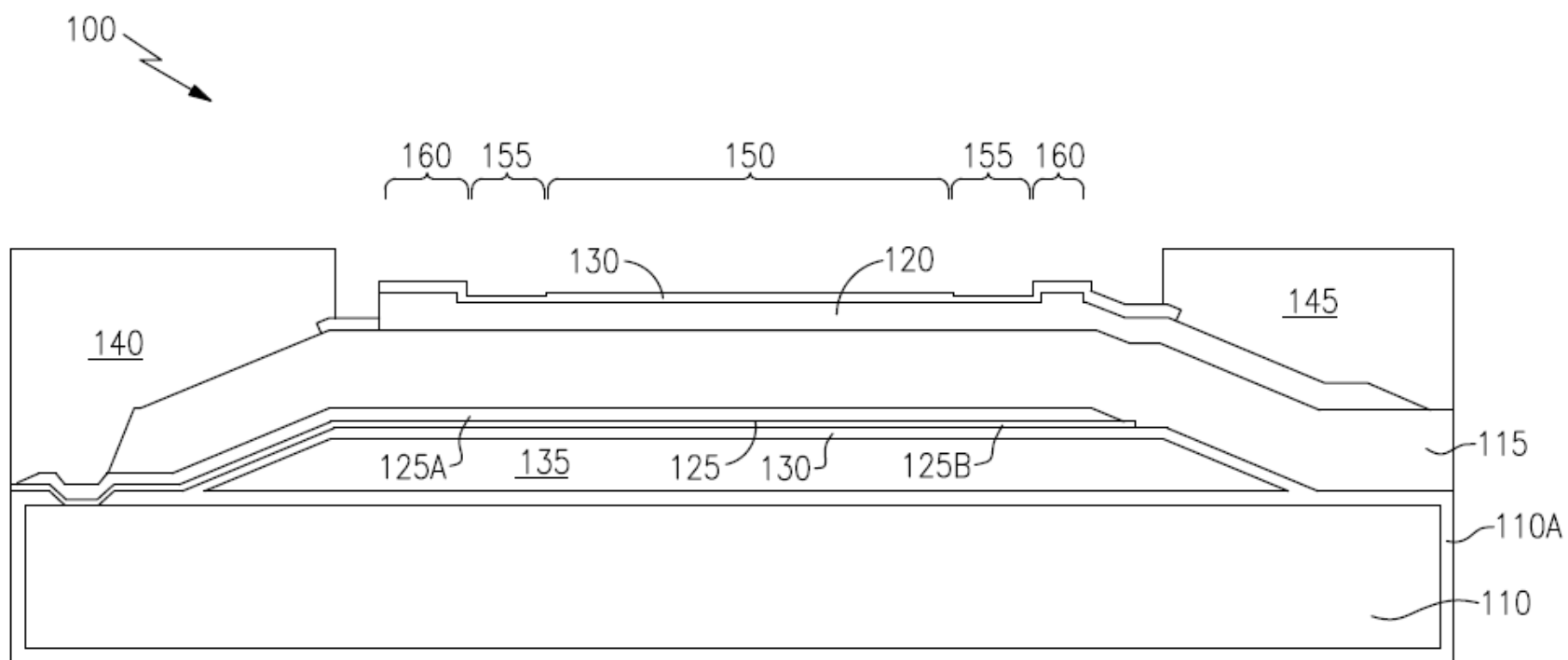
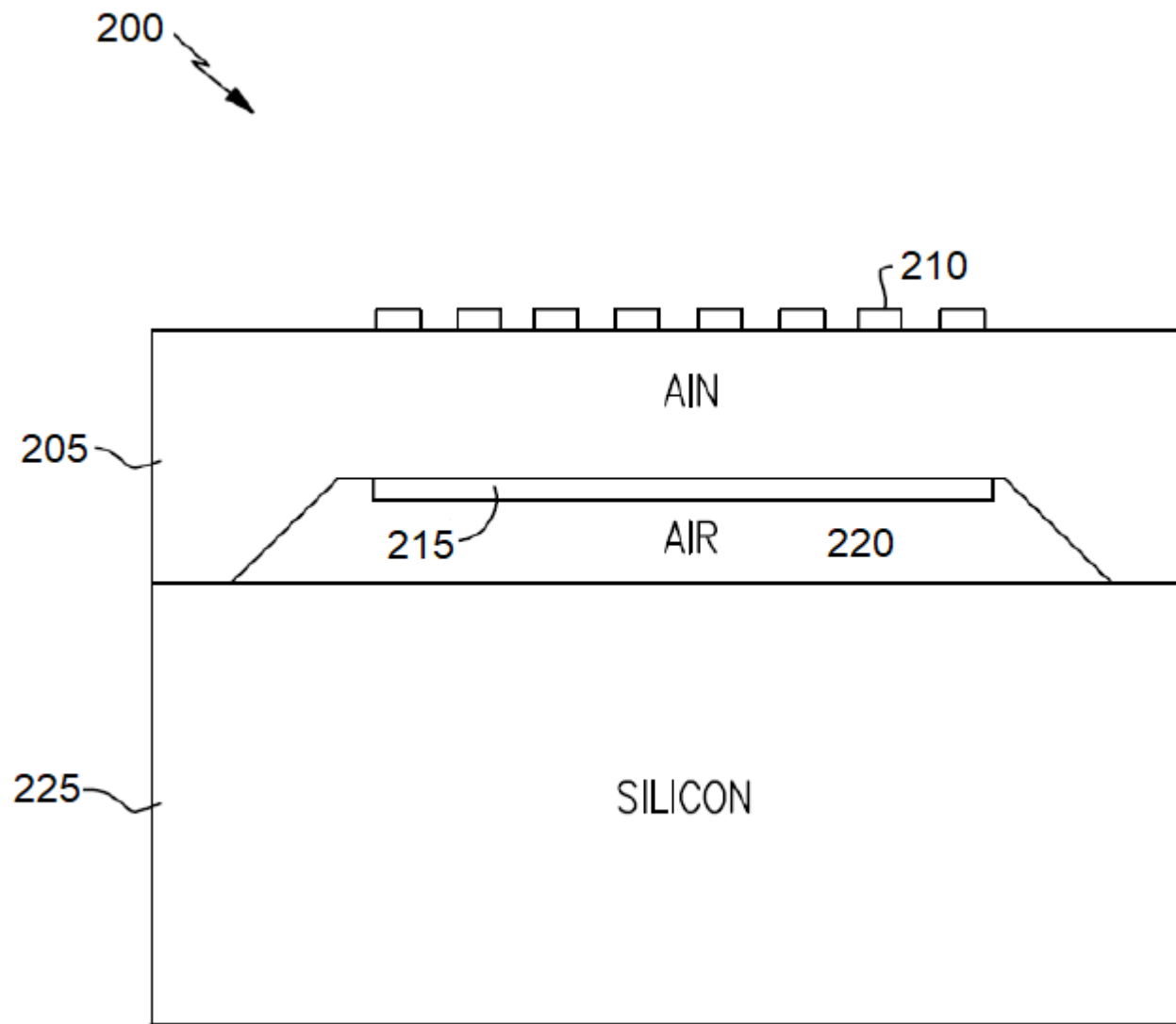
