- 2 MAR 2005

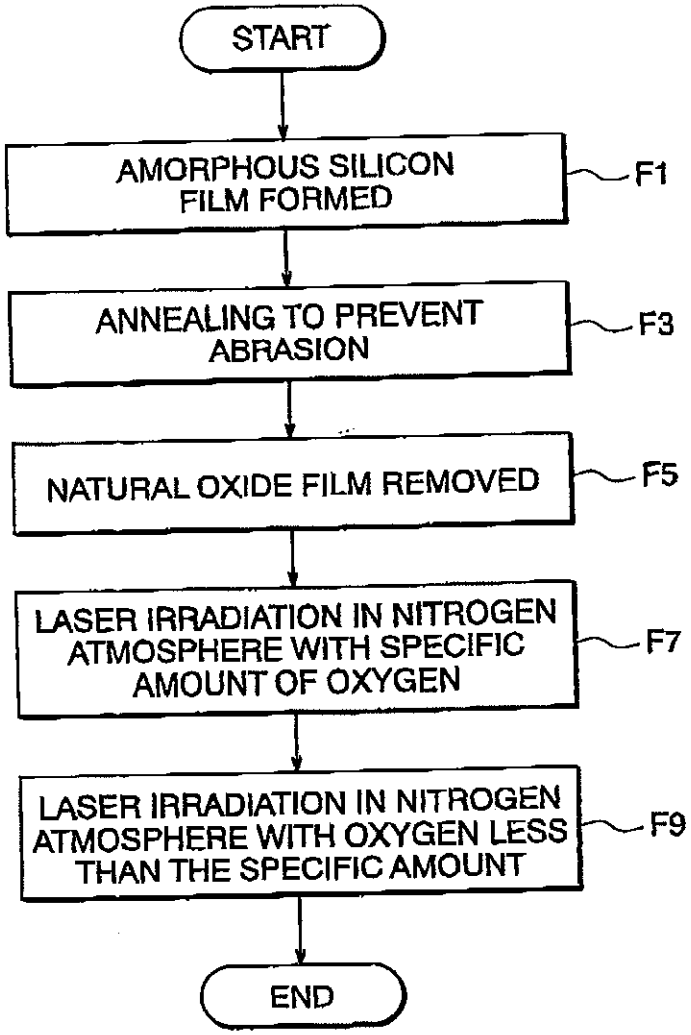


FIG. 1

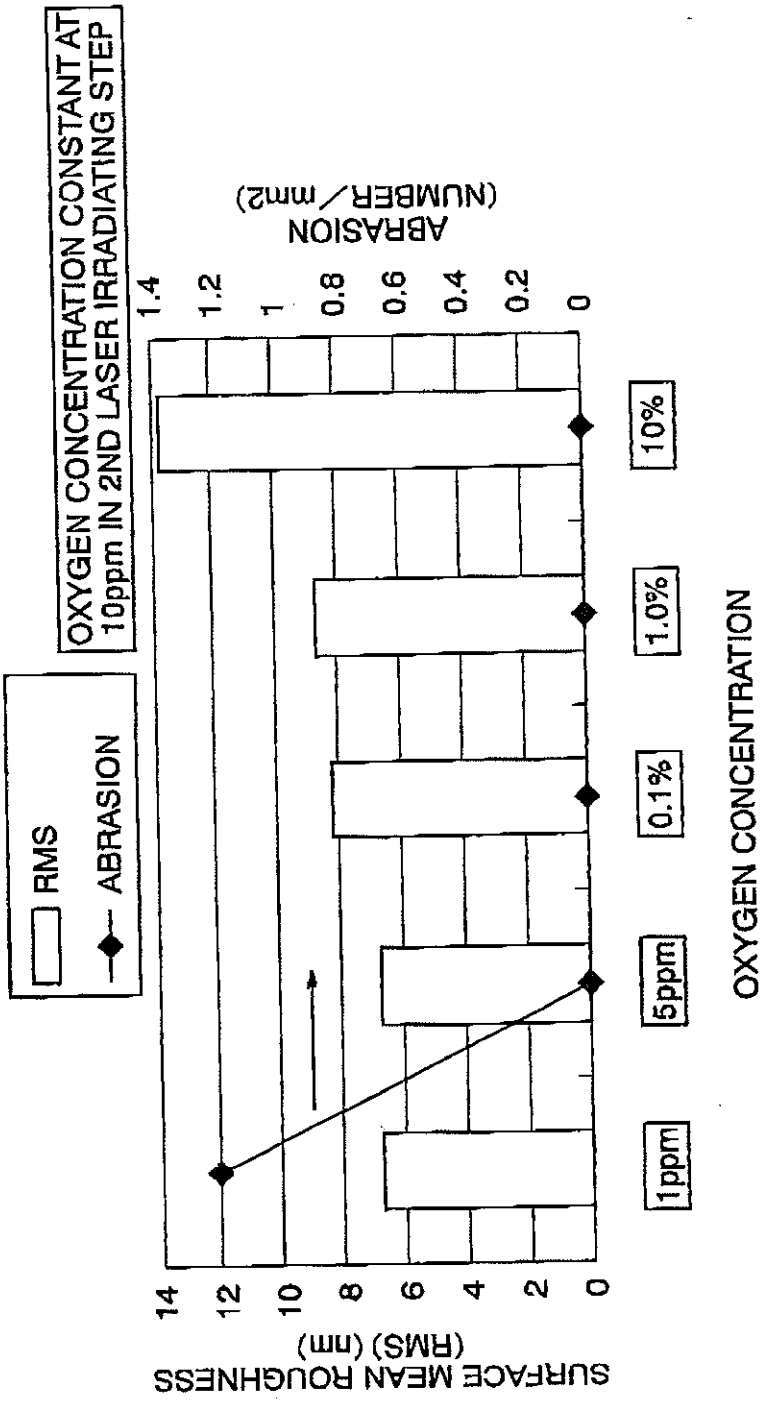

OXYGEN CONCENTRATION CONSTANT AT 10ppm IN 2ND LASER IRRADIATING STEP
RMS
ABRASION
ABRASION (NUMBER/mm2)
1.4
1.2
1
0.8
0.6
0.4
0.2
0
10%
1.0%
0.1%
5ppm
1ppm
OXYGEN CONCENTRATION
SURFACE MEAN ROUGHNESS (RMS) (nm)
14
12
10
8
6
4
2
0

