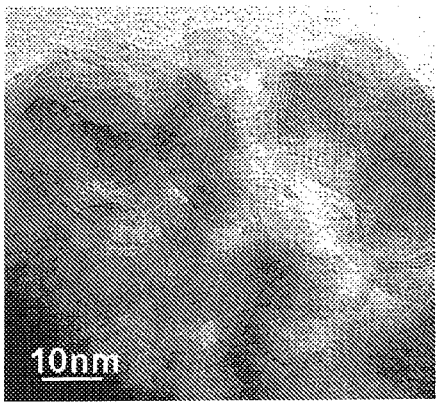


FIG. 1(a)

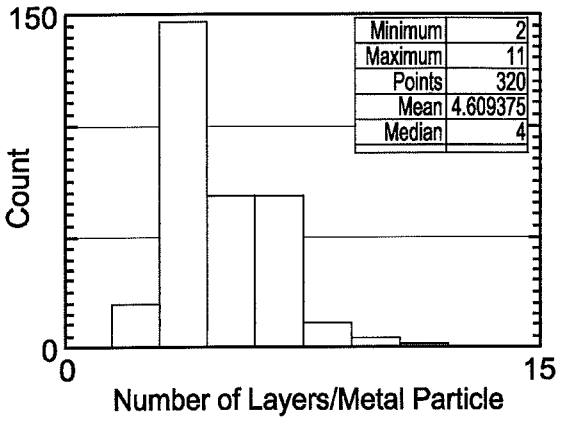


FIG. 2

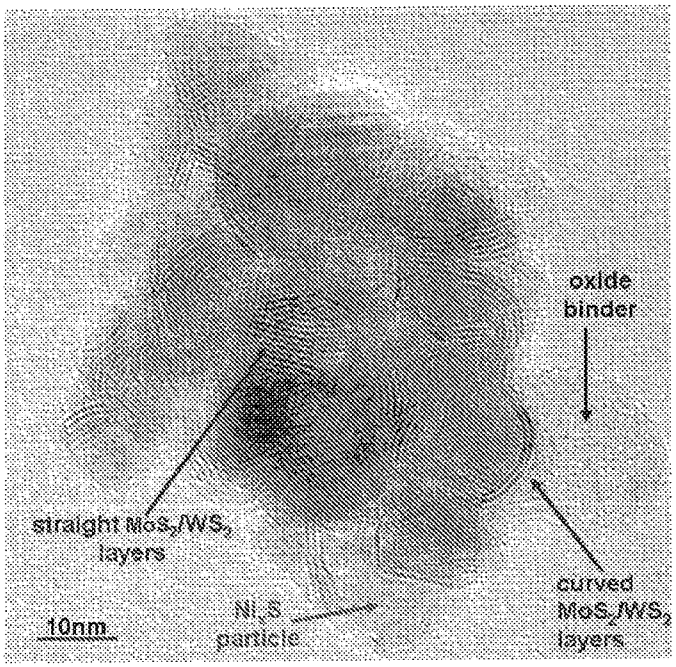


FIG. 1(b)

