

# Mridula Gupta

## List of Publications by Year in descending order

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120  
papers

1,865  
citations

279798

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121  
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docs citations

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times ranked

752  
citing authors

#	ARTICLE	IF	CITATIONS
1	TCAD-Based Optimization of Field Plate Length & Passivation Layer of AlGaIn/GaN HEMT for Higher Cut-Off Frequency & Breakdown Voltage. IETE Technical Review (Institution of Electronics and Telecommunication Engineers, India), 2021, 38, 197-205.	3.3	12
2	Optimization of "Gate AlGaIn/AlN/GaN HEMTs for Low Noise and High Gain Applications. Silicon, 2022, 14, 393-404.	3.3	12
3	Modeling and Simulation-Based Investigation of 2-D Symmetric Double Gate Dopingless-TFET and Its Circuit Performance for Low-Power Applications. IETE Technical Review (Institution of Electronics and Telecommunication Engineers, India), 2021, 38, 429-437.	3.2	3
4	Impact of Non-Uniform Doping on the Reliability of Double Gate Junctionless Transistor: A Numerical Investigation. IETE Technical Review (Institution of Electronics and Telecommunication Engineers, India), 2021, 38, 429-437.	3.2	3
5	Optimization of Multimode Fibers for Surface Plasmon Resonance Based Sensors Under Spectral and Single Wavelength Intensity Interrogation. Plasmonics, 2022, 17, 665-673.	3.4	2
6	Undoped Drain Graded Doping (UDGD) based TFET design: An innovative concept. Superlattices and Microstructures, 2022, 163, 107147.	3.1	2
7	Interplay Between "Ray Irradiation and 3DEG for Dosimeter Applications. IEEE Access, 2022, 10, 25811-25827.	4.2	2
8	Investigation of proton irradiated dual field plate AlGaIn/GaN HEMTs: TCAD based assessment. Microelectronics Journal, 2022, 122, 105405.	2.0	4
9	Optimized DL-TFET Design for Enhancing its Performance Parameters by Using Different Engineering Methods. IETE Technical Review (Institution of Electronics and Telecommunication Engineers, India), 2021, 38, 429-437.	3.2	3
10	Differential microstrip patch rectenna featuring consistent high gain over a wide operating bandwidth. Microwave and Optical Technology Letters, 2021, 63, 1470-1476.	1.4	1
11	TCAD-Based Assessment of Dual-Gate MISHEMT with Sapphire, SiC, and Silicon Substrate. IETE Technical Review (Institution of Electronics and Telecommunication Engineers, India), 2021, 38, 197-205.	3.2	2
12	An Asymmetric "Gate MOSHEMT Architecture for High Frequency Applications. Lecture Notes in Networks and Systems, 2021, , 453-458.	0.7	0
13	Gate stacked dual-gate MISHEMT with 39 THz V Johnson's figure of merit for V-band applications. Journal of Computational Electronics, 2021, 20, 556-567.	2.5	2
14	Total ionizing dose effects in junctionless accumulation mode MOSFET. Applied Physics A: Materials Science and Processing, 2021, 127, 1.	2.3	5
15	Performance evaluation of dielectric modulation and metalloid T-shaped source/drain on gate-all-around junctionless transistor for improved analog/RF application. Journal of Materials Science: Materials in Electronics, 2021, 32, 10943-10950.	2.2	1
16	Proton irradiation effects on buffer-free gallium nitride on silicon carbide high electron mobility transistor-based radio frequency power amplifier. Semiconductor Science and Technology, 2021, 36, 045019.	2.0	10
17	Performance Investigation of Novel Pt/Pd-SiO <sub>2</sub> Junctionless FinFET as a High Sensitive Hydrogen Gas Sensor for Industrial Applications. IEEE Sensors Journal, 2021, 21, 13356-13363.	4.7	17
18	TCAD-Based Investigation of Double Gate Junctionless Transistor for UV Photodetector. IEEE Transactions on Electron Devices, 2021, 68, 2841-2847.	3.0	14

