


Skript zur Vorlesung Anorganische Chemie I

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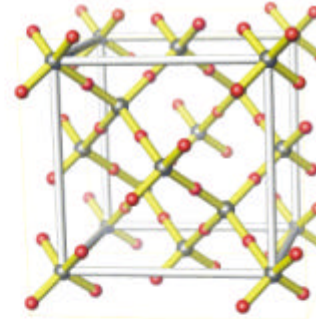
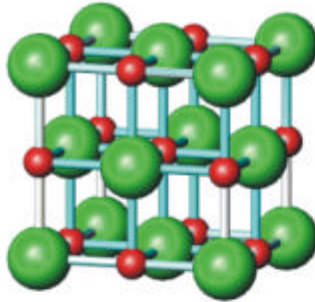
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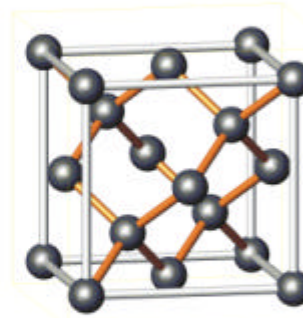
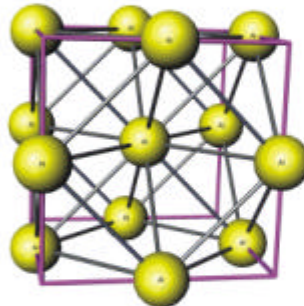
Cubic Face-Centered Structures

rocksalt-type



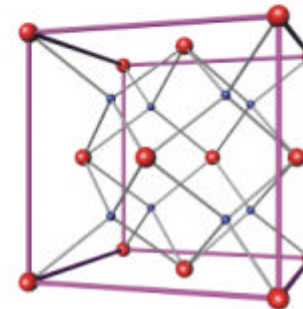
Cristobalite
-type
(SiO_2)

fcc-type



diamond
-type
(C, Si, Ge, Sn)

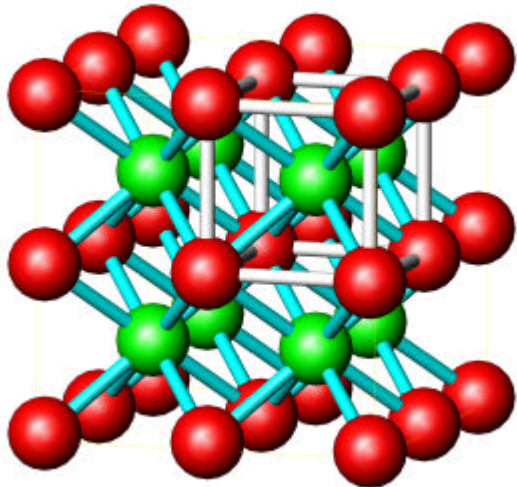
rocksalt-type



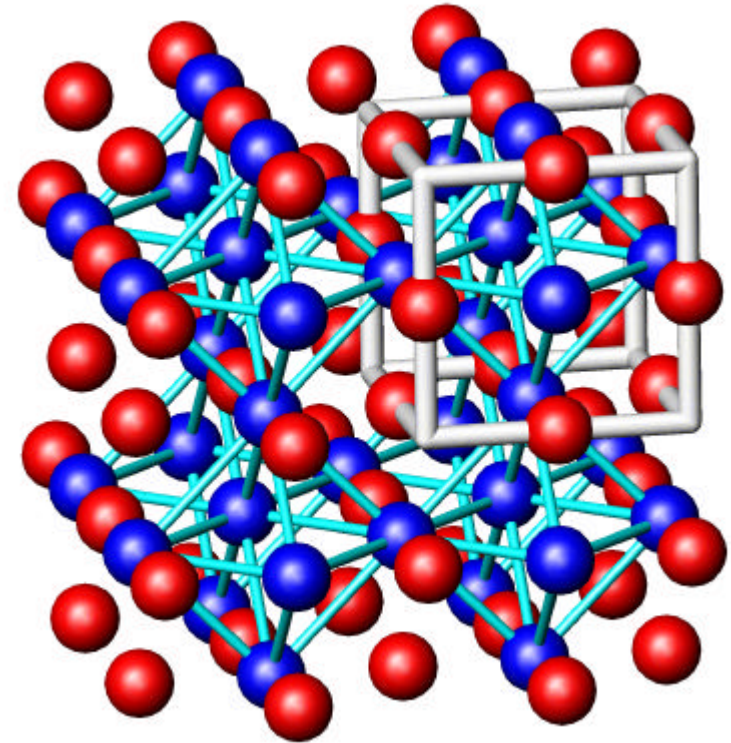
Fluorite-type
(CaF_2)

