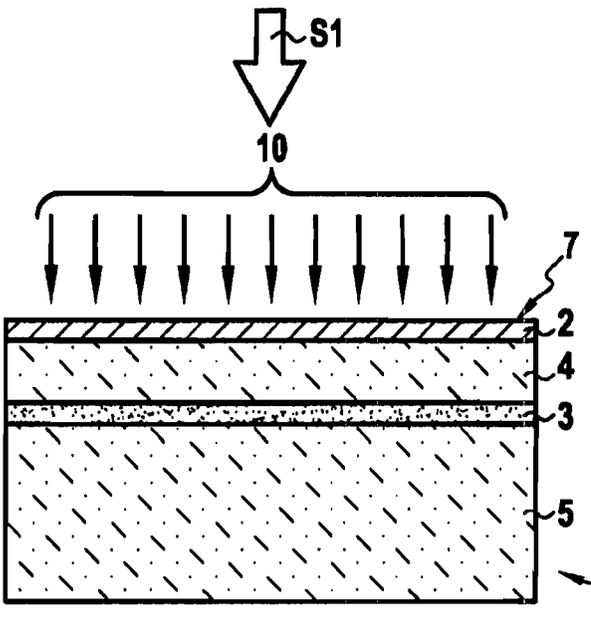


FIG.1A

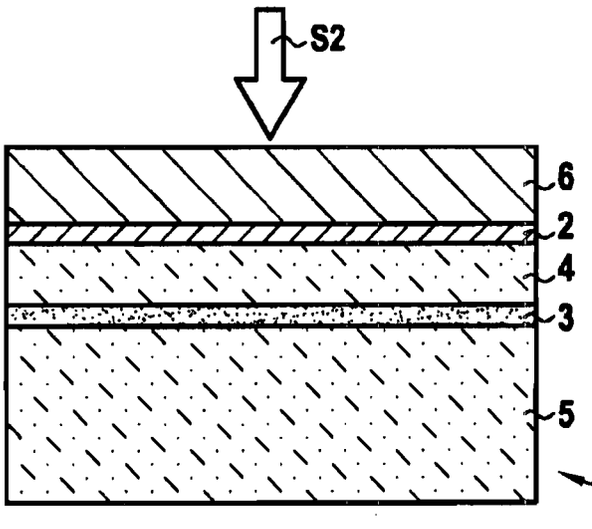


FIG.1B

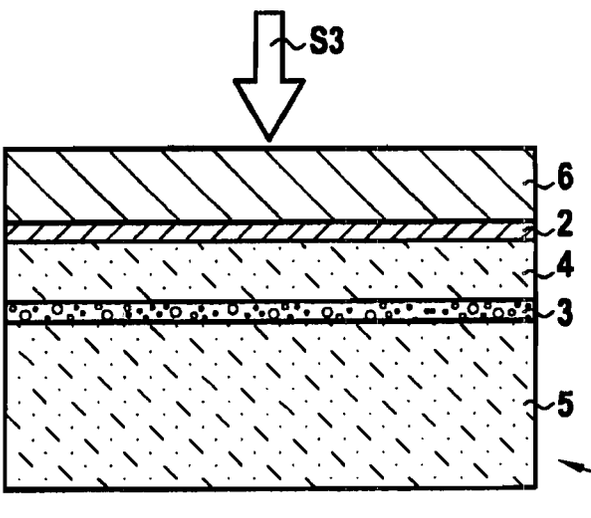


FIG.1C

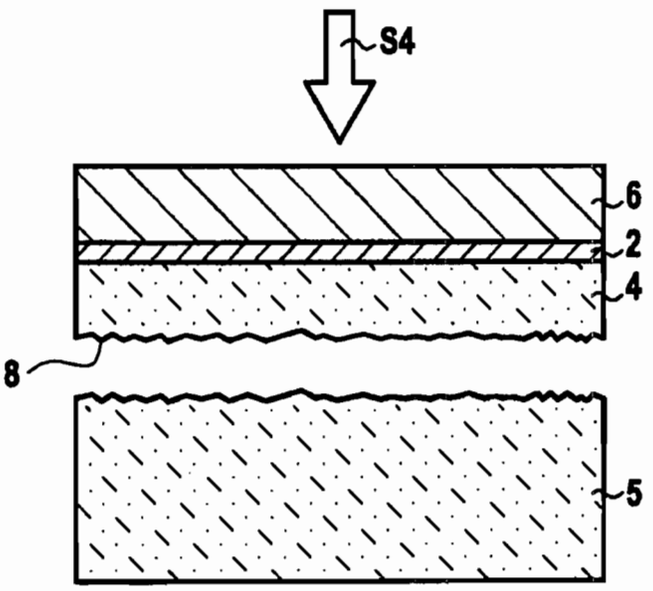


FIG.1D

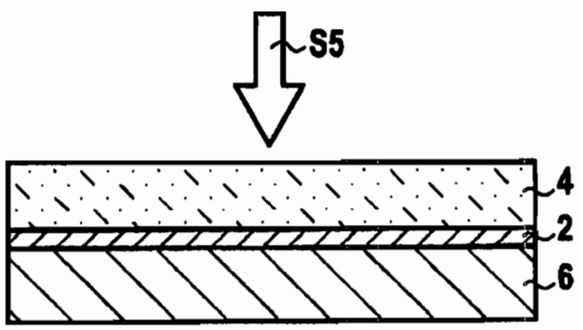