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19	Analytical Modeling and Simulation of AlGaIn/GaN MOS-HEMT for High Sensitive pH Sensor. IEEE Sensors Journal, 2021, 21, 12998-13005.	4.7	7
20	Degradation Mechanisms in a Proton Irradiated HEMT with 3DEG Conduction and 3DHG as a Back Barrier. , 2021, , .		3
21	Open gate AlGaIn/GaN HEMT biosensor: Sensitivity analysis and optimization. Superlattices and Microstructures, 2021, 156, 106968.	3.1	11
22	Differential multiresonator stacked microstrip antenna for wireless energy harvesting. International Journal of RF and Microwave Computer-Aided Engineering, 2021, 31, e22828.	1.2	3
23	Performance Analysis and Optimization of Under-Gate Dielectric Modulated Junctionless FinFET Biosensor. IEEE Sensors Journal, 2021, 21, 18897-18904.	4.7	11
24	TCAD Based Investigation of Single Event Transient Effect in Double Channel AlGaIn/GaN HEMT. IEEE Transactions on Device and Materials Reliability, 2021, 21, 416-423.	2.0	11
25	Dielectric Separated Independent Gates Junctionless Transistor (DSIG-JLT) For Highly Scaled Digital Logic Implementation. IEEE Nanotechnology Magazine, 2021, 20, 262-269.	2.0	2
26	A comparative study on the accuracy of small-signal equivalent circuit modeling for large gate periphery GaN HEMT with different source to drain length and gate width. Microelectronics Journal, 2021, 118, 105258.	2.0	8
27	Investigation of Single Event Transient Effects in Junctionless Accumulation Mode MOSFET. IEEE Transactions on Device and Materials Reliability, 2020, 20, 604-608.	2.0	9
28	Comparative Analysis of Junctionless FinFET and Inverted Mode FinFET as Phosphine (PH <sub>3</sub> ) Gas Sensor. , 2020, , .		10
29	Reliability Assessment of GaAs/Al <sub>x</sub> O <sub>y</sub> Junctionless FinFET in the Presence of Interfacial Layer Defects and Radiations. IEEE Transactions on Device and Materials Reliability, 2020, 20, 452-458.	2.0	10
30	Equivalent Channel Temperature in GaN HEMT with Field Plate. , 2020, , .		0
31	Investigation of total ionizing dose effect on SOI tunnel FET. Superlattices and Microstructures, 2019, 133, 106186.	3.1	16
32	Impact of different localized trap charge profiles on the short channel double gate junctionless nanowire transistor based inverter and Ring Oscillator circuit. AEU - International Journal of Electronics and Communications, 2019, 108, 251-261.	2.9	10
33	Comparative study of InGaIn and InGaAs based dopingless TFET with different gate engineering techniques. Advances in Natural Sciences: Nanoscience and Nanotechnology, 2019, 10, 035009.	1.5	6
34	Optimization of Asymmetric ĩ Gate HEMT for Improved Reliability & Frequency Applications. , 2019, , .		7
35	Study of Extended Back Gate Double Gate JunctionLess Transistor: Theoretical and Numerical Investigation. Springer Proceedings in Physics, 2019, , 633-642.	0.2	0
36	Interface trap-dependent linearity assessment in single and dual metal gate junctionless accumulation mode (surrounding gate) nanowire MOSFET. Applied Physics A: Materials Science and Processing, 2019, 125, 1.	2.3	1