Cubic Primitive Structures

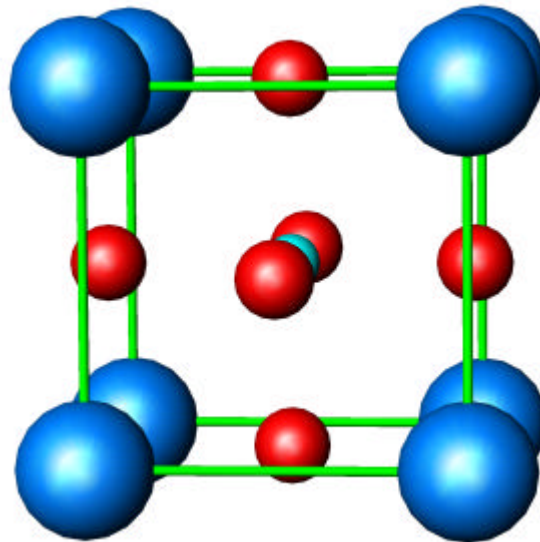
CsCl-type



NbO-type

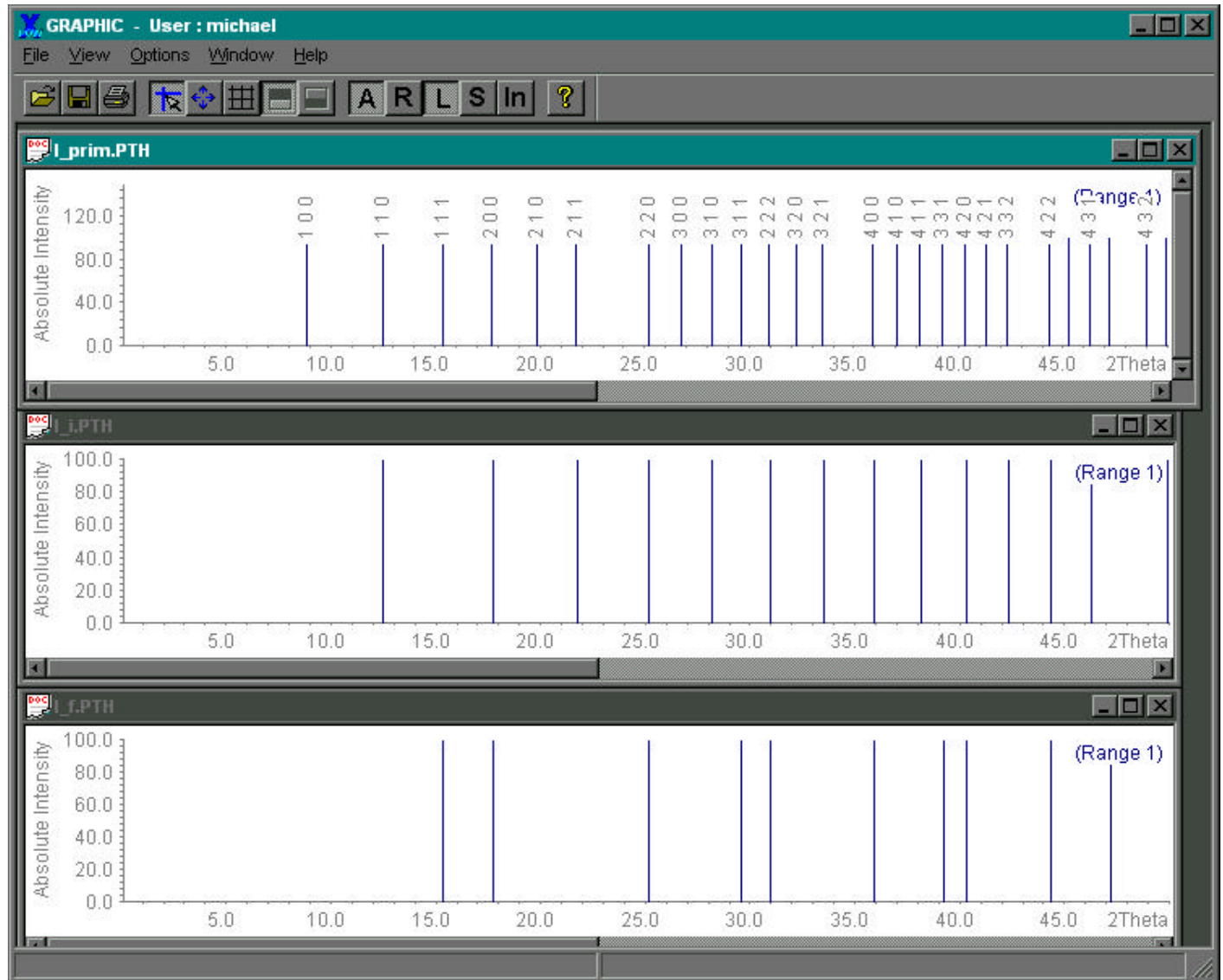


Perovskite-type
 CaTiO_3



Effect of Centering

- P



$h+k+l = 2n$

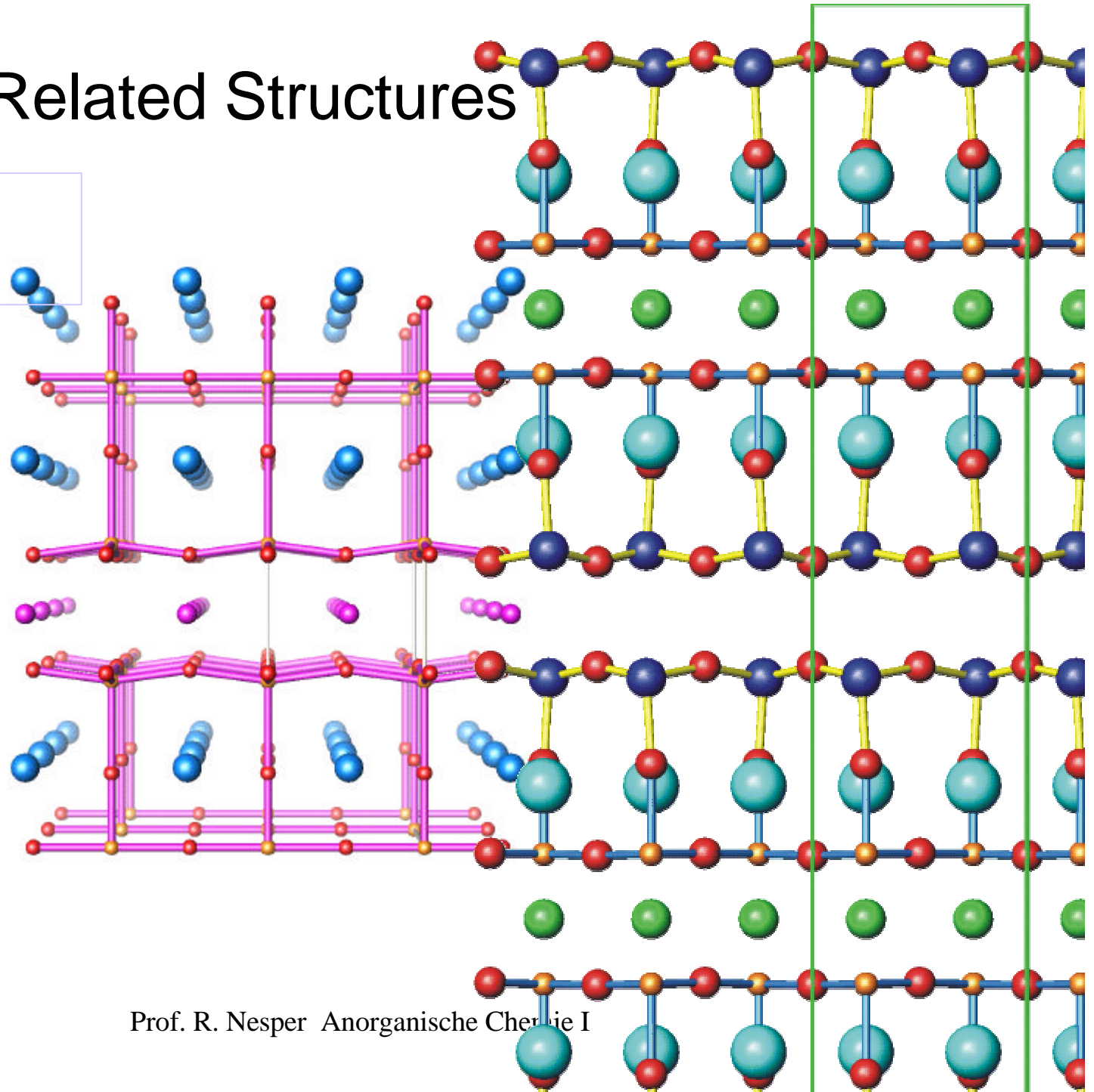
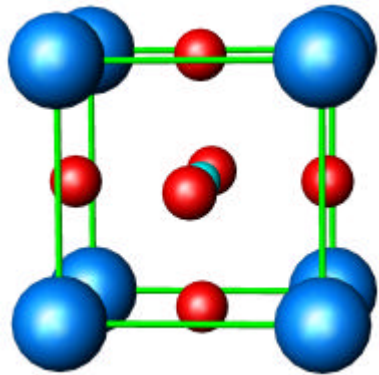
I

$h+k+l = 2n$

F

