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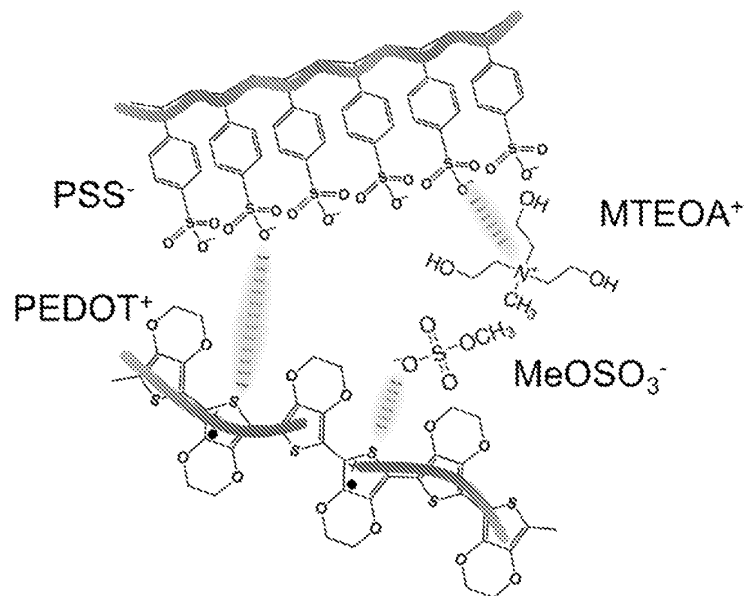
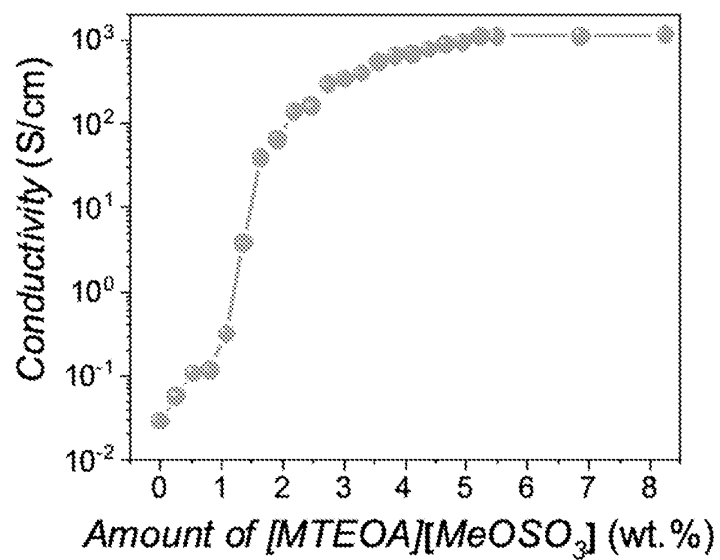
FIG. 1A**FIG. 1B**

FIG. 1C

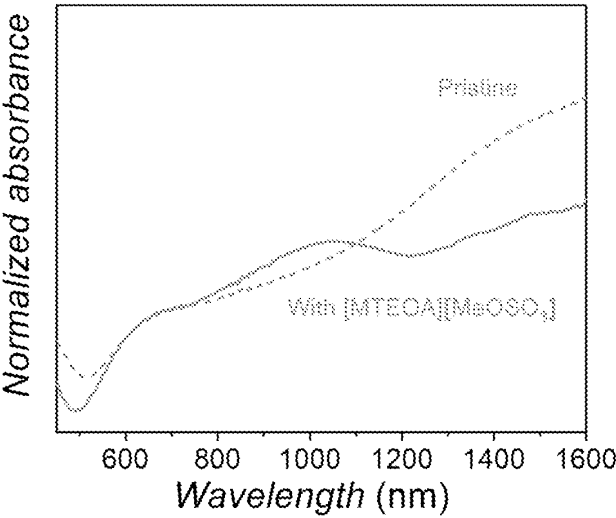
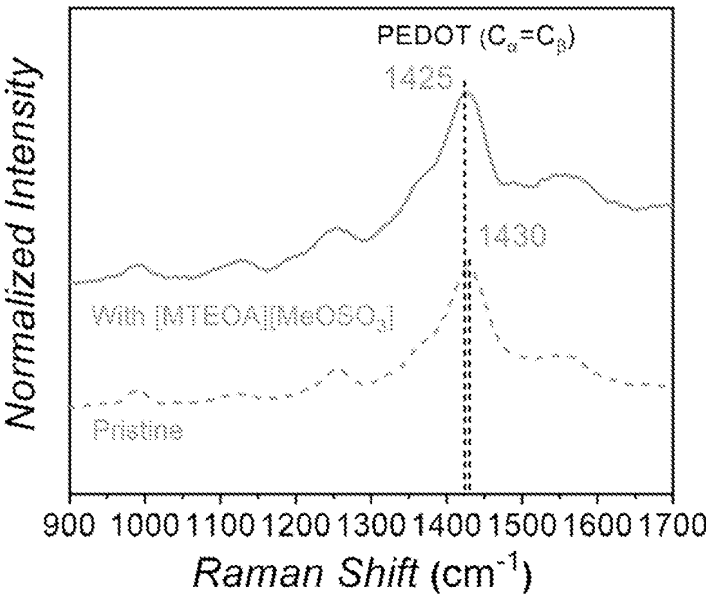
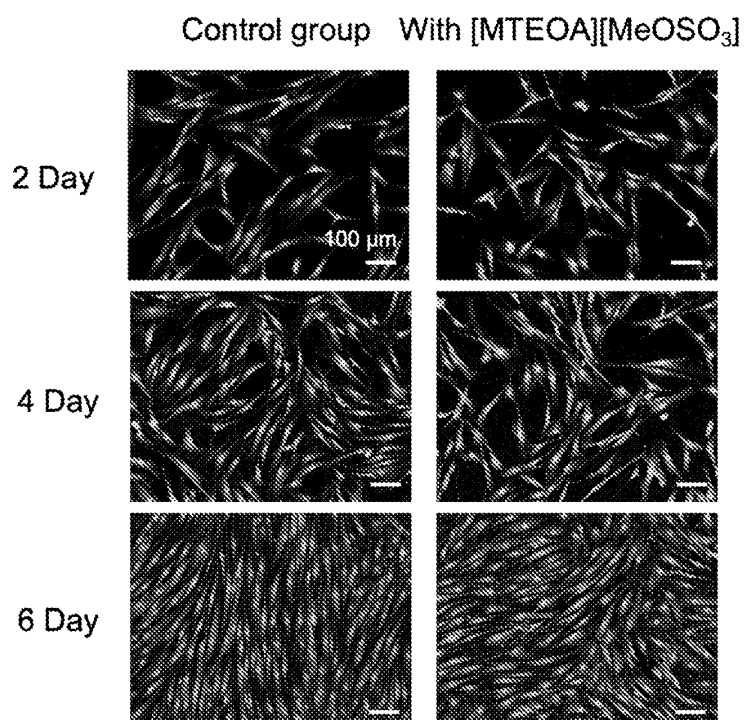
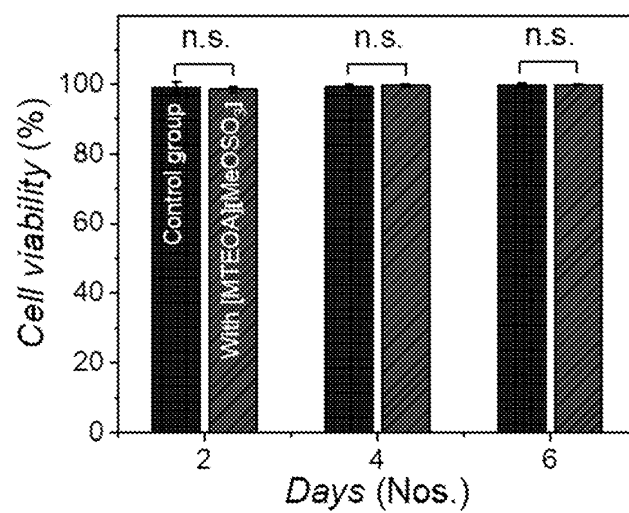


