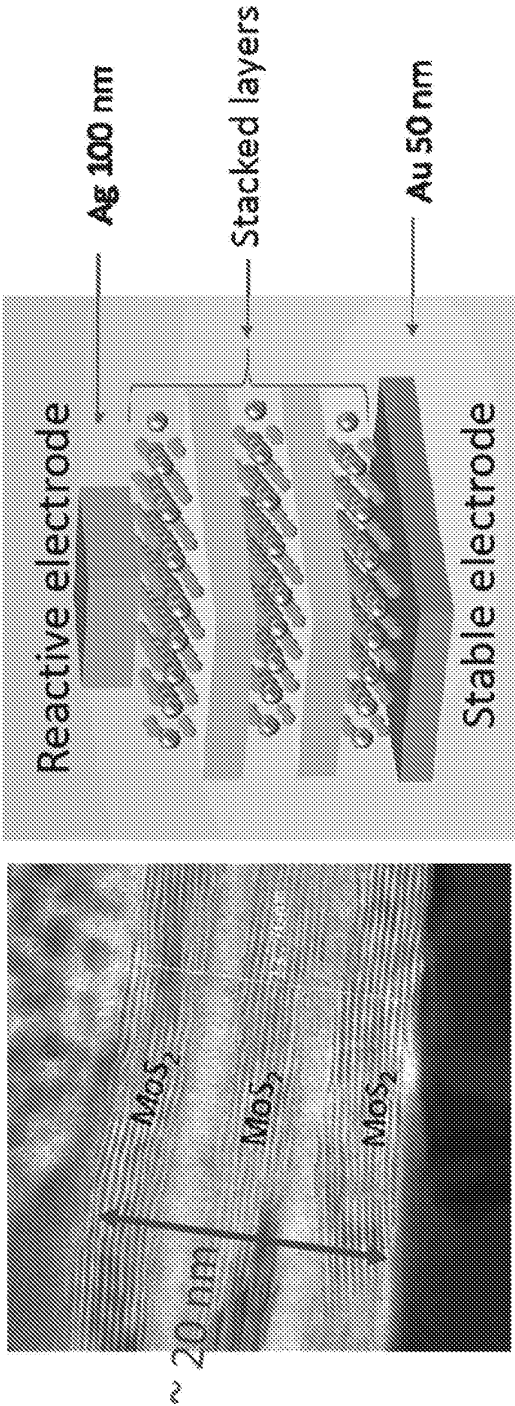


FIG. 1



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FIG. 