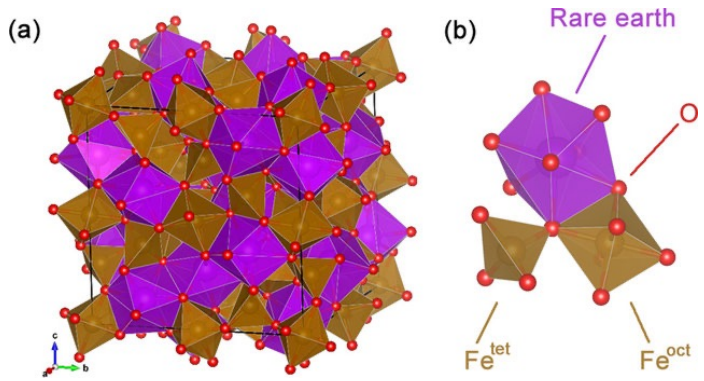
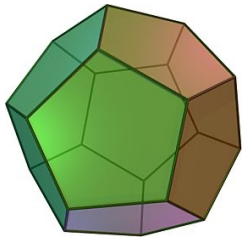
$Y_3(Fe,Al)_5O_{12}$





Regular dodecahedron

Crystal structure of rare earth iron garnets. (a) Cubic unit cell. (b) Local polyhedra environment experienced by Fe and R ions from their neighboring oxygen ions. Ref.: Phys. Rev. B 95, 024434 (2017)

Optical image of rare earth iron garnet $Y_3(Fe,Al)_5O_{12}$ mineral. The most common crystal shape is the cube-based rhombic dodecahedron, a twelve-sided crystal with diamond shaped faces.

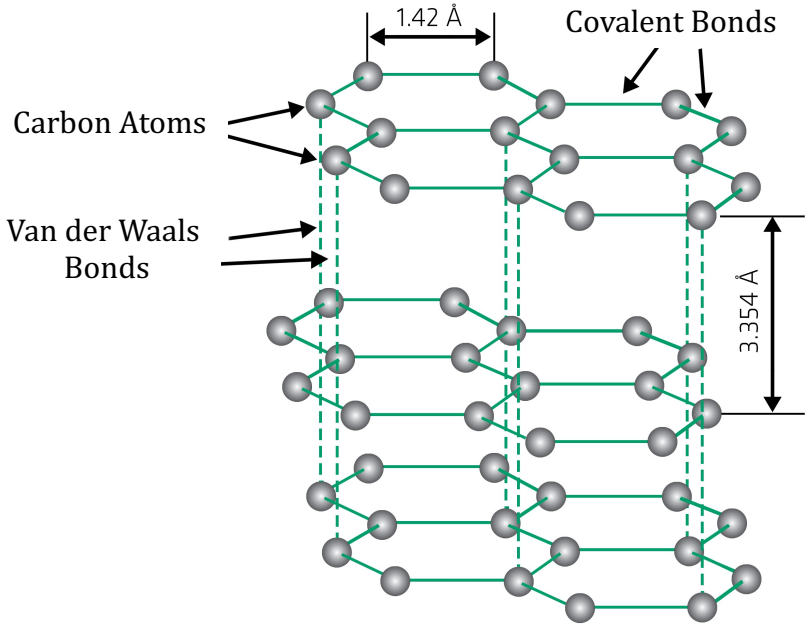
Rare earth iron garnets are ferrimagnetic insulators with the chemical formula $R_3Fe_5O_{12}$ (where R is rare-earth elements) and useful magneto-optical properties.

Graphite

Graphite is a mineral consisting of carbon

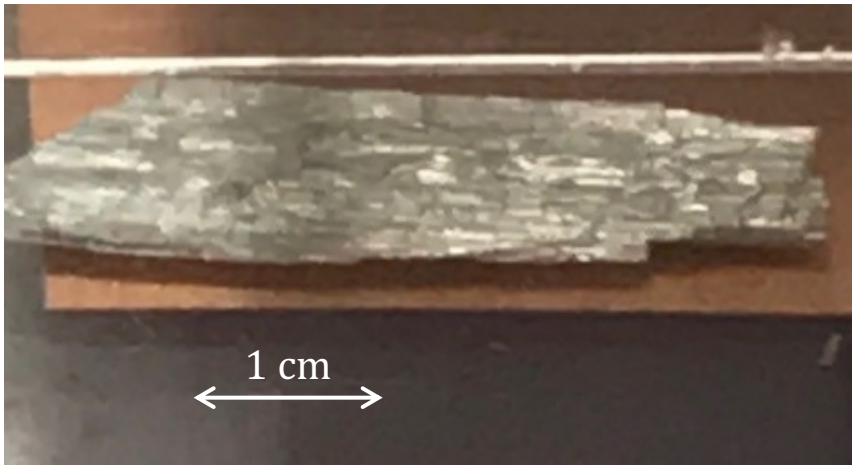
Graphite specimen

It is one of the softest minerals and it exhibits perfect basal cleavage.

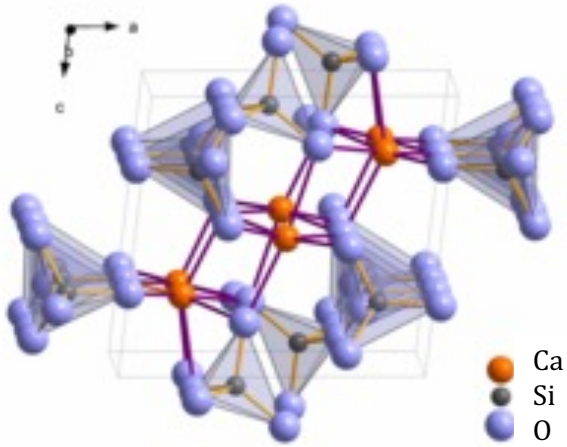


Graphite is a crystalline form of the element carbon. It composed of overlayed graphene layers interacting through Van der Waals forces.

$CaSiO_3$



Optical image of Wollastonite – calcium silicate mineral $CaSiO_3$.



The unit cell of triclinic $CaSiO_3$. This formula may also be written as $Ca(Si_3O_9)_{0.33}$ or as $Ca_3(Si_3O_9)$.

Canadian Wollastonite is a little-known a relatively rarely-occuring mineral with a pearly luster on cleavage surfaces and a granular texture. Ref.: Wikipedia.org