FIG. 1D



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FIG. 2A**FIG. 2B**

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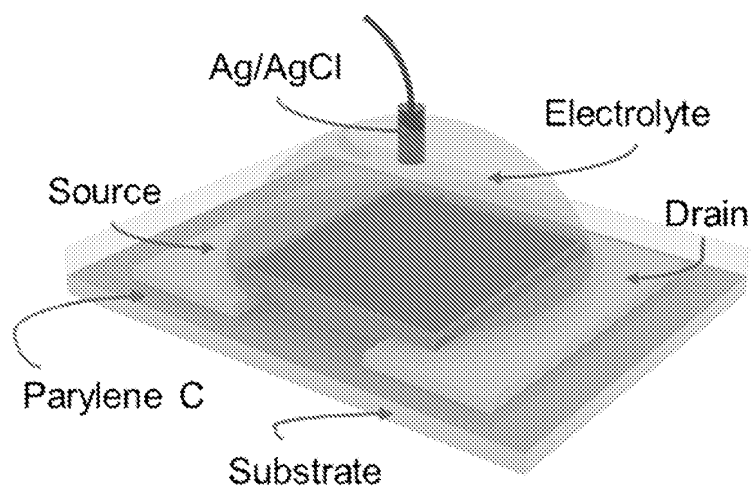
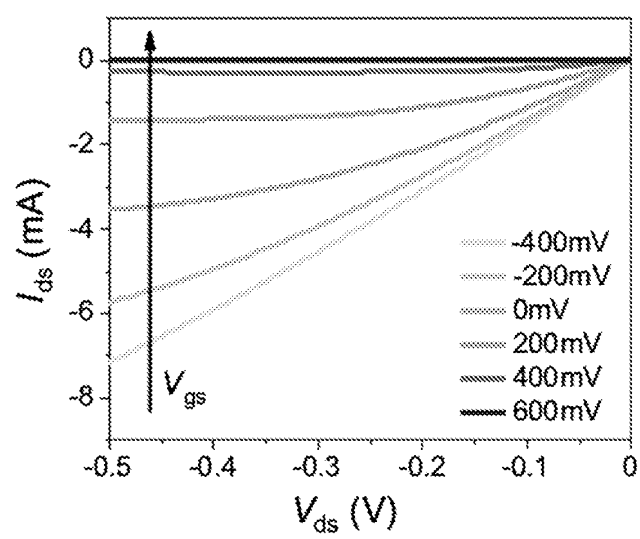
FIG. 3A**FIG. 3B**