2

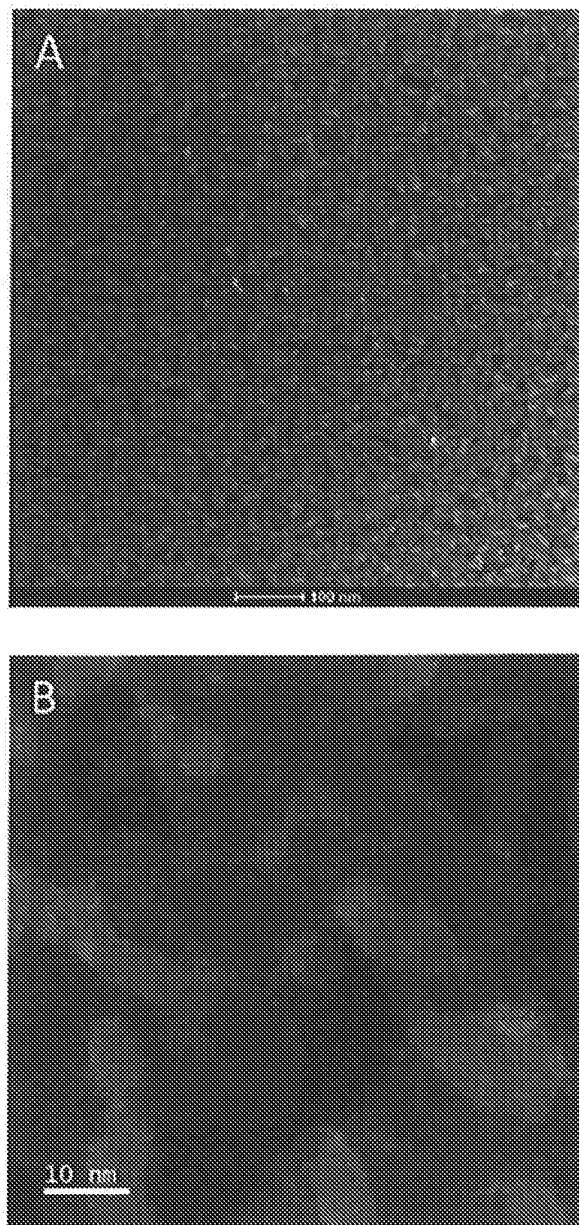
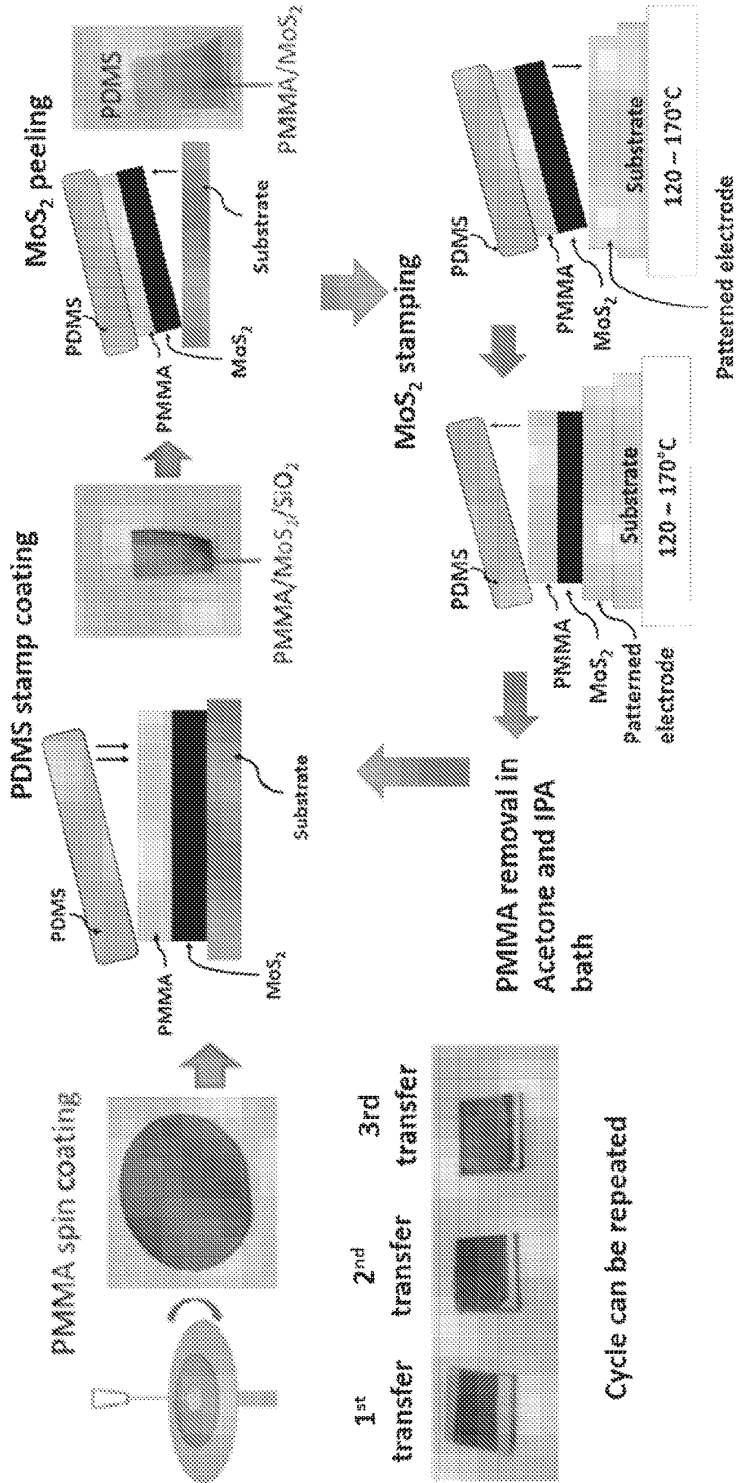


