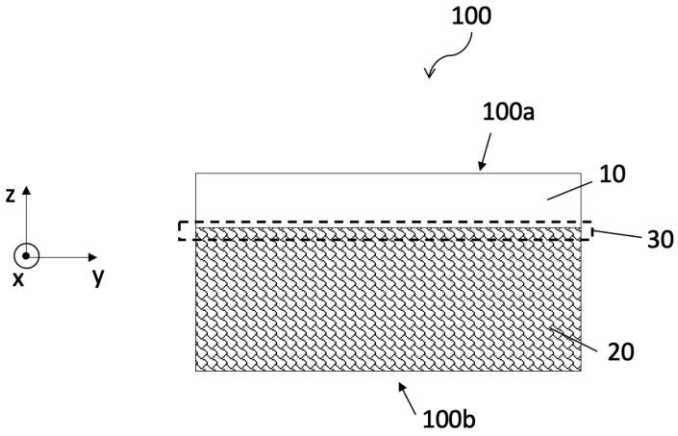
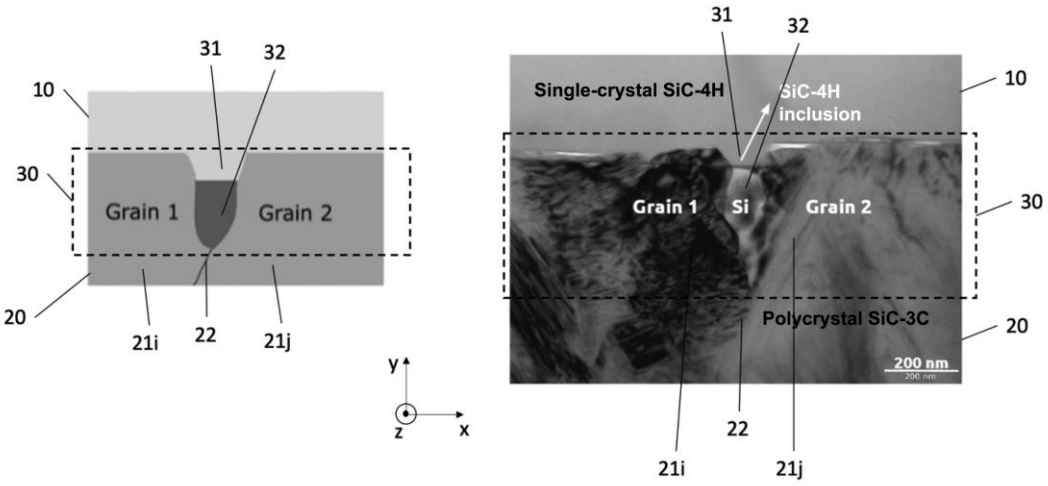
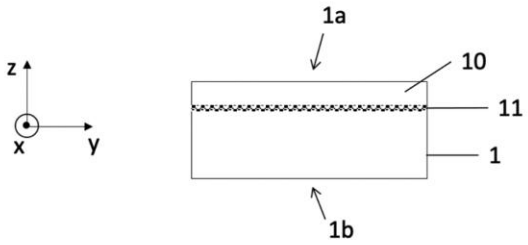
[Fig. 1]



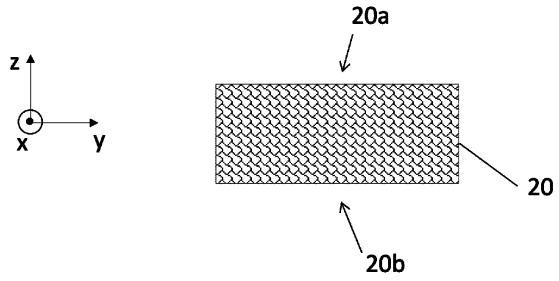
[Fig. 2]