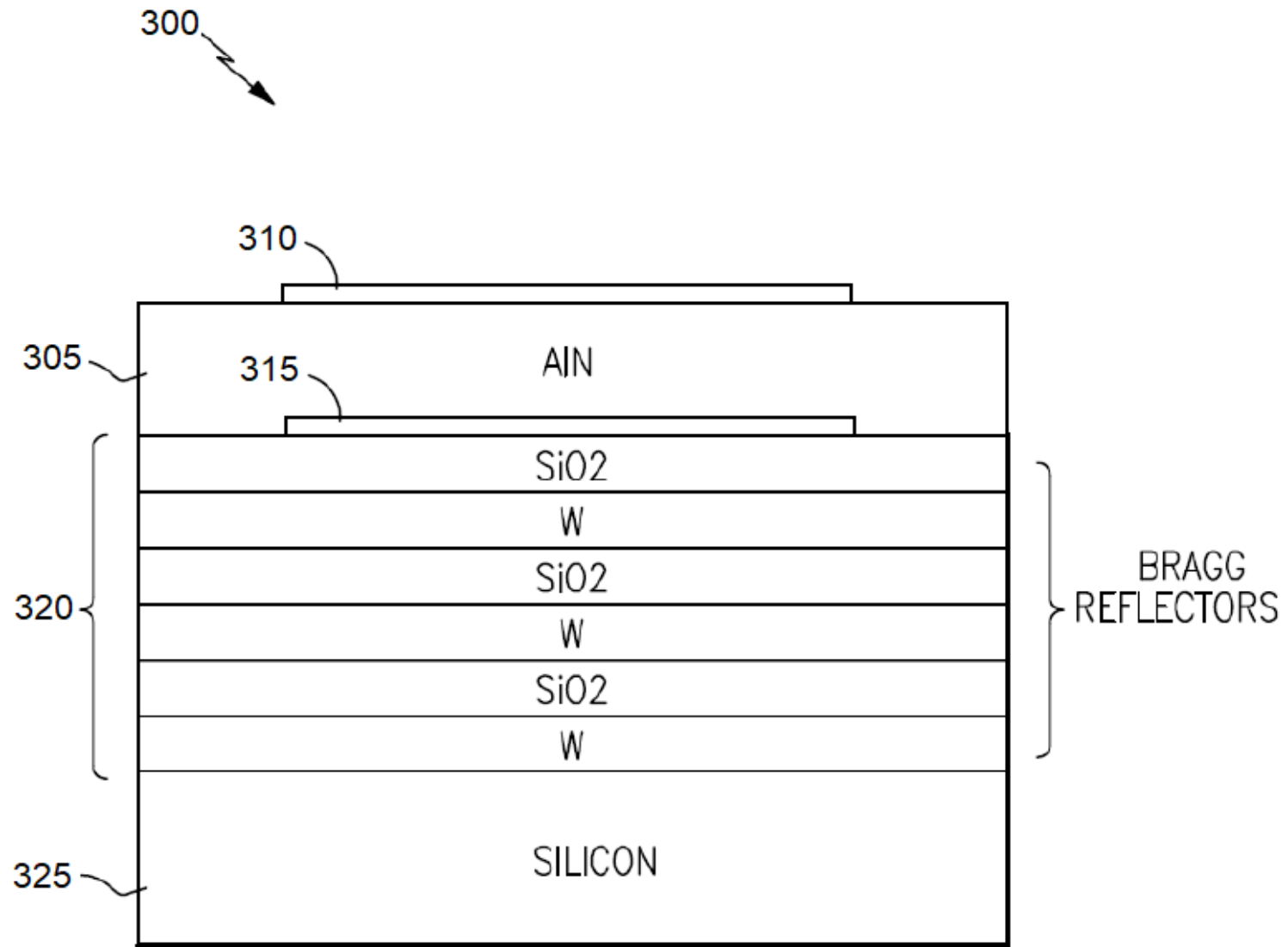