FIG. 3



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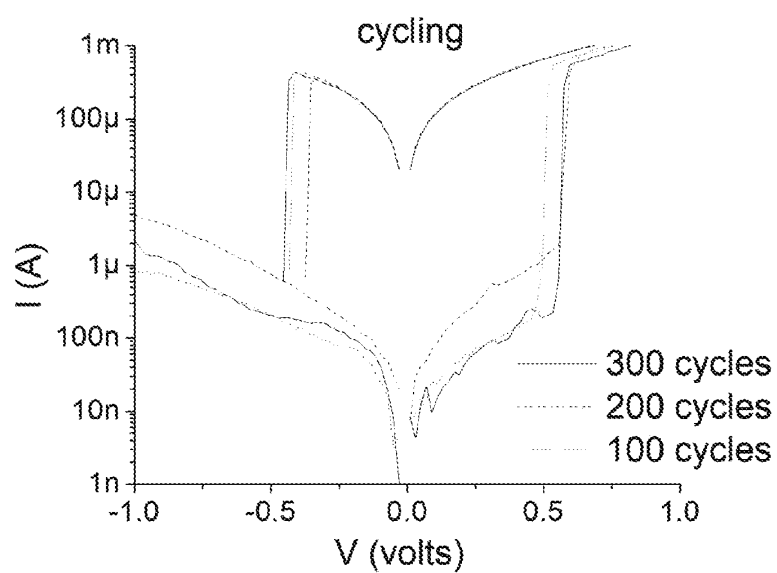
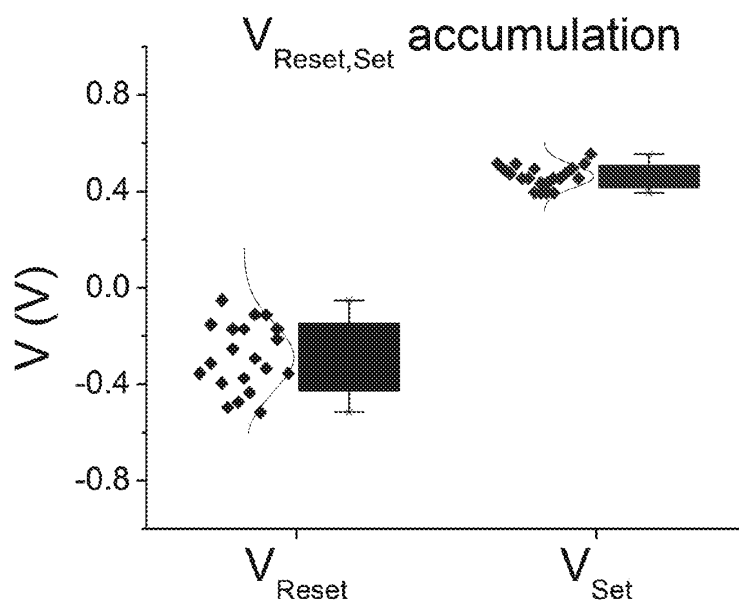
FIG. 4A**FIG. 4B**