FIG.1E

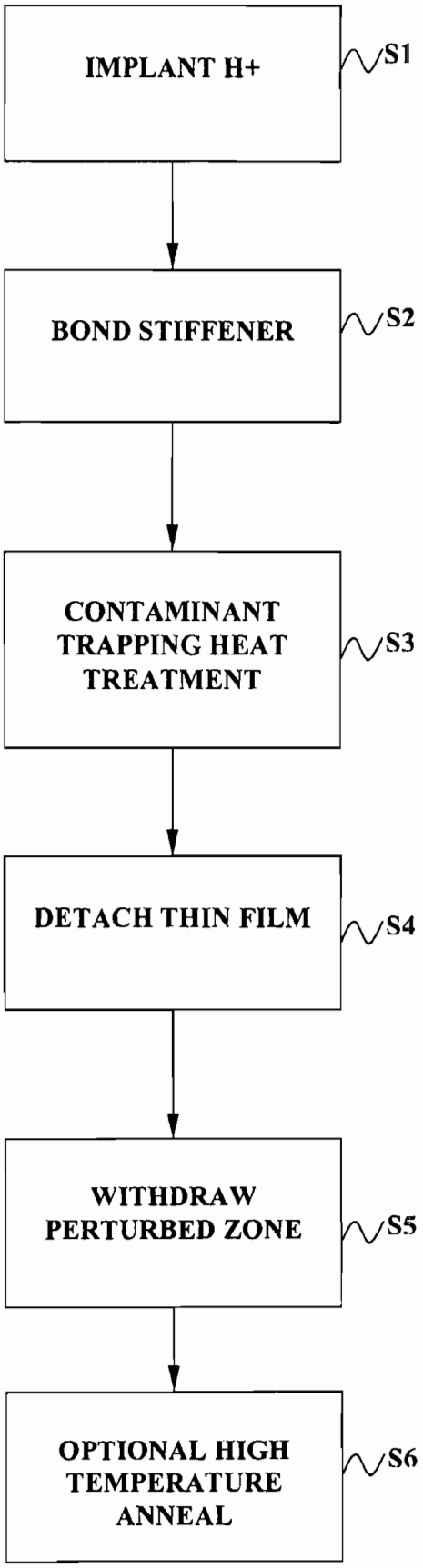

IMPLANT H+
S1
BOND STIFFENER
S2
CONTAMINANT TRAPPING HEAT TREATMENT
S3
DETACH THIN FILM
S4
WITHDRAW PERTURBED ZONE
S5
OPTIONAL HIGH TEMPERATURE ANNEAL
S6