FIG. 2

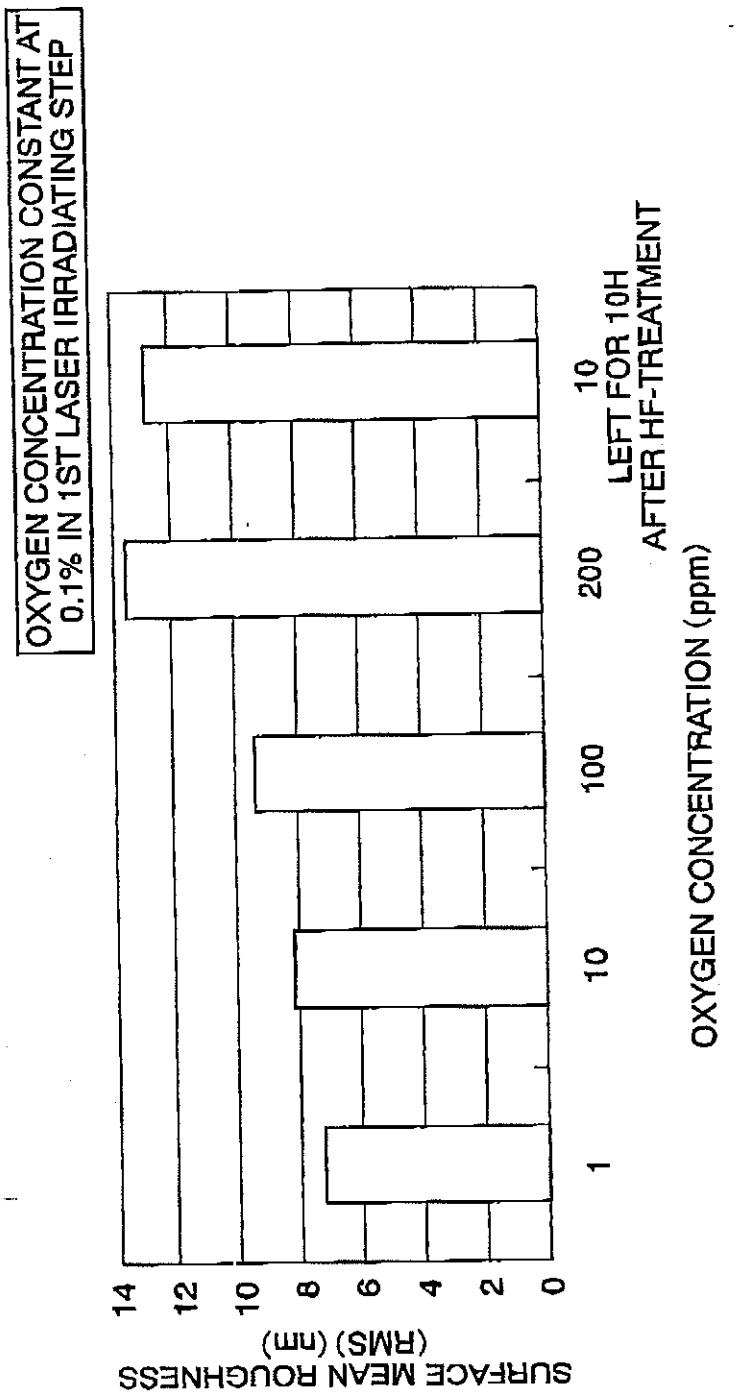

OXYGEN CONCENTRATION CONSTANT AT
0.1% IN 1ST LASER IRRADIATING STEP
SURFACE MEAN ROUGHNESS
(RMS) (nm)
0
2
4
6
8
10
12
14
OXYGEN CONCENTRATION (ppm)
1
10
100
200
10
LEFT FOR 10H
AFTER HF-TREATMENT