FIG. 5A

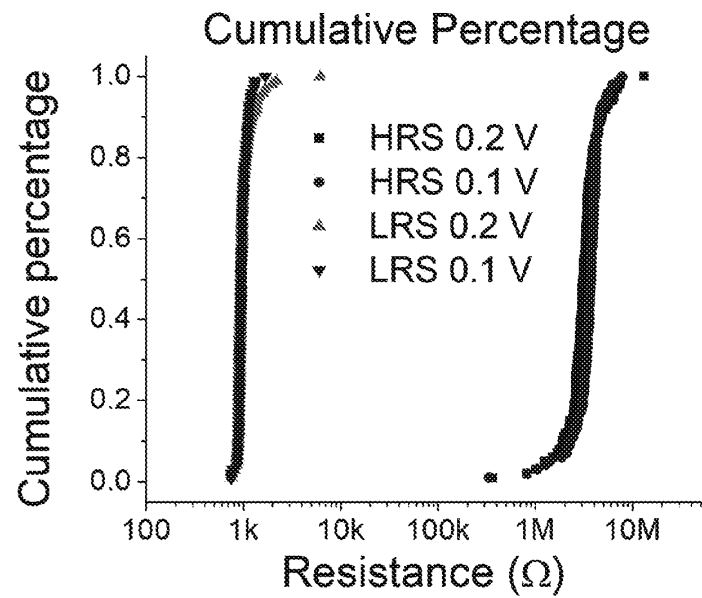


FIG. 5B

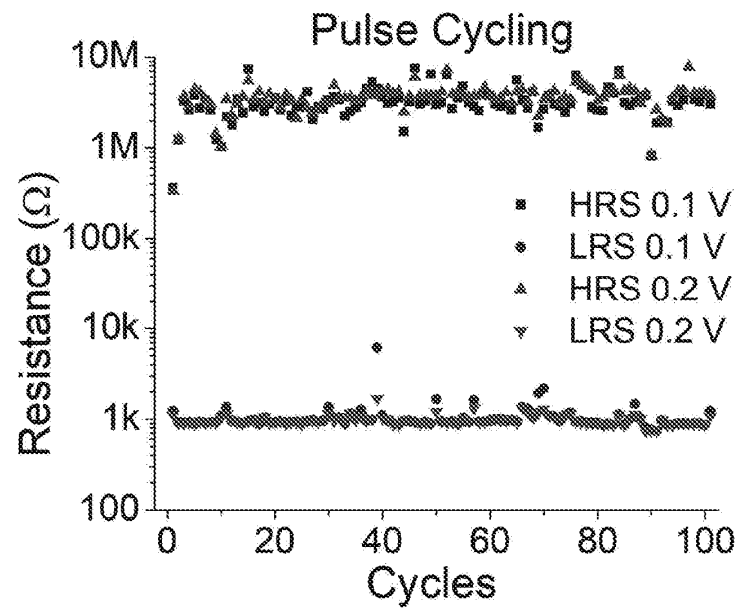


FIG. 6A

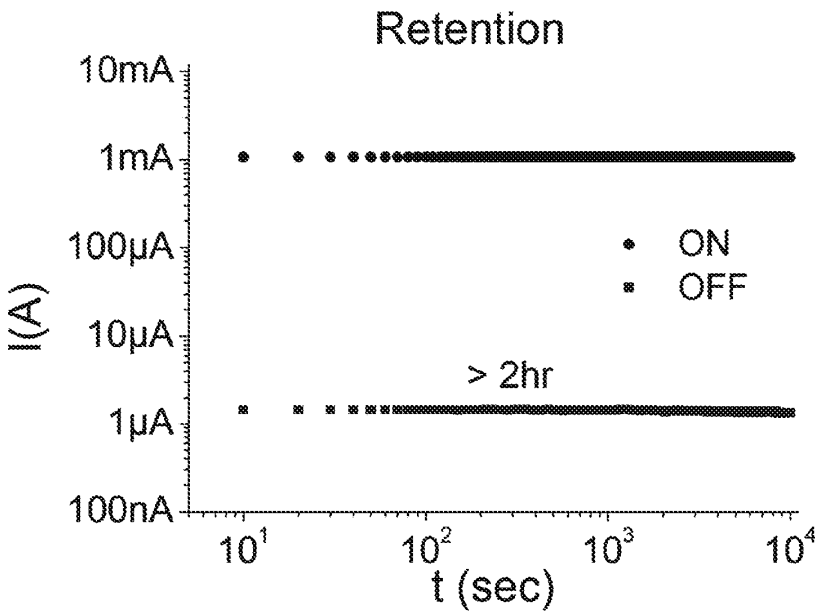
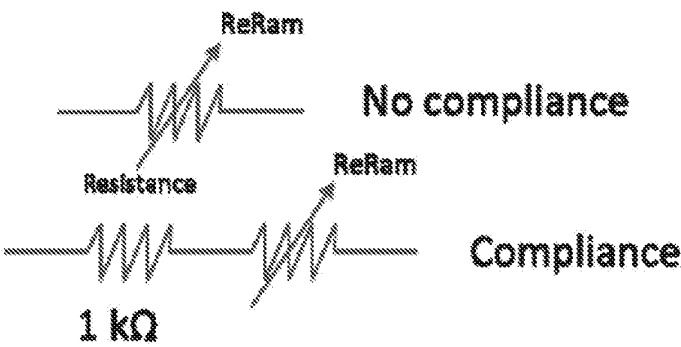


