

FIG. 1

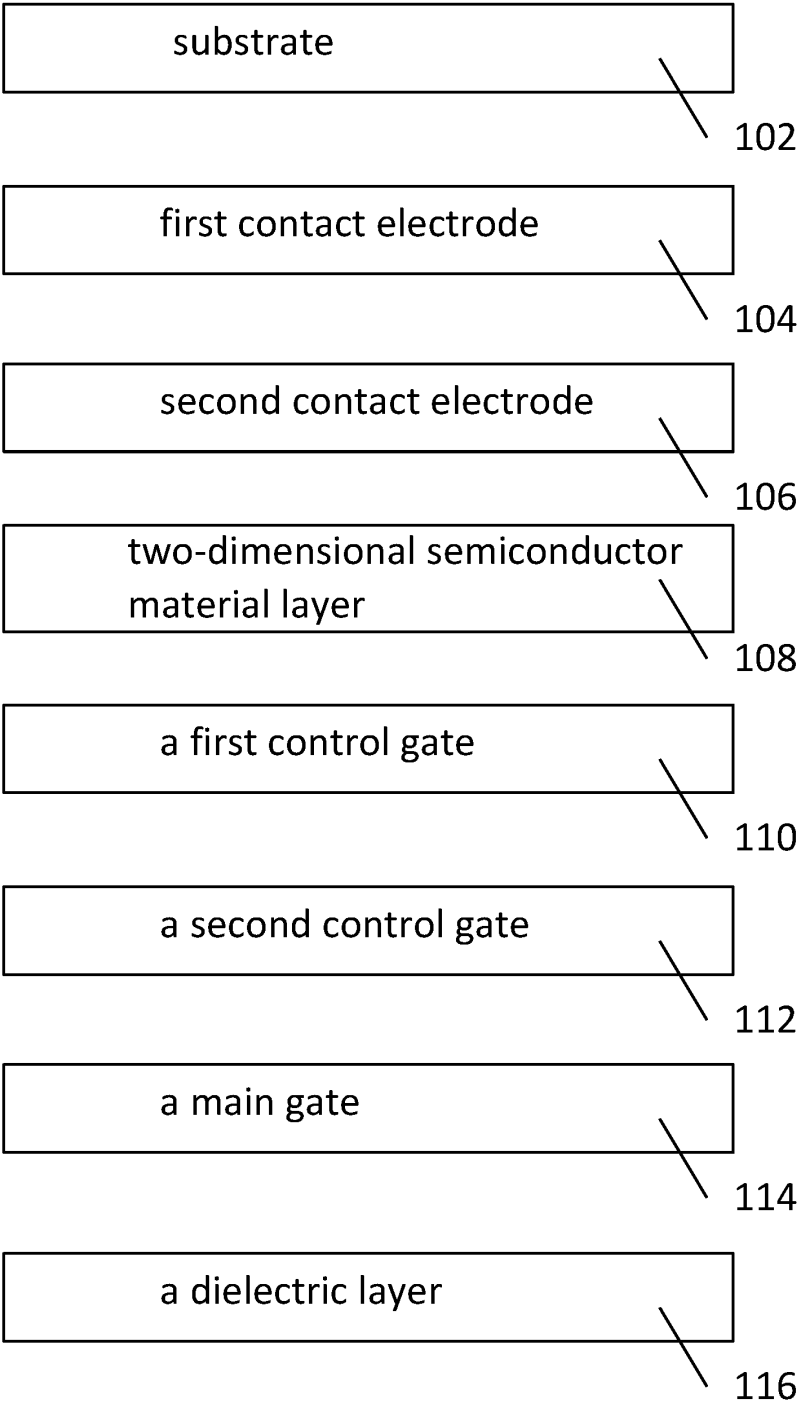


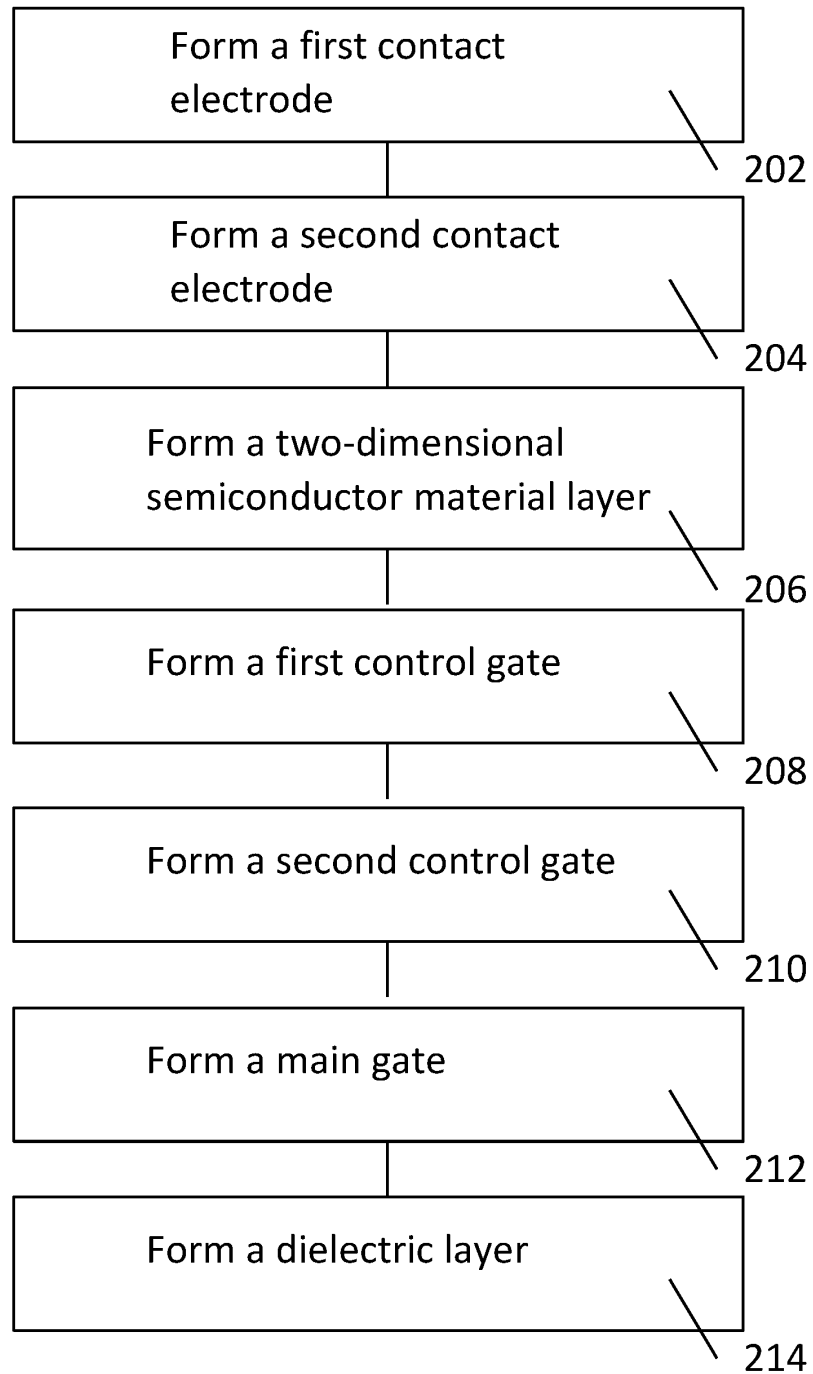
FIG. 2

FIG. 3

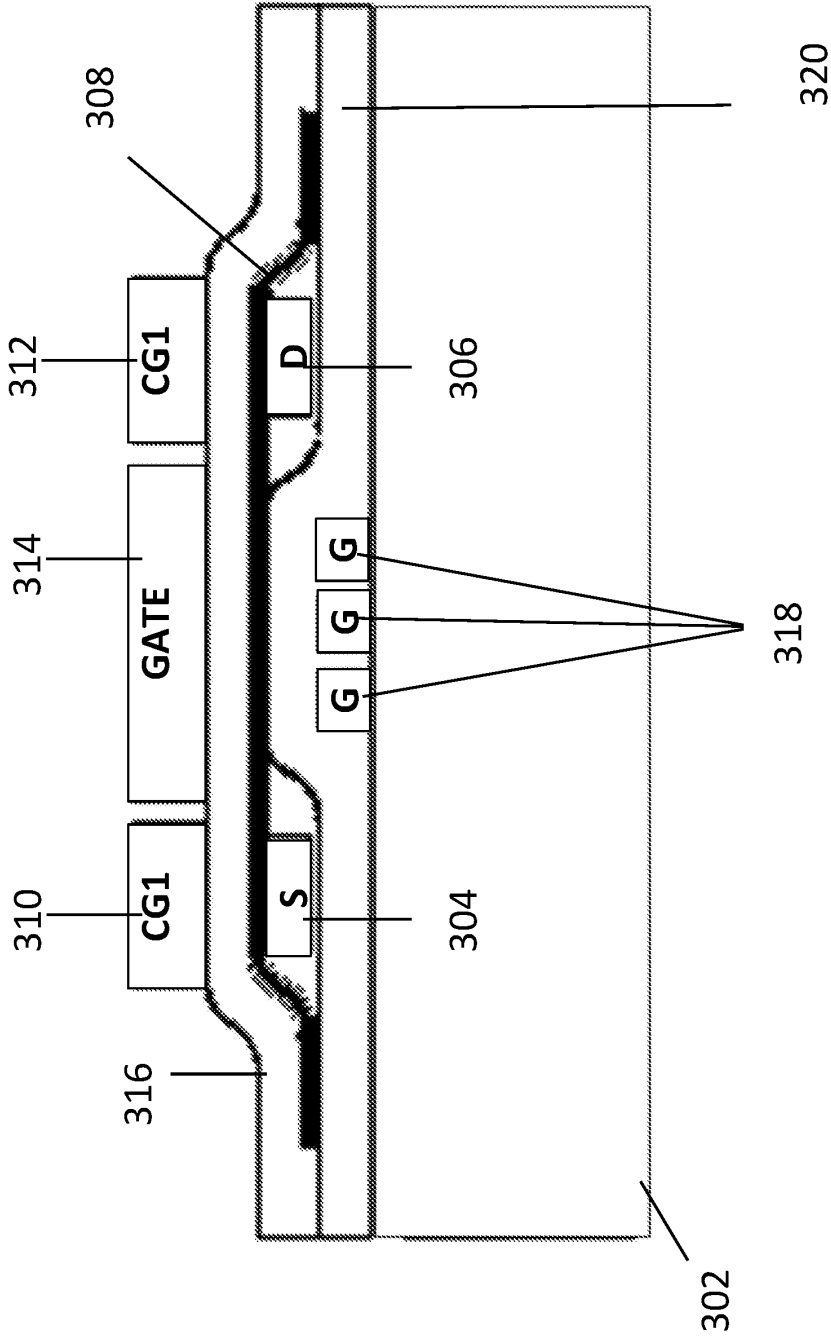


FIG. 4

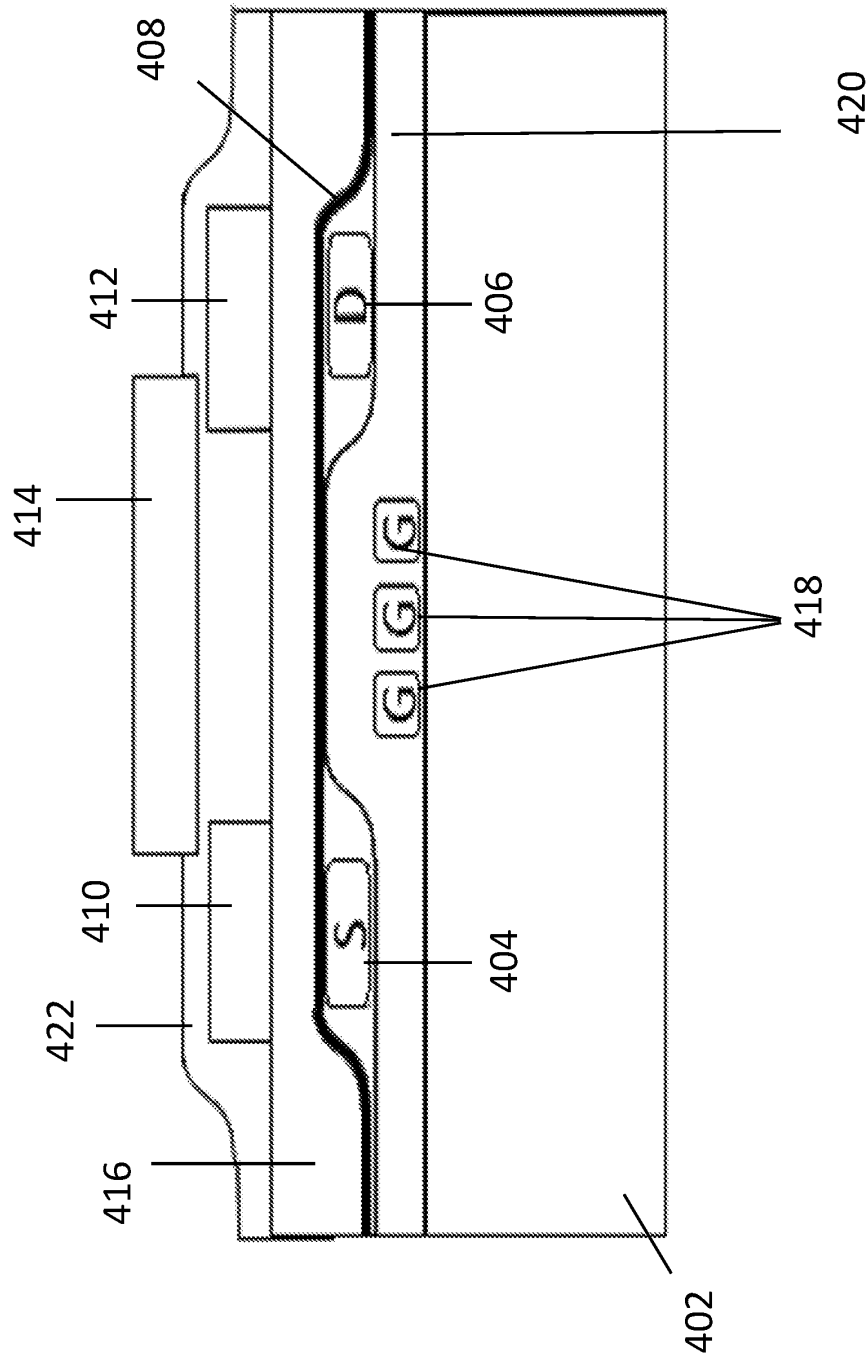


FIG. 5

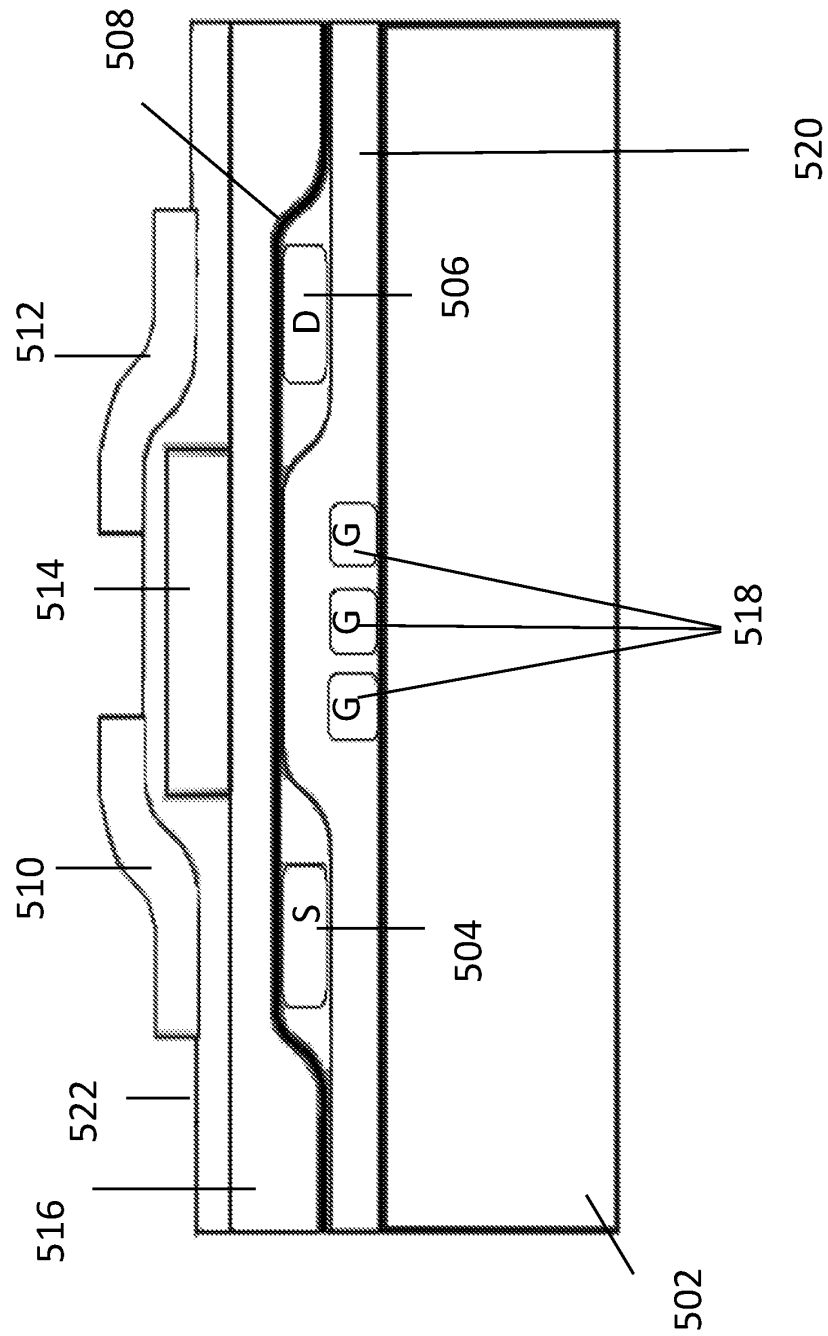


FIG. 6A

MoS ₂ layer thickness	Flake type	Contact scheme	Carrier density (10 ¹² /cm ²)	Contact resistance	Temperature	Reference
Monolayer	Exfoliated	Graphene	10	~10 kΩ.μm	0.3 K	[7]