FIG. 3

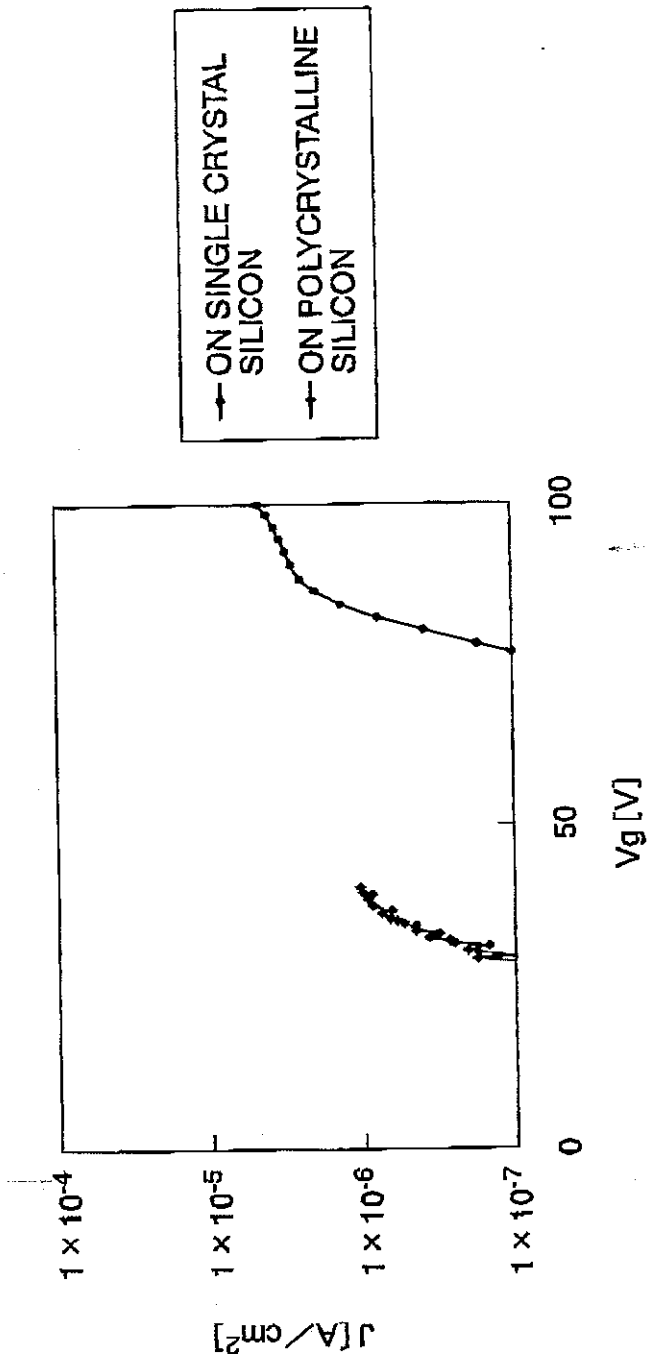

ON SINGLE CRYSTAL SILICON
ON POLYCRYSTALLINE SILICON
J [A/cm²]
1 × 10⁻⁴
1 × 10⁻⁵
1 × 10⁻⁶
1 × 10⁻⁷
0
50
100
Vg [V]