FIG. 3C

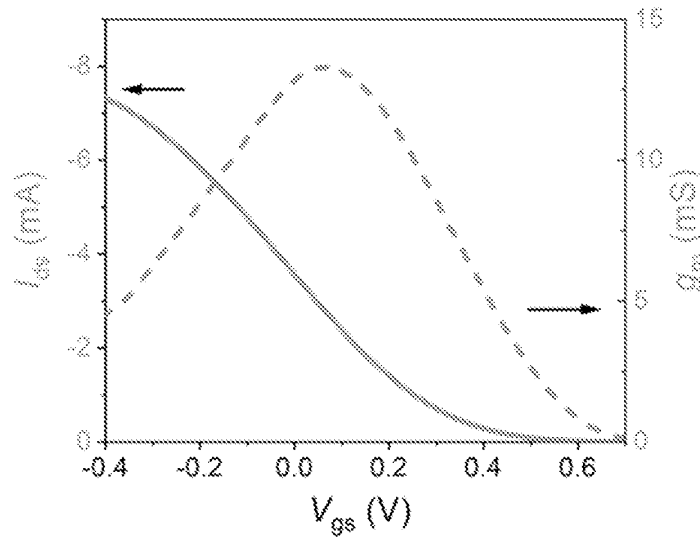


FIG. 3D

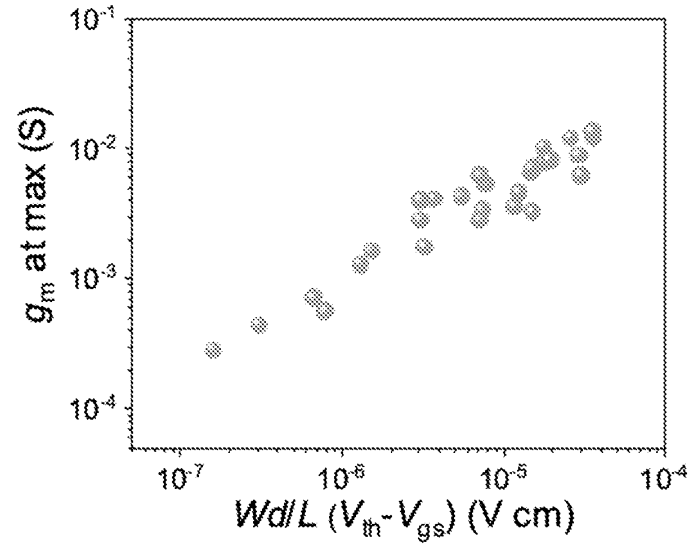


FIG. 3E

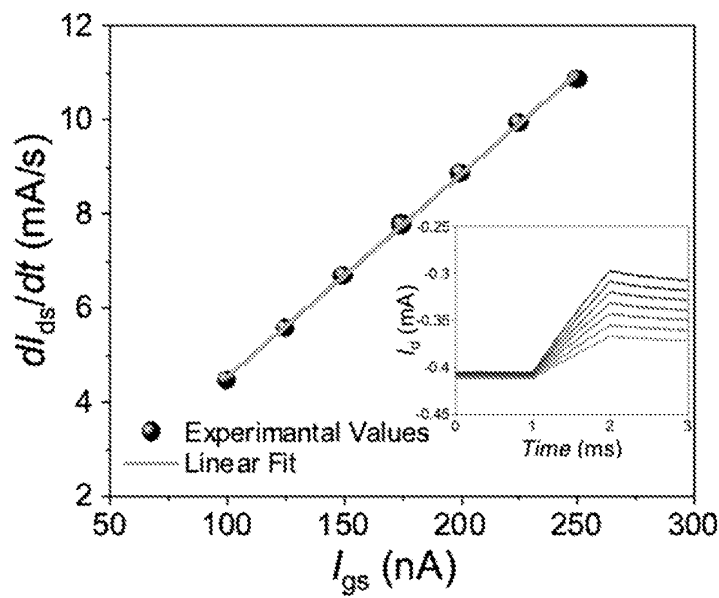
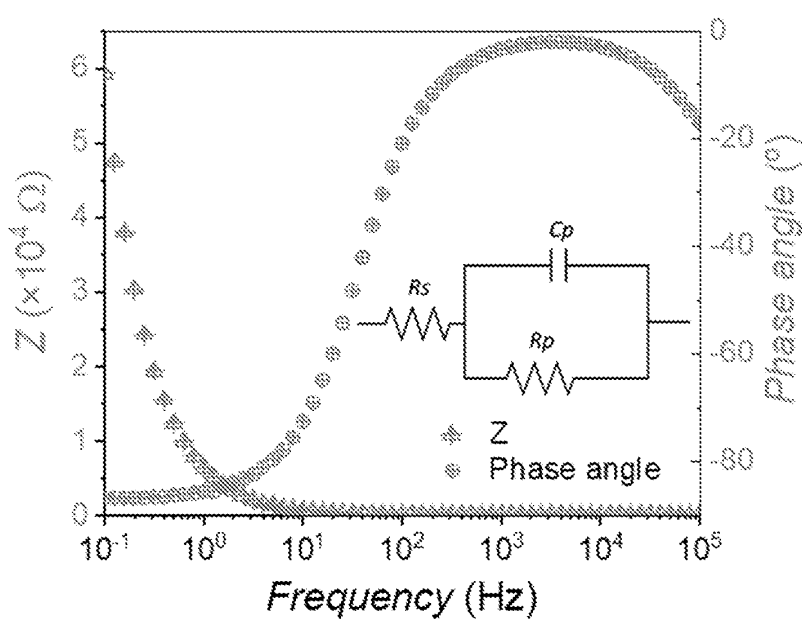


FIG. 3F



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FIG. 3G

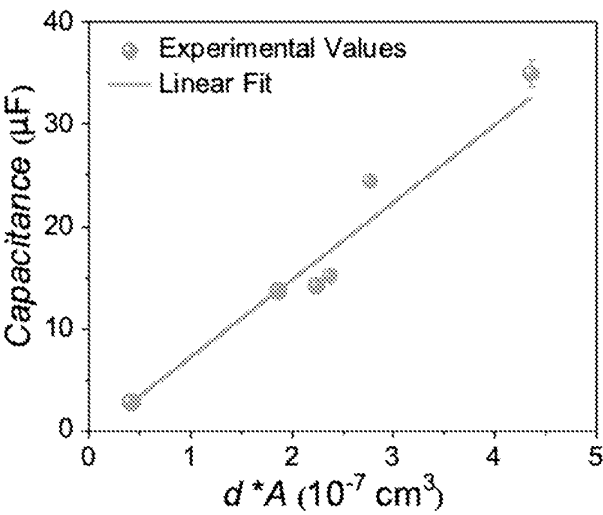
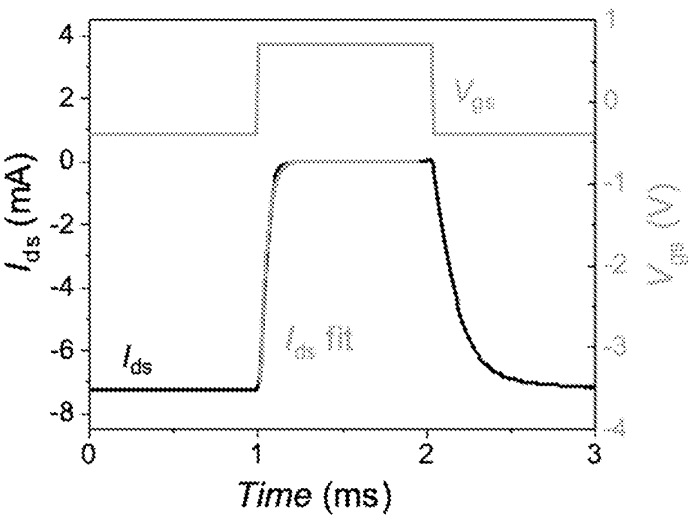


FIG. 3H



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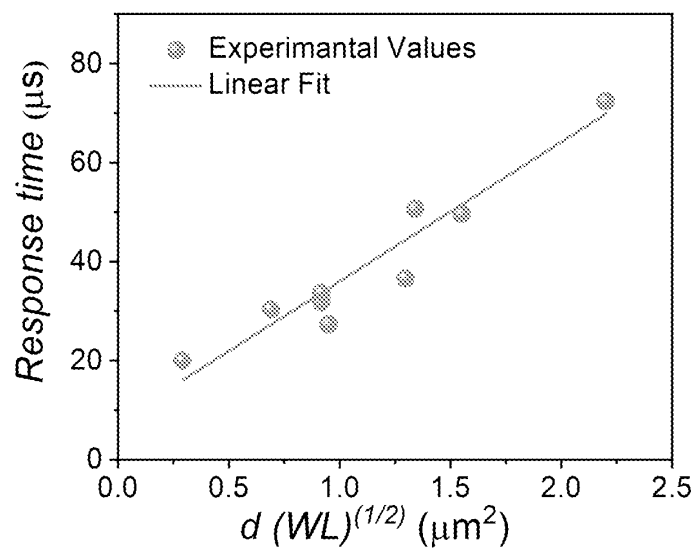
FIG. 3I

