FIG. 1

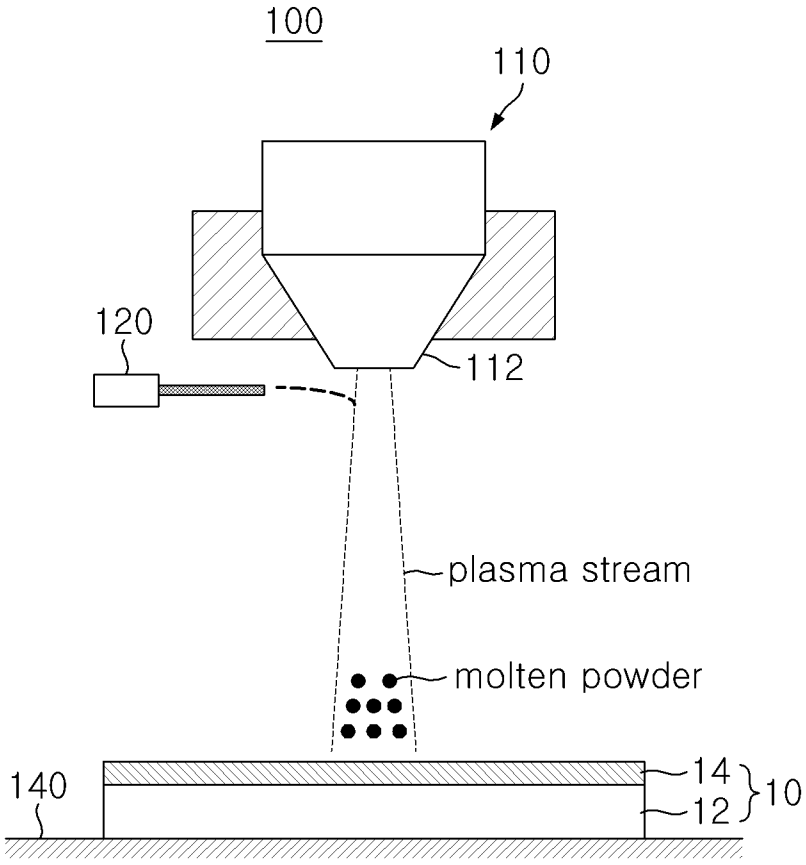


FIG. 2A

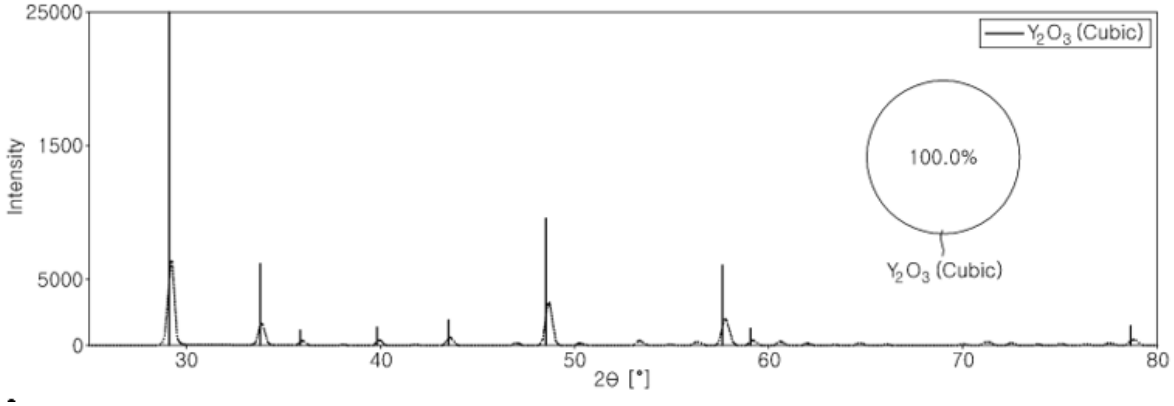


FIG. 2B

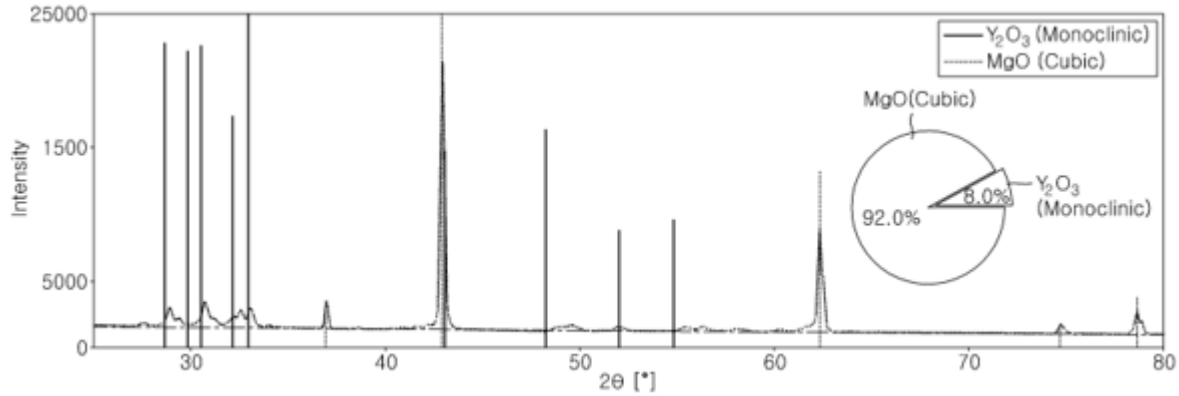