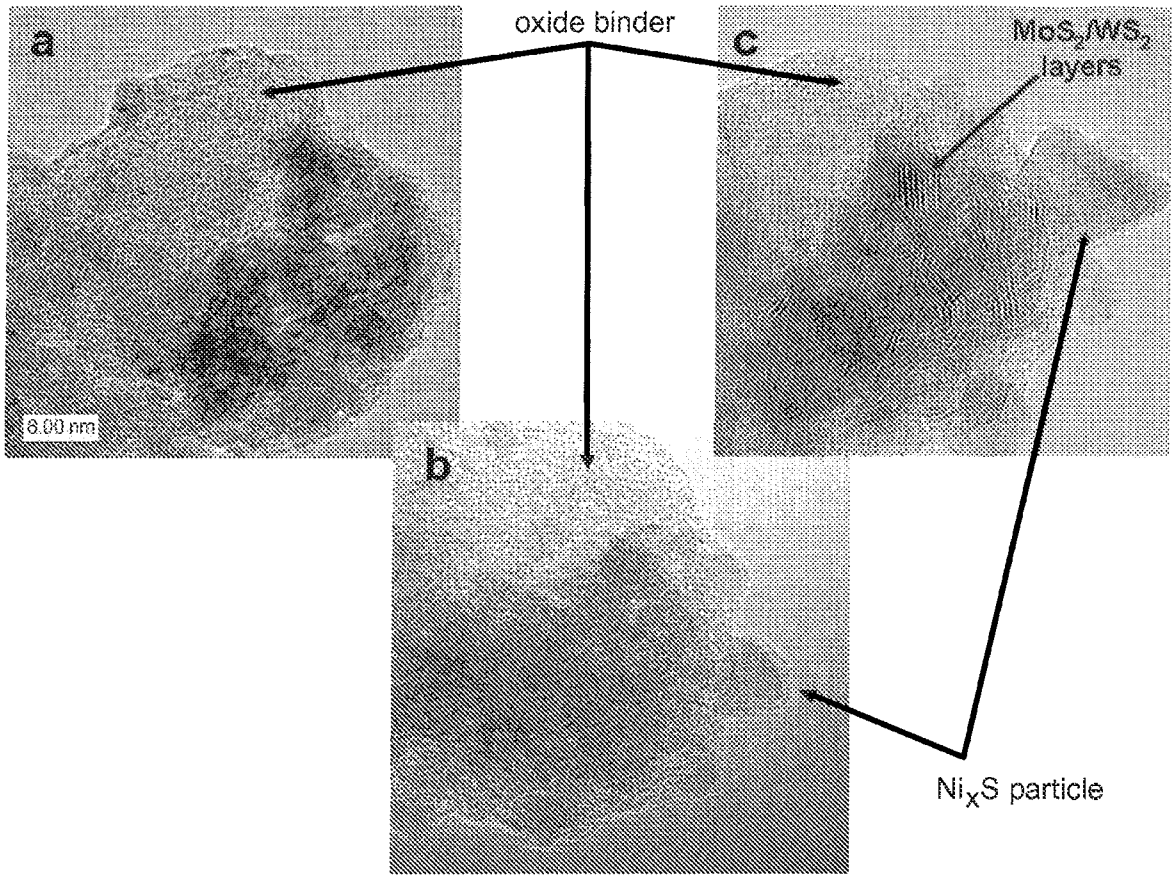

a
oxide binder
c
MoS_2/WS_2 layers
8.00 nm
b
Ni_xS particle