FIG.2

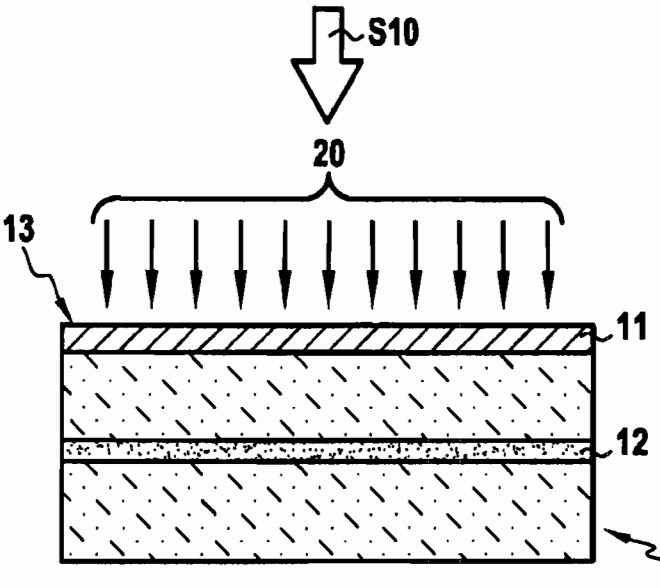


FIG.3A

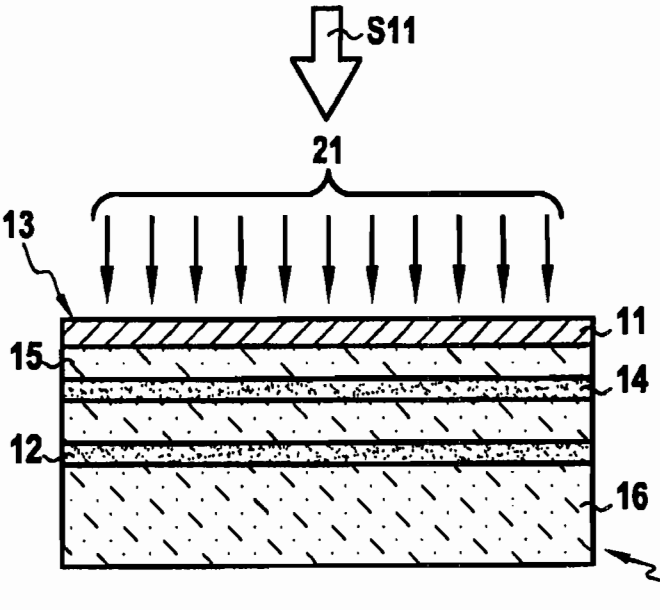


FIG.3B

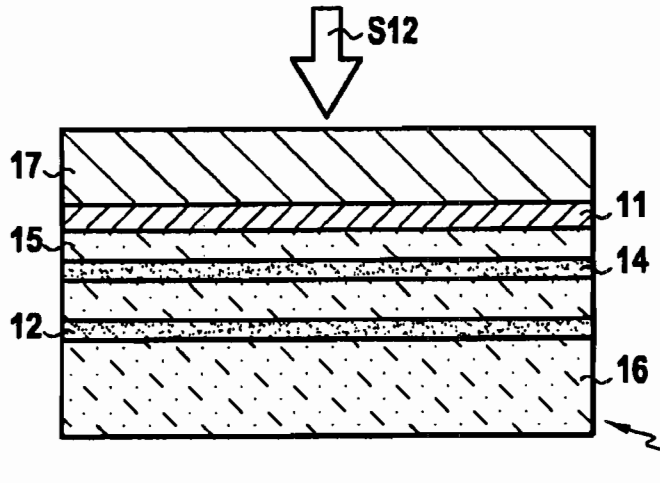


FIG.3C

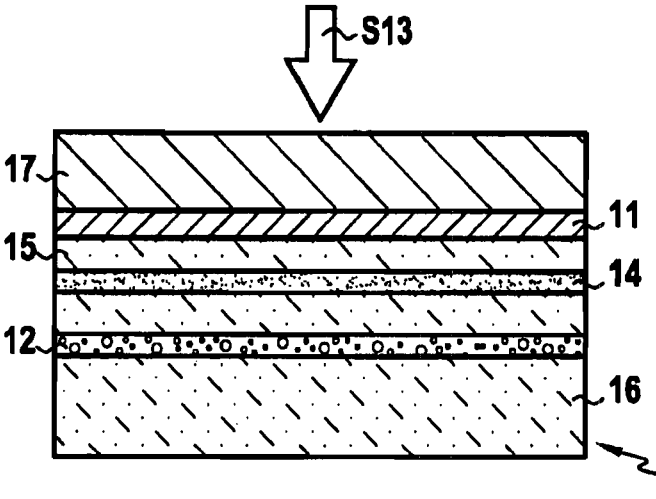


FIG.3D

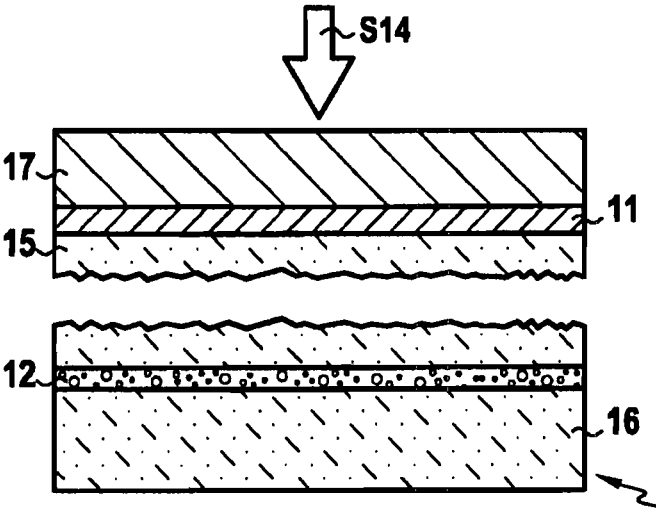


FIG.3E