FIG. 2C

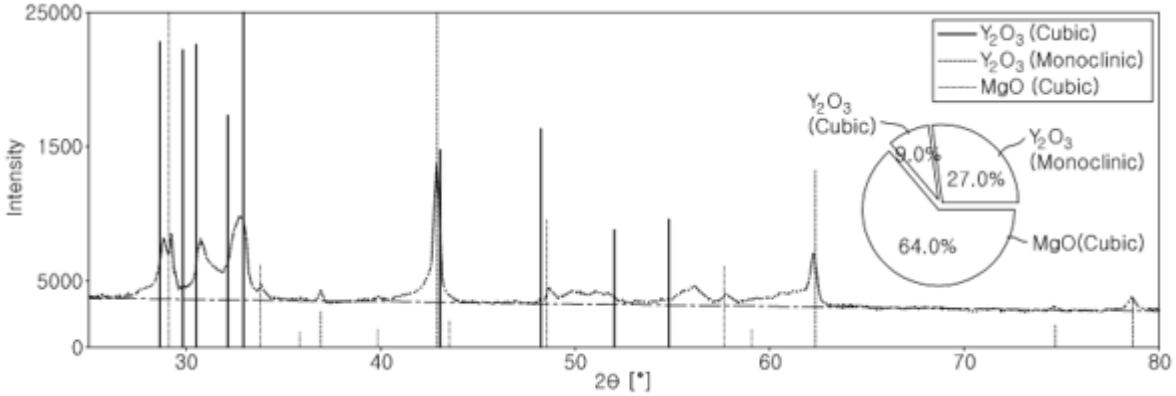


FIG. 3A

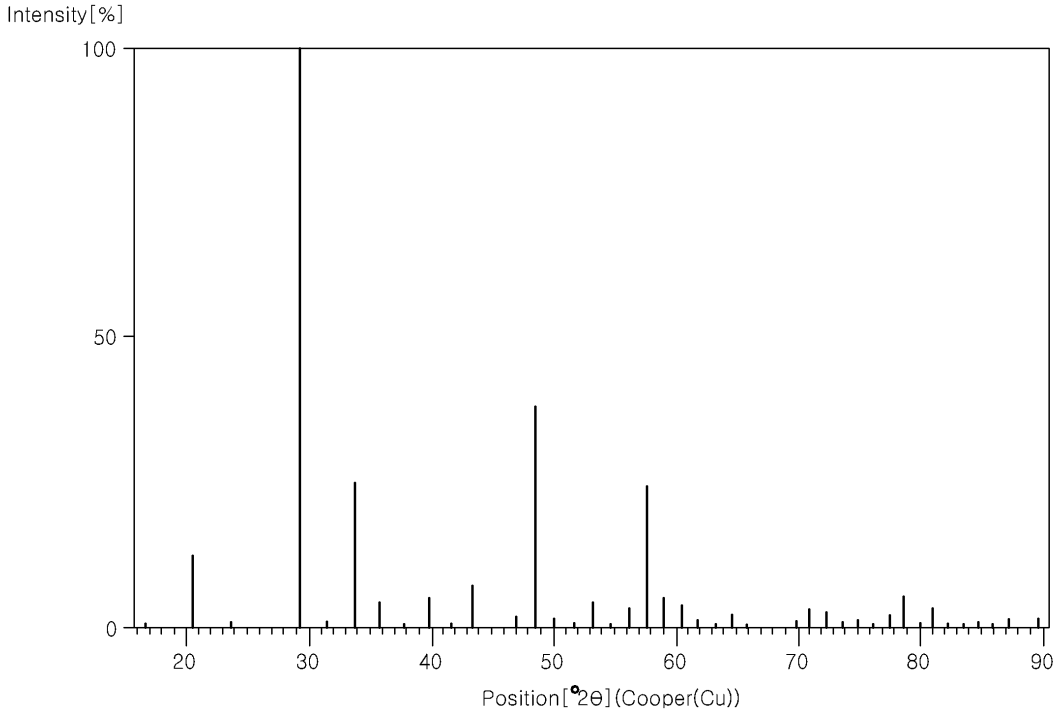

Intensity[%]
100
50
0
20
30
40
50
60
70
80
90