Monolayer	Exfoliated	hBN + Co	5.3	3 kΩ.μm	1.7 K	[14]
Monolayer	Exfoliated	Patterned hBN + Ti/Au	~7.6	~10 kΩ.μm	1.7 K	[9]
Monolayer	Exfoliated	Bottom contacts	~4	~10 kΩ.μm	1.7 K	[11]
Monolayer	Exfoliated	Sn	~1.1	73 kΩ.μm	1.4 K	[3]
Monolayer	Exfoliated	In/Au	3.4	~1 kΩ.μm	100 K	[5]
Monolayer	CVD	In/Au	5	3 kΩ.μm	77-300 K	[4]
Monolayer	CVD	Au (in UHV)	~3	~60 kΩ.μm	80-300 K	[6]
Monolayer	MOCVD	Bi	1.5	0.12 kΩ.μm	77 K	[8]
1-2 layers	Exfoliated	Ti/Au + high temperature anneal	1.2	~30 kΩ.μm	1.7-300 K	[1]
3 layers	Exfoliated	Graphene	-	~5 kΩ.μm	4 K	[12]
4-5 layers	Exfoliated	hBN + Ni	-	~1.8 kΩ.μm	77-300 K	[13]
9 layers	Exfoliated	Selective etching + Ti/Au + anneal	-	0.25 kΩ.μm	2-300 K	[10]
Few layer	Exfoliated	Selective etching + Ti/Au	8.8	0.5 kΩ.μm	2 K	[2]
Monolayer	Exfoliated	Contact gates	~0.66	~26 kΩ.μm	4.2 K	[Our work]

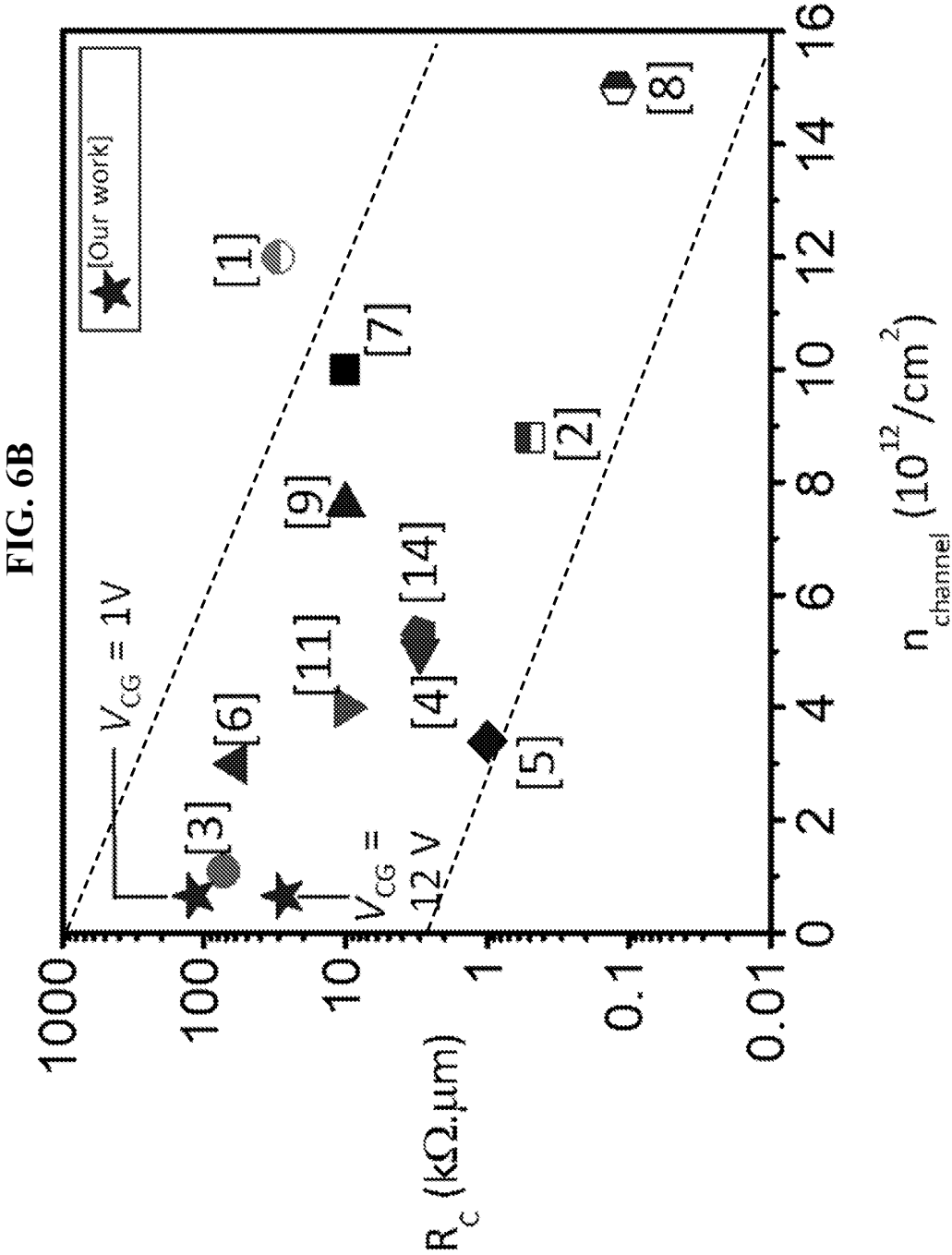
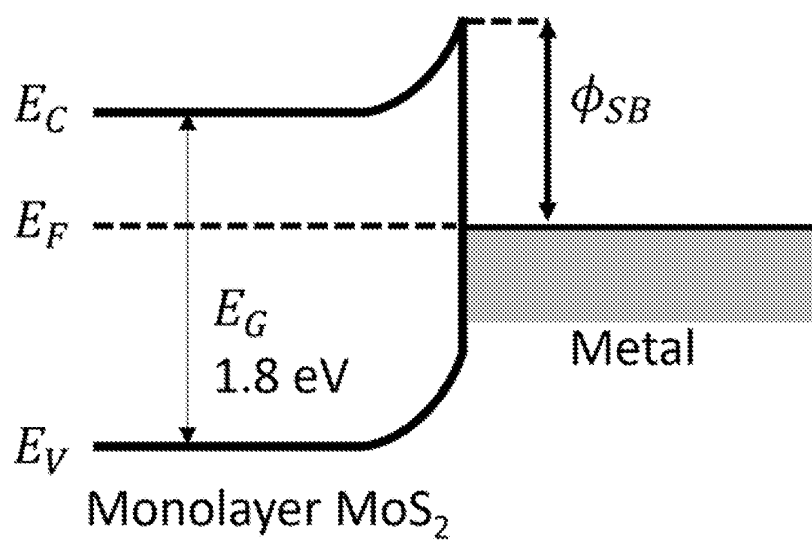
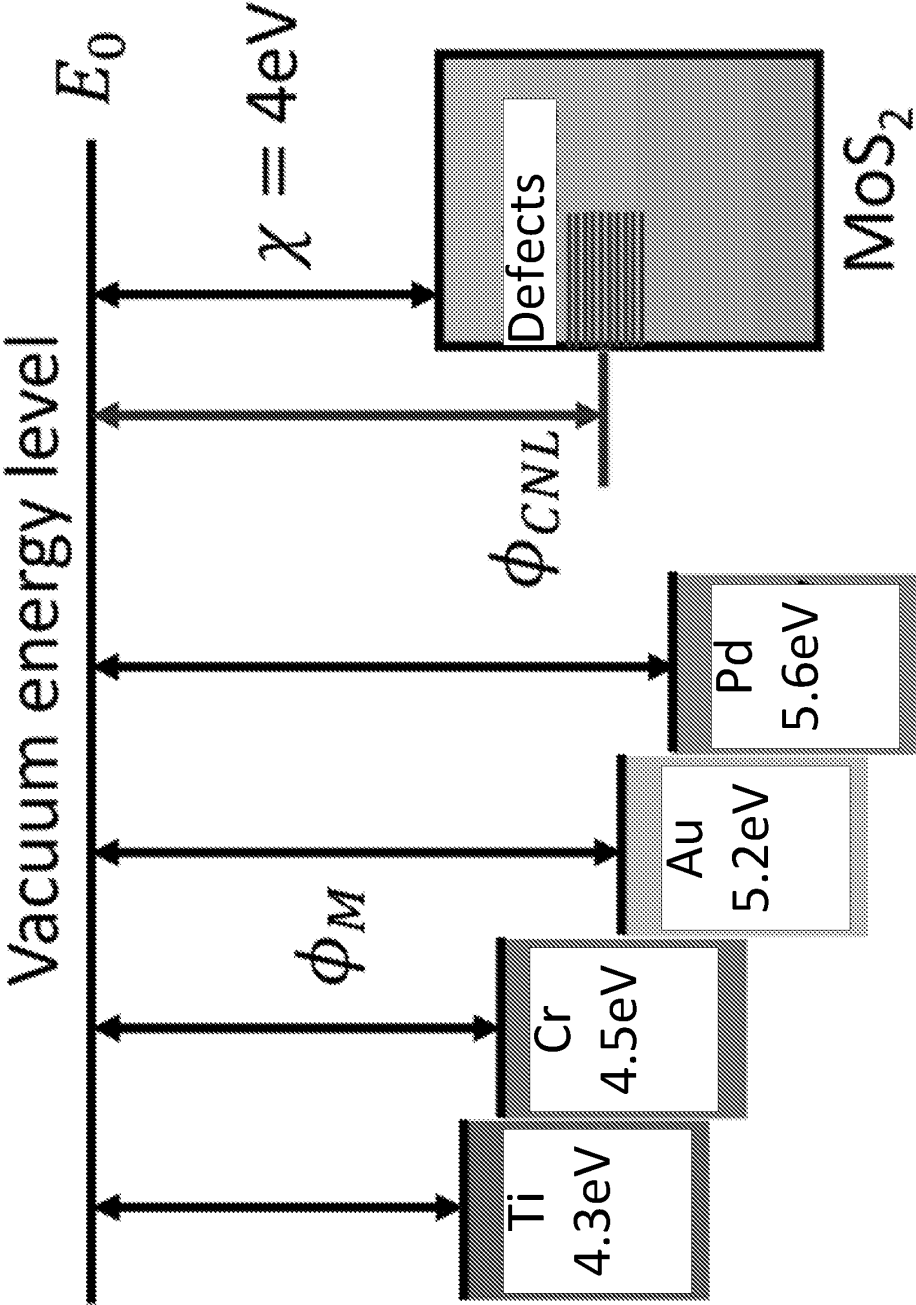