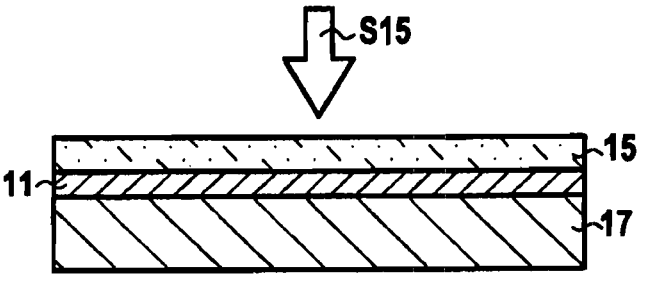


FIG.3F

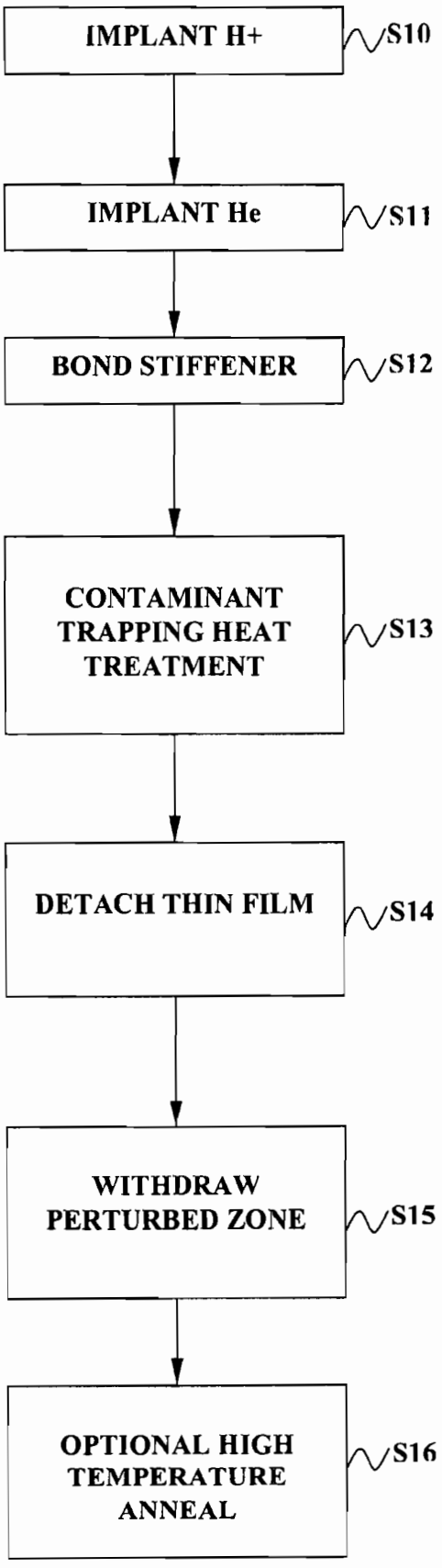

IMPLANT H+
S10
IMPLANT He
S11
BOND STIFFENER
S12
CONTAMINANT TRAPPING HEAT TREATMENT
S13
DETACH THIN FILM
S14
WITHDRAW PERTURBED ZONE
S15
OPTIONAL HIGH TEMPERATURE ANNEAL
S16