FIG. 3J

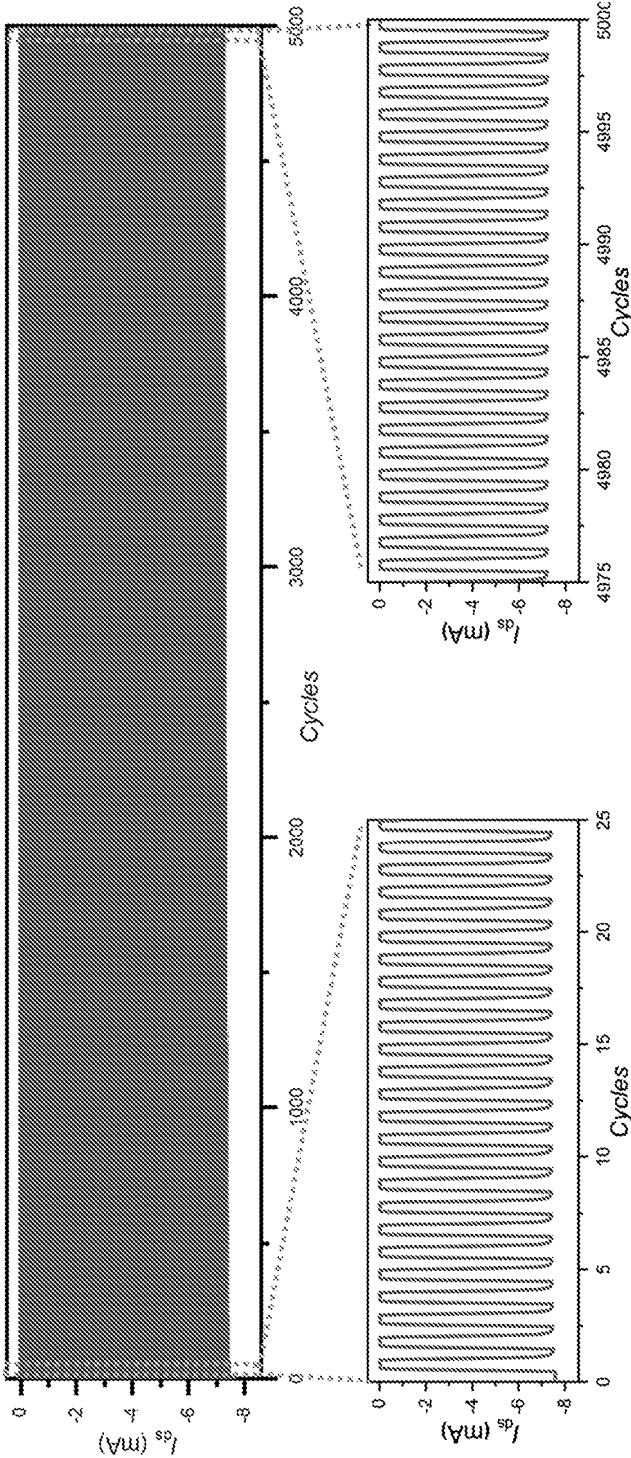


FIG. 3K

Active material	Main additive content	SDS	Biocompatibility	WtL (μm/μm)	Thickness dWtL (nm)	dWtL (μm)	V ₉₀ (V)	g _m (mS)	g _m /WtL (μS μm ⁻¹)	C ₉₀ (F cm ⁻¹ V ⁻¹ s ⁻¹)	μ (cm ² V ⁻¹ s ⁻¹)
PEDOT:PSS	---	(Aqueous solution) Warning: H315 Causes skin irritation.	(Film) Claimed to be biocompatible.	1000/100	200	2.00	-1	0.018	0.009	0.03	---
PEDOT:PSS/sera d-antitoxin	40%	Not a hazardous substance or mixture.	Claimed to be biocompatible	500/5	2000	200	-1	32.3	0.1015	---	---
PEDOT:PSS/glycerol	5 wt %	Not a hazardous substance or mixture.	Claimed to be biocompatible	80/5	~70	1.12	-1	0.0	0.0	---	---
PEDOT:PSS/PEI/glycopolymethylene sul	4 wt %, 5 wt %, 5 wt %	Not a hazardous substance or mixture.	Claimed to be biocompatible.	2000/8000	300	0.08	---	0.12	1.6	---	---
PEDOT:PSS/PTCDA/TECDA/MeOCSO ₂ /MeOCSO ₂	3.5 wt %	Not a hazardous substance or mixture.	Yes, proved to be biocompatible in this study.	100/20	60	0.65	-1	7.766	22.3 ± 4.5	283.60 ± 28.66	75.87 ± 6.14
PEDOT:PSS/AV	3.3 wt %	Not a hazardous substance or mixture.	No. > 0.57 wt % DMSO is toxic to fibroblasts cells.	100/10	40000	160	-1	250	1.56	---	2.59
PEDOT:PSS/DMSO	19 wt %	Not a hazardous substance or mixture.	No. > 0.57 wt % DMSO is toxic to fibroblasts cells.	30	115	3.45	-1	6	1.74	---	---
PEDOT:PSS/EG	25 wt %	Warning: H302 Harmful if swallowed. H320 Causes eye irritation.	Have not been reported to be biocompatible yet.	60/20	190	0.76	-1	~0.028	5.3	100 ± 7	3.22
PEDOT:PSS/EG	5 wt %	Warning: H302 Harmful if swallowed. H320 Causes eye irritation.	Have not been reported to be biocompatible yet.	10/5	400	0.8	-1	5.2	6.5	---	---
PEDOT:PSS/EG	5 wt %	Warning: H302 Harmful if swallowed. H320 Causes eye irritation.	Have not been reported to be biocompatible yet.	100/20	110	0.55	-1	5.17	8.4	---	---
PEDOT:PSS/EG	5 wt %	Warning: H302 Harmful if swallowed. H320 Causes eye irritation.	Have not been reported to be biocompatible yet.	50/50	500	0.5	-1	5	10	75 ± 5	39
PEDOT:PSS/EG	5 wt %	Warning: H302 Harmful if swallowed. H320 Causes eye irritation.	Have not been reported to be biocompatible yet.	100/10	190	1	---	13	13	---	---
PEDOT:PSS/DBSA	4 wt %	Caution: H314 Causes severe skin burns and eye damage.	Have not been reported to be biocompatible yet.	20/10	20000	40	-1	1.4	0.035	---	---
PEDOT:PSS/EMMA/ETOM	1.5 wt %	Substance not yet fully tested.	Have not been reported to be biocompatible yet. And it is potentially toxic.	1000/100	200	2.00	-1	1.12	~7.1	335	3.8
PEDOT:PSS/EMMA/ETOM	1.1 wt %	Warning: H302 Harmful if swallowed. H319 Causes serious eye irritation.	Have not been reported to be biocompatible yet. And it is potentially toxic.	1000/250	400	1.80	-1	11.6	4.91 ± 0.30	64 ± 17	37.3 ± 3.1
PEDOT:PSS/Trifluoromethyl	5.2 wt %	Caution: H318 Causes serious eye damage.	No. 0.2% Trifluoromethyl can kill human dermal fibroblasts cells	1000/200	2000	10.00	-1	48.7	4.9	91 ± 19	38

FIG. 3L

Active material	Main additive	Main additive content	W/L (μm/μm)	Thickness (nm)	d (WL) ^{1/2} (μm ²)	Rise time τ (μs)	v(d (WL) ^{1/2}) (μs/μm ²)	Refs.
Pristine PEDOT:PSS	~	~	1000/100	200	63.25	30000	474.3	1
PEDOT:PSS/EG	EG	5 v/v. %	10/10	400	4.00	102	25.5	8
PEDOT:PSS/EG	EG	5 wt. %	10/20	110	1.56	42.39	27.2	This work
PEDOT:PSS/[MTEOA][MeOSO ₃]O ₄ [MeOSO ₃]	[MTEOA][MeOSO ₃]	3.5 wt. %	100/20	69	3.11	59.46	28.1 ± 3.0	This work
			100/10		2.20	40.57		