FIG. 7A



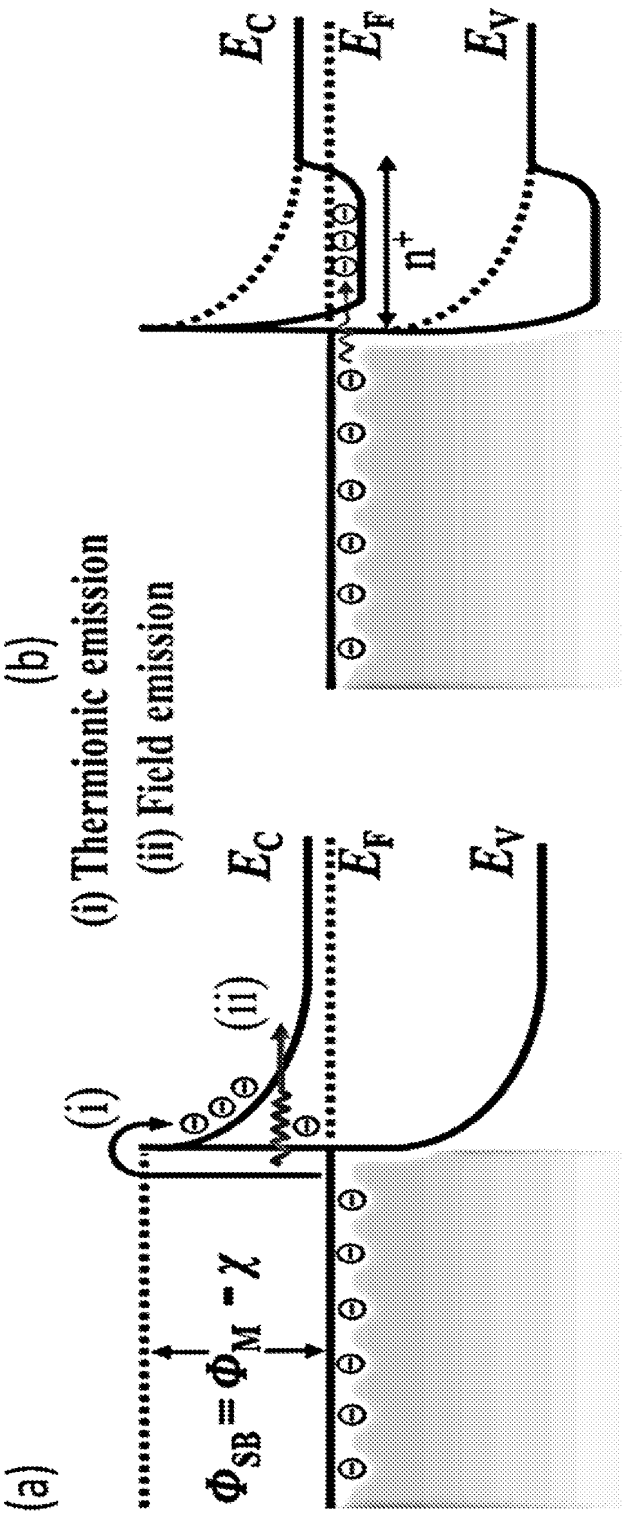
PRIOR ART

FIG. 7B



PRIOR ART

FIG. 8



PRIOR ART

FIG. 9

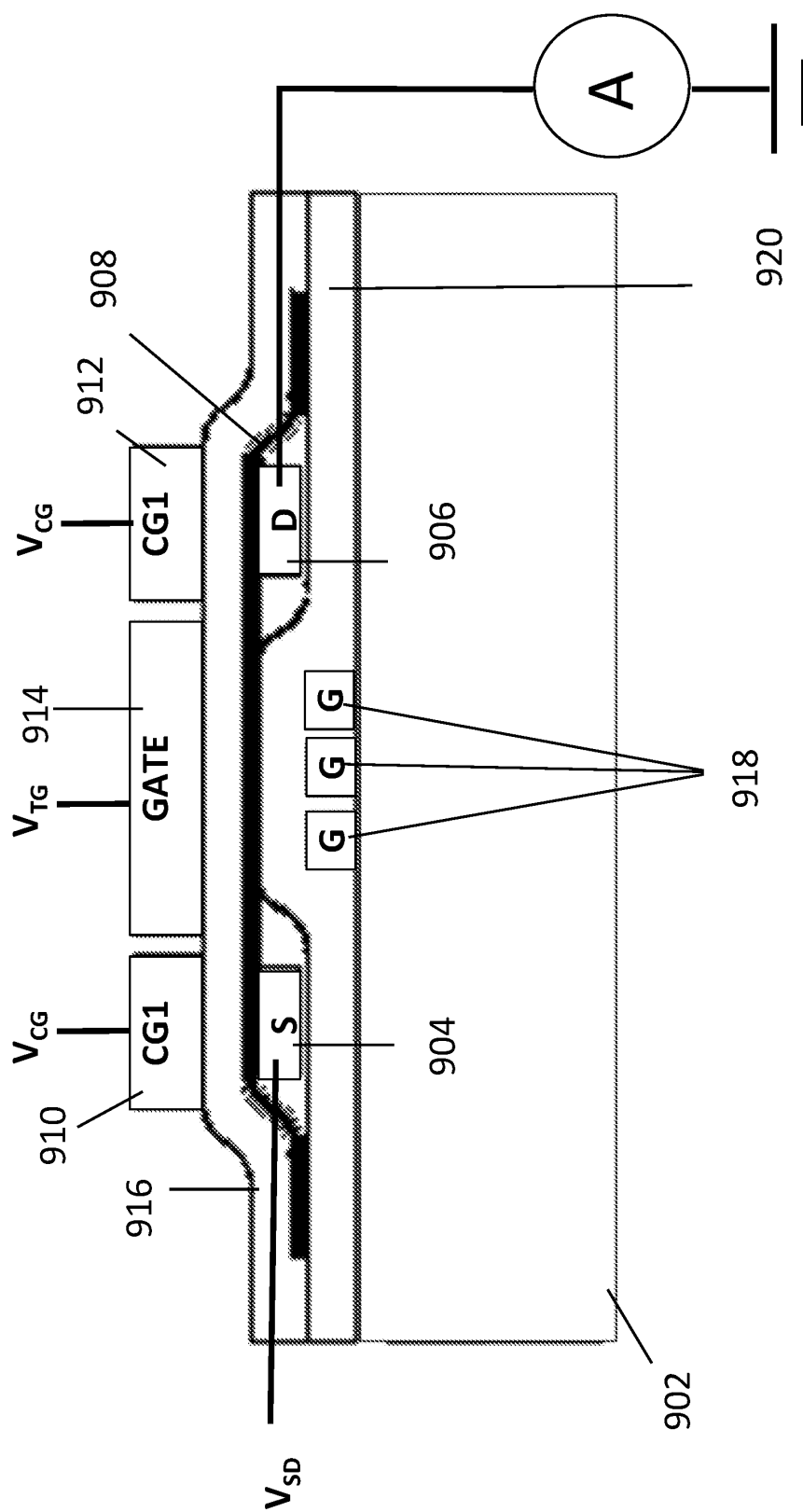