**FIG. 1**

**FIG. 2**

**FIG. 3**

End Member	End Member Crystal Structure	Solid Solution Series
ScN	Halite	$\text{Al}_{1-x}\text{Sc}_x\text{N}$
BeSiN_2	Wurtzite	$\text{Al}_{1-2x}\text{Be}_x\text{Si}_x\text{N}$
MgSiN_2	Wurtzite	$\text{Al}_{1-2x}\text{Mg}_x\text{Si}_x\text{N}$
MnSiN_2	Wurtzite	$\text{Al}_{1-2x}\text{Mn}_x\text{Si}_x\text{N}$
ZnSiN_2	Wurtzite	$\text{Al}_{1-2x}\text{Zn}_x\text{Si}_x\text{N}$
CaAlSiN_3	Distorted Wurtzite	$\text{Al}_{1-2x}\text{Ca}_x\text{Si}_x\text{N}$
SrAlSiN_3	Distorted Wurtzite	$\text{Al}_{1-2x}\text{Sr}_x\text{Si}_x\text{N}$
LiSi_2N_3	Distorted Wurtzite	$\text{Al}_{1-3x}\text{Li}_x\text{Si}_{2x}\text{N}$
NaSi_2N_3	Distorted Wurtzite	$\text{Al}_{1-3x}\text{Na}_x\text{Si}_{2x}\text{N}$
NaGe_2N_3	Distorted Wurtzite	$\text{Al}_{1-3x}\text{Na}_x\text{Ge}_{2x}\text{N}$