Position[°2θ](Cooper(Cu))

FIG. 3B

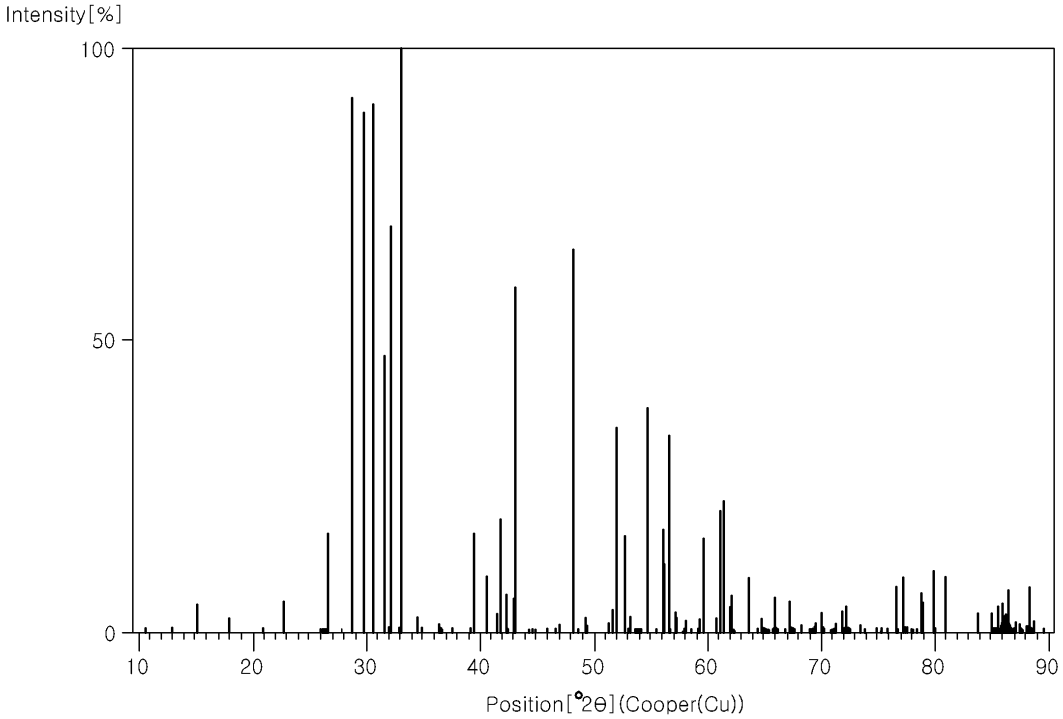

Intensity[%]
100
50
0
10
20
30
40
50
60
70
80
90
Position[°2θ](Cooper(Cu))