Perovskite-Related Structures

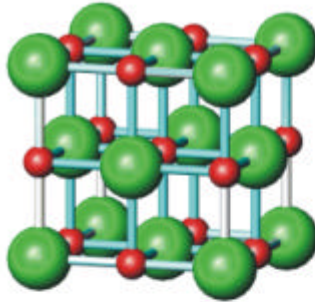
Perovskite-type
 CaTiO_3



Mutual Coordinations

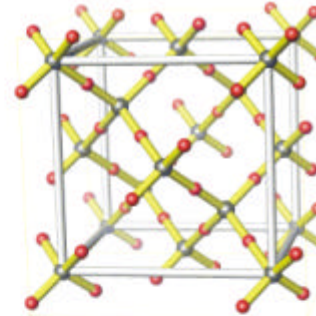
Rocksalt-type

6:6



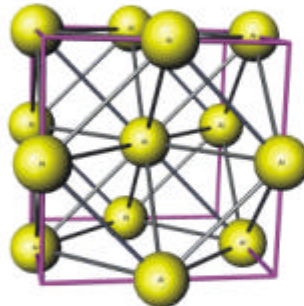
Cristobalite
-type

4:2



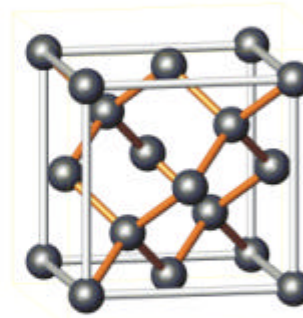
fcc-type

12:?