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FIG. 4A

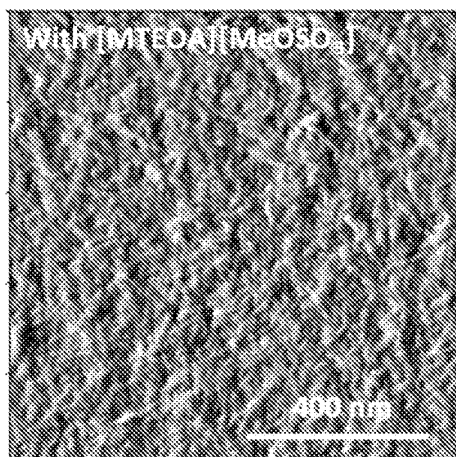


FIG. 4B

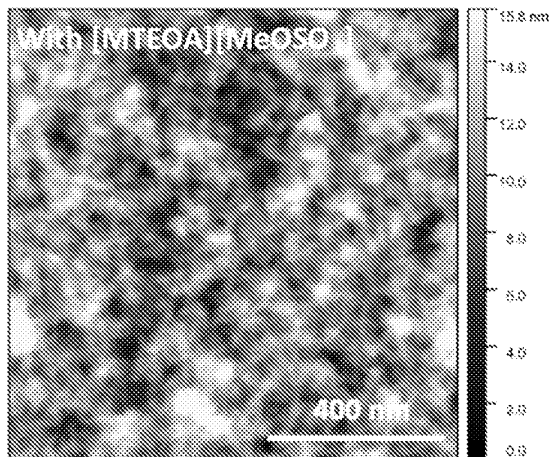


FIG. 4C

PEDOT:PSS/[MTEOA][MeOSO₃]

FIG. 4D

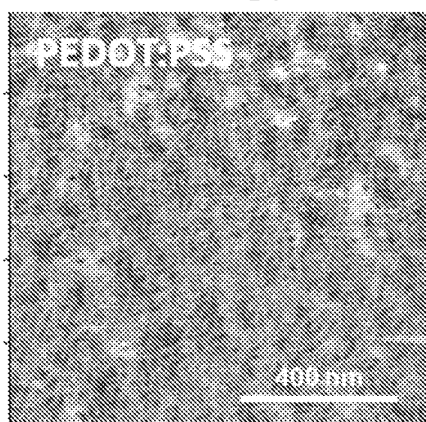


FIG. 4E

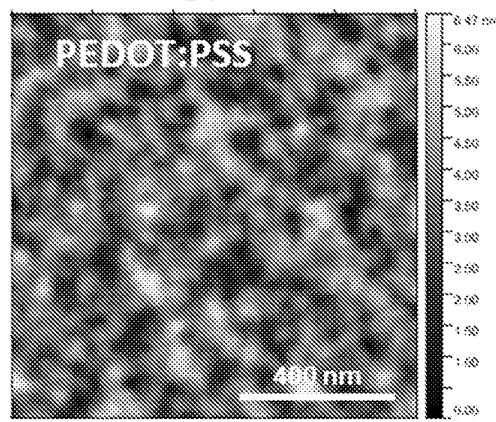


FIG. 4F

PEDOT:PSS



FIG. 4G

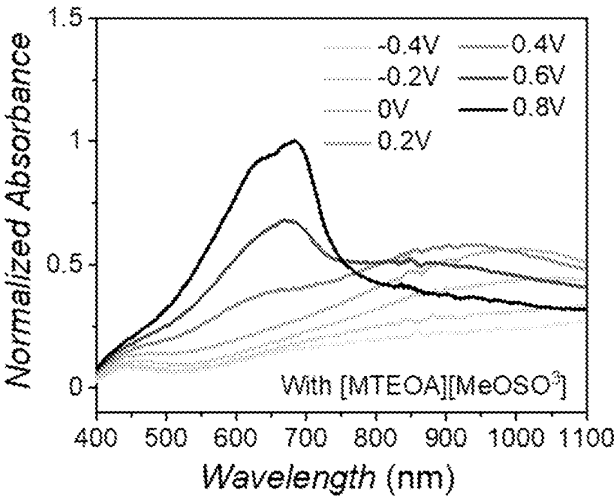
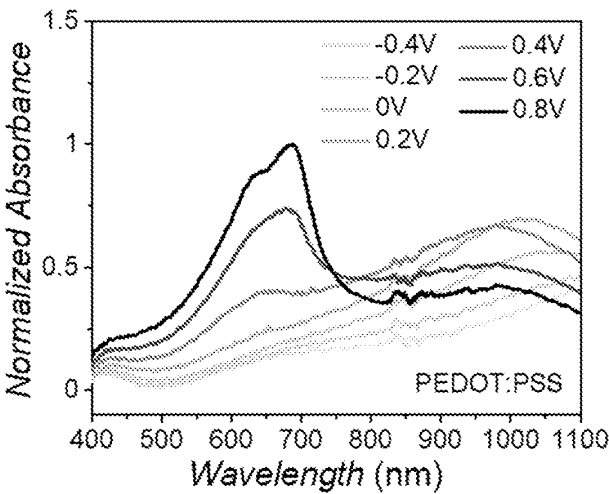
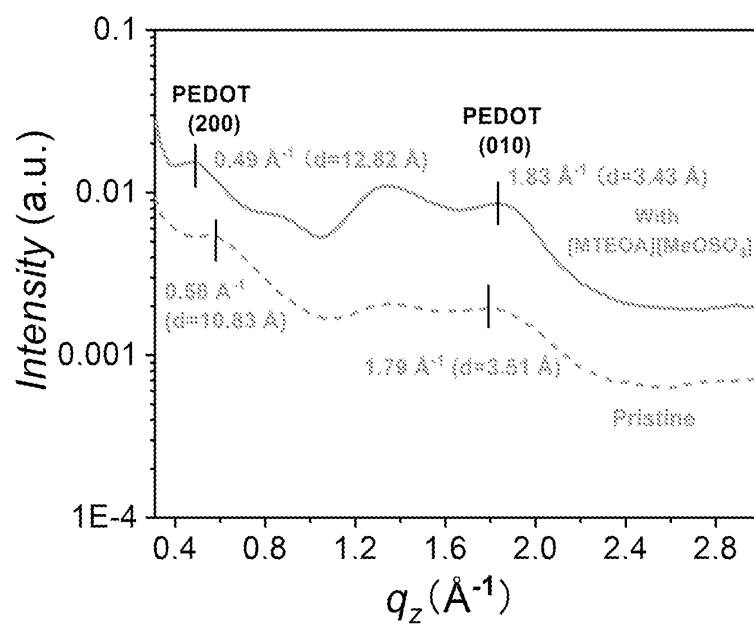
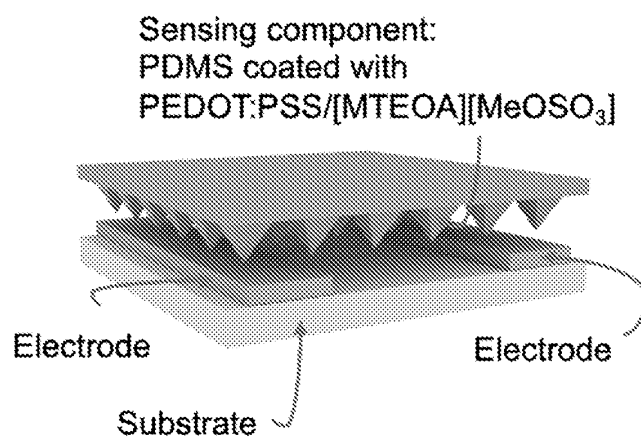