FIG. 10

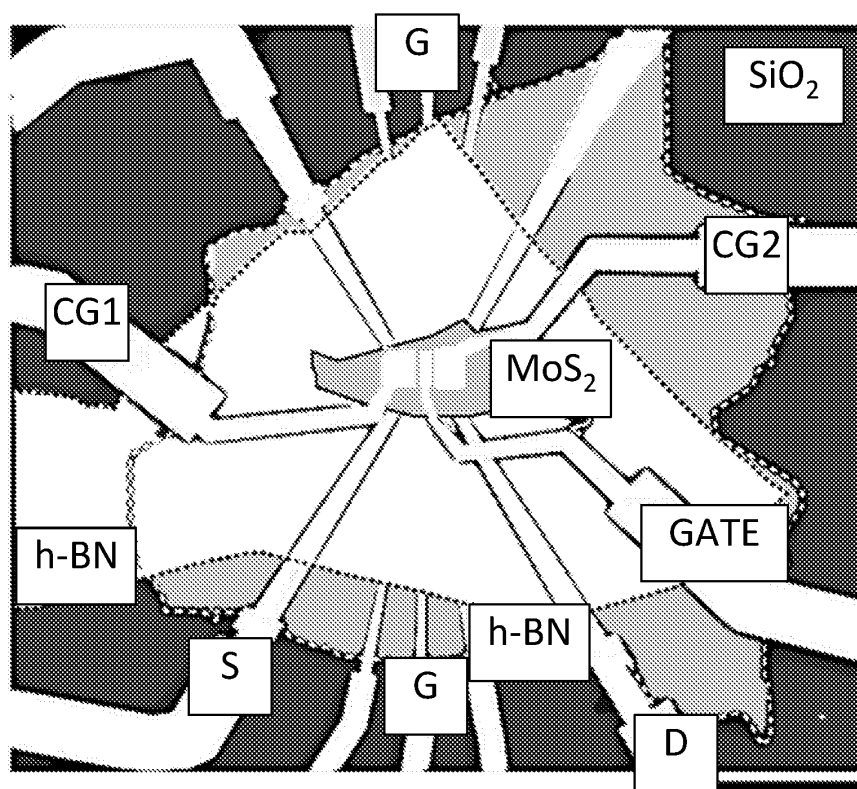


FIG. 11

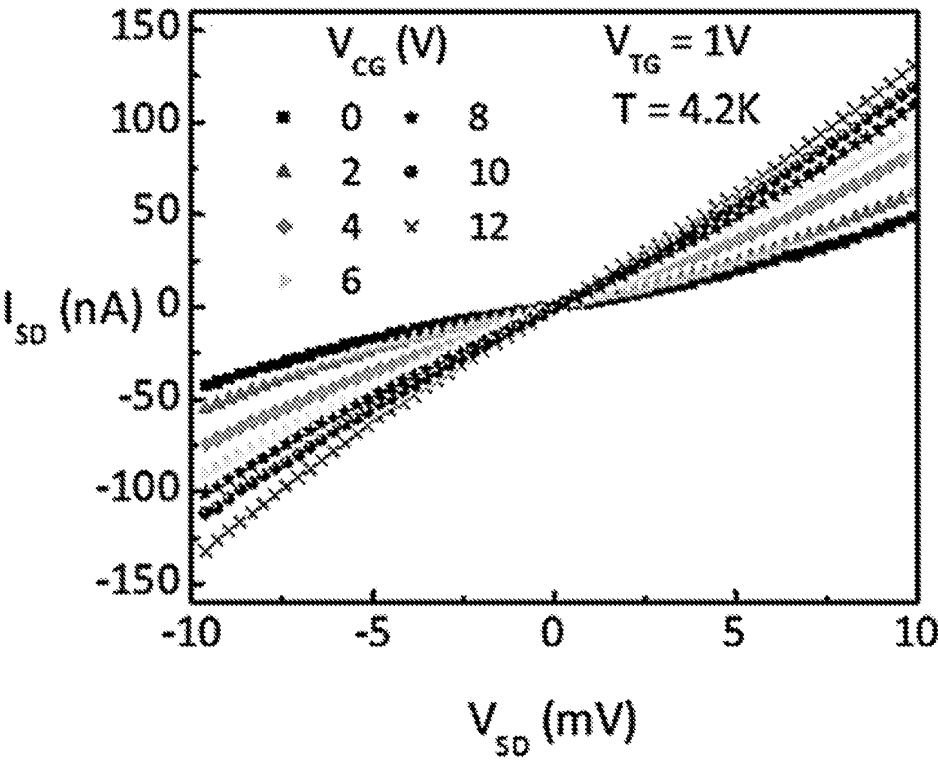


FIG. 12A