Diamond
-type

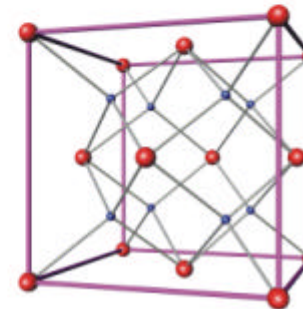
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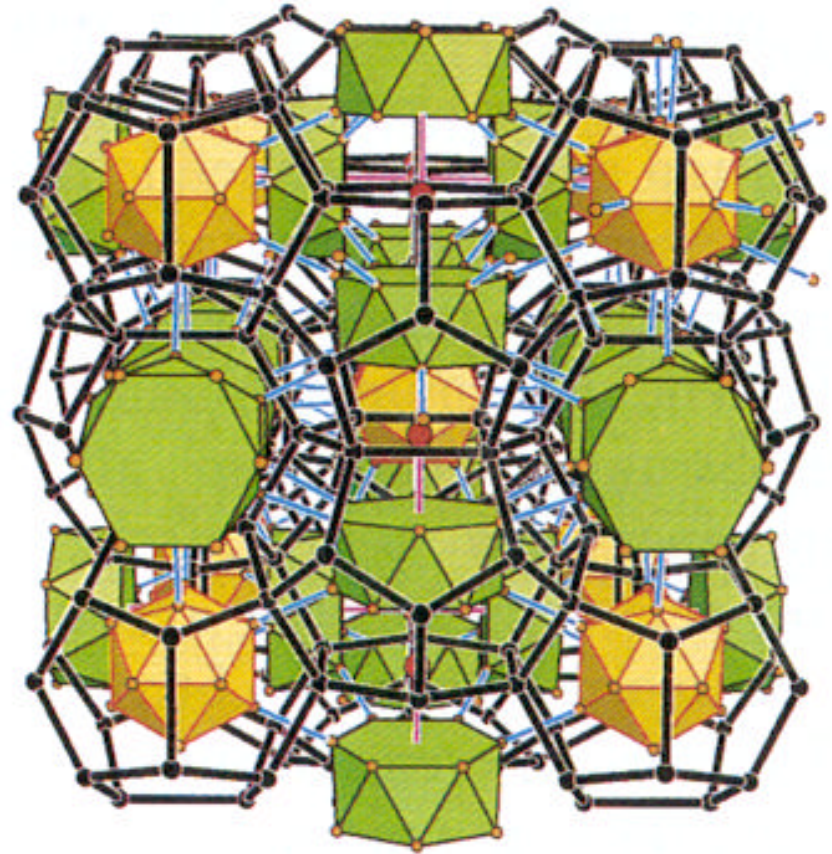
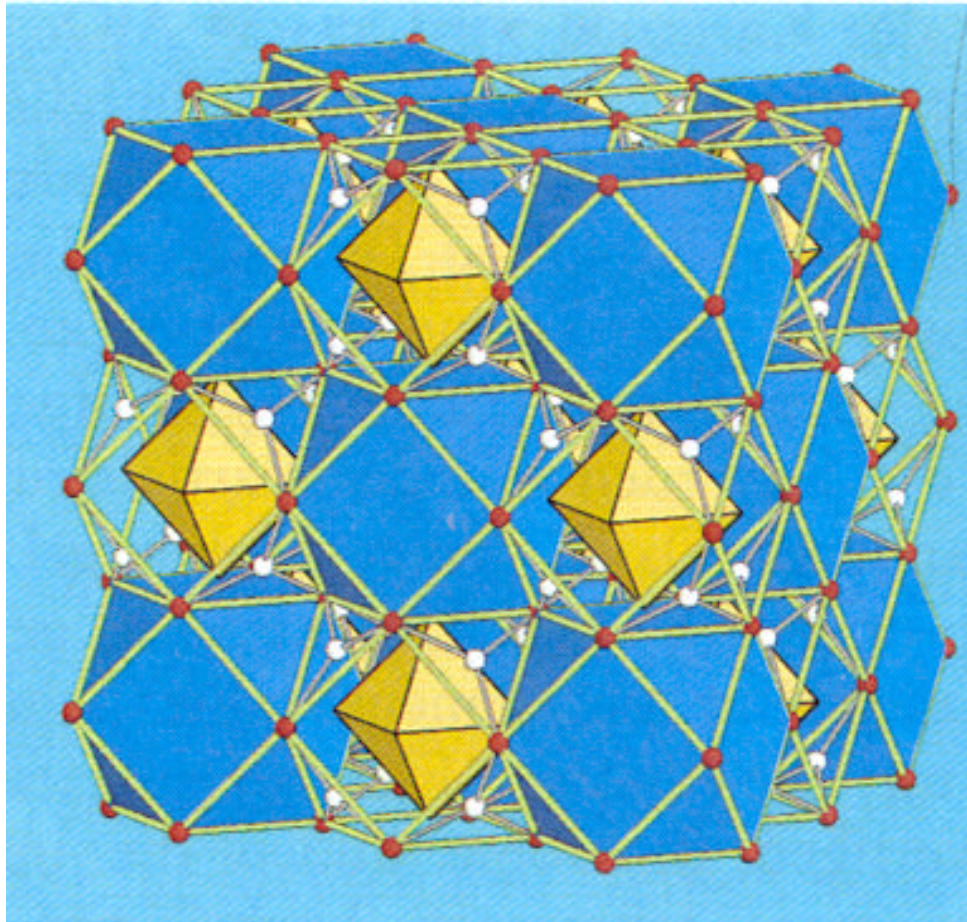
Rocksalt-type

Fluorite-type

8:4



Symmetry?

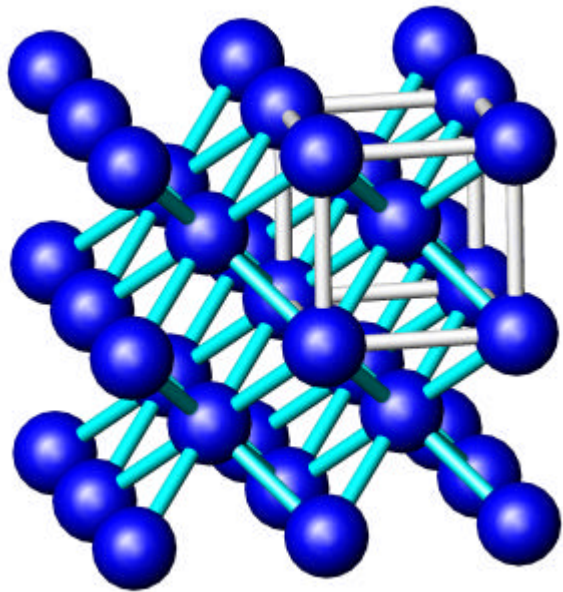


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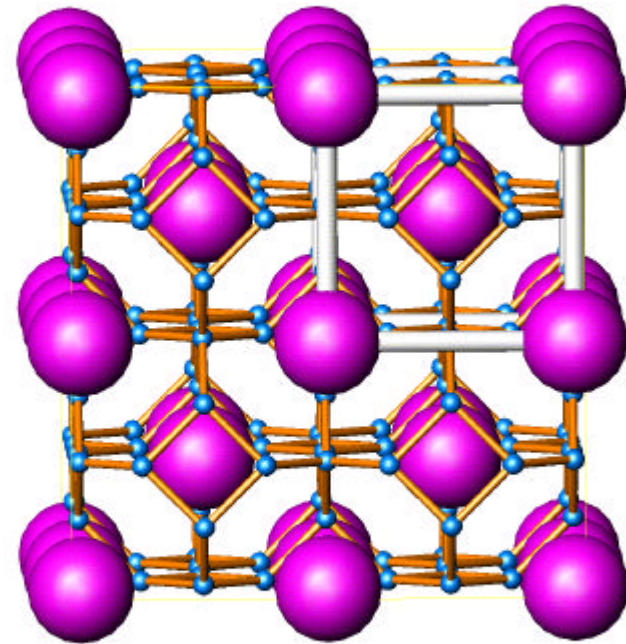
Prof. R. Nesper Anorganische Chemie I

