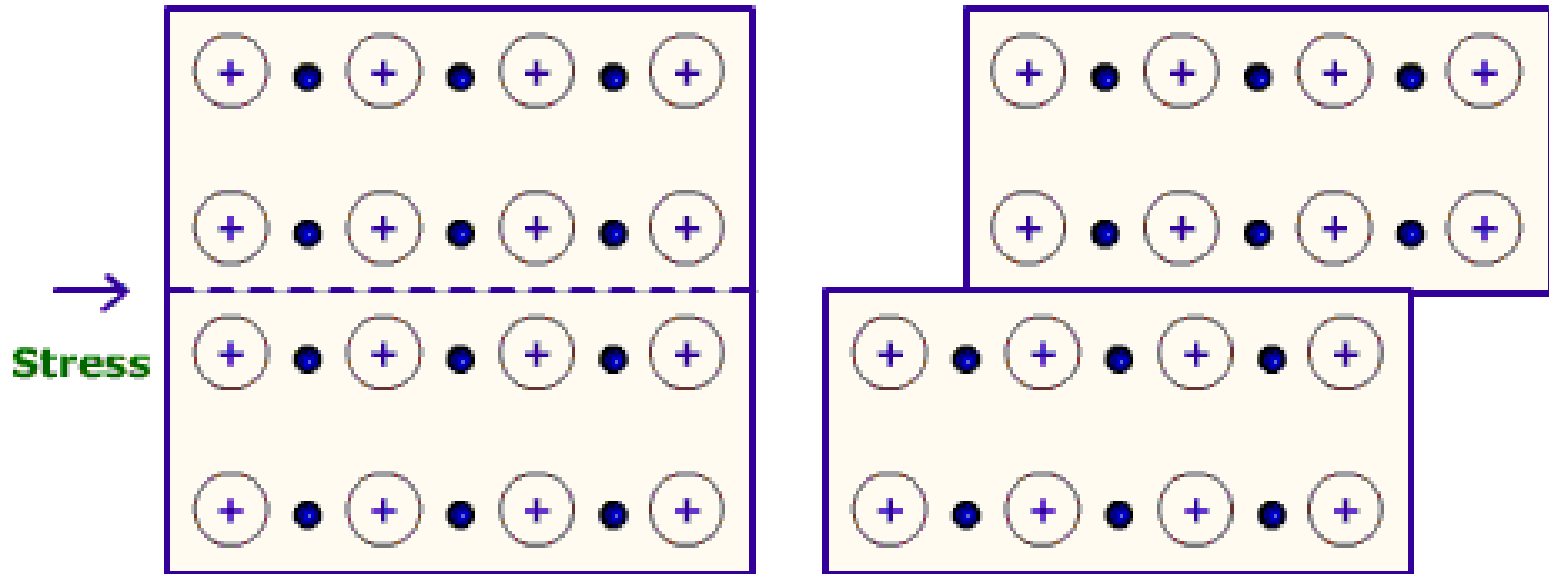
Metallic substance

Free Electrons from outer
shell of metal atoms

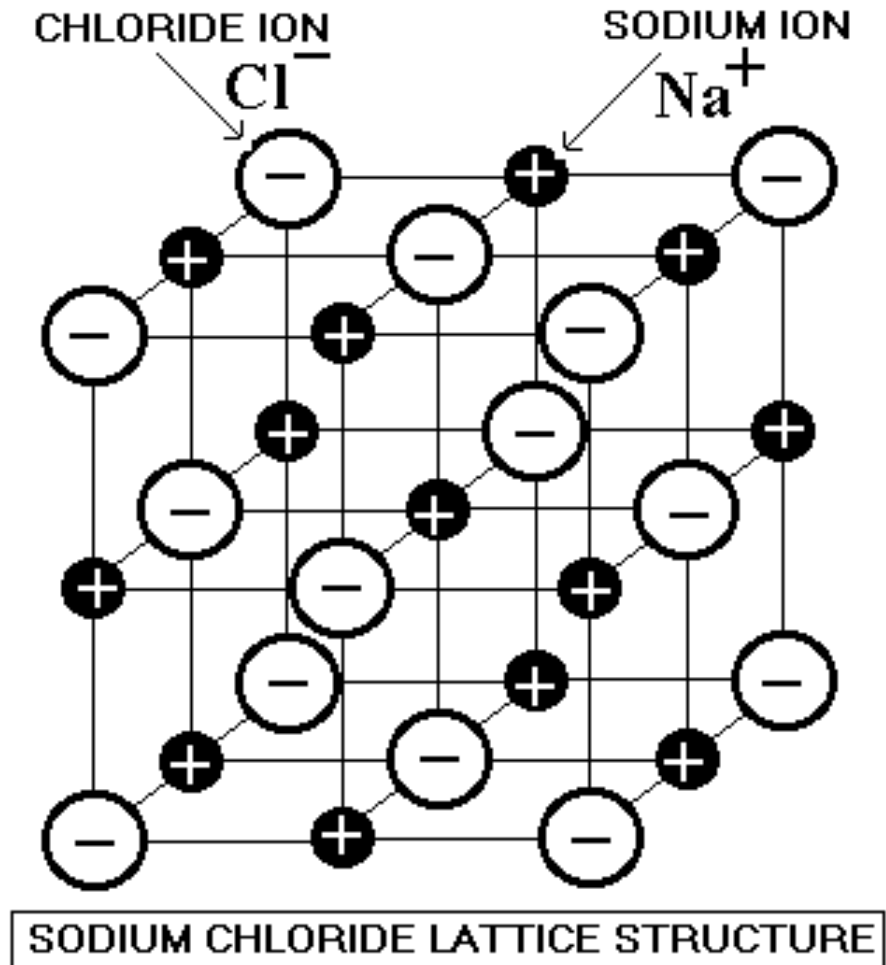


Metal ions

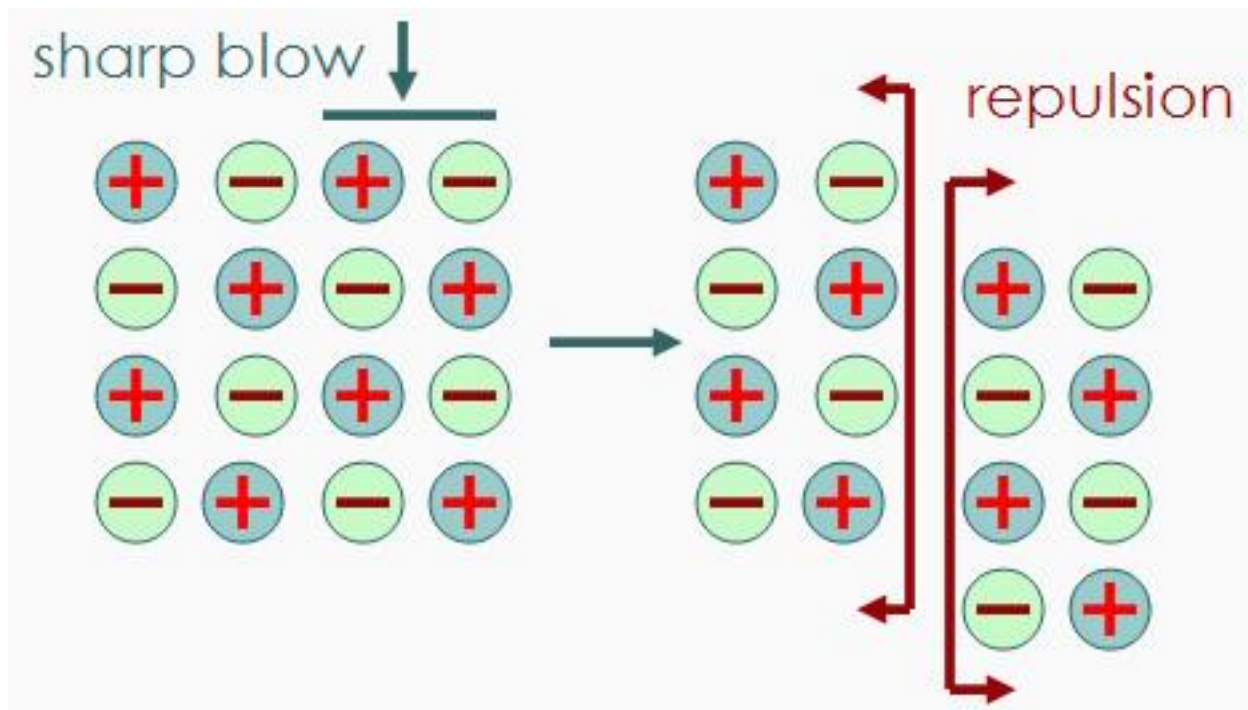