FIG.4

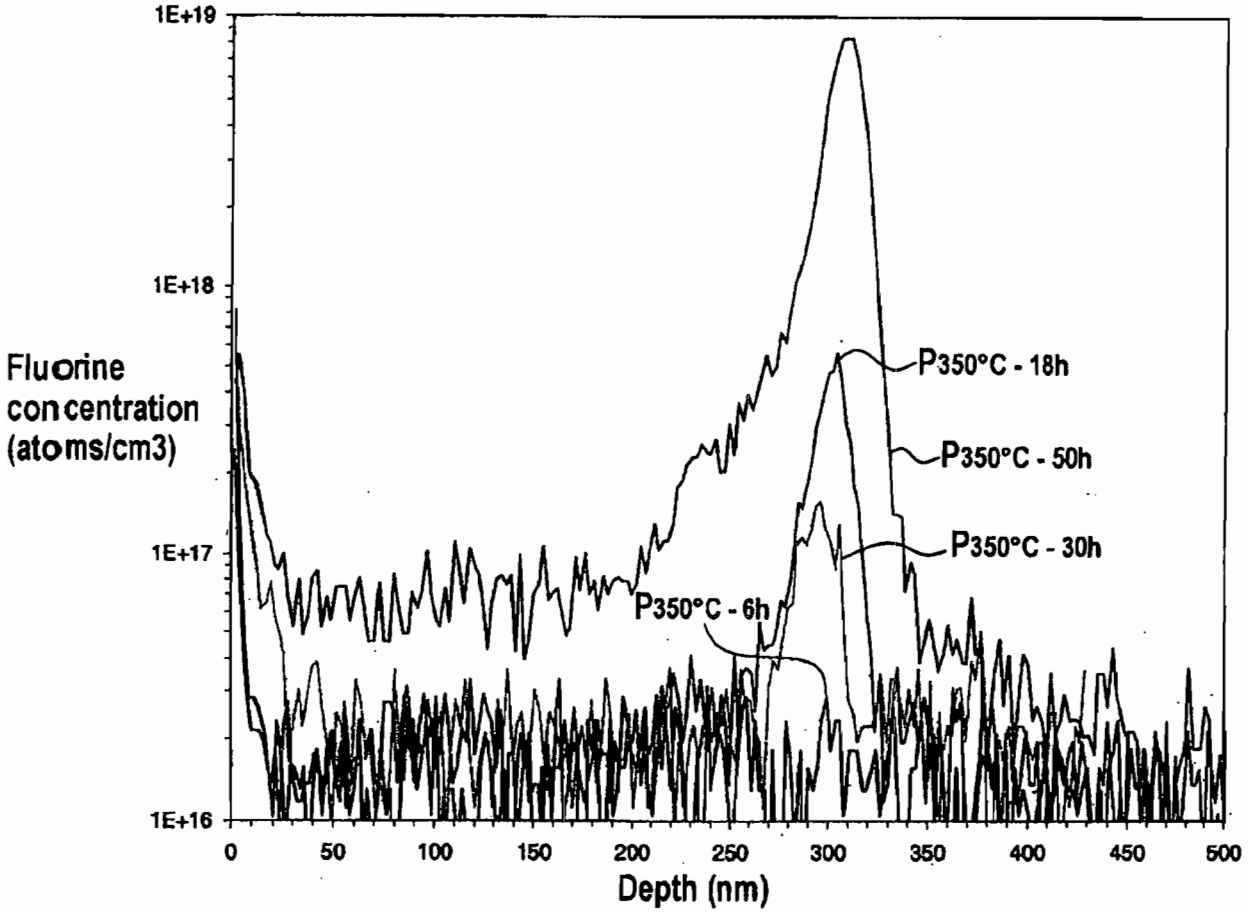

1E+19
1E+18
1E+17
1E+16
Fluorine concentration (atoms/cm3)
P350°C - 18h
P350°C - 50h
P350°C - 30h
P350°C - 6h
0
50
100
150
200
250
300
350
400
450
500
Depth (nm)

FIG.5