FIG. 3

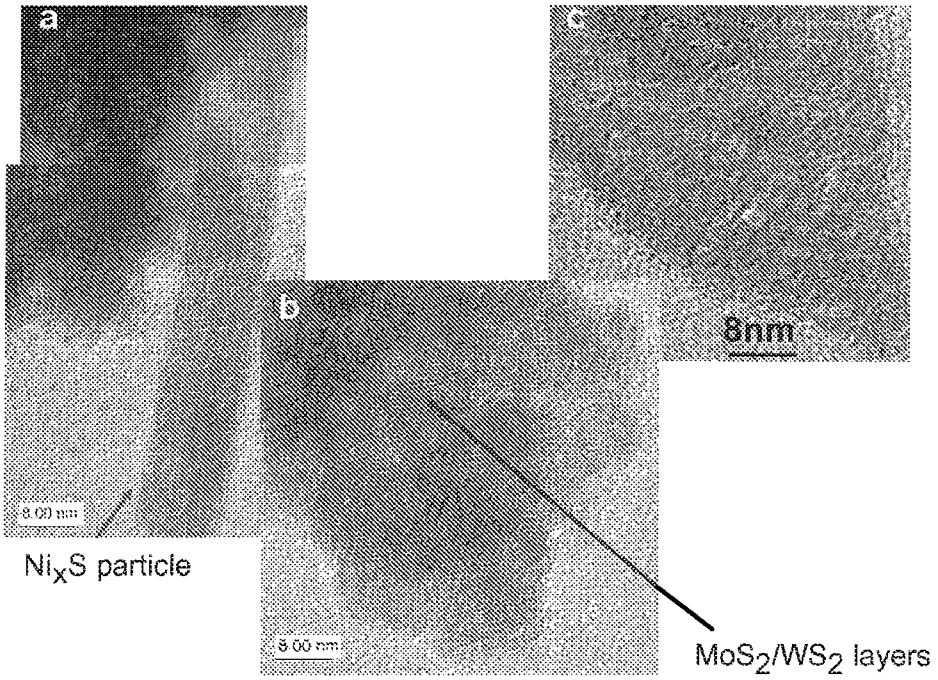

a
c
b
8nm
8.00 nm
Ni_xS particle
8.00 nm
MoS_2/WS_2 layers