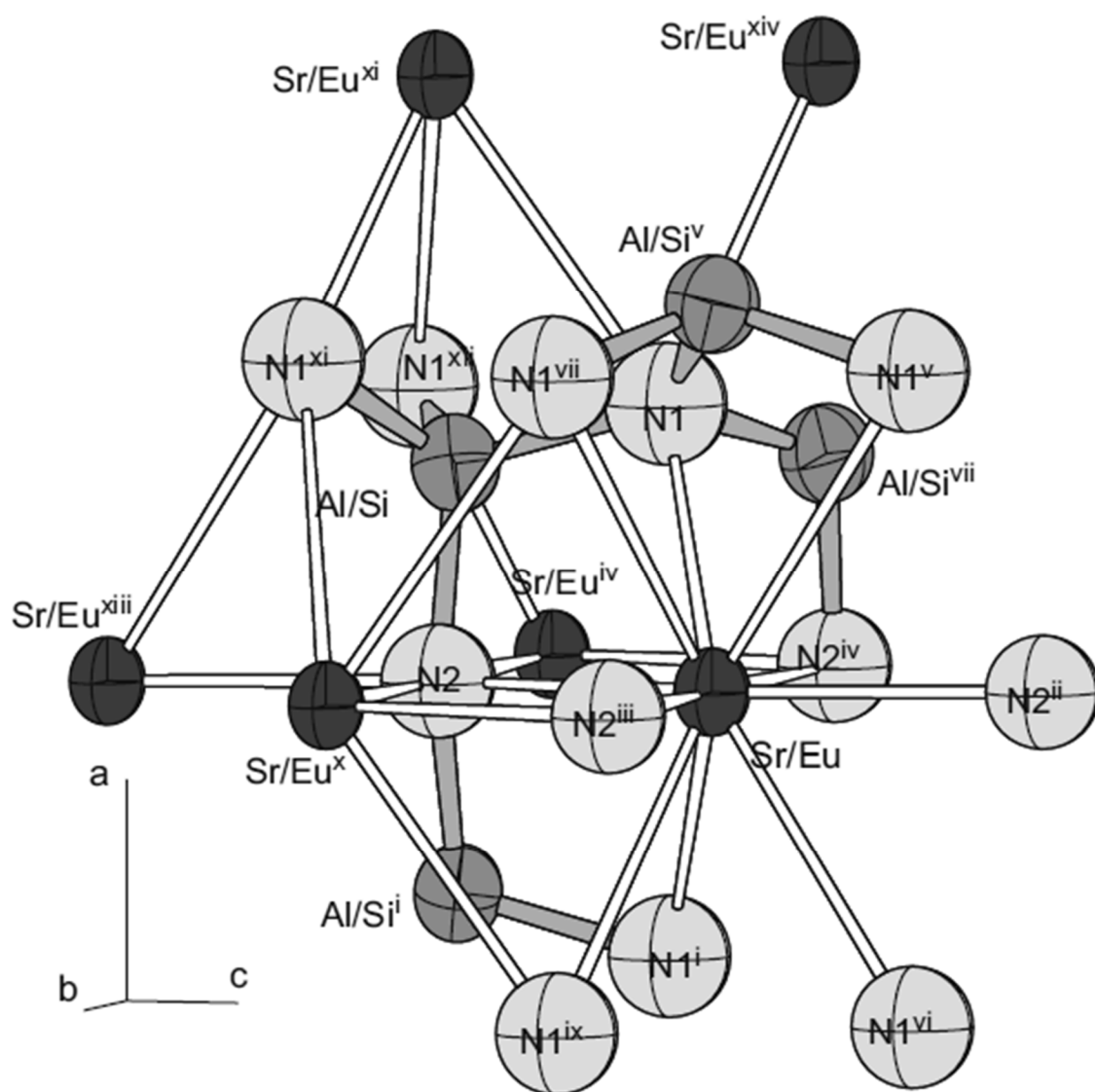
FIG. 4

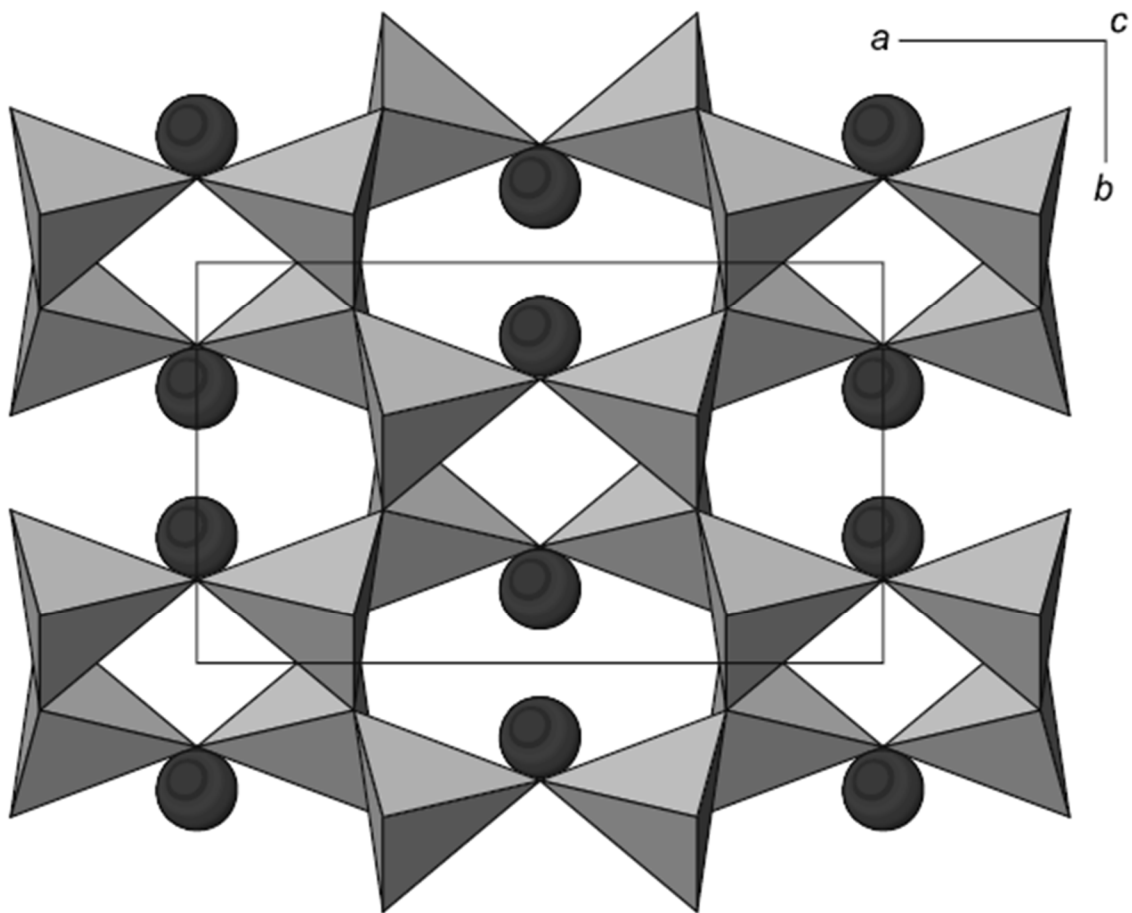
	Space group	Lattice constants [pm]	Structure type	Silicate group
CaSiN_2	$Pbca$	$a=513.0$, $b=1022.4$ $c=1481.9$,	filled Cristobalite	<i>Tecto-</i>
$\text{Ca}_5\text{Si}_2\text{N}_6$	$C2/c$	$a=983.6$, $b=605.2$ $c=1275.7$, $\beta = 100.2^\circ$	homotypic to $\text{Ba}_5\text{Si}_2\text{N}_6$	<i>Oligo-</i> <i>(Di-)</i>
$\text{Ca}_7\text{Si}_{4-x}\text{Al}_x\text{O}_x\text{N}_{10-x}$ ($0 \leq x \leq 0.5$)	$P2_1/c$	$a=591.3$, $b=2034$ $c=951.8$, $\beta = 105.61^\circ$	own	<i>Phyllo-</i> <i>(Mono-)</i>
$\text{Ca}_7\text{NbSi}_2\text{N}_9$	$P2_1/m$	$a=605.1$, $b=994.6$ $c=899.7$, $\beta = 92.10^\circ$	own	<i>Oligo-</i> <i>(Tri-)</i>
$\text{Ce}_{23+x}\text{Ca}_{37.5-x}\text{Si}_{48-x}\text{Al}_x\text{O}_{96}\text{N}_{48}$ ($0 \leq x \leq 9$)	$Pa\bar{3}$	$a=1514.6$	own	<i>Cyclo-</i> <i>(Hexa-)</i>
CaSiAlN_3	$Cmc2_1$	$a=985.1$, $b=565.4$ $c=507.1$	filled Wurtzite	<i>Tecto-</i>
$\text{Ca}_5\text{Si}_2\text{Al}_2\text{N}_8$	$Pbcn$	$a=925.5$, $b=614.0$ $c=1557.8$	own	<i>Tecto-</i>
$\text{Ca}_4\text{SiAl}_3\text{N}_7$	$P\bar{1}$	$a=585.7$, $\alpha=77.97^\circ$ $b=815.9$, $\beta=77.07^\circ$ $c=1305$, $\gamma=82.18^\circ$	own	<i>Tecto-</i>
$\text{Ca}_{15}\text{Si}_{18}\text{Al}_2\text{O}_{12}\text{N}_{28}$	$Pa\bar{3}$	$a=1548.0$	own	<i>Tecto-</i>