Malleability of metallic substance



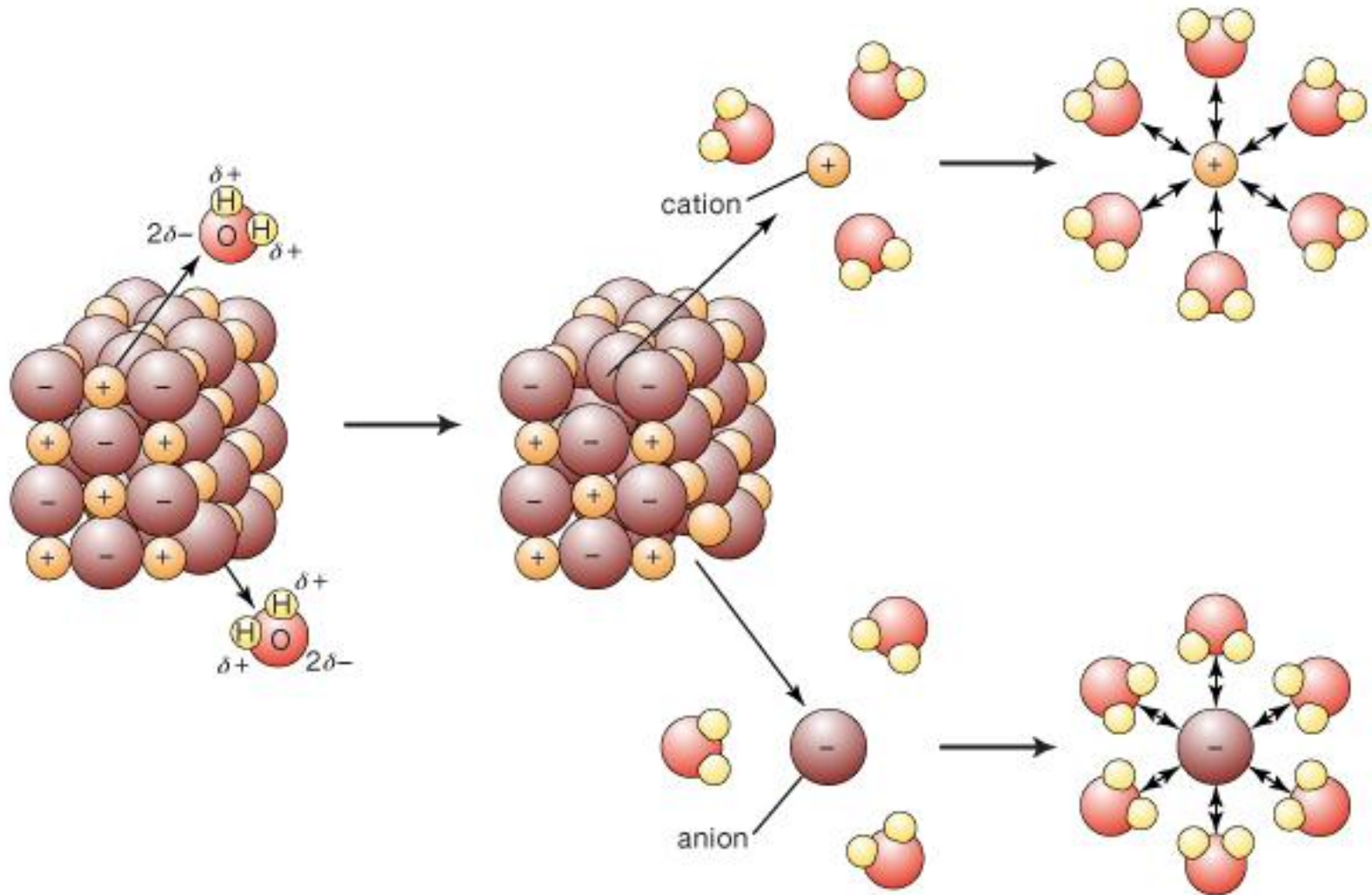
Ionic substance



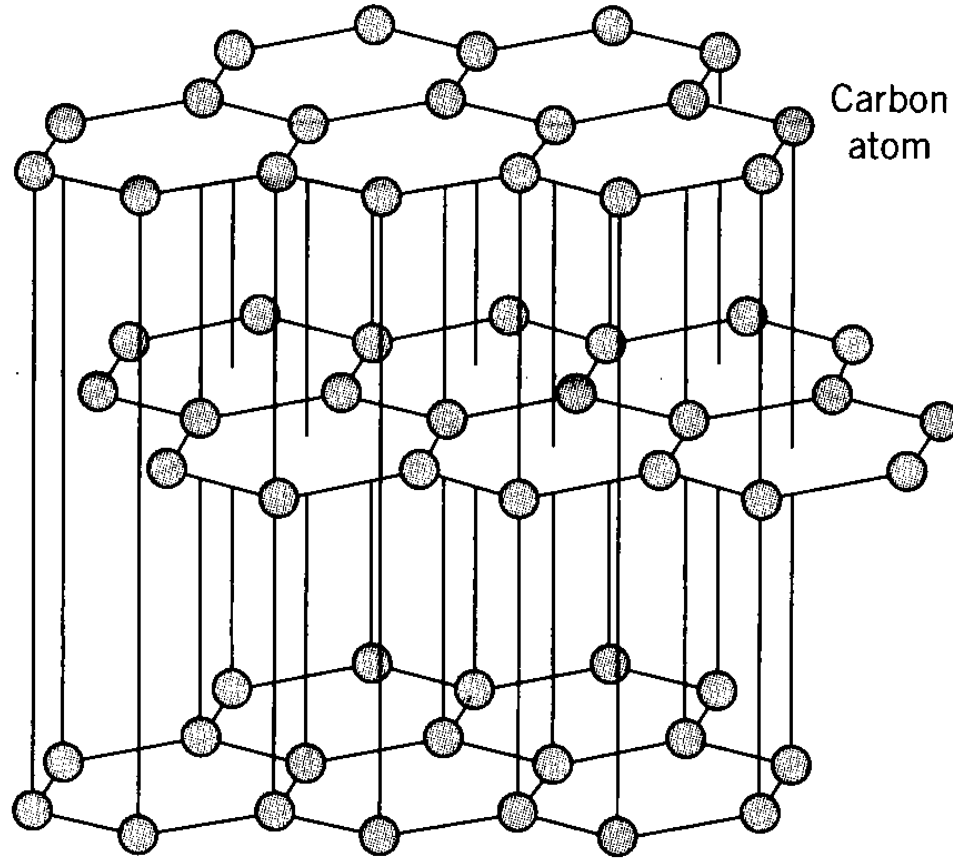
Ionic substance is Brittle