FIG. 4

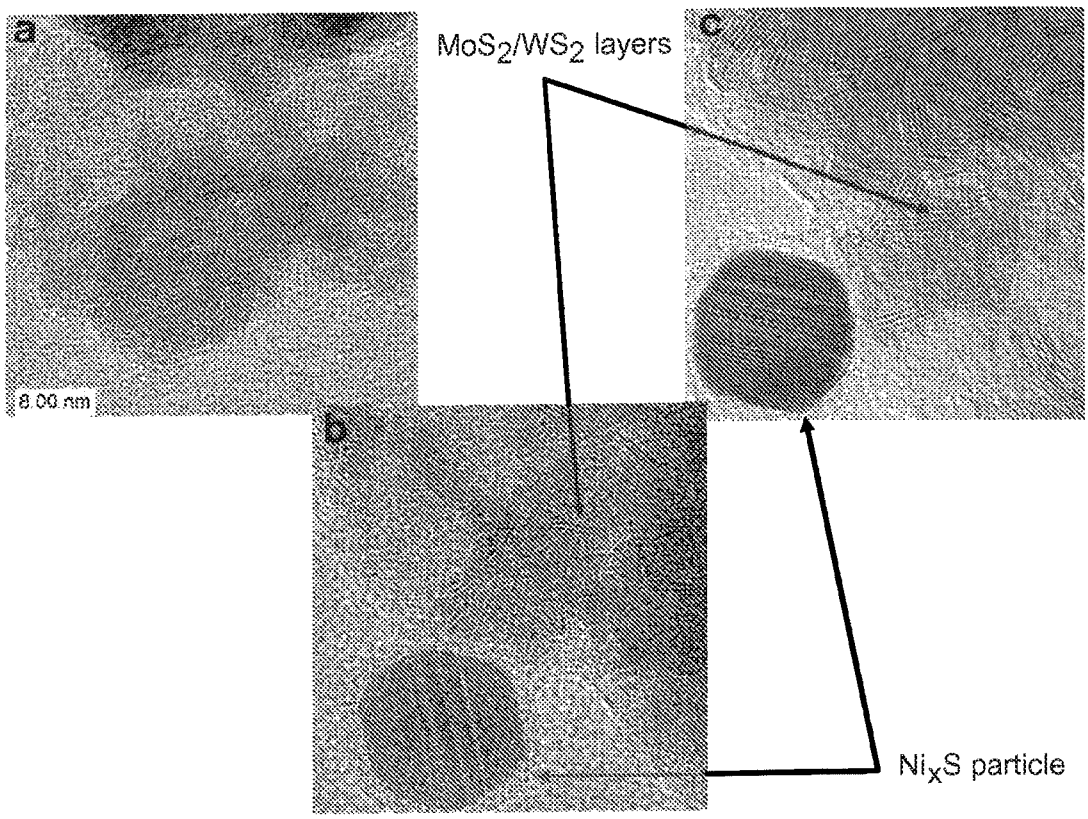

a
8.00 nm
MoS_2/WS_2 layers
c
b
Ni_XS particle