FIG. 6B



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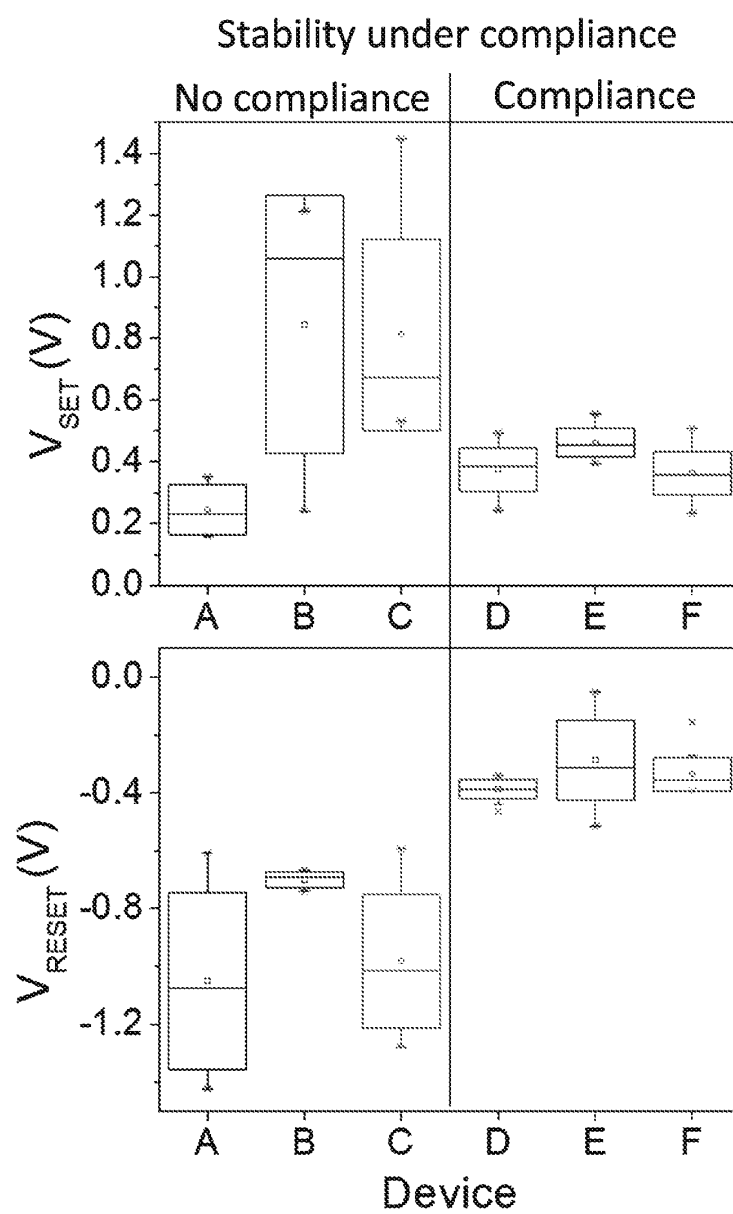
FIG. 6C