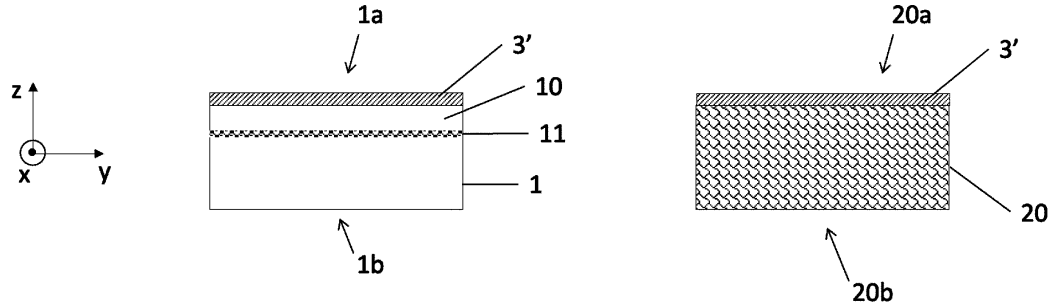
[Fig. 3a]



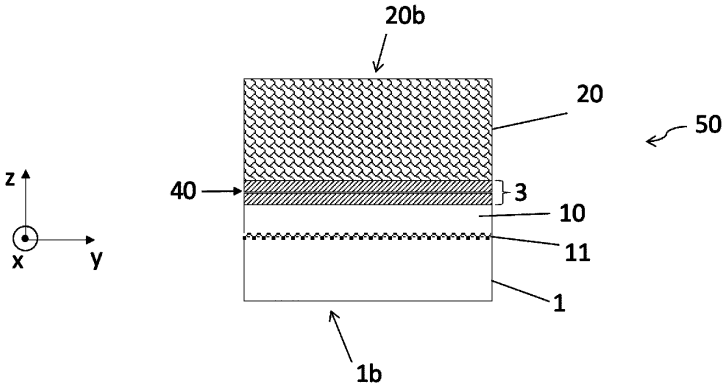
[Fig. 3b]



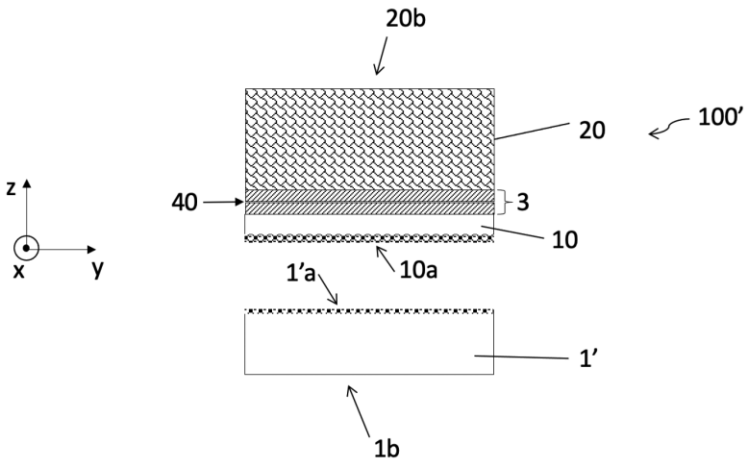
[Fig. 3c]