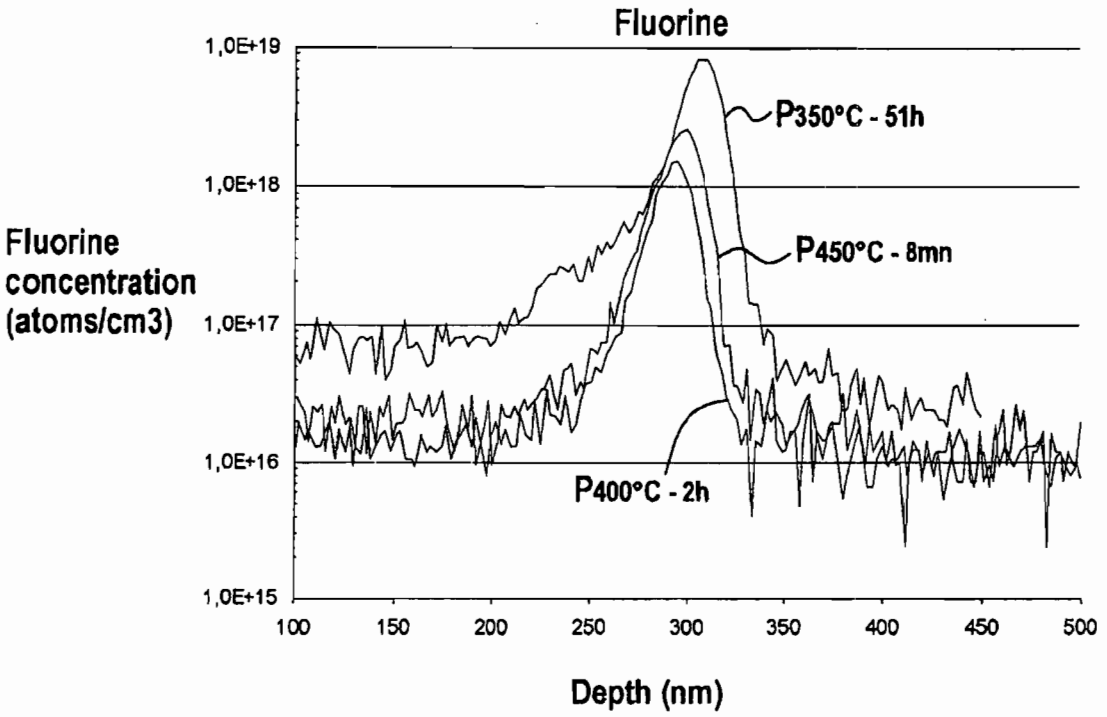

Implant H, 37 keV - 5.75 x 10^16
Fluorine
1,0E+19
1,0E+18
1,0E+17
1,0E+16
1,0E+15
Fluorine concentration (atoms/cm3)
P350°C - 51h
P450°C - 8mn
P400°C - 2h
100
150
200
250
300
350
400
450
500
Depth (nm)