FIG. 4

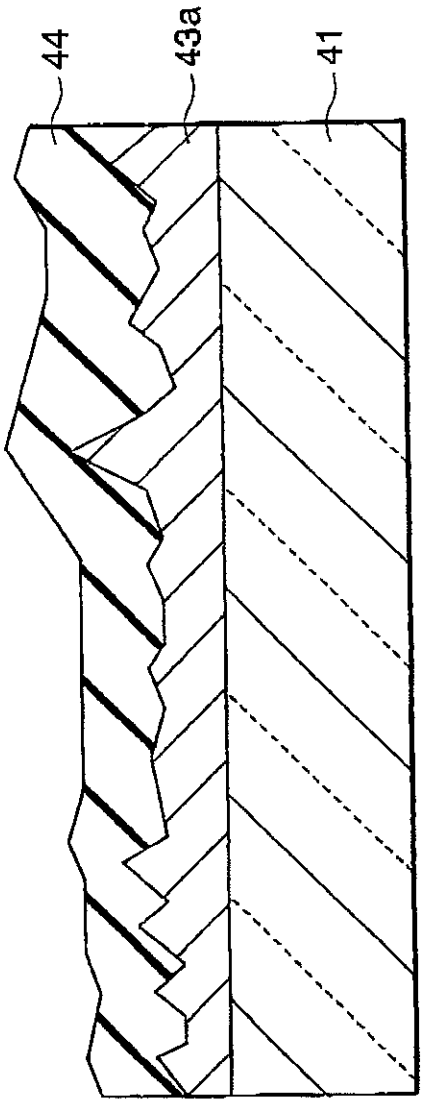


FIG. 5

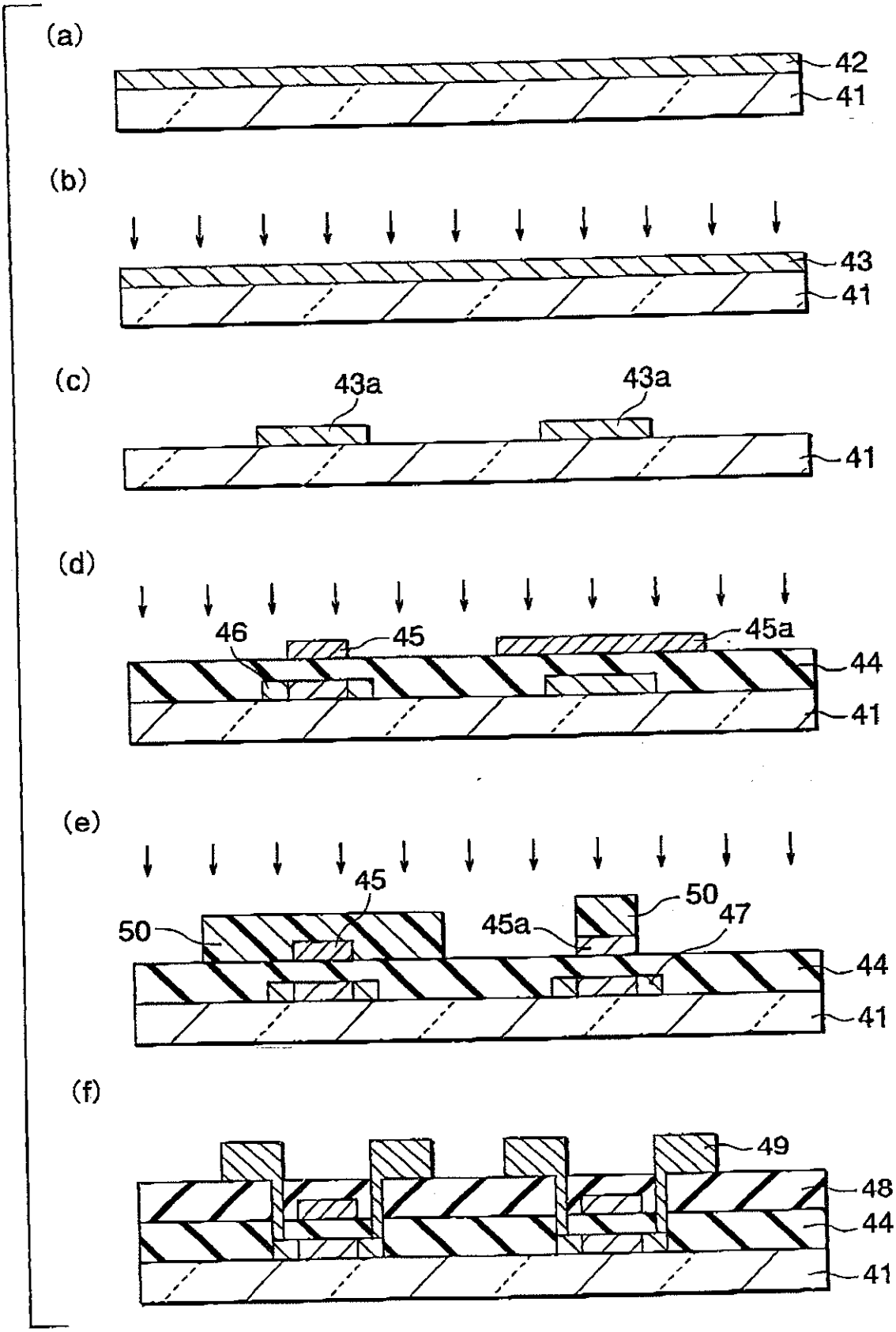

(a)
42
41
(b)
43
41
(c)
43a
43a
41
(d)
46
45
45a
44
41
(e)
45
50
45a
50
47
44
41
(f)
49
48
44
41