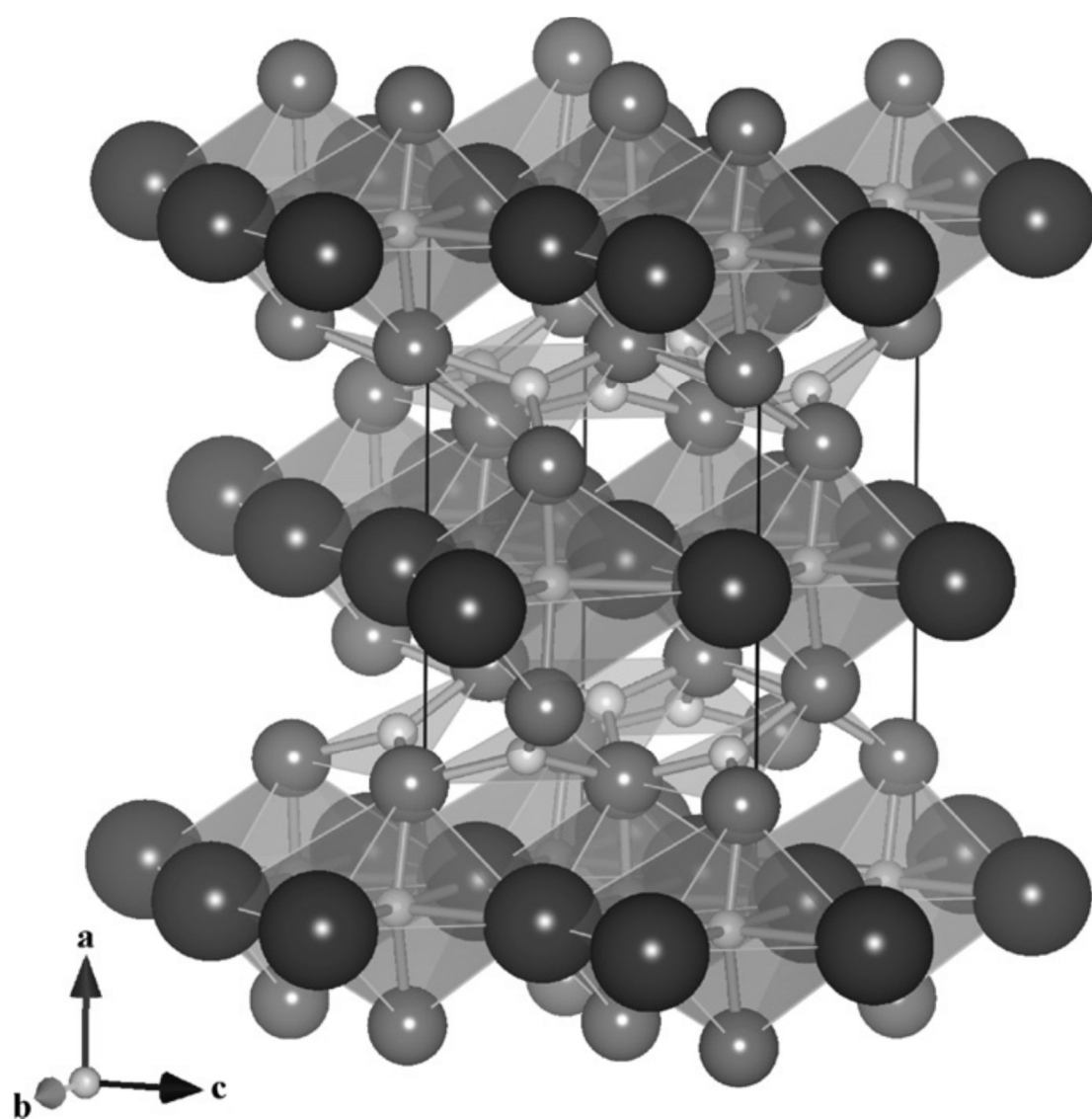
FIG. 5A

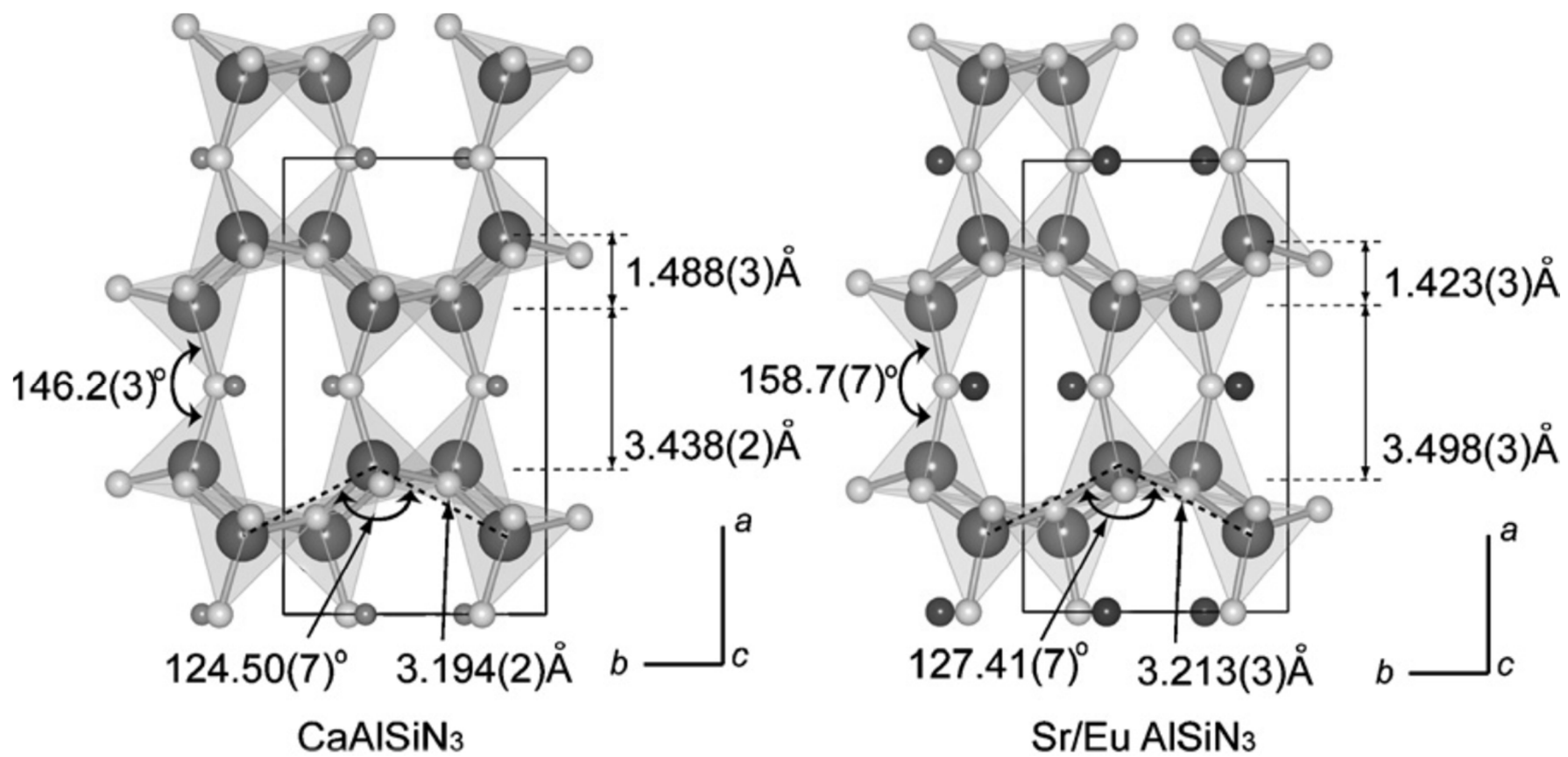
	Space group	Lattice constants [pm]	Structure type
$\text{Ca}_2\text{Si}_5\text{N}_8$	<i>Cc</i>	$a=1435.2$, $b=561.0$ $c=968.9$, $\beta = 112.06^\circ$	$\text{Ca}_2\text{Si}_5\text{N}_8$
$\text{M}_2\text{Si}_5\text{N}_8$ (M=Sr,Ba,Eu)	<i>Pmn2</i> ₁	$a=571.0$, $b=682.2$ $c=934.1$ (M=Sr)	$\text{Sr}_2\text{Si}_5\text{N}_8$
$\text{BaSi}_7\text{N}_{10}$	<i>Pc</i>	$a=678.3$, $b=671.3$ $c=963.3$, $\beta = 106.27^\circ$	$\text{BaSi}_7\text{N}_{10}$
$\text{Ba}_5\text{Si}_2\text{N}_6$	<i>P2</i> ₁ <i>2</i> ₁ <i>2</i> ₁	$a=615.9$, $b=1030.5$ $c=1529.2$	$\text{Ba}_5\text{Si}_2\text{N}_6$
$\text{Ln}_3\text{Si}_6\text{N}_{11}$ (Ln=La-Nd,Sm)	<i>P4bm</i>	$a=1018.9$, $c=483.7$ (Ln=La)	$\text{Ce}_3\text{Si}_6\text{N}_{11}$