Cubic Body-Centered Structures

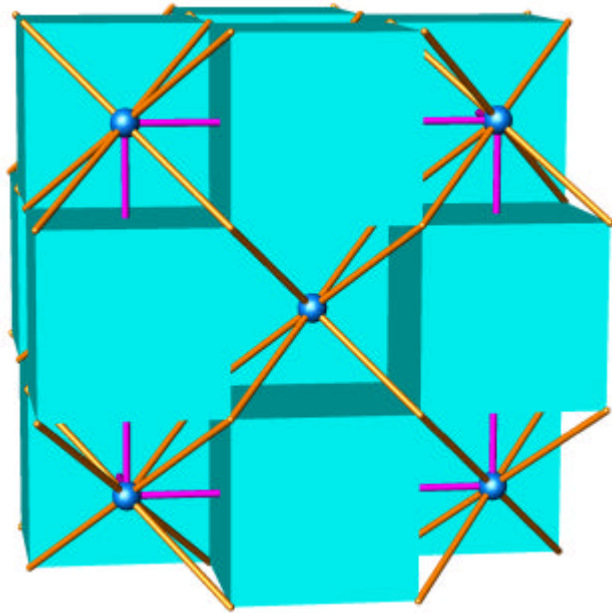
Tungsten-type



AgI – Ionic
Conductor



Fluoride-Based Compounds



O^{2-} - Ionenleiter

Lambda-Sonde/Autocat-Steuerung

Besetzte Würfel in Schichten

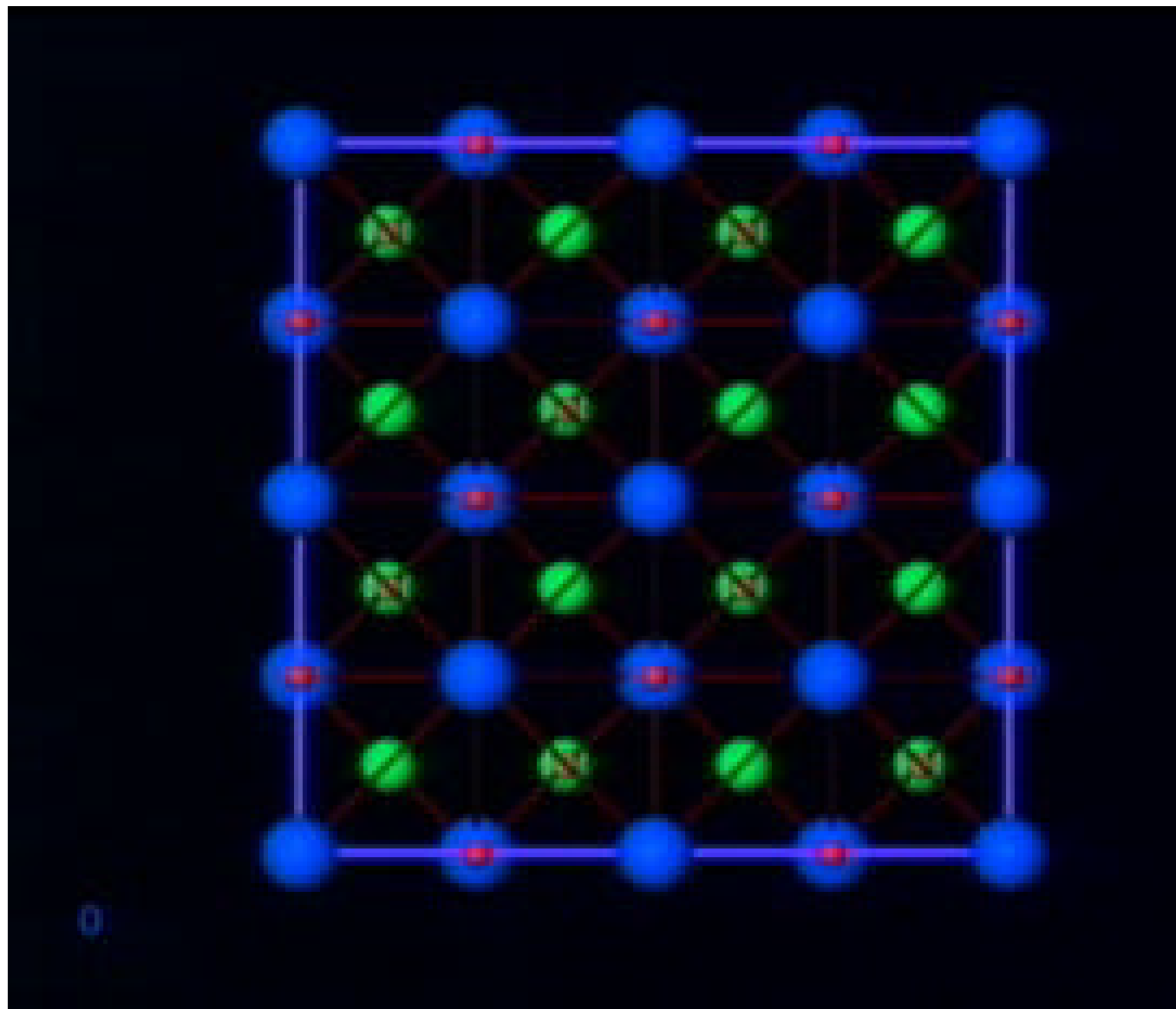