FIG. 6

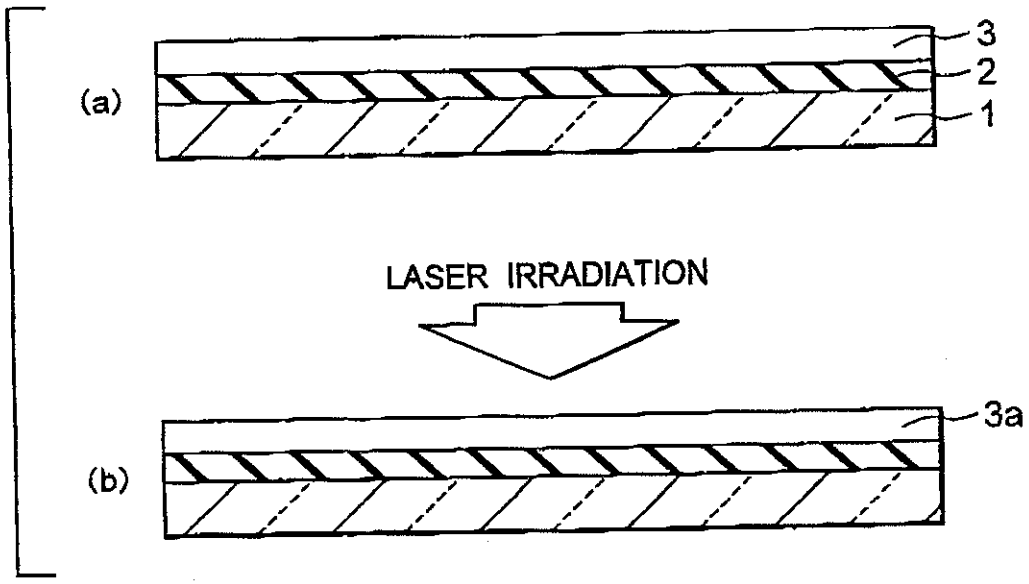


FIG. 7

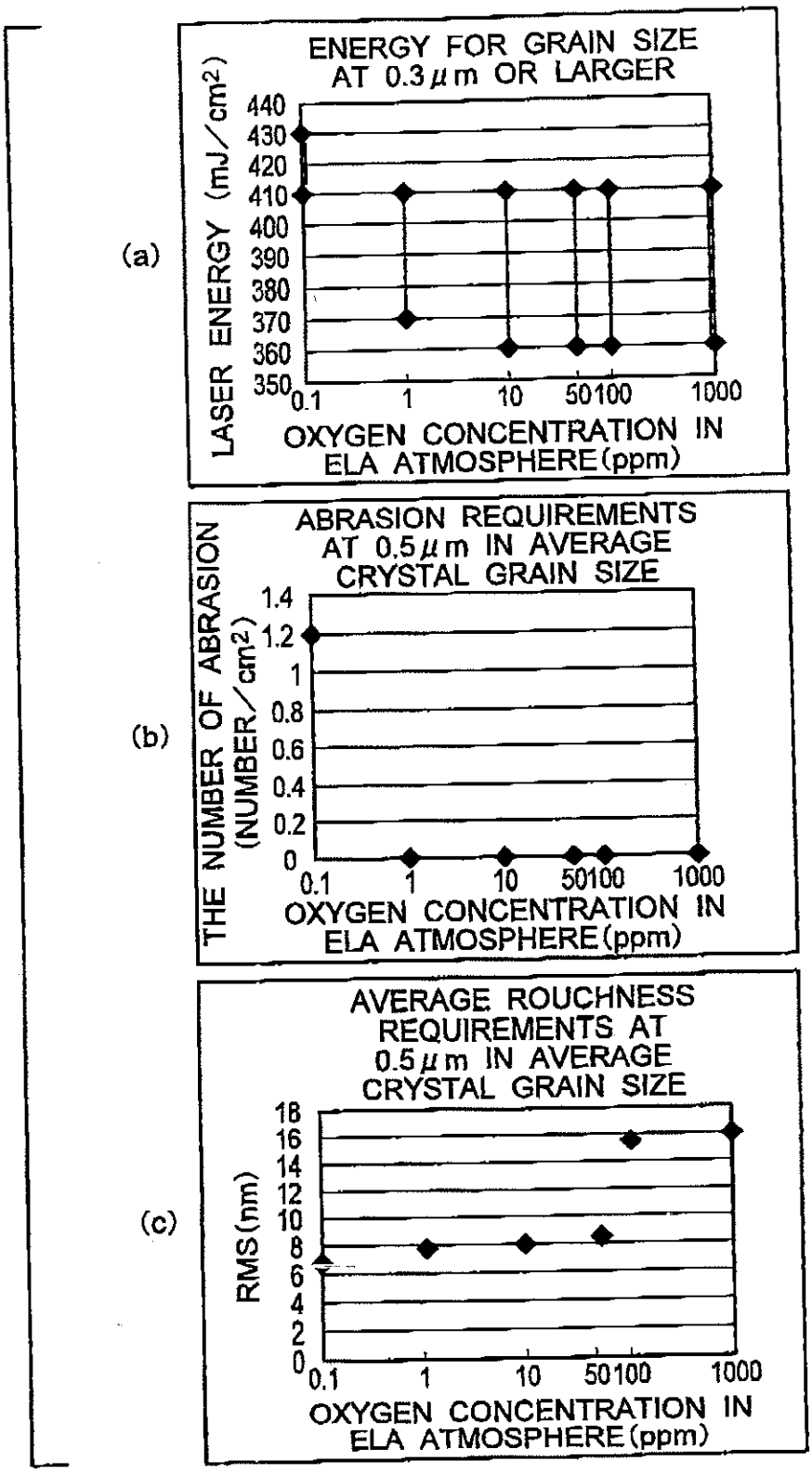

(a)
ENERGY FOR GRAIN SIZE AT 0.3μm OR LARGER
LASER ENERGY (mJ/cm²)
440
430
420
410
400
390
380
370
360
350
0.1
1
10
50100
1000
OXYGEN CONCENTRATION IN ELA ATMOSPHERE(ppm)
(b)
ABRASION REQUIREMENTS AT 0.5μm IN AVERAGE CRYSTAL GRAIN SIZE
THE NUMBER OF ABRASION (NUMBER/cm²)
1.4
1.2
1
0.8
0.6
0.4
0.2
0
0.1
1
10
50100
1000
OXYGEN CONCENTRATION IN ELA ATMOSPHERE(ppm)
(c)
AVERAGE ROUCHNESS REQUIREMENTS AT 0.5μm IN AVERAGE CRYSTAL GRAIN SIZE
RMS(nm)
18
16
14
12
10
8
6
4
2
0
0.1
1
10
50100
1000
OXYGEN CONCENTRATION IN ELA ATMOSPHERE(ppm)