FIG. 4A

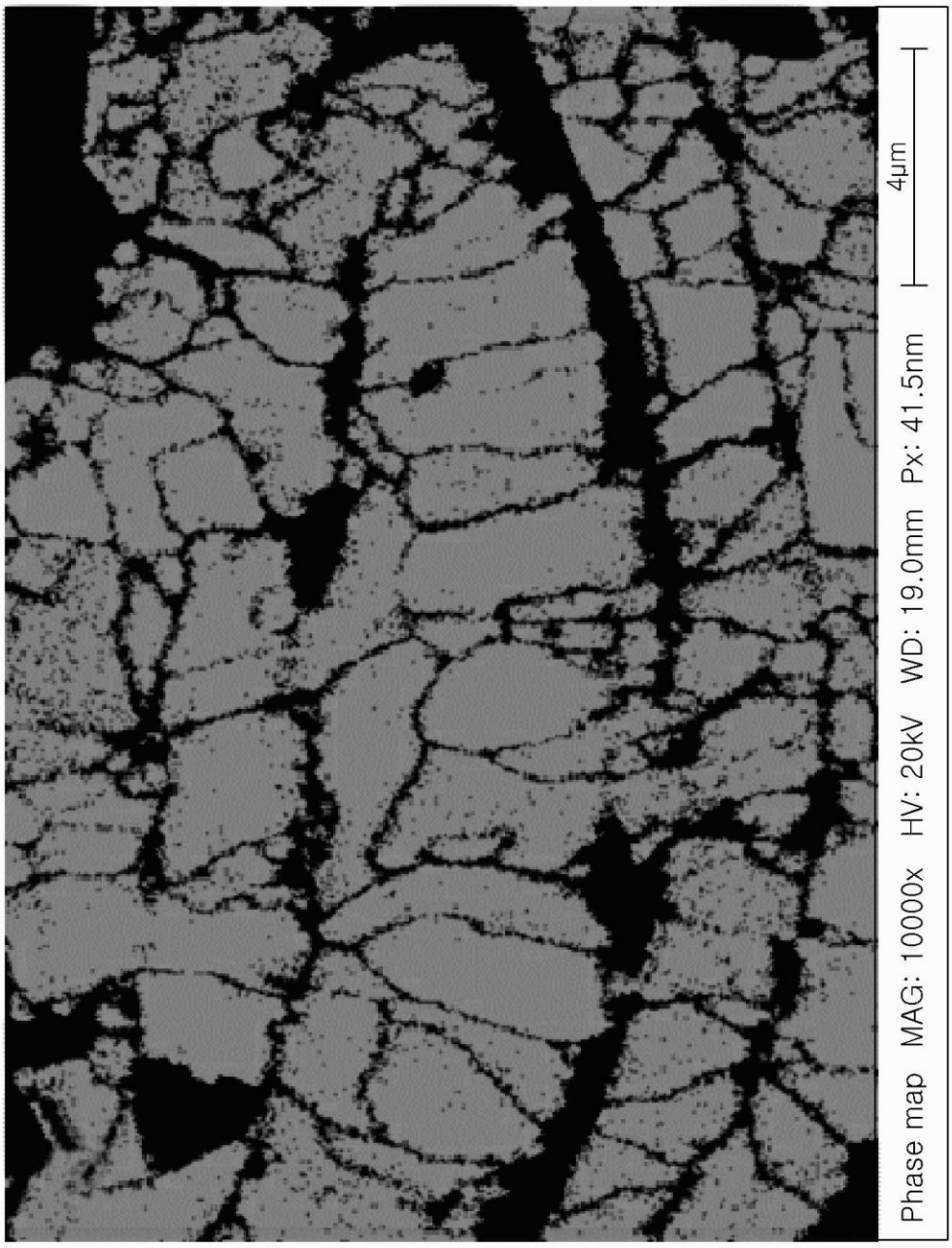