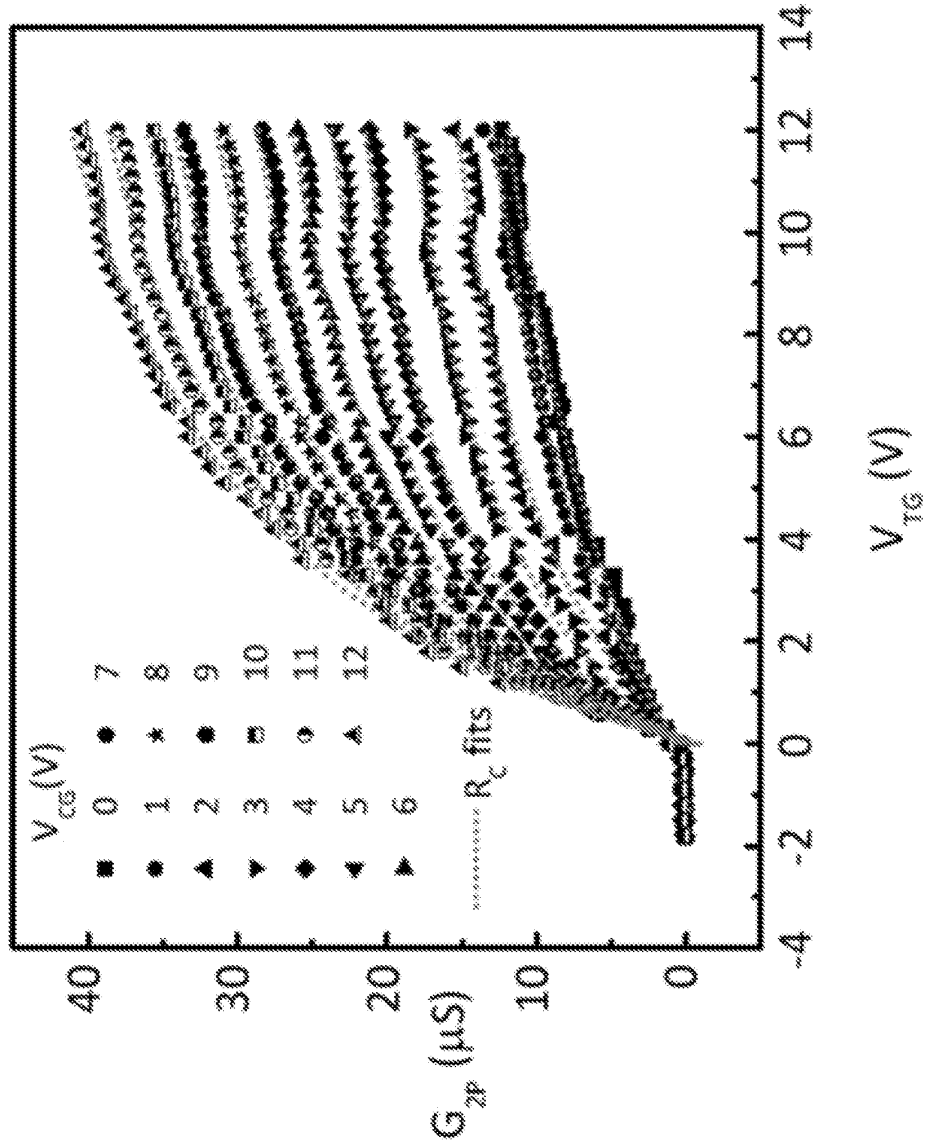


FIG. 12B

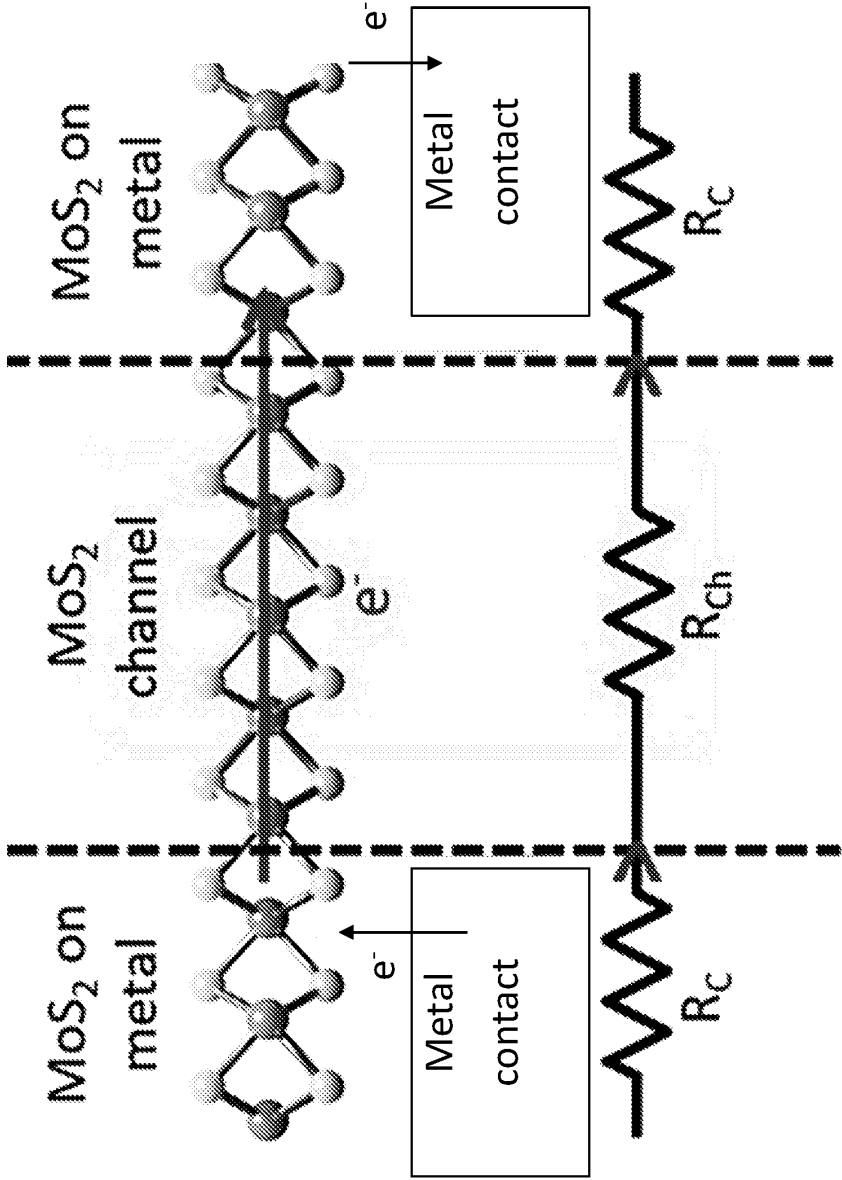


FIG. 12C

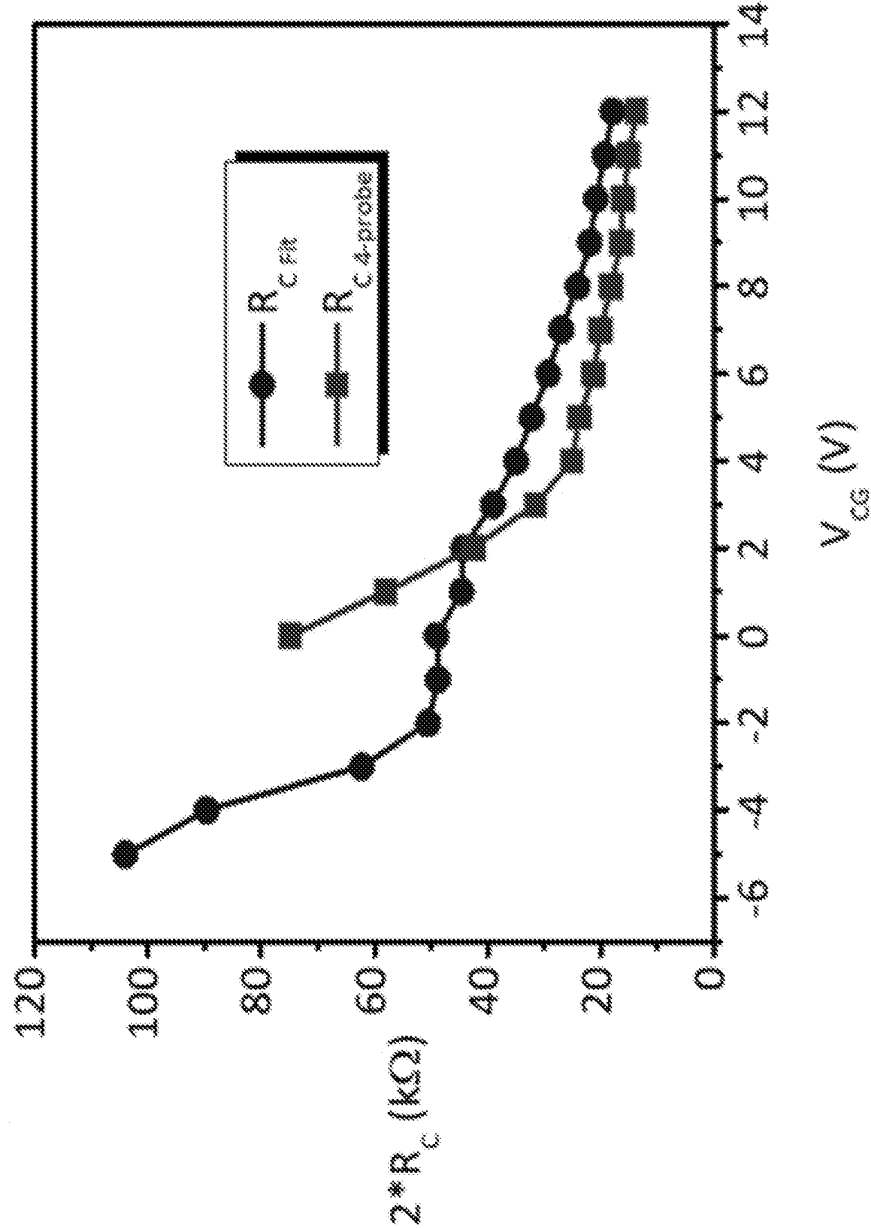


FIG. 13A