FIG. 4H



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FIG. 4I**FIG. 5A**

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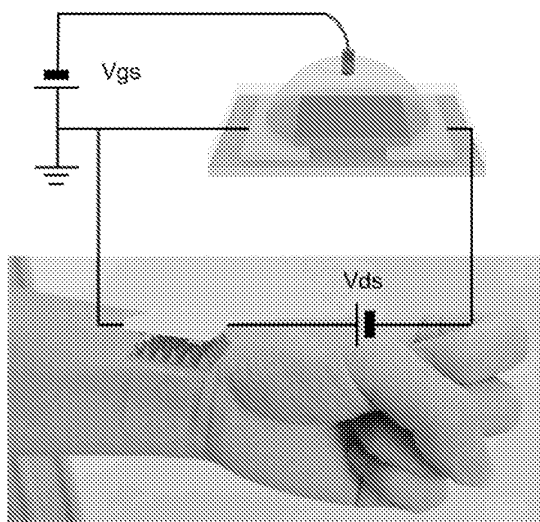
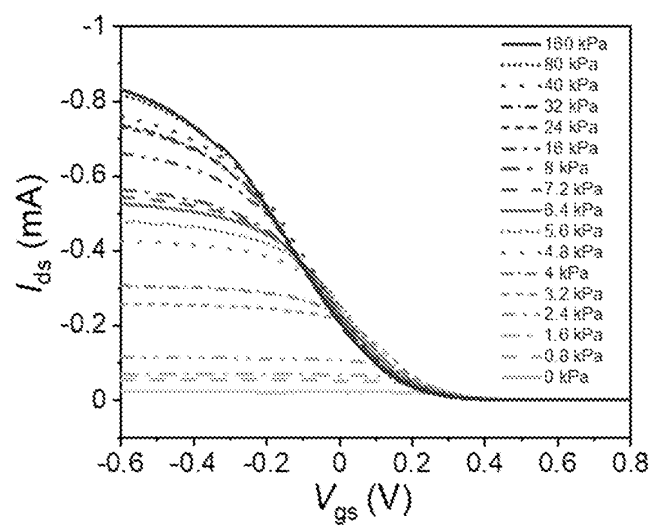
FIG. 5B**FIG. 5C**