FIG. 4B

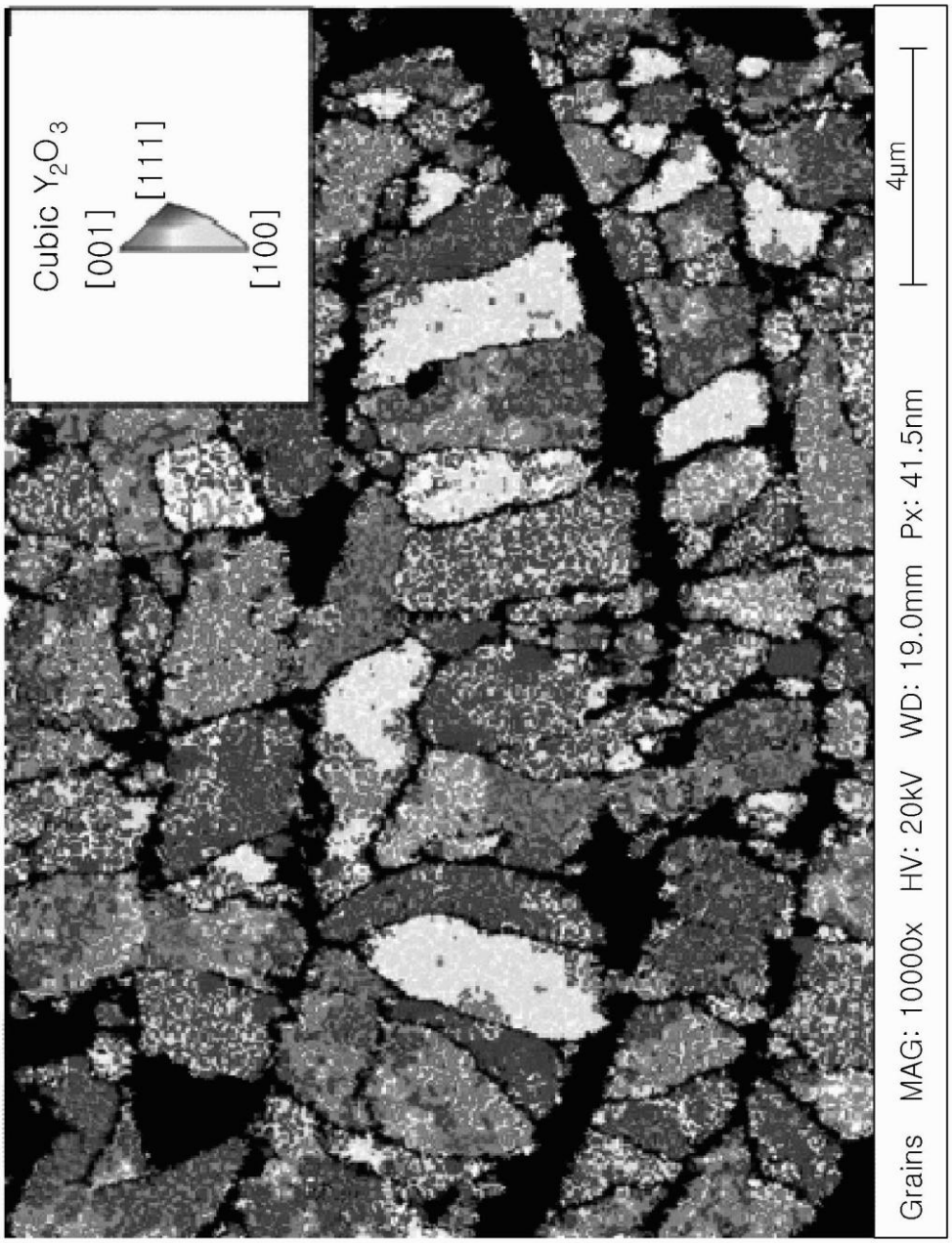