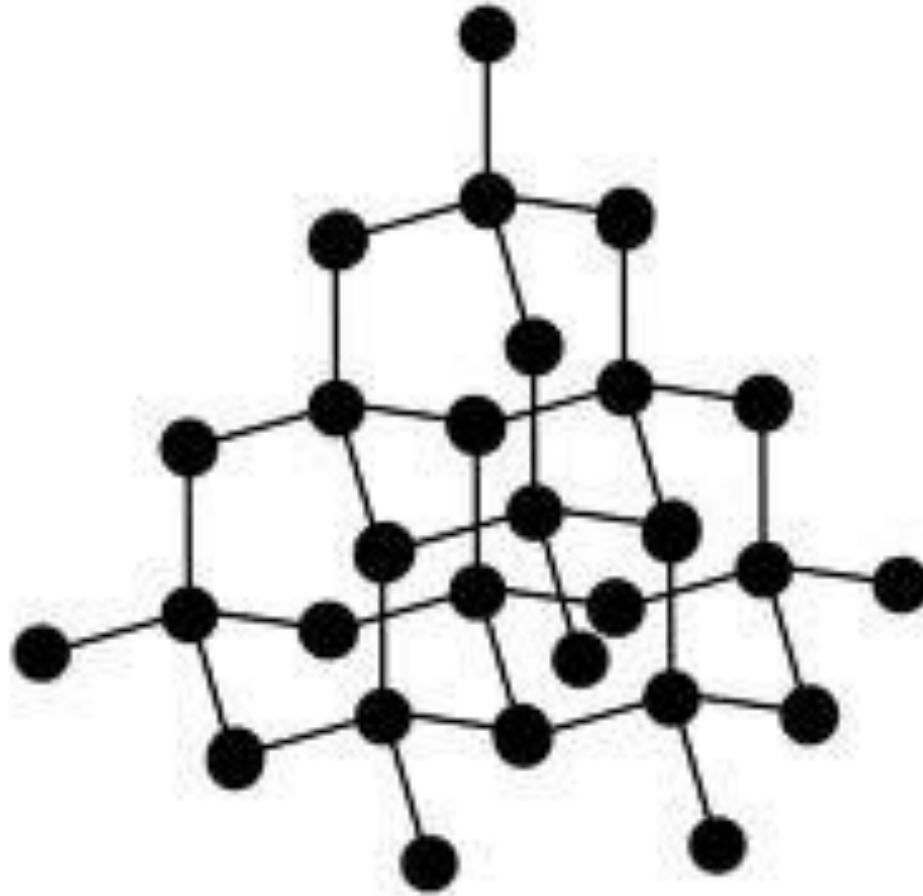
Solubility of ionic substances



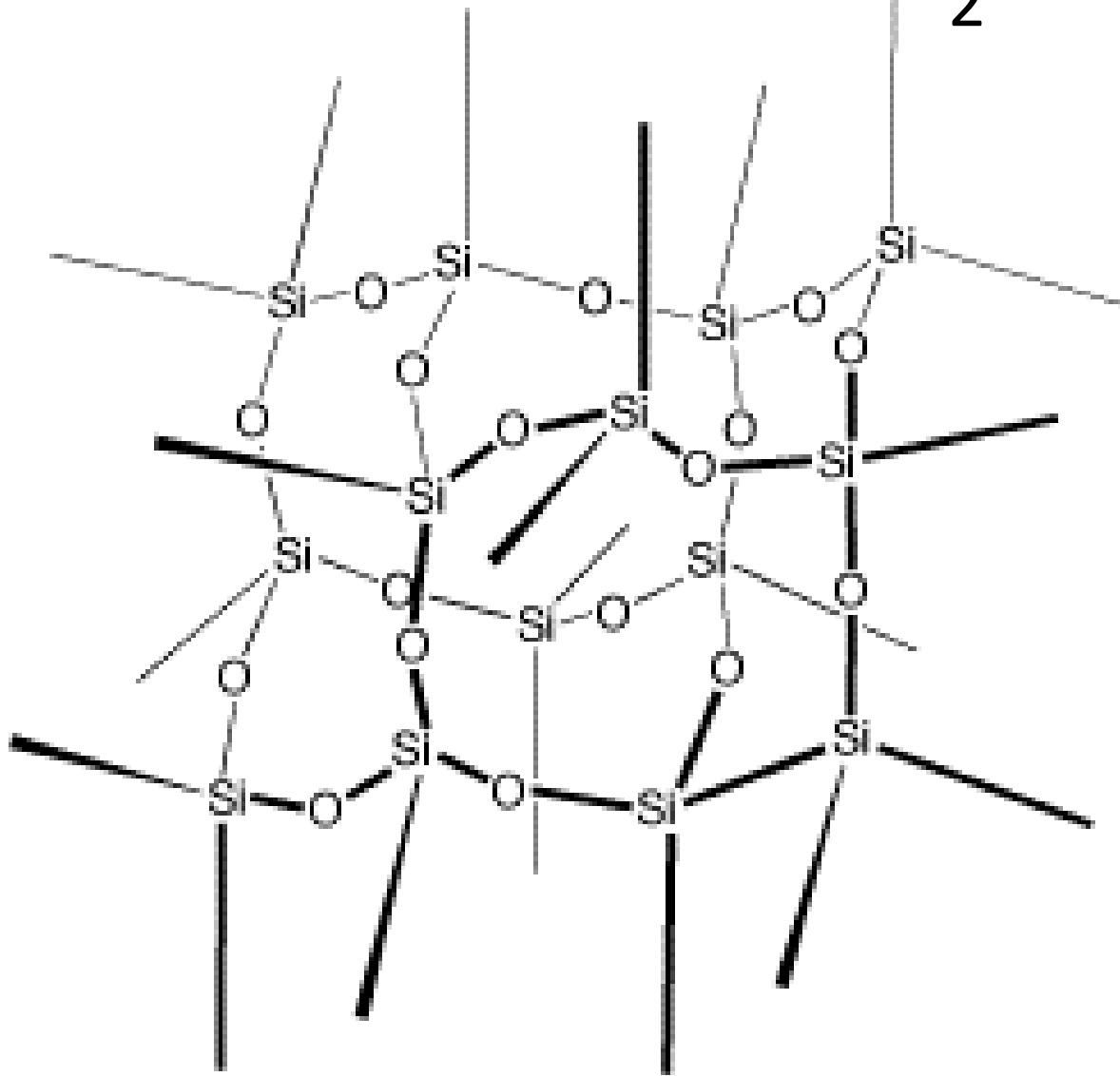
Giant molecular graphite



Giant molecular diamond



Giant molecular SiO_2



Type of solid	Particle	Attraction force
Discrete molecular	molecule	Intermolecular force (weak)
Metallic	Metal atom or Cation in sea of electrons	Electrostatic between the positive cation and negative mobile electrons (strong)
Ionic	Cation and Anion	Electrostatic between positive cation and negative anion (strong)
Giant molecular	Atom	Very strong covalent bond