Filled-up
Fluoride
or
BiF₃-Type

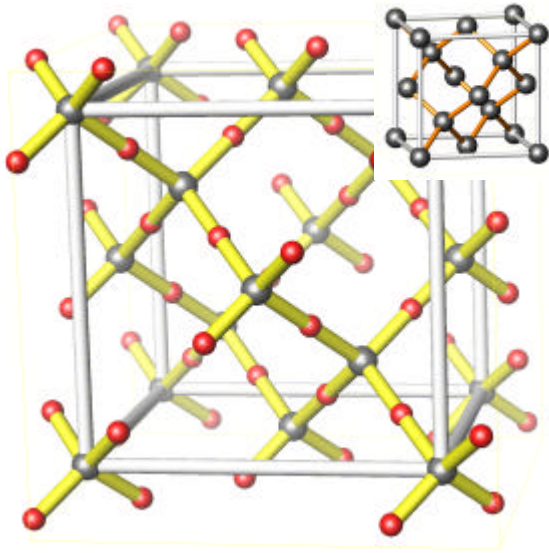
Li₂MgSi

CPMD

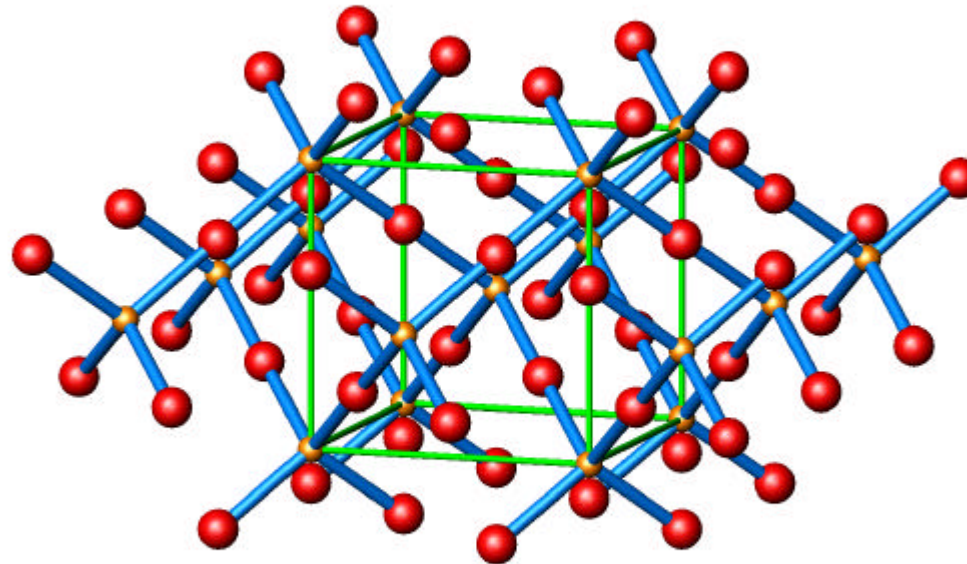
900K



Cristobalite – Related Compounds



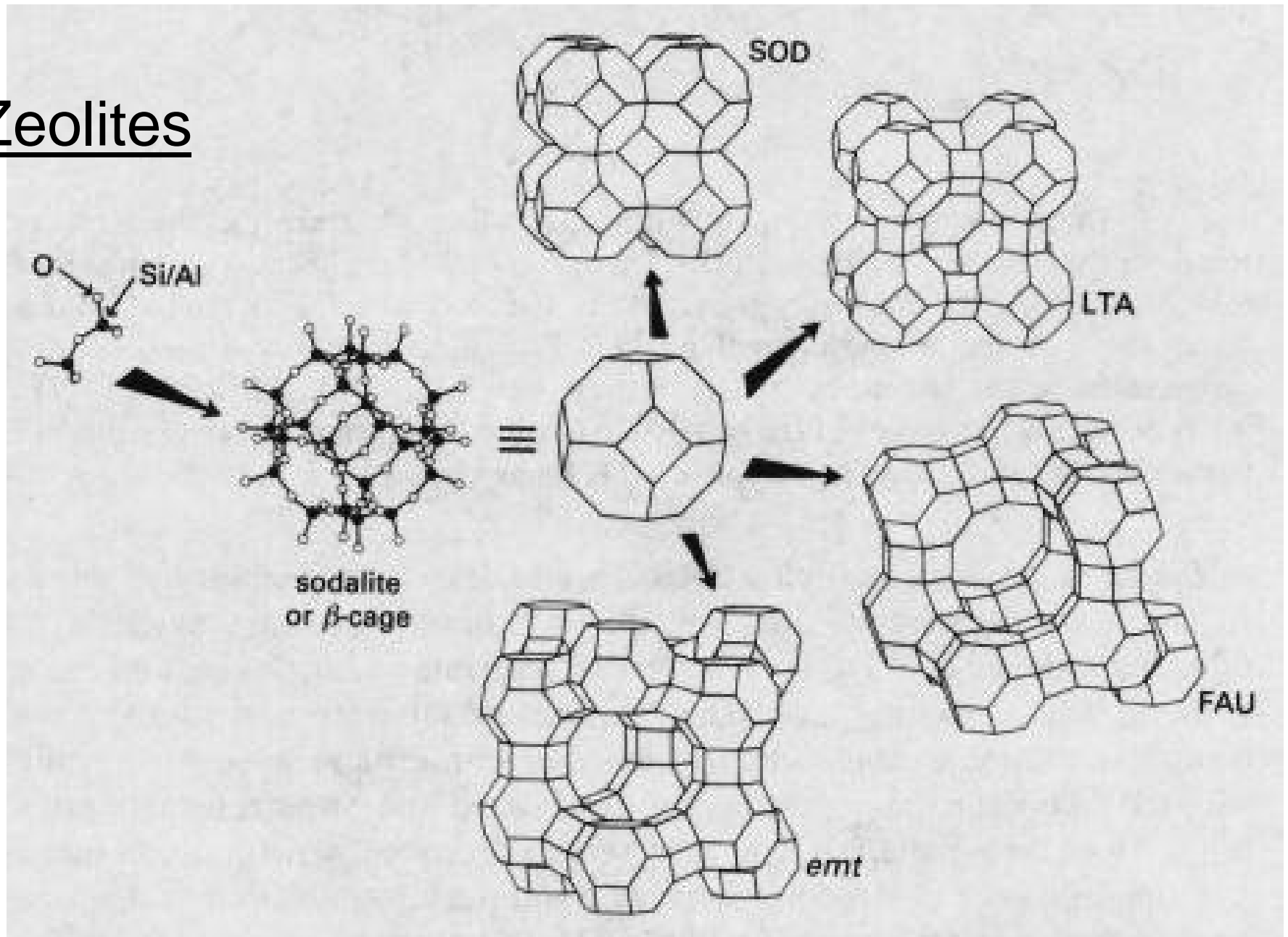
Packungsdichte
im Kugelmodell?