FIG. 5D

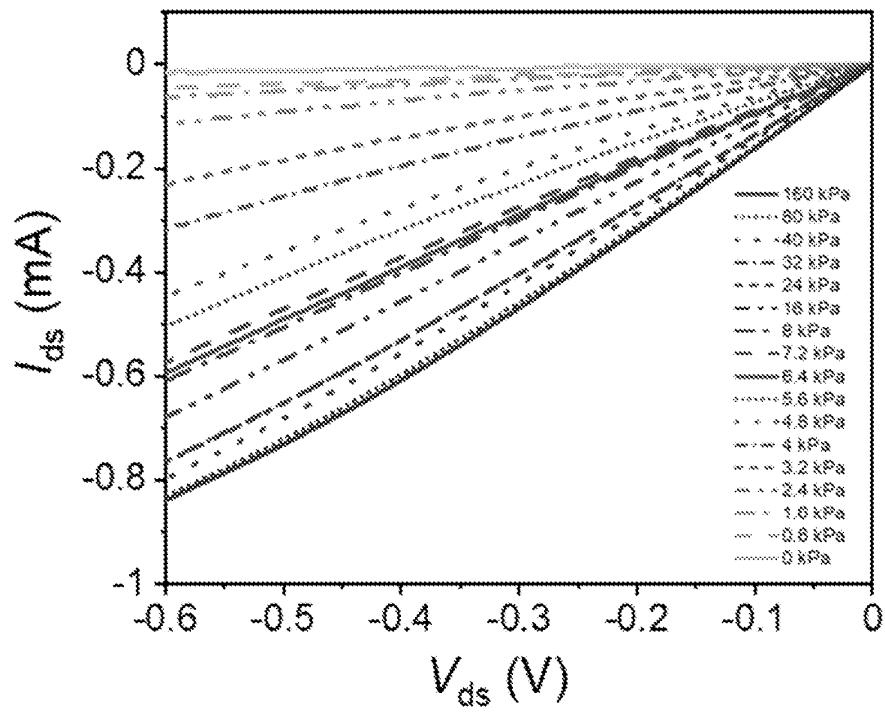


FIG. 6

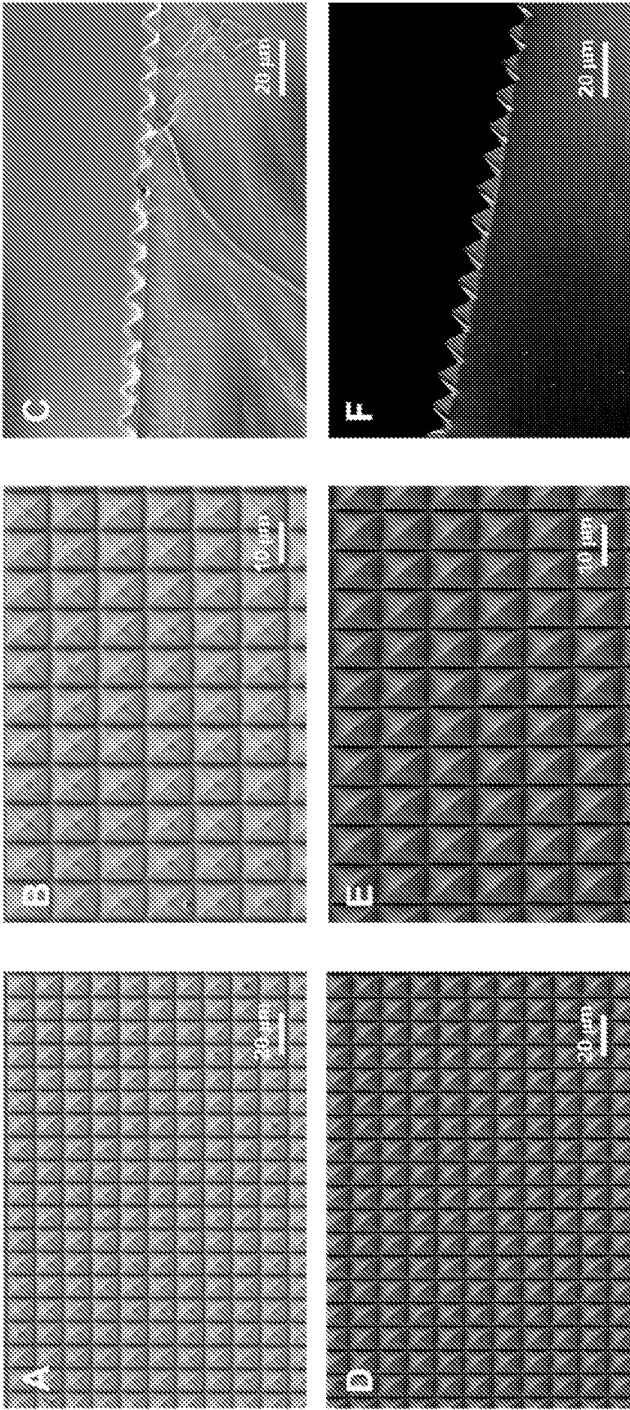
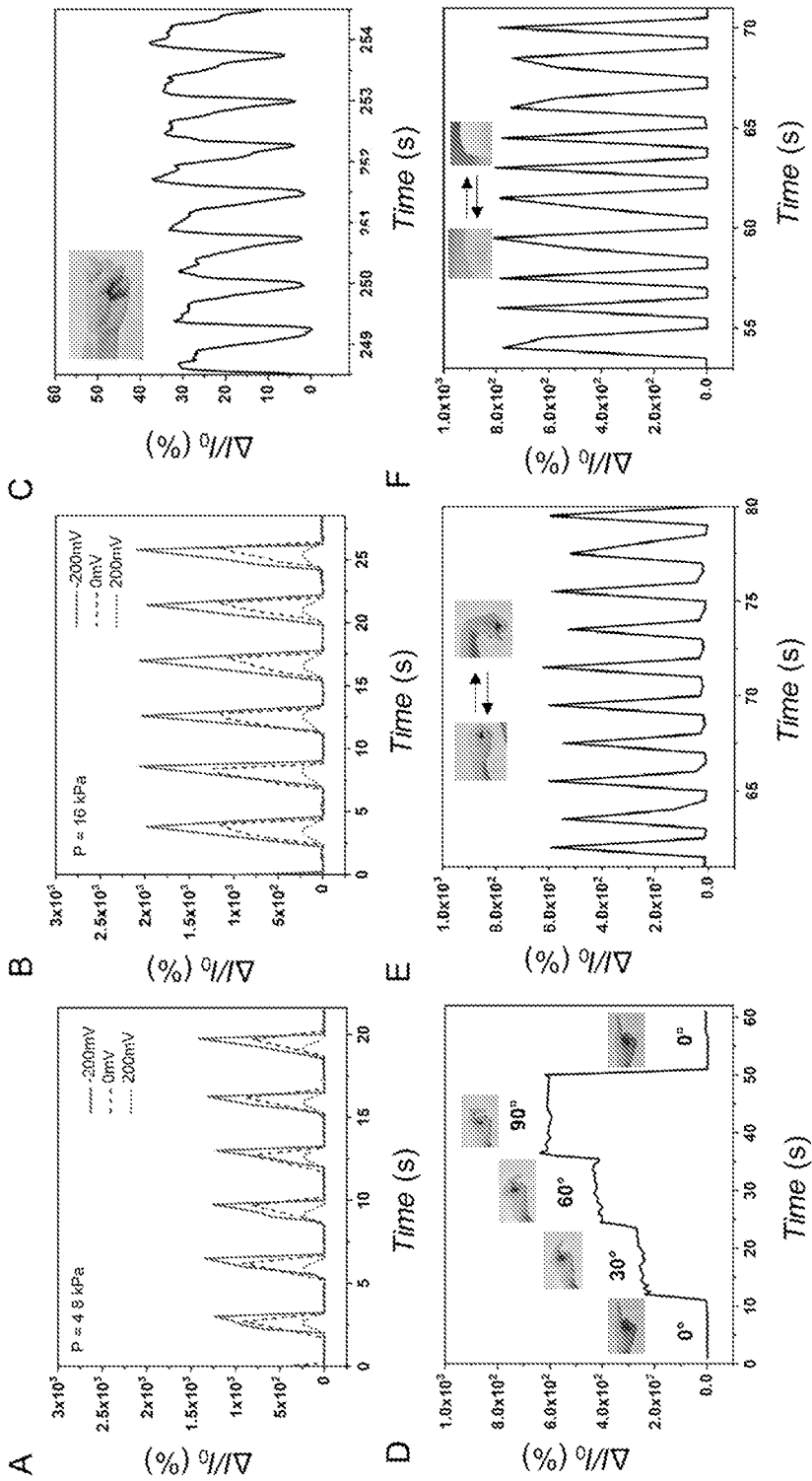


FIG. 7



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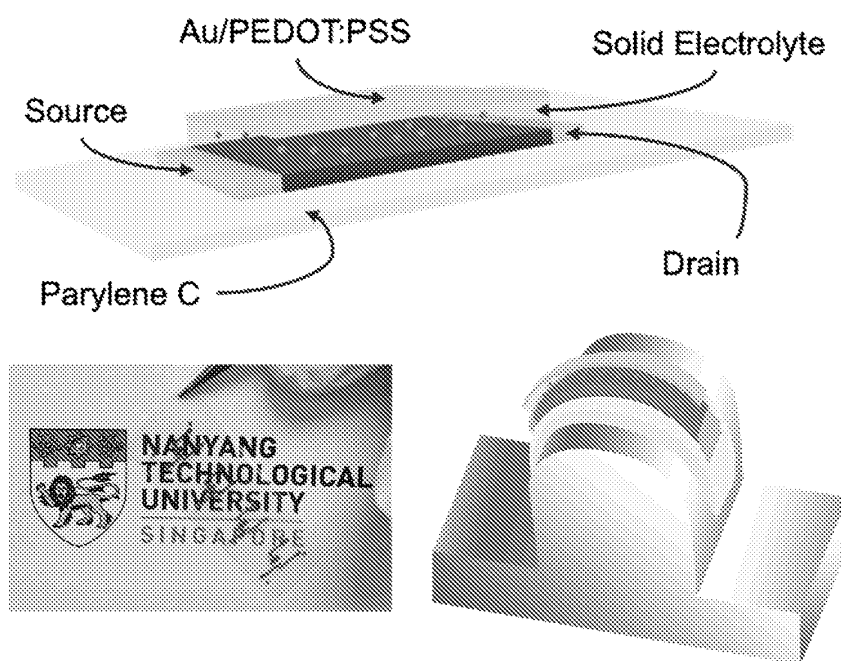
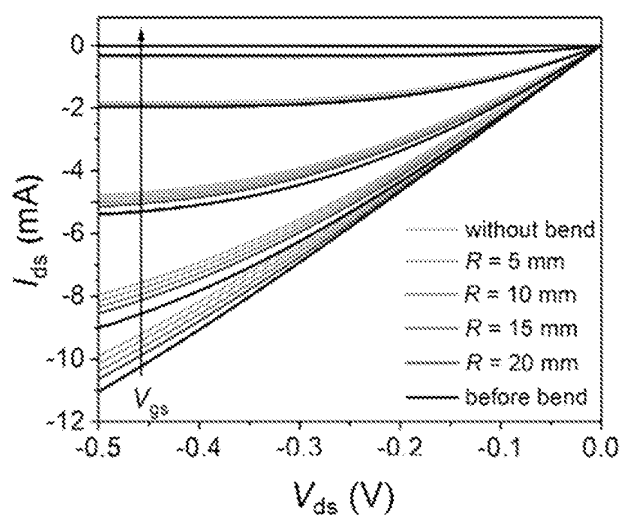
FIG. 8A**FIG. 8B**