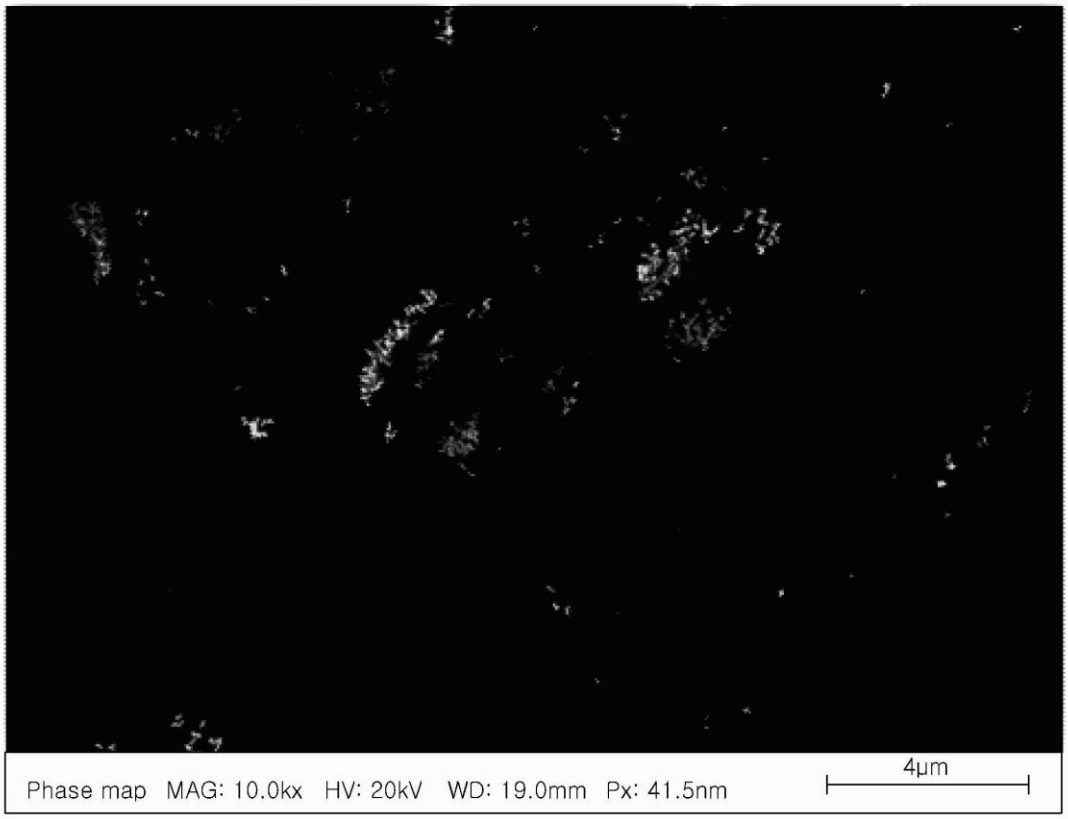