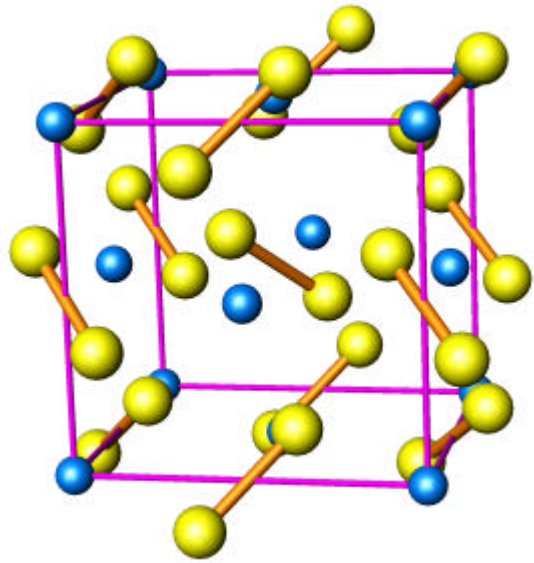
Packungsdichte
im Kugelmodell?

HP-H₂O / Cu₂O

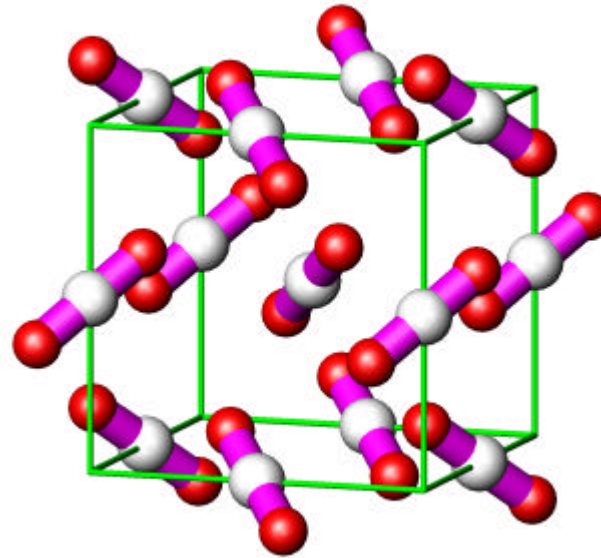
Zeolites



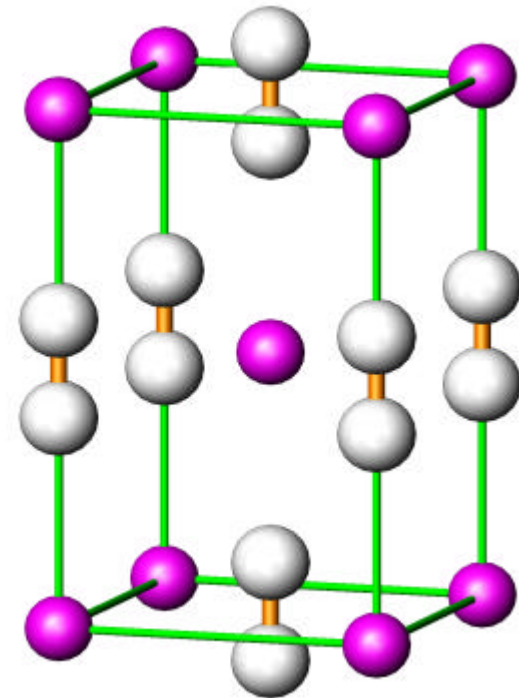
Elongated Anions etc.?