FIG. 8C

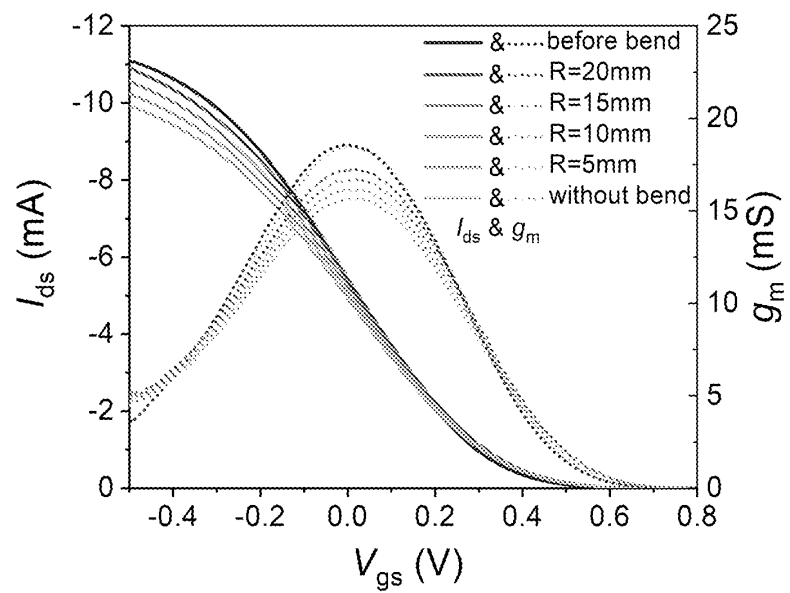
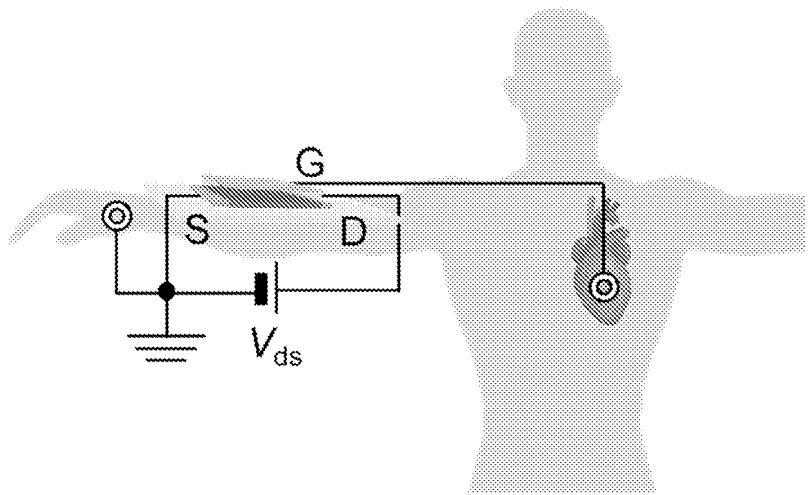


FIG. 9A



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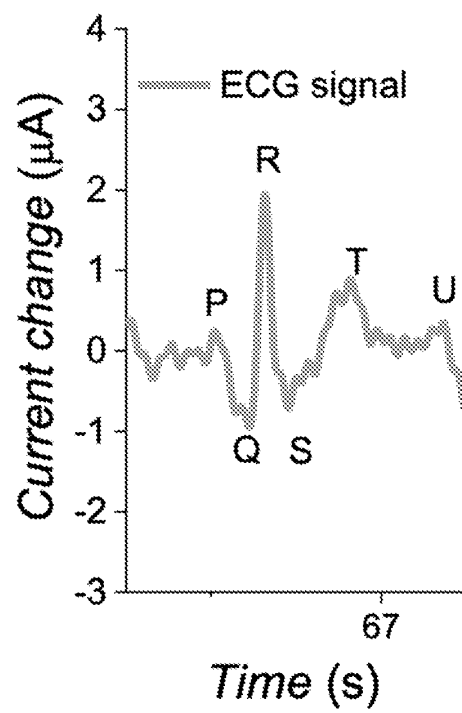
FIG. 9B

FIG. 9C

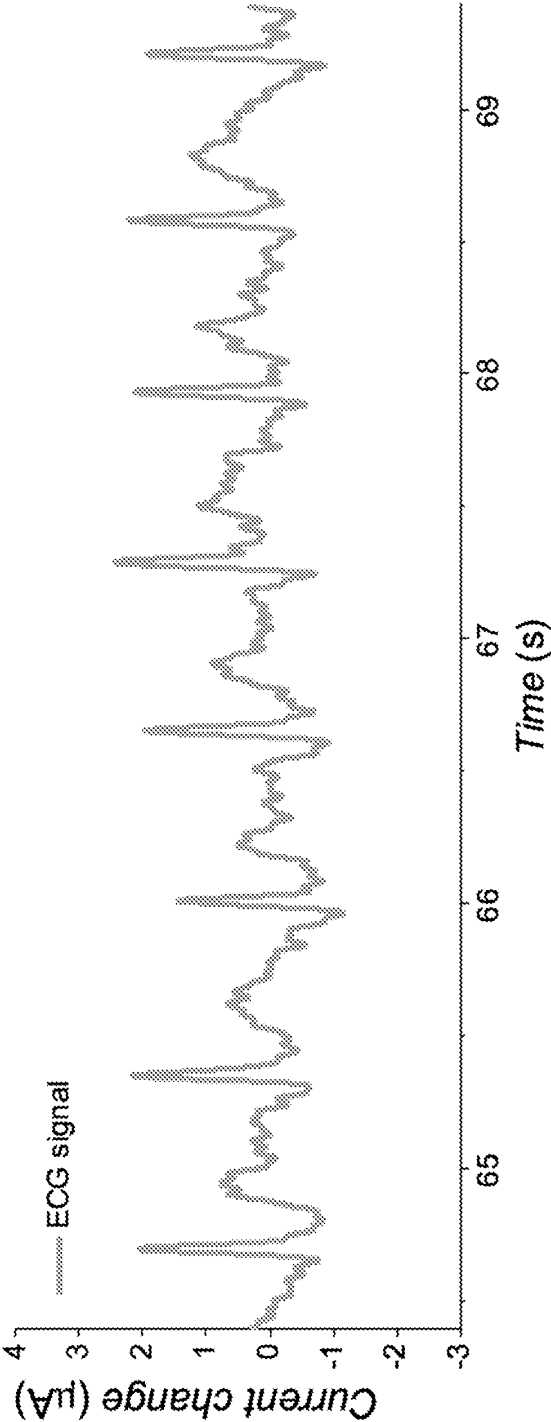


FIG. 10