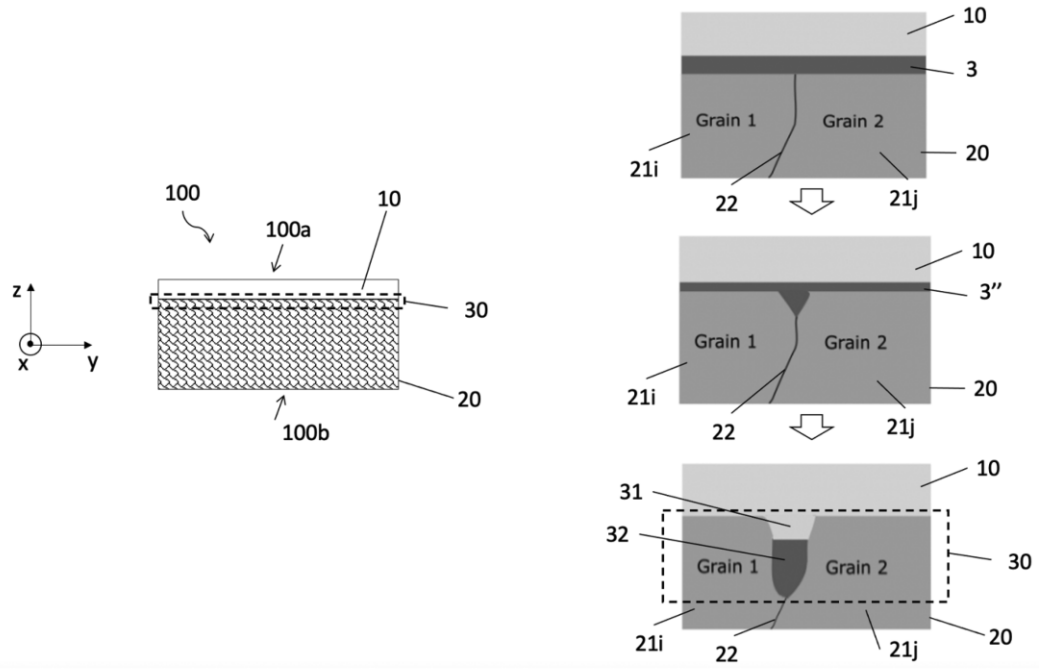
[Fig. 3d]



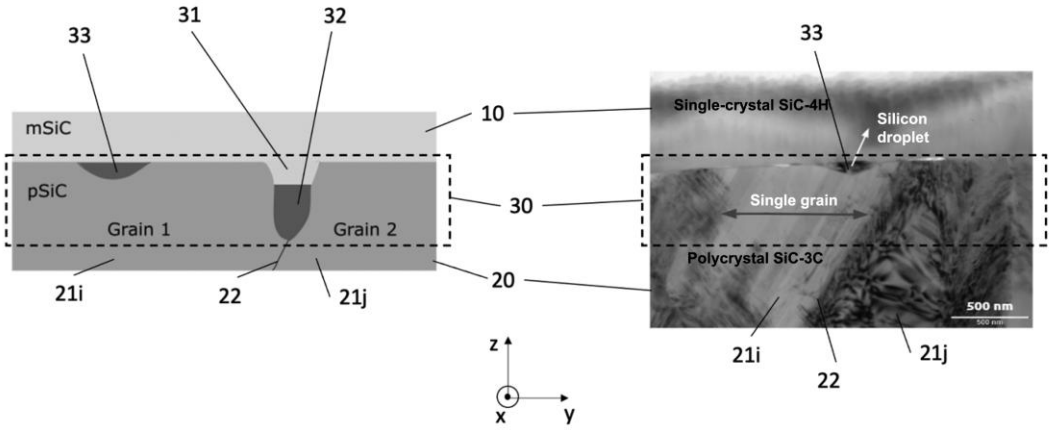
[Fig. 3e]


20b
20
100'
z
40
3
y
x
10
10a
1'a
1'
1b

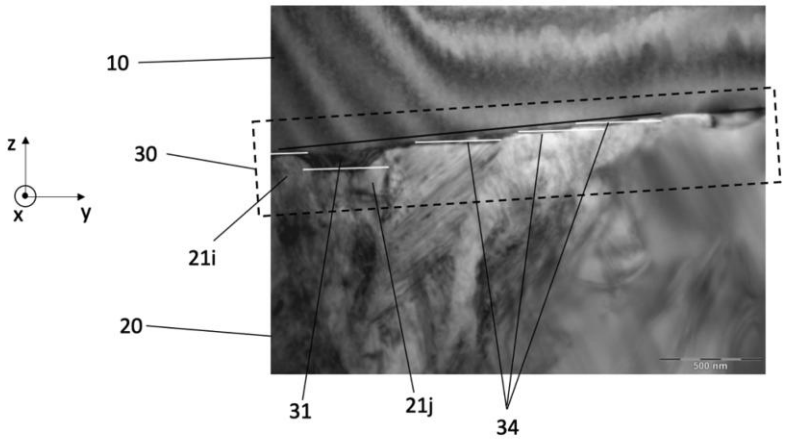
[Fig. 3f]