cubic
 FeS_2



cubic
 CO_2



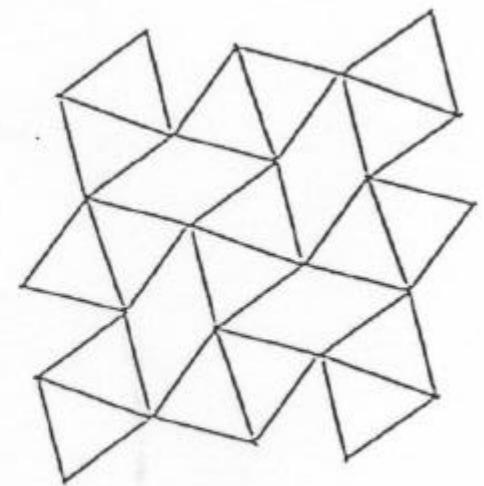
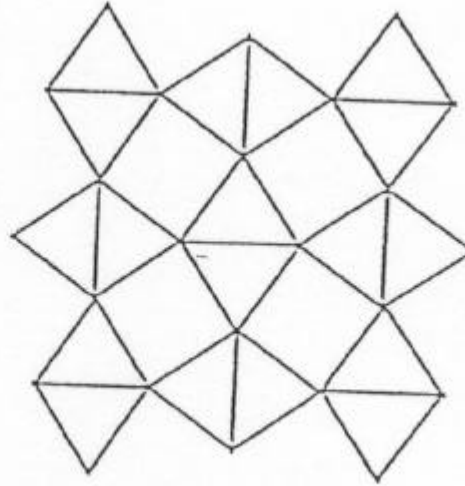
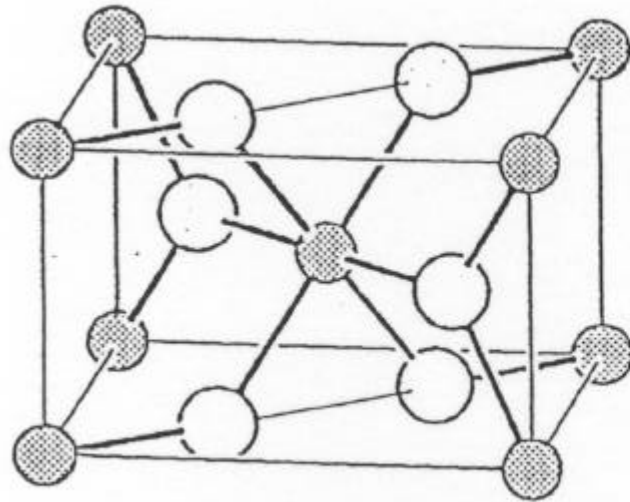
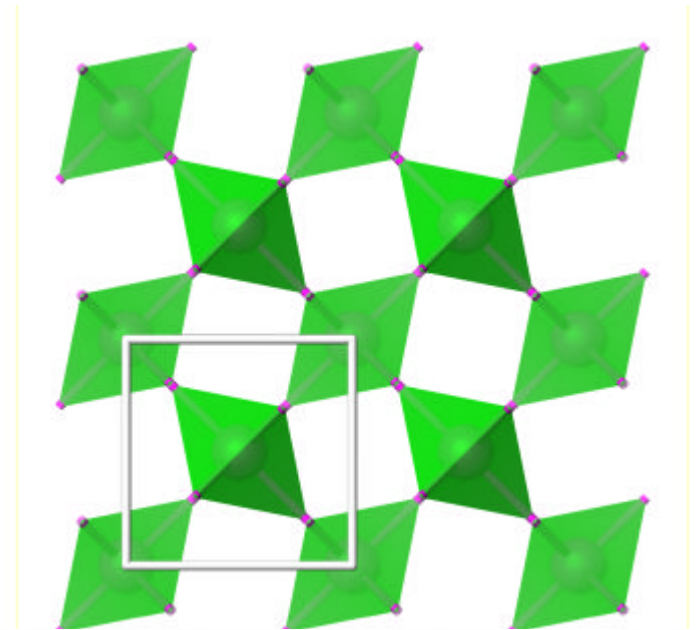
Tetragonal
 $a=b \neq c$;
 CaC_2

Rutile

TiO_2

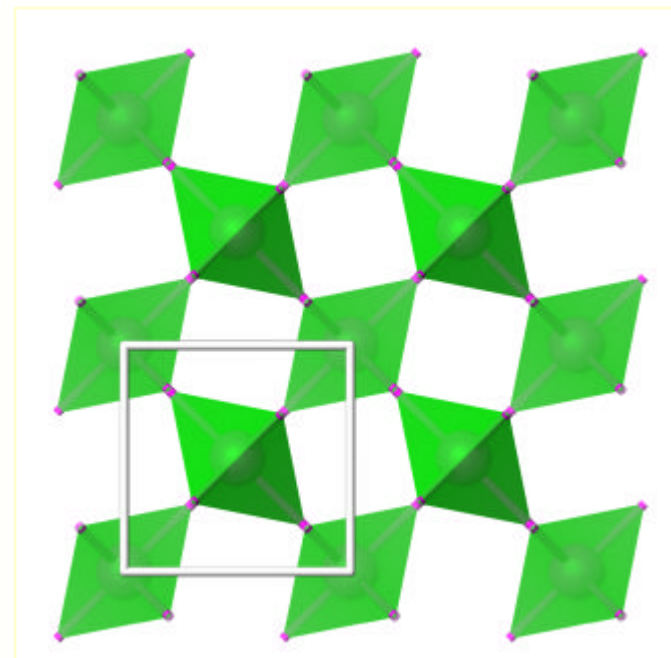
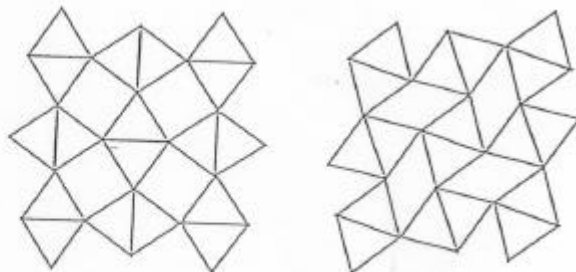
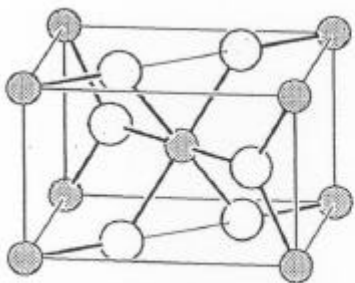
Cordinations ?

Distortions



Bonding?

Rutile



- $\beta\text{-MnO}_2$
- MnF_2
- MgF_2
- GeO_2
- SnO_2
- $\beta\text{-PbO}_2$