FIG. 5

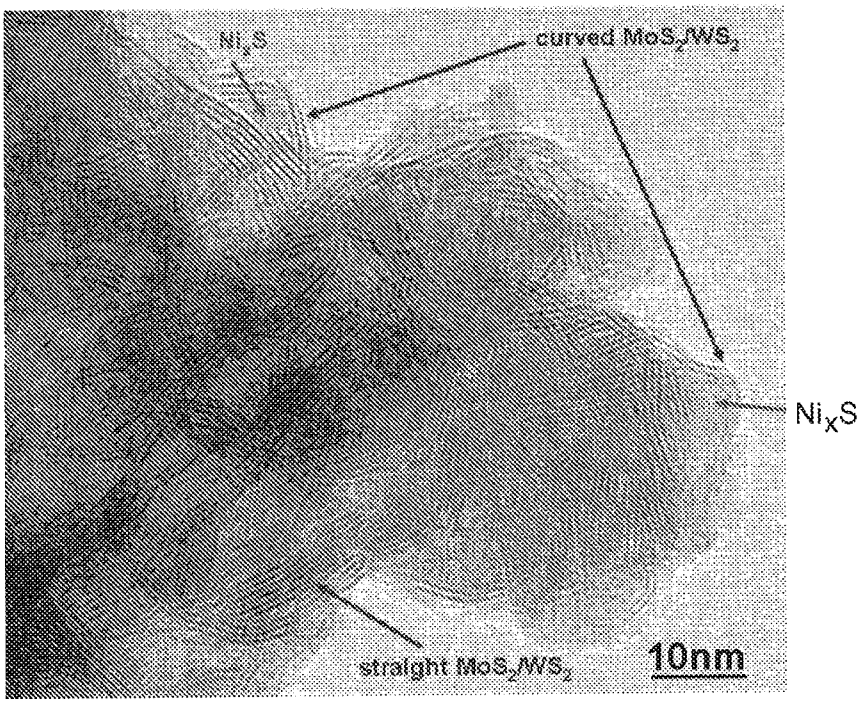

Ni_XS
curved MoS_2/WS_2
Ni_XS
straight MoS_2/WS_2
10nm