LnSi_3N_5 (Ln=La-Nd)	<i>P2</i> ₁ <i>2</i> ₁ <i>2</i> ₁	$a=785.3$, $b=1126.4$ $c=481.7$ (Ln=La)	LnSi_3N_5
MYbSi_4N_7 (M=Sr,Ba,Eu)	<i>P6</i> ₃ <i>mc</i>	$a=603.1$, $c=982.0$ (M=Ba)	MYbSi_4N_7
MSiN_2 (M=Bc,Mg,Mn,Zn)	<i>Pna2</i> ₁	$a=527.9$, $b=647.6$ $c=499.2$ (M=Mg)	Wurtzit
MSi_2N_3 (M=Li,Na)	<i>Cmc2</i> ₁	$a=922.2$, $b=529.6$ $c=478.0$ (M=Li)	verz. Wurtzit, isotyp zu Li_2SiO_3
$\text{Ba}_2\text{Nd}_7\text{Si}_{11}\text{N}_{23}$	<i>Cmmm</i>	$a=1096.2$, $b=2304.6$ $c=964.9$	$\text{Ba}_2\text{Nd}_7\text{Si}_{11}\text{N}_{23}$
$\text{Er}_{6.33}\text{Si}_{11}\text{N}_{21}$, $\text{Dy}_{0.33}\text{Sm}_6\text{Si}_{11}\text{N}_{21}$	<i>P31c</i>	$a=989.8$, $c=1078.7$	$\text{Er}_{6.33}\text{Si}_{11}\text{N}_{21}$

