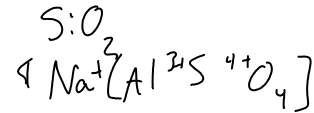
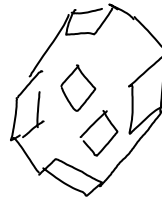
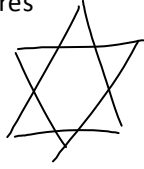


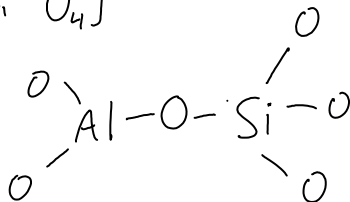
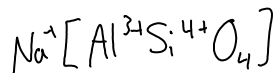
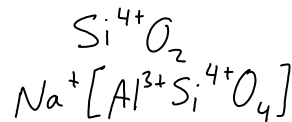
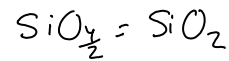
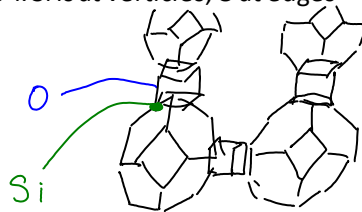
Notes 02/29

Friday, February 29, 2008
10:00 AM

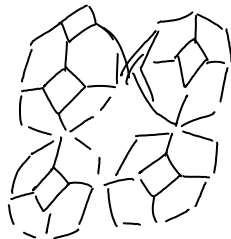
- Truncated octahedron
 - Octahedral molecule has 8 faces
 - Shave off 6 edges to create squares
 - 8 hexagons and 6 squares



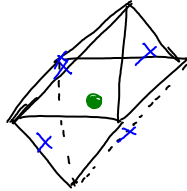
- Join two truncated octahedrons by their squares... continue to join until all squares are in extended structure.
 - This is structure of LTA and zeolite A
- At the vertices of a truncated octahedron, there are 3 connections. When they are connected to each other they become 4. Si is at vertices, O at edges



- Take out cubes from LTA structure and directly connect truncated octahedrons. This is structure of sodalite (SOD) and ice under pressure.



Each truncated octahedron is joined to square x6



Every other hexagonal face is joined to another hexagonal face to make a hexagonal prism between them - Example - Fau (SiO_2 , AlSiO_4)

Sulfur (does not make zeolite structures)

They are all cyclical except S infinity. And always S with 2 bonds and 2 lone pairs.

Alpha-Sor S_8

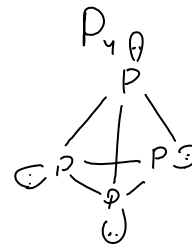
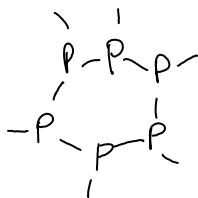
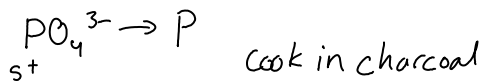
Common form of sulfur



Crown

Phosphorus

Phosphate PO_4^{3-} (oxidation of P is 5⁺)



We covered:

- Boron
 - CaB_6
 - Elemental form of boron
 - Boron nitride

- $B_{12}H_{12}$ (based on icosahedron)
- Boron oxides (Bos)
- Complex anions
- Sphere packing (VOH handout)
 - Need to know structures regarding closest packing (list of structures need to know on VOH)
- Carbon
 - Graphate, C_{60} (icosahedron by shaving vertices, diamond)
- Silicon
 - Silicon oxide structures
 - Silicon is always tetrahedral
- Zeolites
 - 02/29 notes
- Phosphorus
 - Form of elemental phosphorus
- Sulfur