FIG. 6

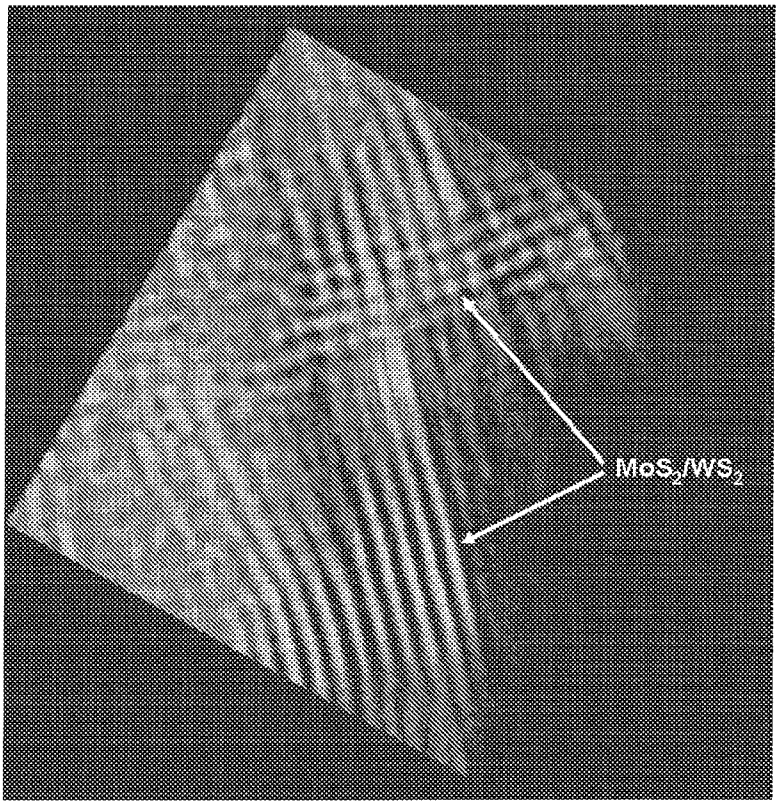


FIG. 7

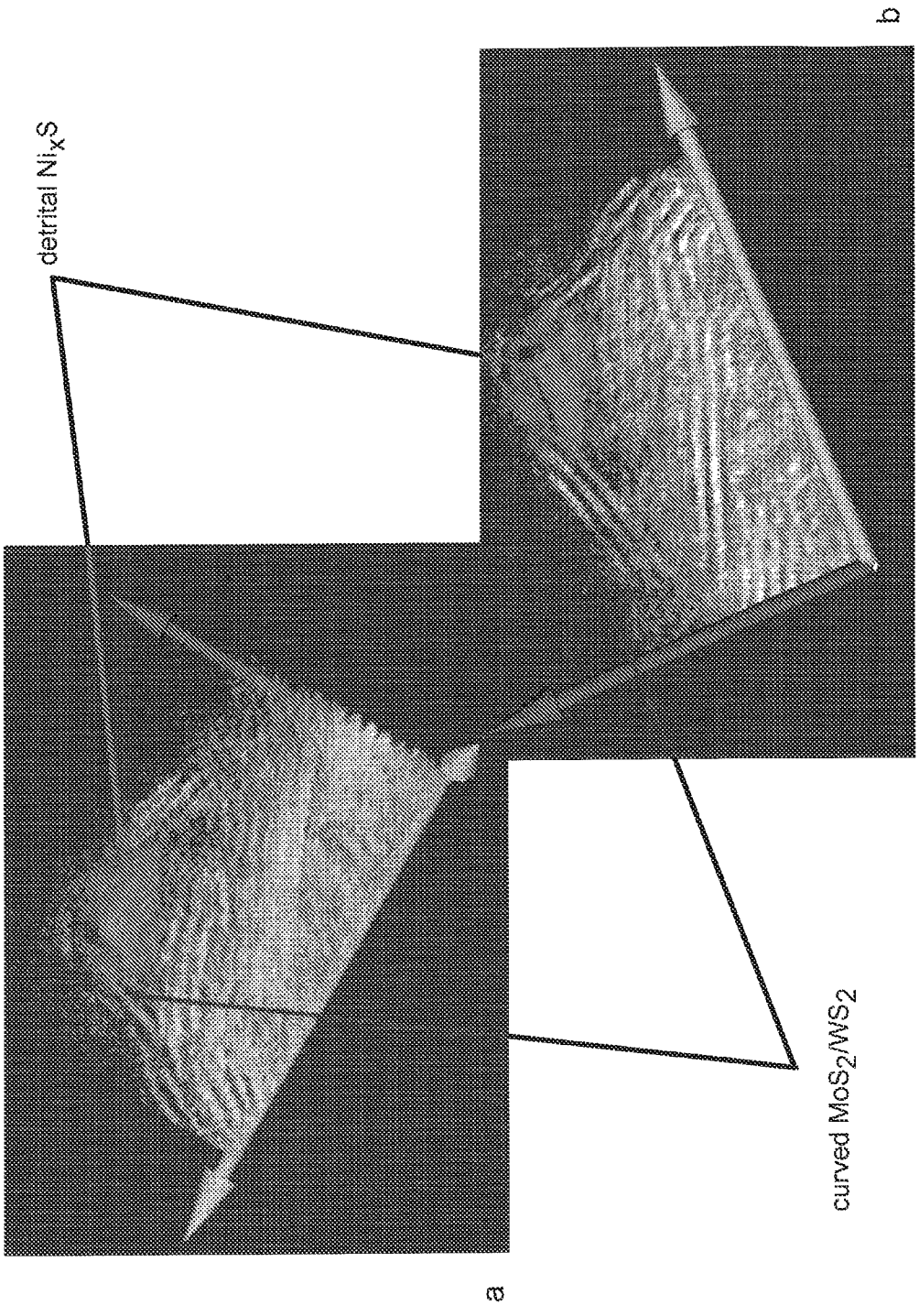


