

see periodic tables in kitel

project:

FCC/BCC/SC/EX

BCC and FCC examples (Elements)

FCC	Al	5.26	Ir	3.84	Pt
	Ag	4.09	Kr		8-Pu
lattice	Al	4.05	La		Rh
constant	Au	4.08	Ne		Sc
in Å	Ca	5.58	Ni		Sr
	Ce	5.16	Pb		Th
	β -Co	3.55	Pd		Xe
	Cu	3.61	Pr		Yb 5.49

BCC	Ba	5.02	Li	Ta
	Cr	2.88	Mo	Tl
	Cs	6.05	Na	V
	Fe	2.87	Nb	W
	K	5.23	Rb	

SC is very rare (only one type of Po!)

Why do you think? (Too empty?)

project:

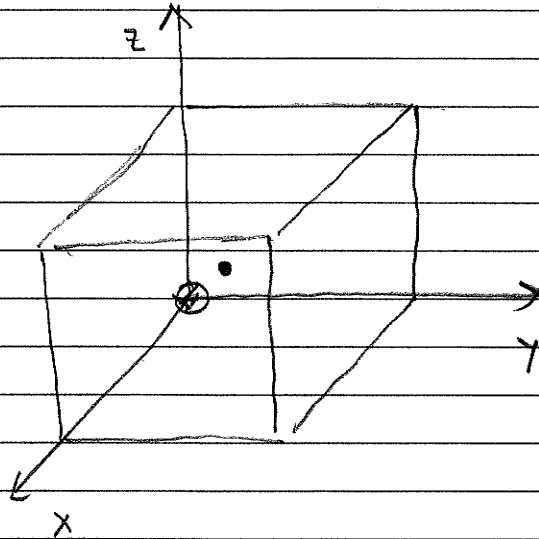
HCP-1

Diamond, Hexagonal Close Packed, and NaCl

Diamond structure

FCC lattice with basis $\vec{0}, \frac{a}{4}(\hat{x} + \hat{y} + \hat{z})$

C	3.57
Si	5.43
Ge	5.66
α -Sn	6.49



Zincblende

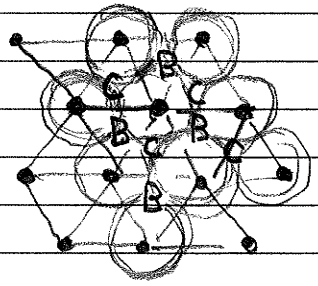
⊗ and • are different atoms

CuF	4.26	ZnS	5.41	AlSb	6.13
CuCl	5.41	ZnSe	5.67	GaP	
CuBr	5.69	:	:	GaAs	
CuI	:	:	:	GaSb	
AgI				InP	
BeS				InAs	
BeSe				InSb	
BeTe				SiC	4.35
MnS					
MnSe		AlAs	5.62		

doped semiconductors
Si:C
↑
not 1:1
but small
amounts.

Hexagonal Close Packed

Plane:



next plane: balls
lie at B indentations
of 1st plane

Note two choices: could
occupy C

DIVOGA

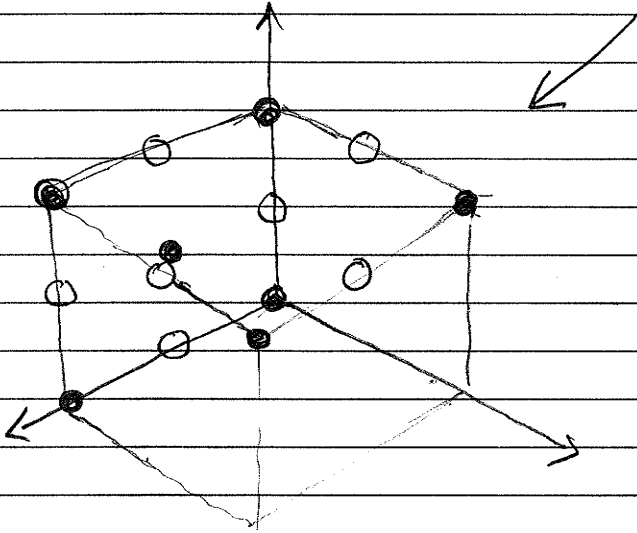
HCP is ABABAB } others
FCC is ABCABCABC } uncommon

project:

HCP-2

NaCl structure

2 interpenetrating fcc lattice



LiF	4.02	RbF	5.64	CaS	5.69
LiCl	5.13	RbCl	6.58	CaSe	5.91
LiBr	5.50	:	:	:	:
LiI	:	:	:	:	:
NaF	:	:	:	:	:
NaCl	:	:	:	:	:
NaBr	:	:	:	:	:
NaI	:	:	:	:	:
KF	:	:	:	:	:
KCl	:	:	:	:	:
KI	7.07	CaO	4.81	BaTe	6.99