Cubic Y_2O_3
[001]
[111]
[100]
Grains MAG: 10000x HV: 20kV WD: 19.0mm Px: 41.5nm
4μm

FIG. 5



MATERIAL	CRYSTAL STRUCTURE	COLOR
Y_2O_3	CUBIC	RED
	MONOCLINIC	GREEN
MgO	CUBIC	BLUE

FIG. 6

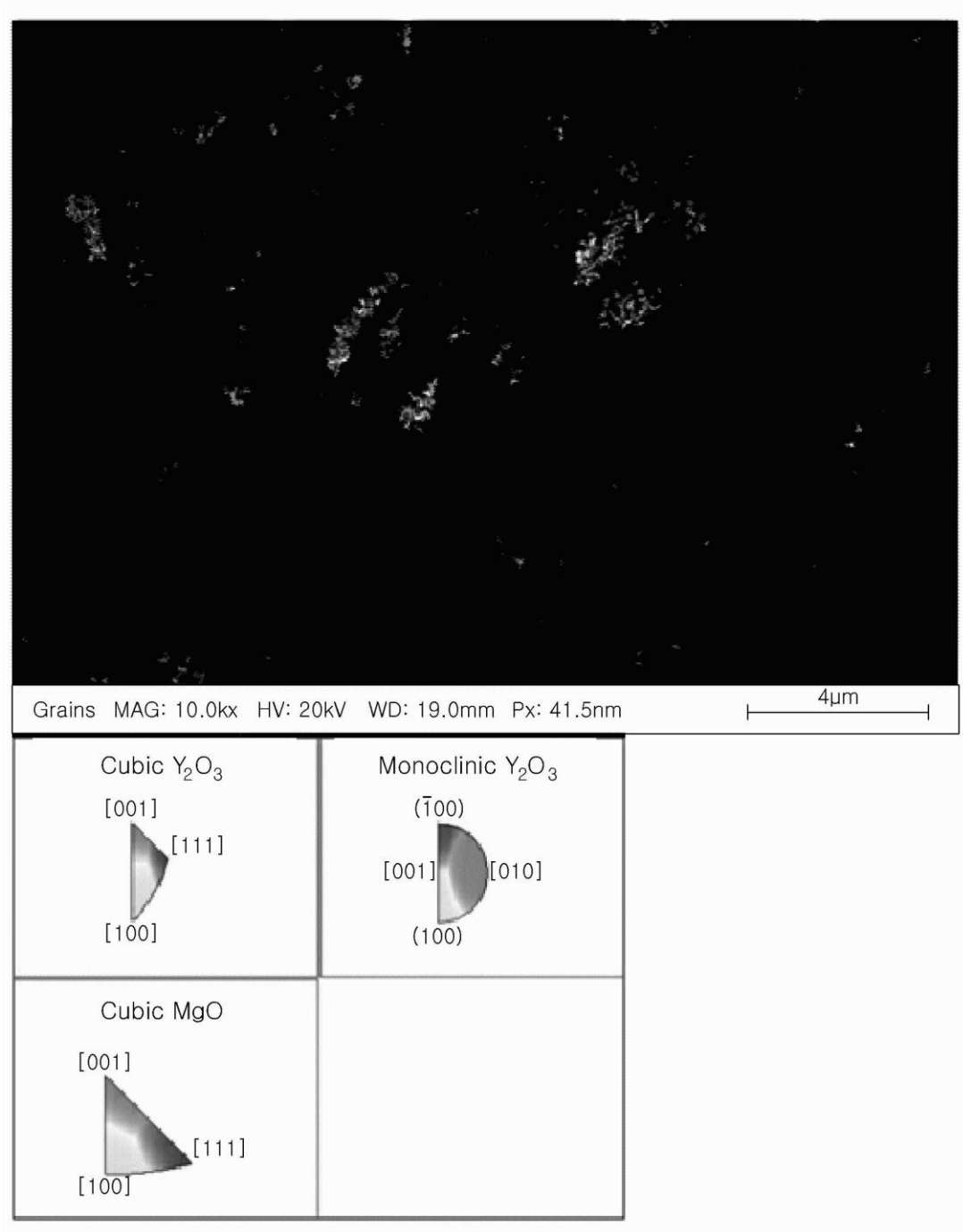

Grains MAG: 10.0kx HV: 20kV WD: 19.0mm Px: 41.5nm
4μm
Cubic Y_2O_3
[001]
[111]
[100]
Monoclinic Y_2O_3
($\bar{1}$00)
[001]
[010]
(100)
Cubic MgO
[001]
[111]
[100]