100
100a
10
30
20
100b
z
x
y
10
3
Grain 1
Grain 2
21i
22
21j
20
10
3''
Grain 1
Grain 2
21i
22
21j
20
10
31
32
Grain 1
Grain 2
30
21i
22
21j
20

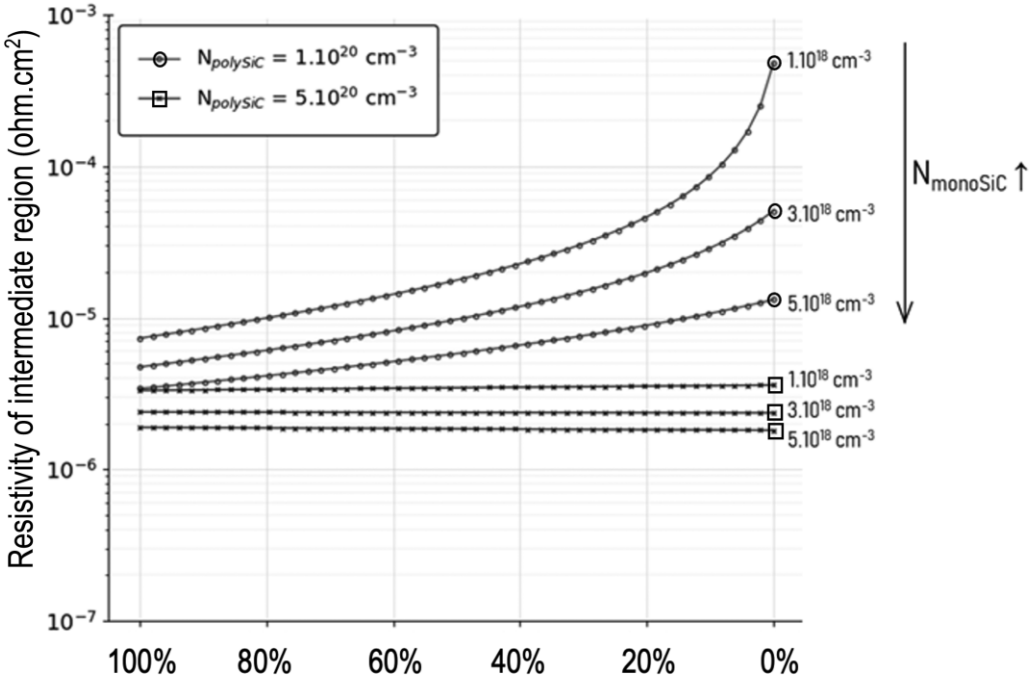
[Fig. 4]


33
31
32
mSiC
pSiC
Grain 1
Grain 2
21i
22
21j
10
30
20
z
x
y
33
Single-crystal SiC-4H
Silicon droplet
Single grain
Polycrystal SiC-3C
500 nm
21i
22
21j

[Fig. 5]


10
30
21i
20
z
x
y
31
21j
34
500 nm

[Fig. 6]


Resistivity of intermediate region (ohm.cm²)
10⁻³
10⁻⁴
10⁻⁵
10⁻⁶
10⁻⁷
N_polySiC = 1.10²⁰ cm⁻³
N_polySiC = 5.10²⁰ cm⁻³
1.10¹⁸ cm⁻³
3.10¹⁸ cm⁻³
5.10¹⁸ cm⁻³
1.10¹⁸ cm⁻³
3.10¹⁸ cm⁻³
5.10¹⁸ cm⁻³
N_monoSiC ↑
100%
80%
60%
40%
20%
0%
% of surface area of the bonded face of the substrate wherein the grains have a size less than or equal to 500 nm