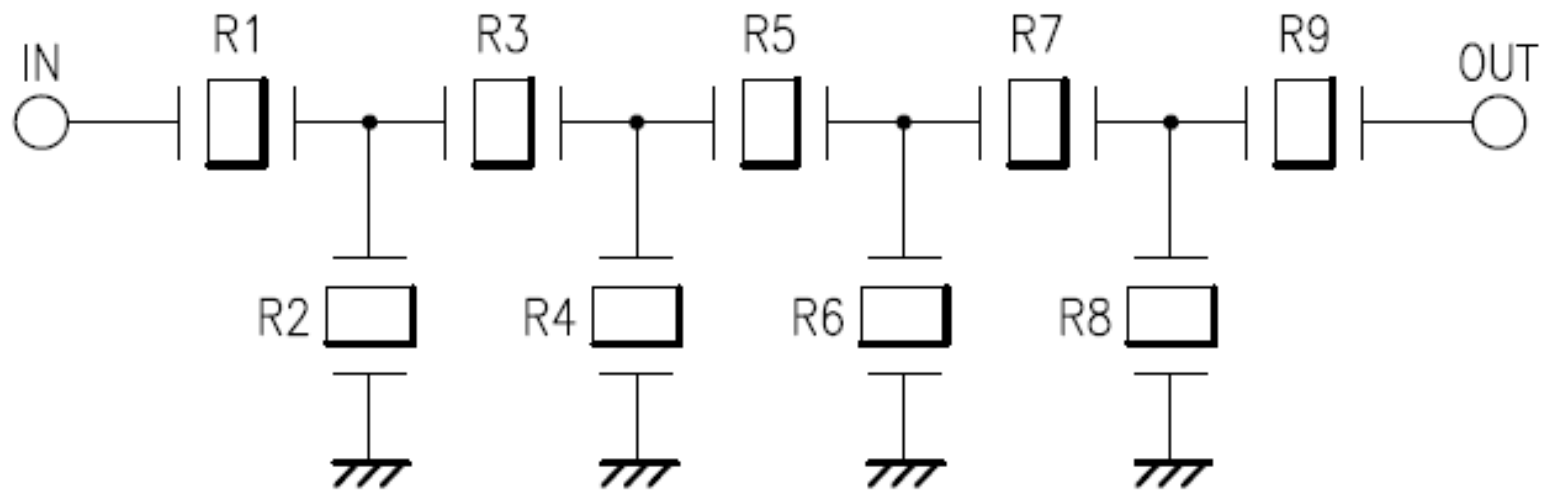
FIG. 5B

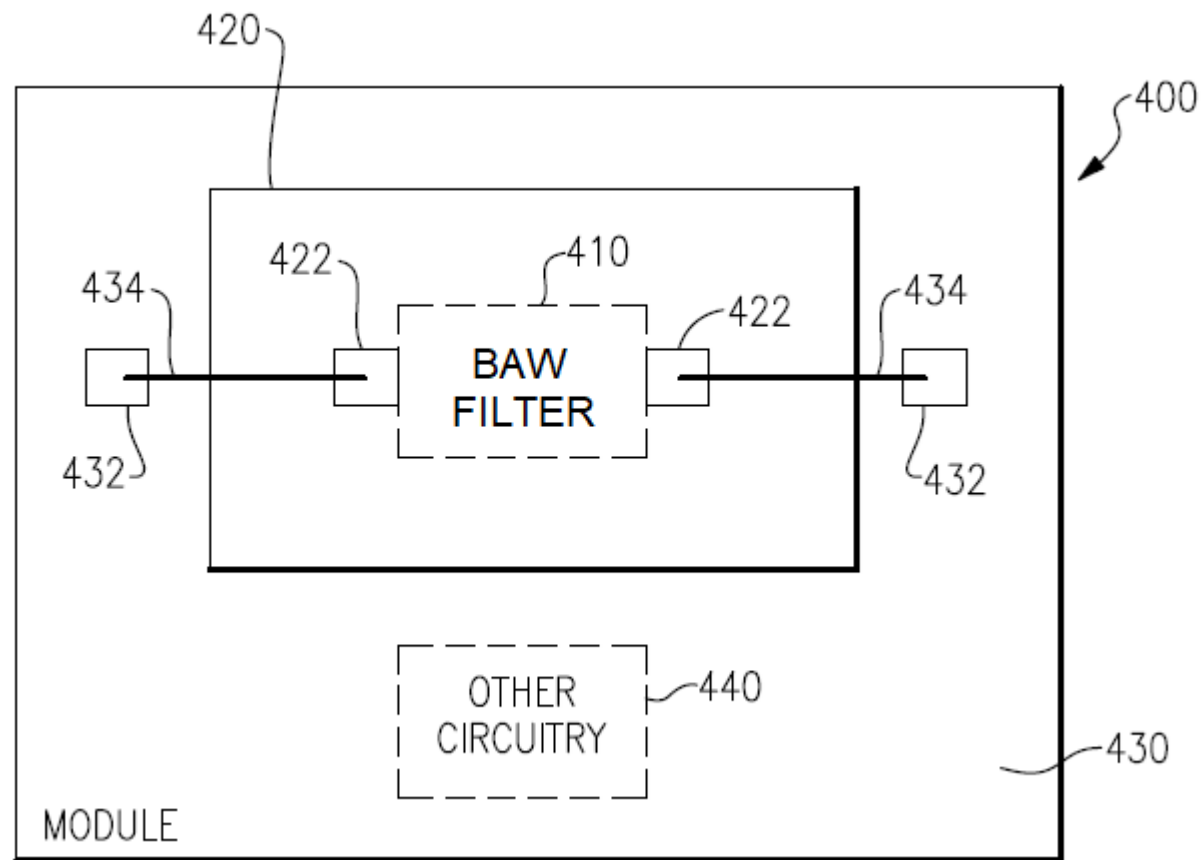
**FIG. 6A**

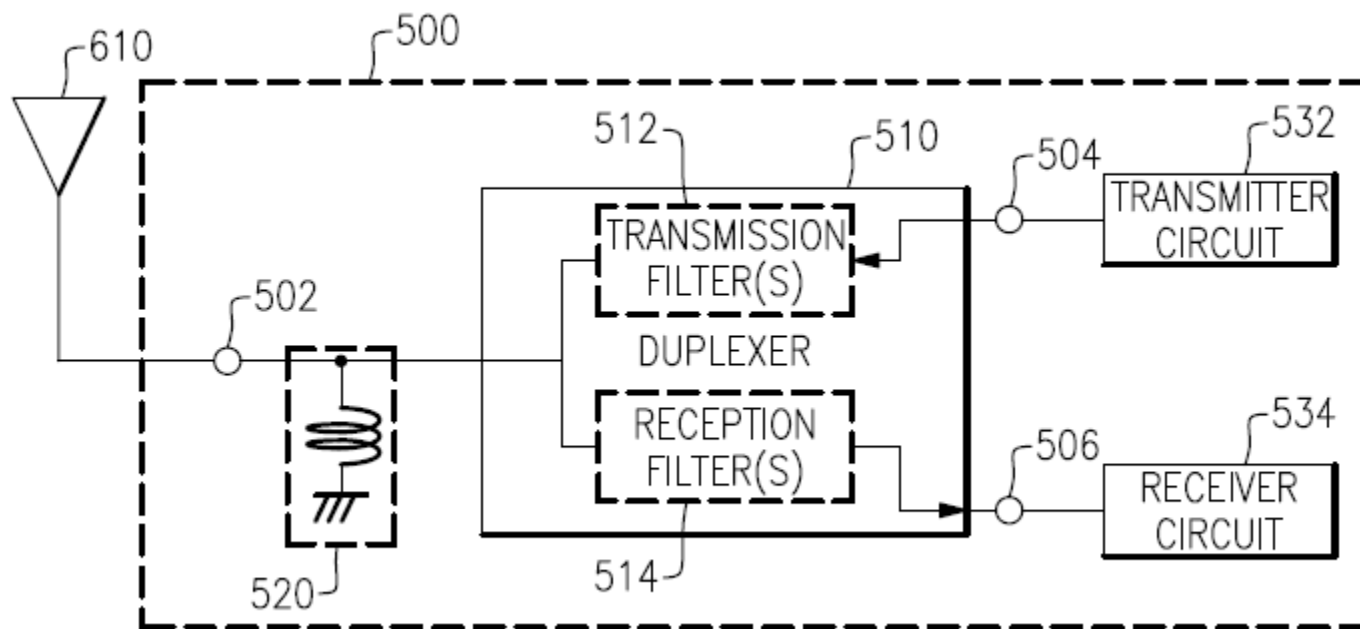