FIG 7A

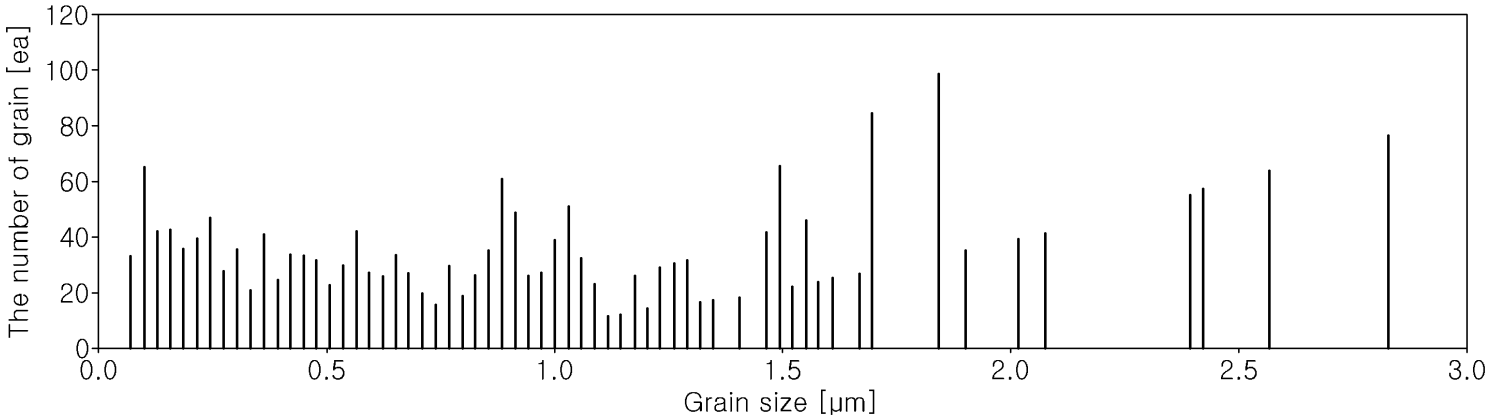
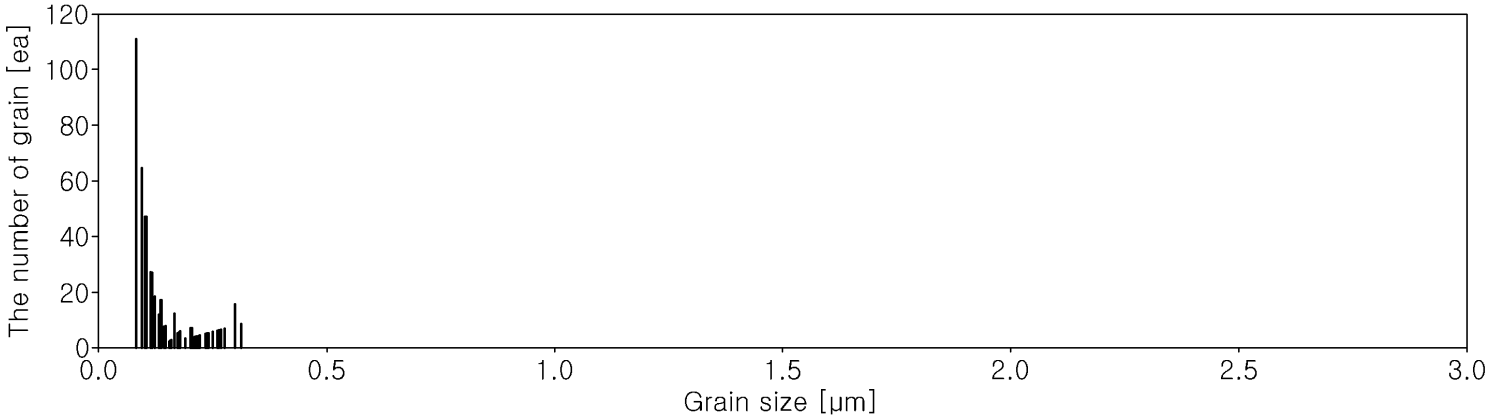

The number of grain [ea]
120
100
80
60
40
20
0
0.0
0.5
1.0
1.5
2.0
2.5
3.0
Grain size [μm]

FIG 7B


The number of grain [ea]
120
100
80
60
40
20
0
0.0
0.5
1.0
1.5
2.0
2.5
3.0
Grain size [μm]