FIG. 8

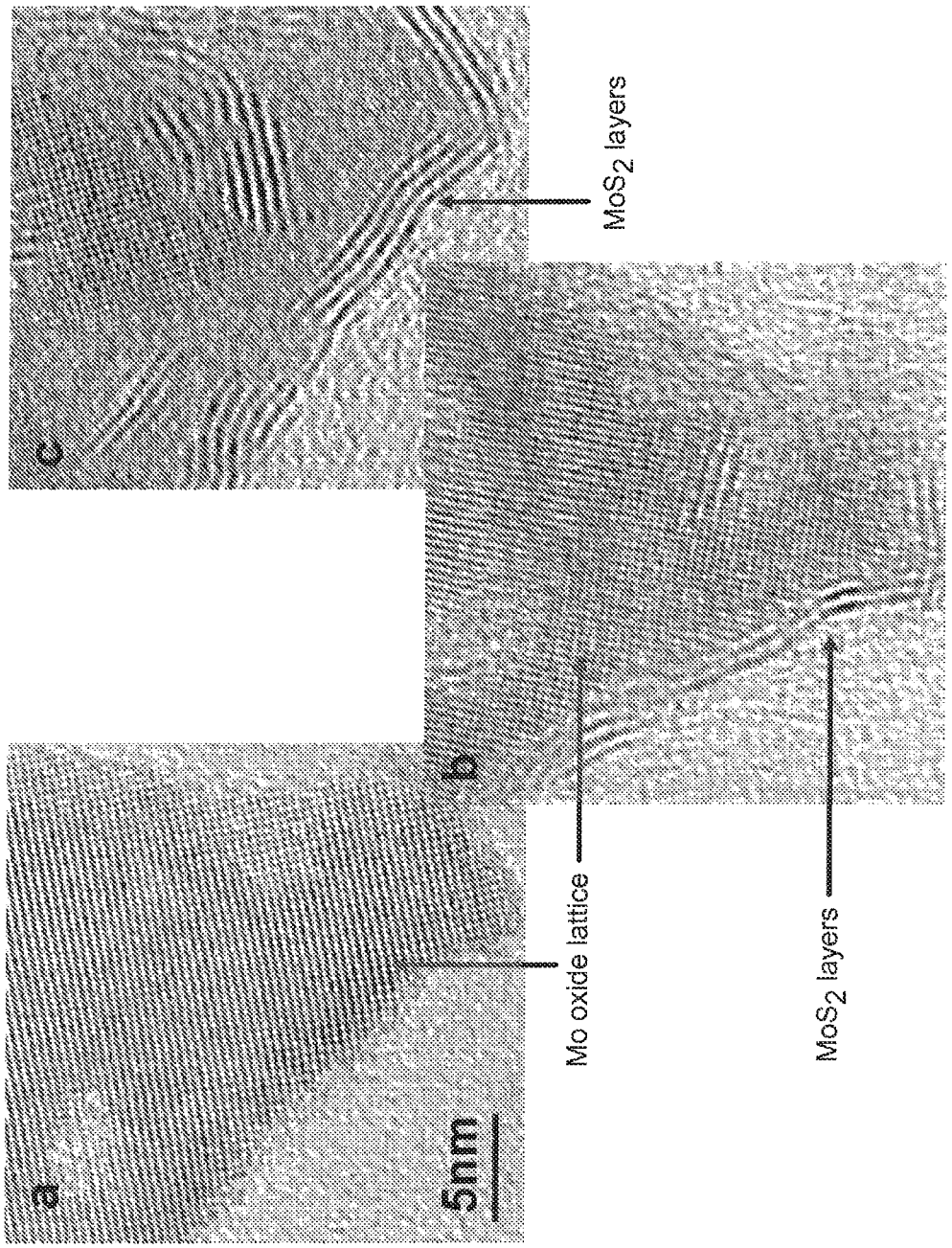


FIG. 9

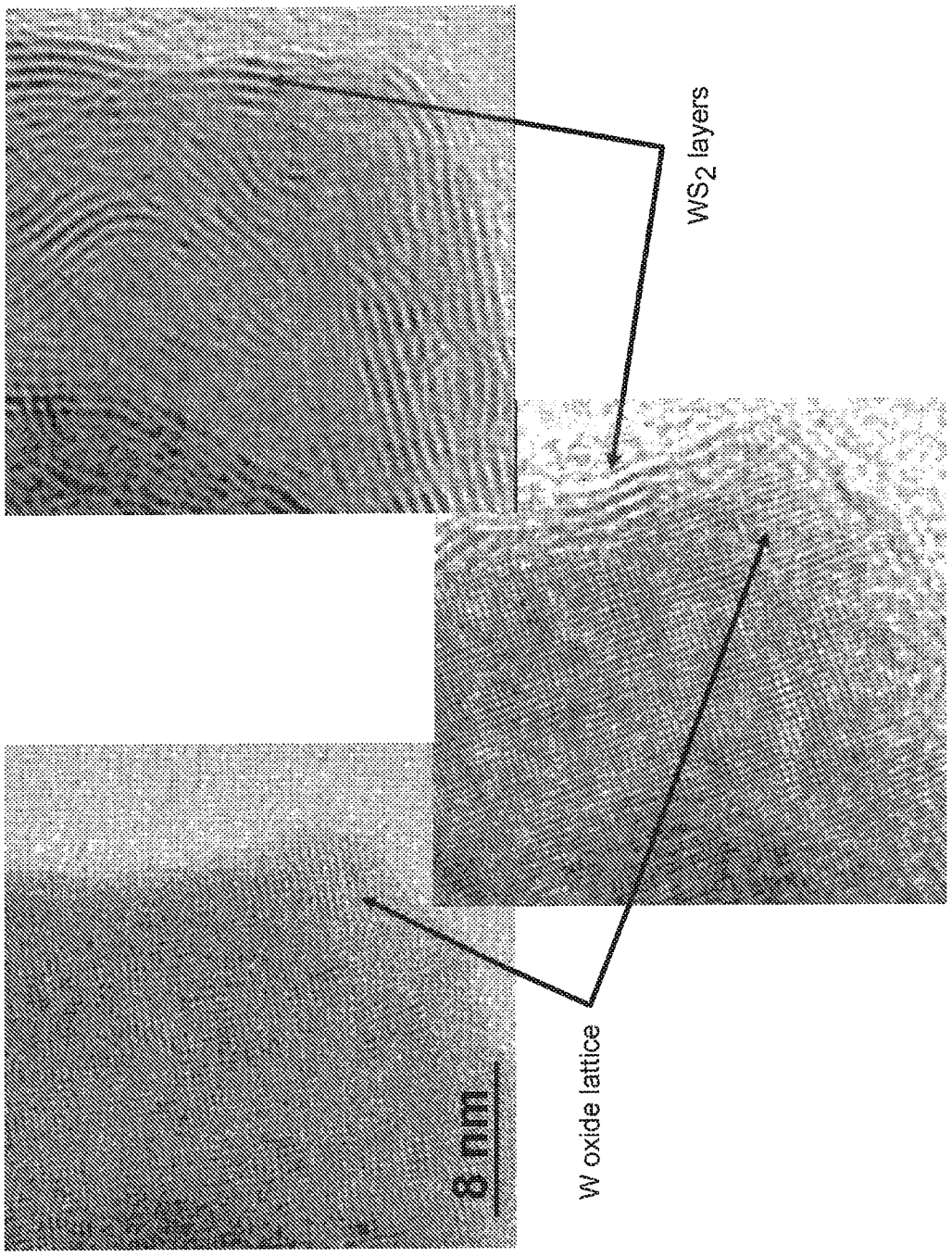


FIG. 10