**FIG. 6B**

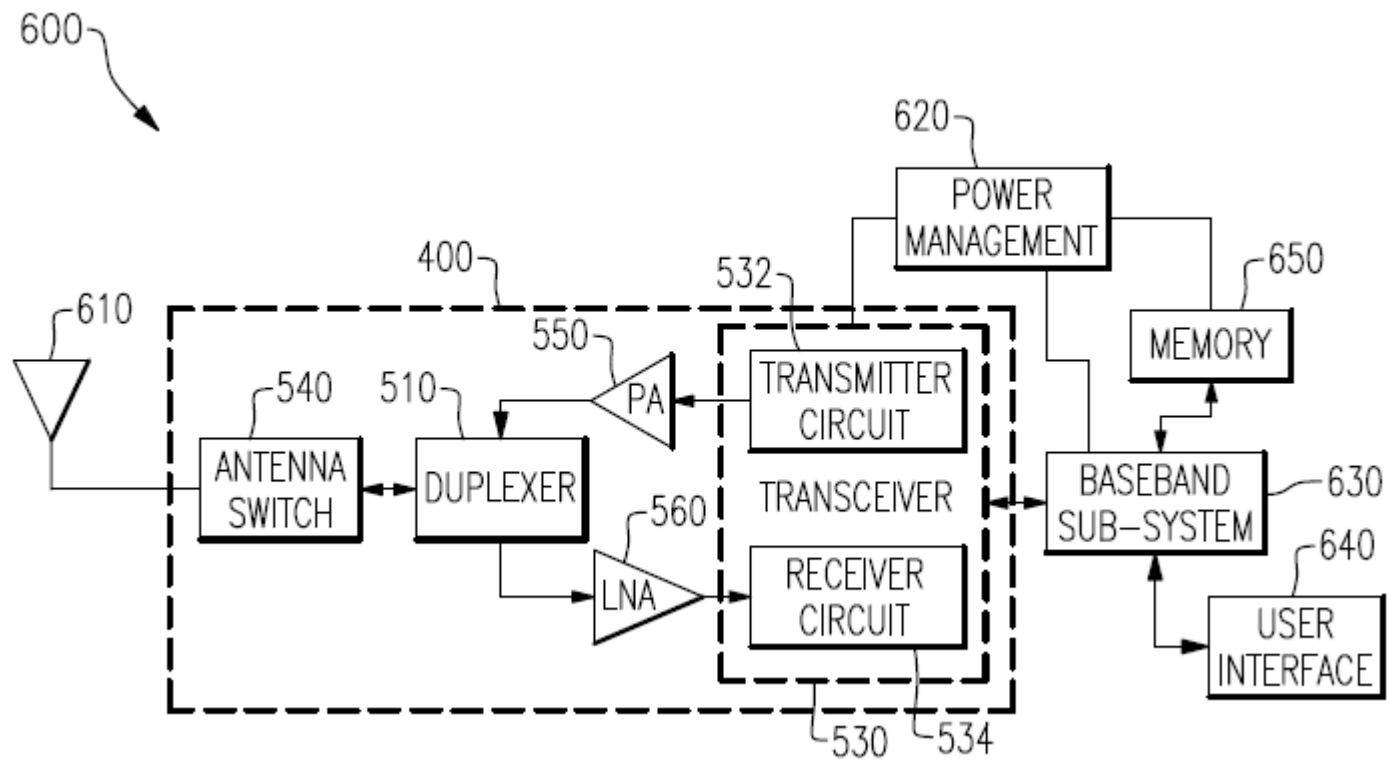
**FIG. 6C**

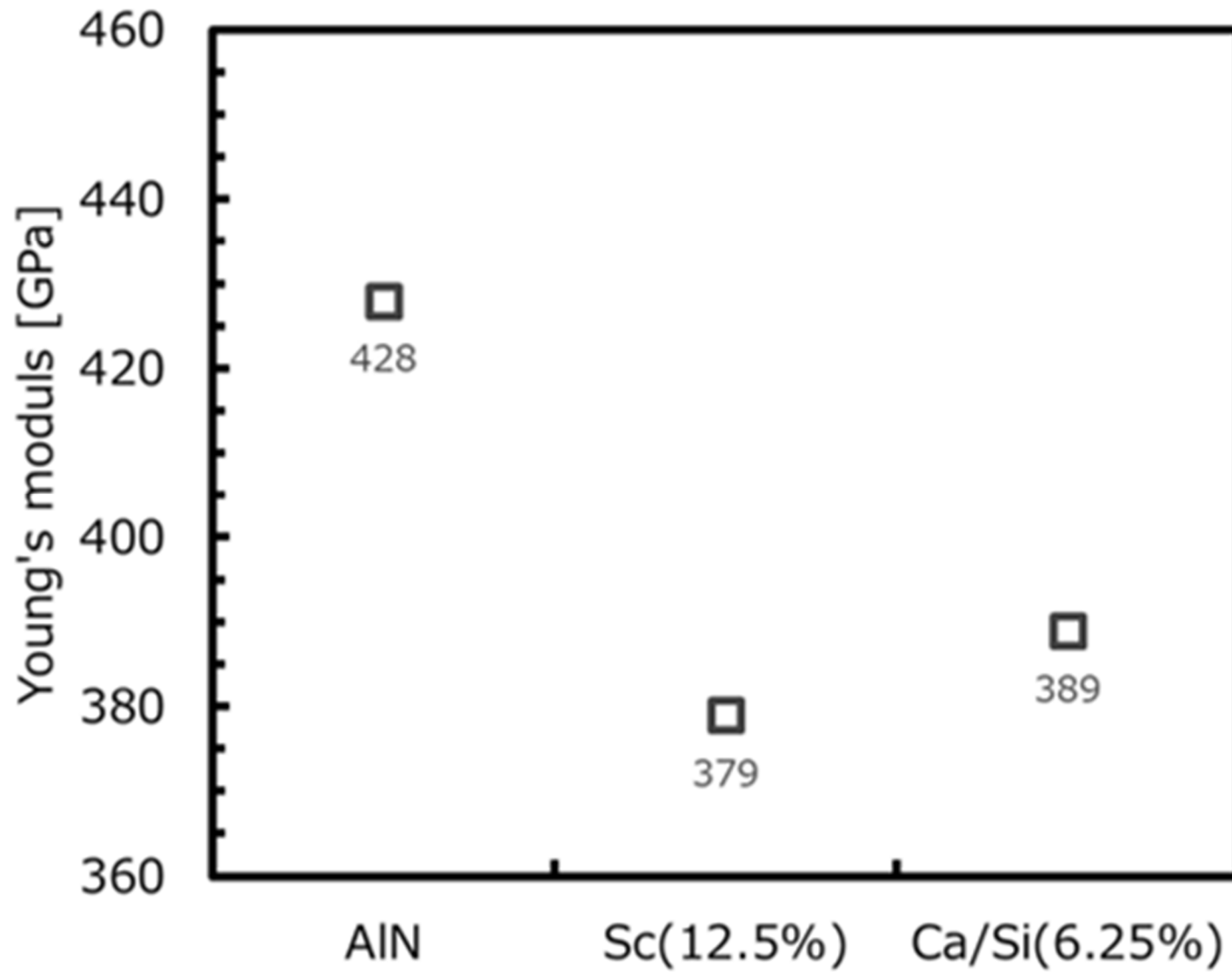
**Fig. 6D**

**FIG. 7**

**FIG. 8**

**FIG. 9**



**FIG. 11**