FIG. 8

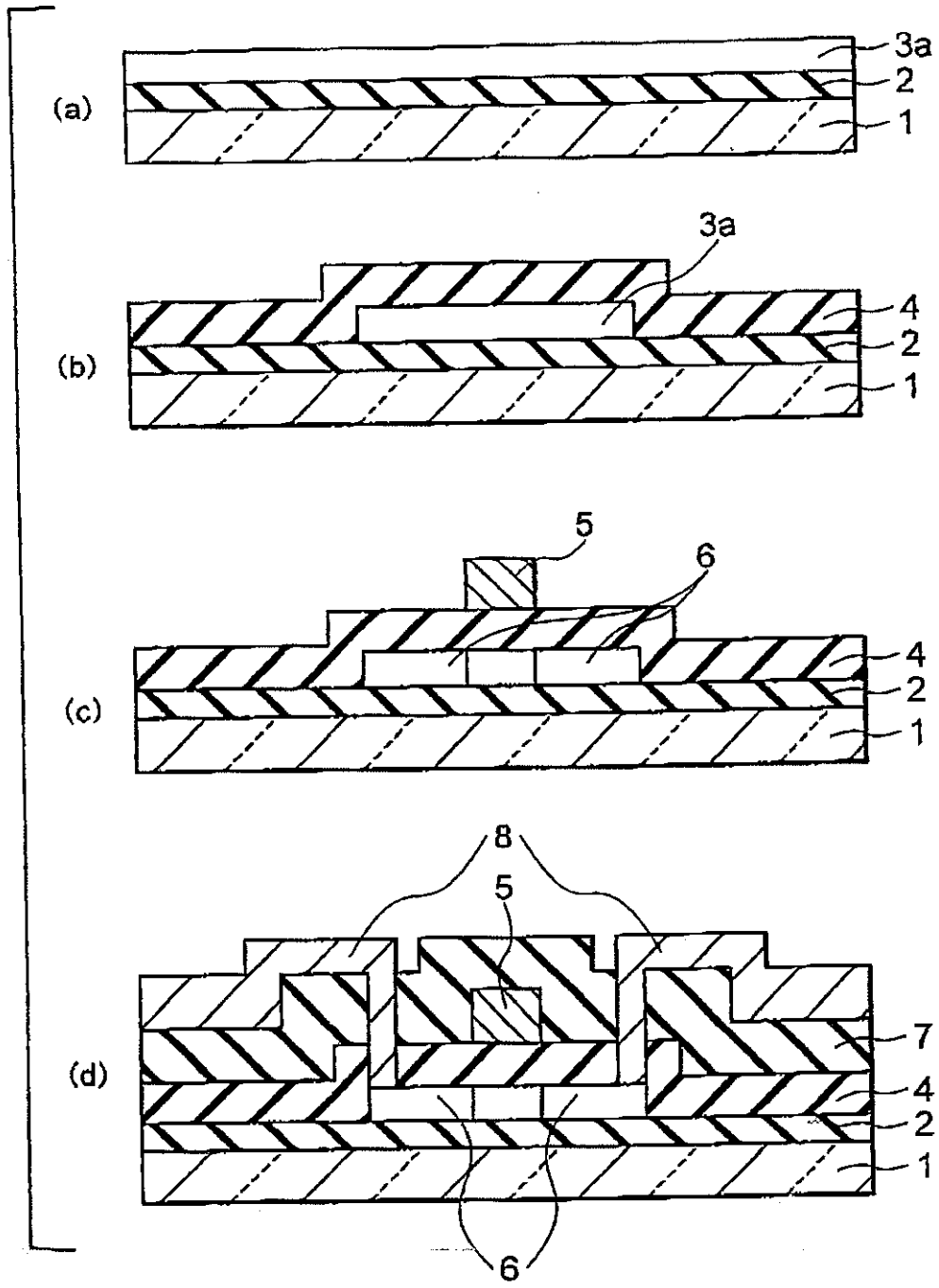


FIG. 9

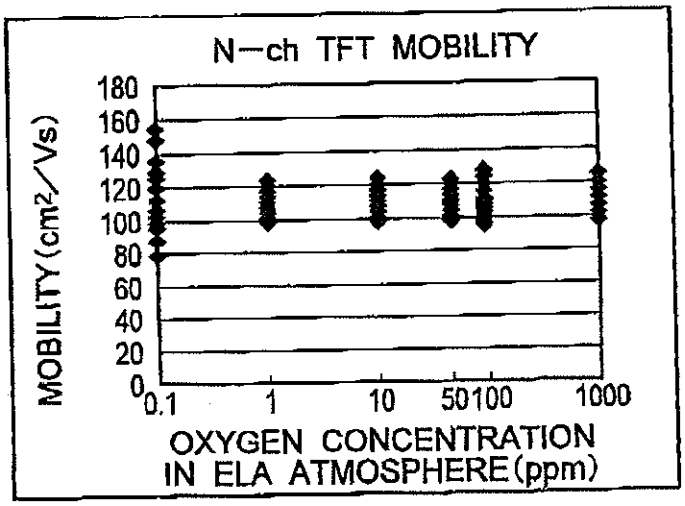

N-ch TFT MOBILITY
MOBILITY (cm²/Vs)
180
160
140
120
100
80
60
40
20
0
0.1
1
10
50
100
1000
OXYGEN CONCENTRATION
IN ELA ATMOSPHERE (ppm)

FIG. 10