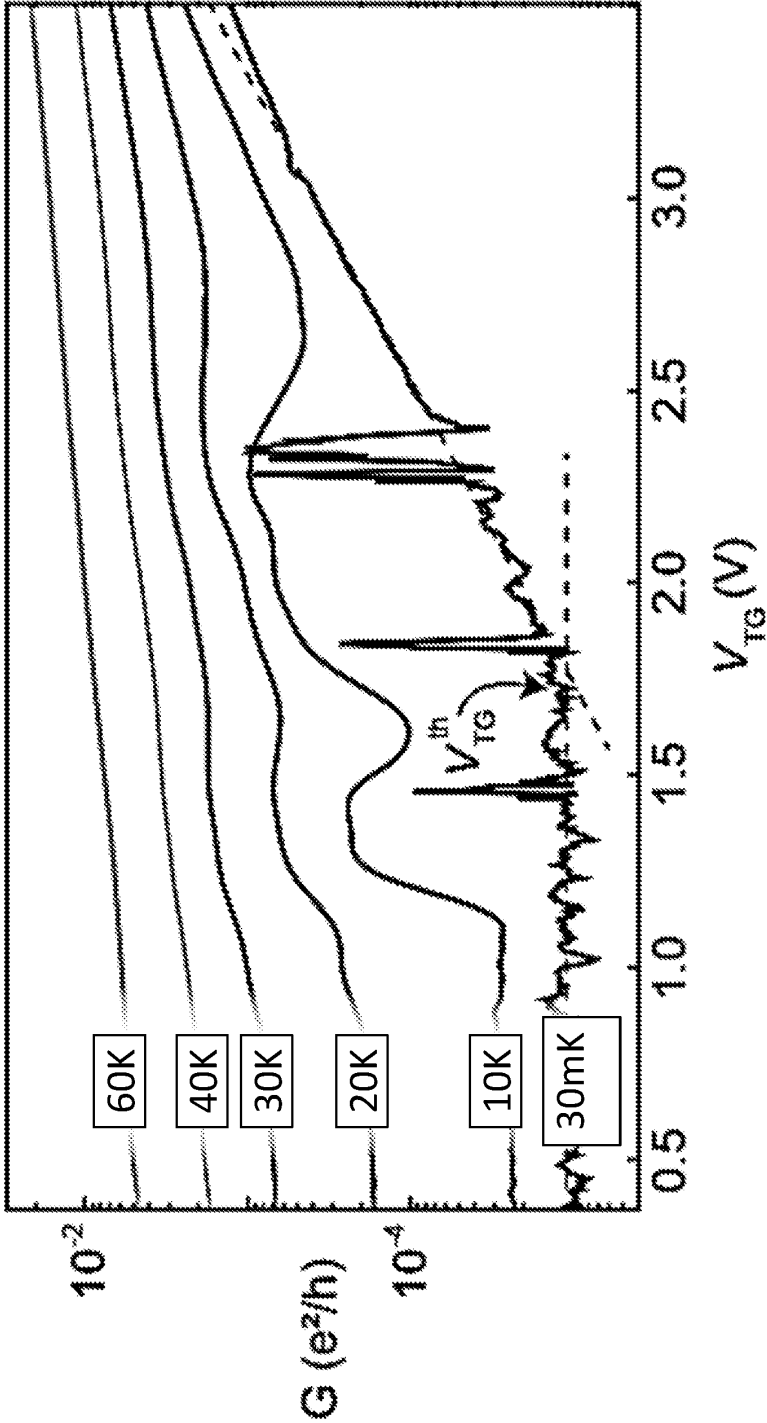


FIG. 13B

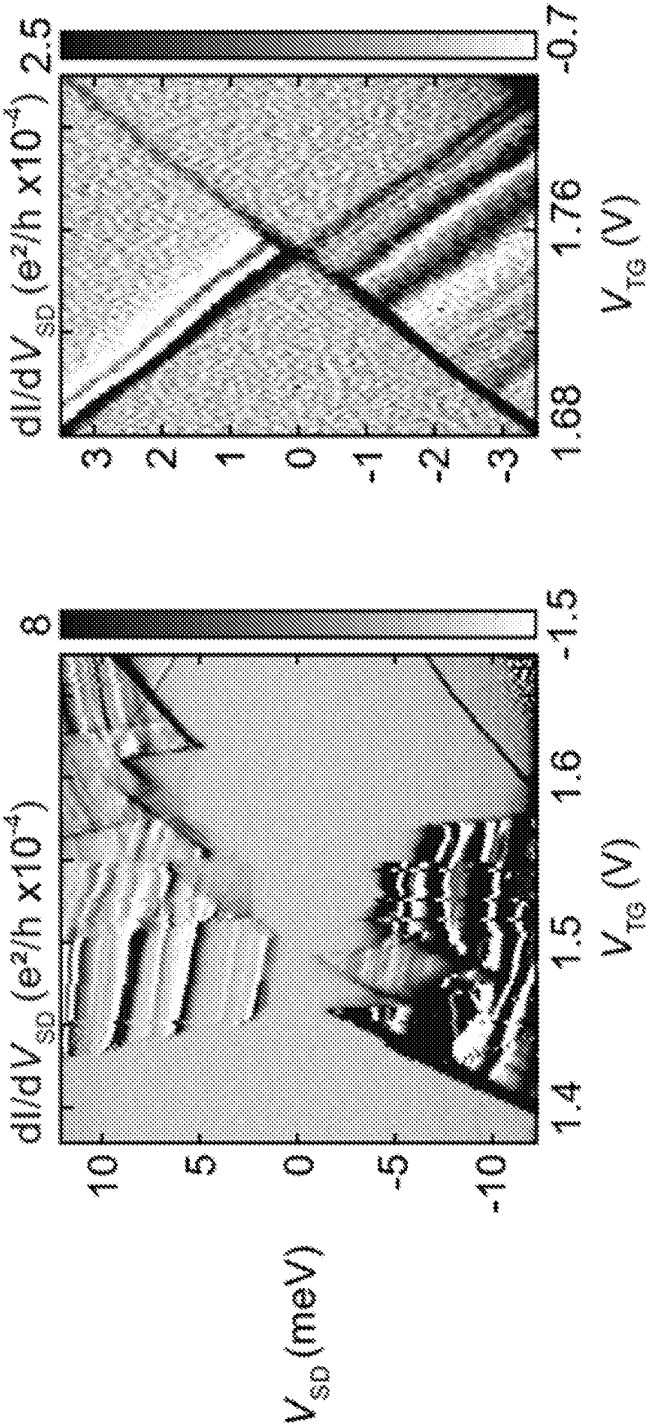
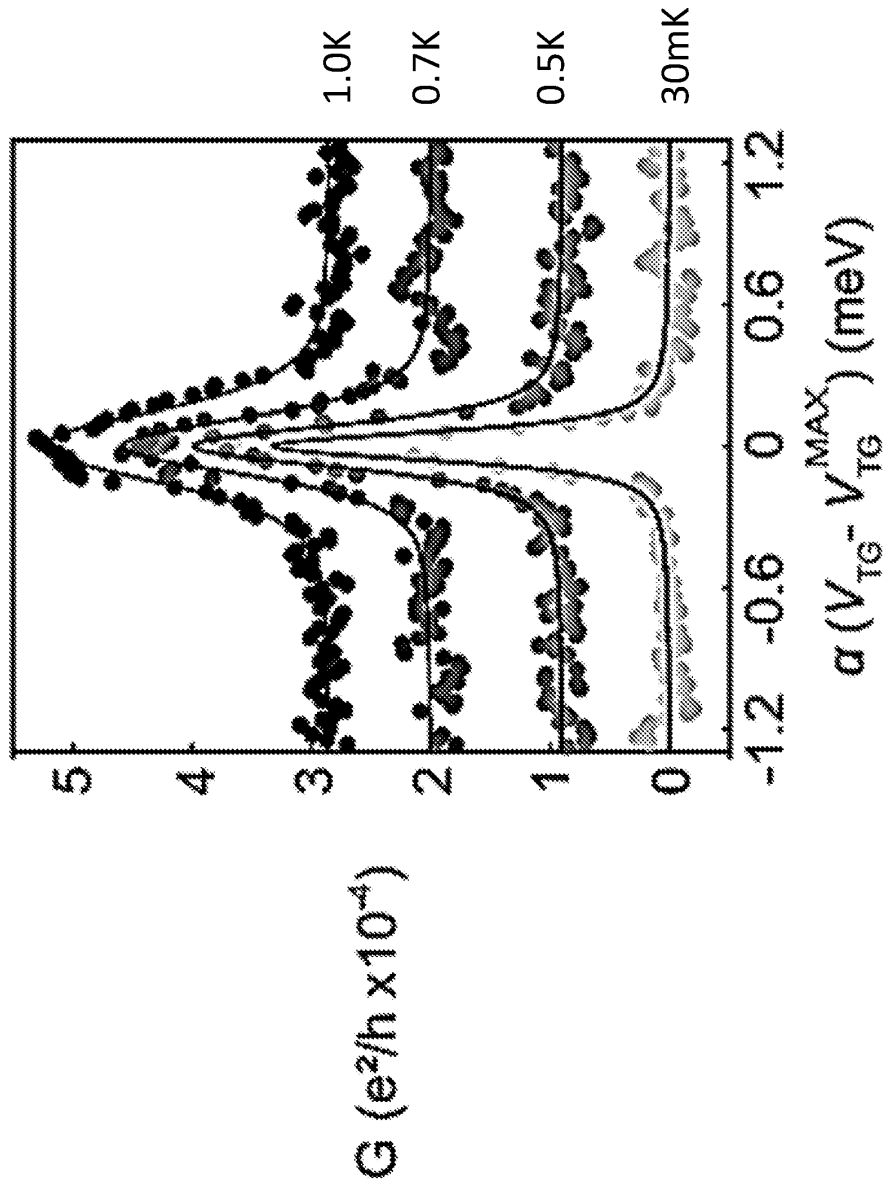