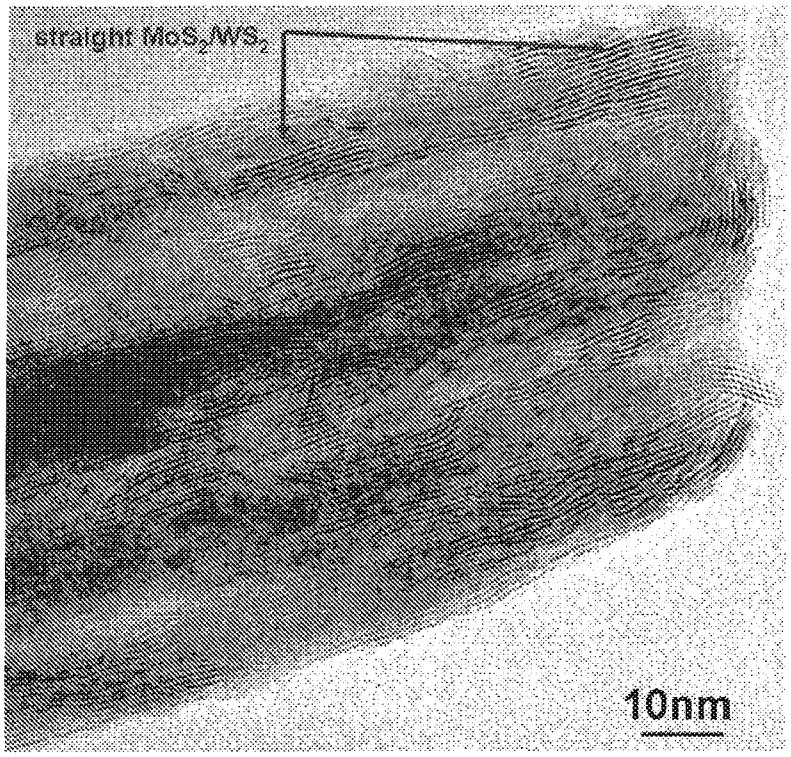


FIG. 11

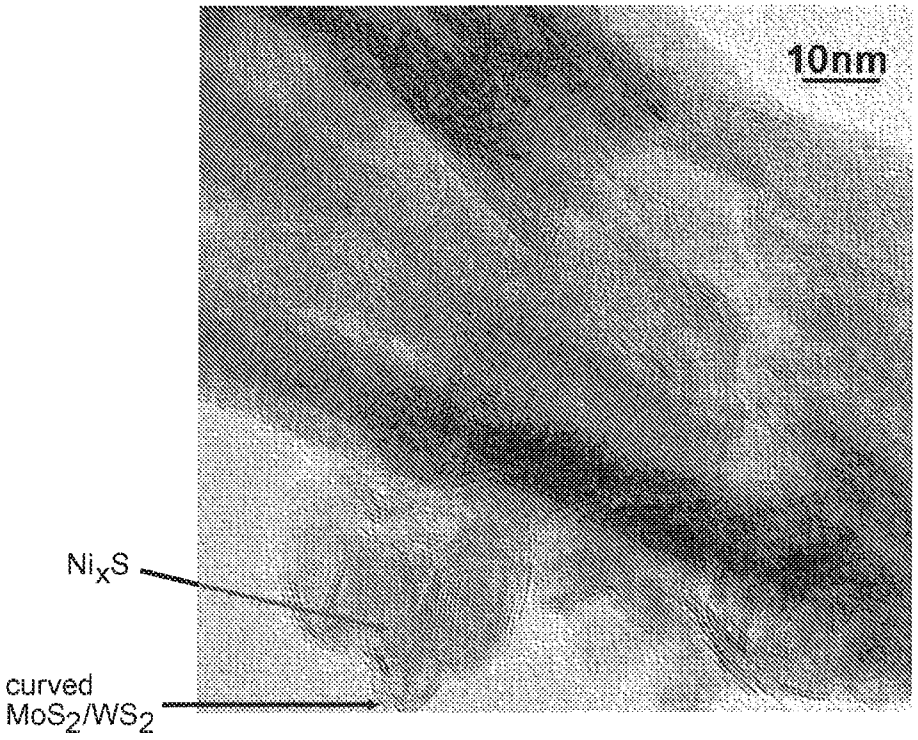


FIG. 12