FIG. 6

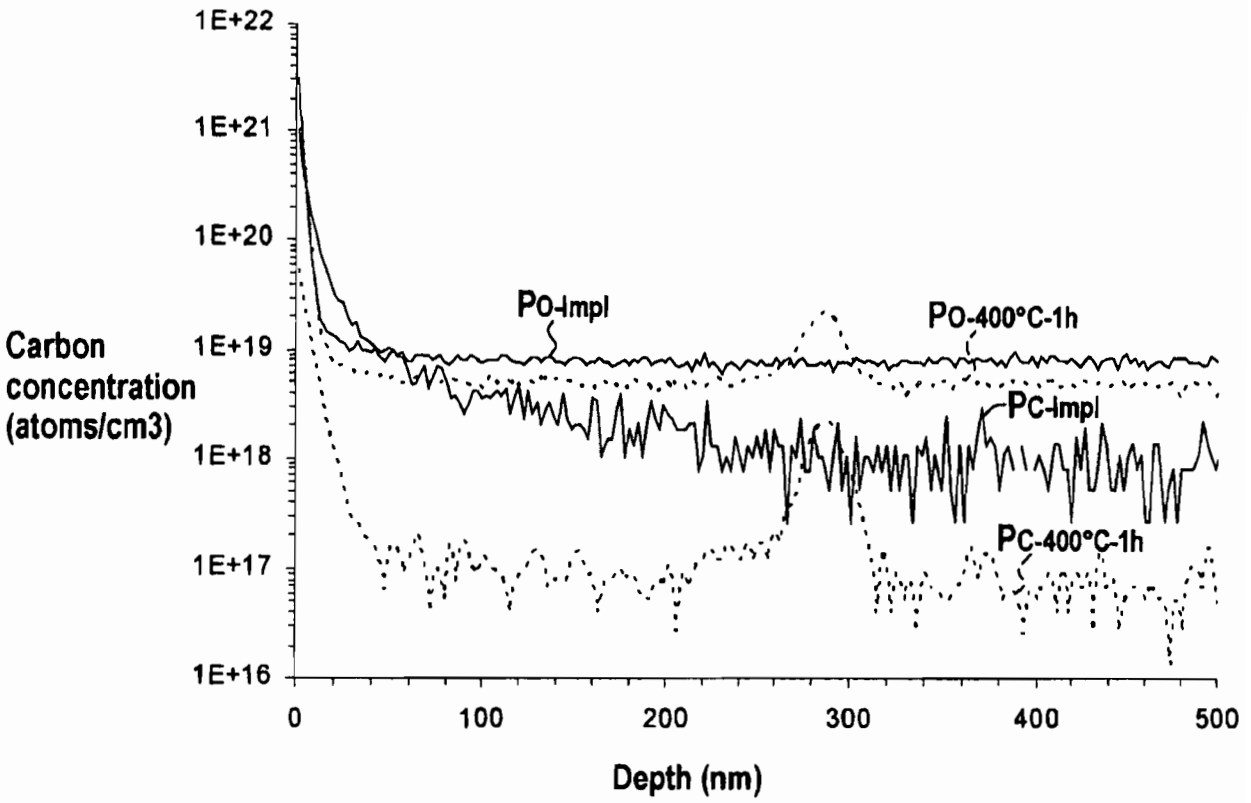

1E+22
1E+21
1E+20
1E+19
1E+18
1E+17
1E+16
Carbon concentration (atoms/cm3)
PO-Impl
PO-400°C-1h
PC-Impl
PC-400°C-1h
0
100
200
300
400
500
Depth (nm)

FIG.7