FIG. 13C



$G (e^2/h \times 10^{-4})$

FIG. 13D

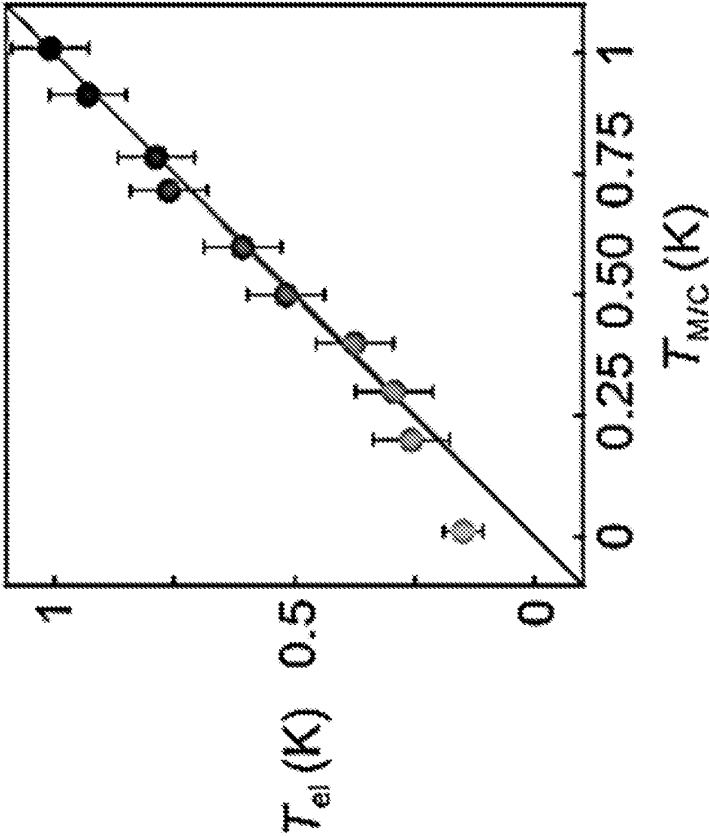


FIG. 14A

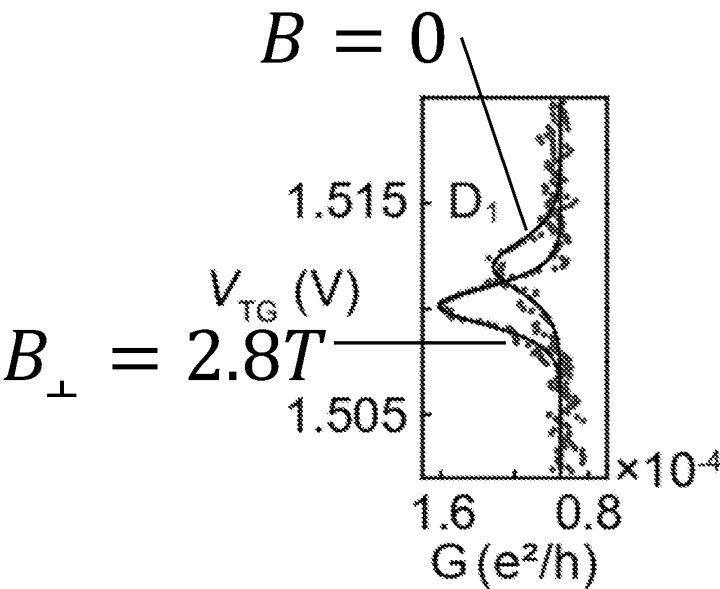


FIG. 14B

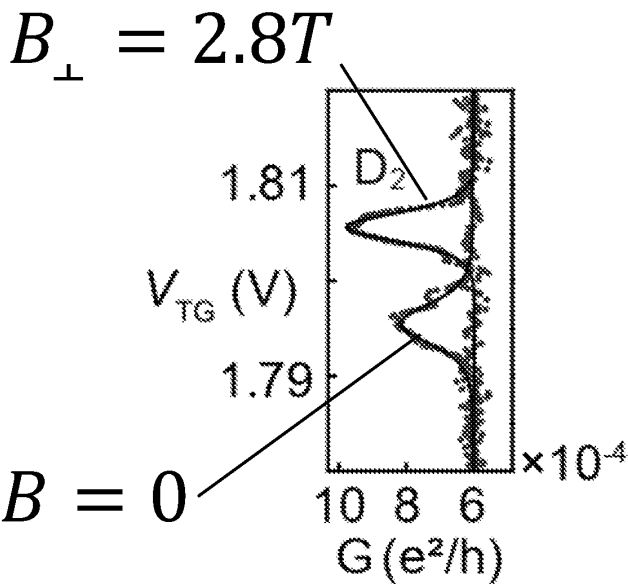


FIG. 14C

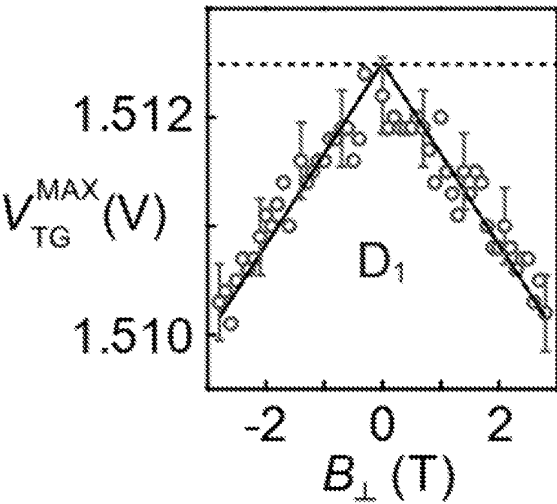


FIG. 14D

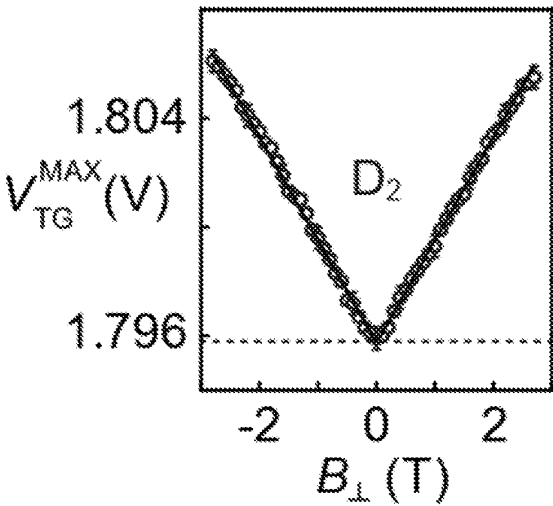


FIG. 15