FIG. 7

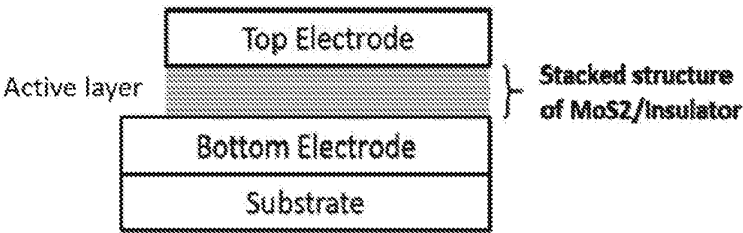


FIG. 8

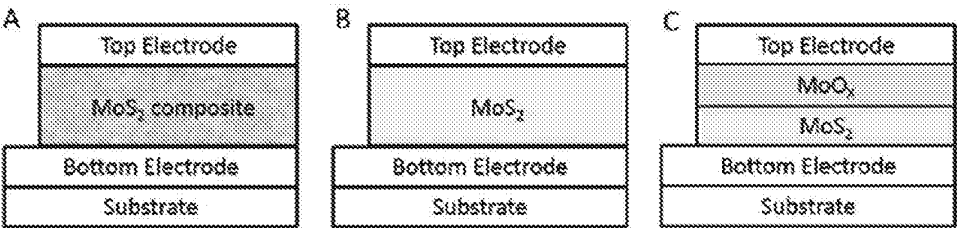


FIG. 9

Composition	Thickness (nm)	Grain size of MoS ₂ (nm)	No. of stacked Structure	Deposition process of MoS ₂ layer	Transferable	Wafer-sized & atomically smooth	Device structure
Multiple stacked MoS ₂ /MoO _x layers	MoS ₂ ~ 6 MoO _x ~ 3 Total ~ 20	~ 10	≥ 2	PVD-grown	✓	✓	Fig. 7
MoS ₂ -PVP	~ 70	~ 200	N.A.	Solution-processed	×	×	Fig. 8a
MoS ₂ -GO	~ 100	~ 1000	N.A.	Solution-processed	×	×	Fig. 8a
MoS ₂ -MOF	~ 80	unknown	N.A.	Solution-processed	×	×	Fig. 8a
MoS ₂ _{1-x} O _x	> 40	> 1000	N.A.	Mechanically exfoliated flakes	✓	×	Fig. 8a
MoS ₂ fibers	~ 100	~ 1000	N.A.	Solution-processed	×	×	Fig. 8b
MoS ₂ /MoO _x	MoS ₂ 50-600 MoO _x < 3	100-400	N.A.	Solution-processed	×	×	Fig. 8c

FIG. 10A

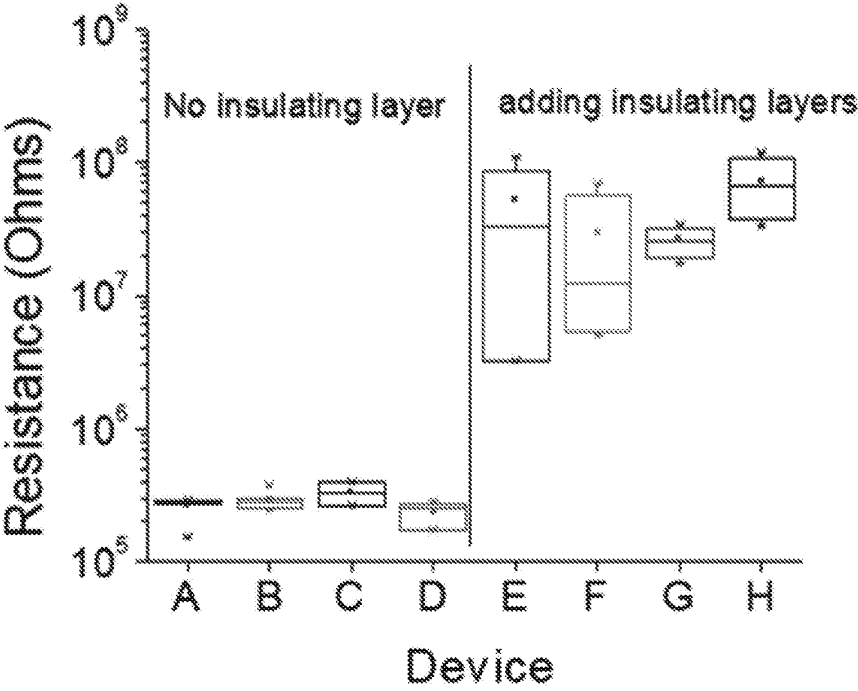
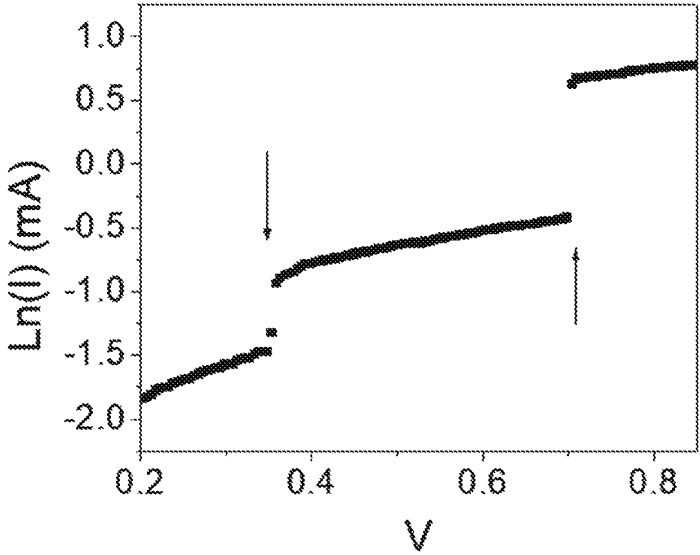


FIG. 10B



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FIG. 11