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37	Comparative Analysis of Dielectric Modulated Junctionless FinFET Biosensor and Junctionless DG MOSFET Biosensor for Medical Instrumentation. , 2019, , .		7
38	Model of GaSb-InAs p-i-n Gate All Around BioTunnel FET. IEEE Sensors Journal, 2019, 19, 2605-2612.	4.7	24
39	Modeling and Simulation of AlGaN/GaN MOS-HEMT for Biosensor Applications. IEEE Sensors Journal, 2019, 19, 587-593.	4.7	45
40	Exploring the applicability of well optimized dielectric pocket tunnel transistor for future low power applications. Superlattices and Microstructures, 2019, 126, 8-16.	3.1	14
41	Assessment of analog RF performance for insulated shallow extension (ISE) cylindrical surrounding gate (CSC) MOSFET incorporating gate stack. Microsystem Technologies, 2019, 25, 1547-1554.	2.0	6
42	Empirical Model for Nonuniformly Doped Symmetric Double-Gate Junctionless Transistor. IEEE Transactions on Electron Devices, 2018, 65, 314-321.	3.0	23
43	Two-dimensional (2D) analytical investigation of an n-type junctionless gate-all-around tunnel field-effect transistor (JL GAA TFET). Journal of Computational Electronics, 2018, 17, 713-723.	2.5	6
44	Modeling and Simulation of Junctionless Double Gate Radiation Sensitive FET (RADFET) Dosimeter. IEEE Nanotechnology Magazine, 2018, 17, 49-55.	2.0	19
45	Study of Gaussian Doped Double Gate JunctionLess (GD-DG-JL) transistor including source drain depletion length: Model for sub-threshold behavior. Superlattices and Microstructures, 2018, 113, 57-70.	3.1	15
46	Analytical modeling of gate-all-around junctionless transistor based biosensors for detection of neutral biomolecule species. Journal of Computational Electronics, 2018, 17, 288-296.	2.5	50
47	Impact of positions of sensing area in a channel of dielectric modulated MOSFET based biosensor. Integrated Ferroelectrics, 2018, 194, 63-71.	0.7	2
48	Simulation Based Breakdown Voltage Analysis Of 3-Step Field Plate AlGaIn/GaN HEMTs. , 2018, , .		3
49	Optimization of Gate Oxide of Dual-Gate MISHEMTs for Enhanced DC performance. , 2018, , .		2
50	Comparative Study of CMOS based Dosimeters for Gamma Radiation. , 2018, , .		4
51	Breakdown Voltage Analysis of Different Field Plate AlGaIn/GaN HEMTs: TCAD based Assessment. , 2018, , .		1
52	Sub-Threshold Drain Current Model of Shell-Core Architecture Double Gate JunctionLess Transistor. , 2018, , .		1
53	Novel junctionless electrolyte-insulator-semiconductor field-effect transistor (JL EISFET) and its application as pH/biosensor. Microsystem Technologies, 2017, 23, 3149-3159.	2.0	14
54	Influence of gate leakage current induced shot noise on the Minimum Noise Figure of InAlAs/InGaAs double-gate HEMT. Superlattices and Microstructures, 2017, 109, 13-22.	3.1	3

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55	Analytical Model of pH sensing Characteristics of Junctionless Silicon on Insulator ISFET. IEEE Transactions on Electron Devices, 2017, 64, 1742-1750.	3.0	58
56	Ambipolarity reduction in DMG asymmetric vacuum dielectric Schottky Barrier GAA MOSFET to improve hot carrier reliability. Superlattices and Microstructures, 2017, 111, 10-22.	3.1	8
57	Charge plasma technique based dopingless accumulation mode junctionless cylindrical surrounding gate MOSFET: analog performance improvement. Applied Physics A: Materials Science and Processing, 2017, 123, 1.	2.3	20
58	Modeling of gate underlap junctionless double gate MOSFET as bio-sensor. Materials Science in Semiconductor Processing, 2017, 71, 240-251.	4.0	35
59	Underlapped FinFET on insulator: Quasi3D analytical model. Solid-State Electronics, 2017, 129, 138-149.	1.4	6
60	Cylindrical gate all around Schottky barrier MOSFET with insulated shallow extensions at source/drain for removal of ambipolarity: a novel approach. Journal of Semiconductors, 2017, 38, 124002.	3.7	9
61	Design and analysis of high performance air-bridge spiral circular inductors for GaN MMICs up to ku band. , 2017, , .		1
62	Variability Investigation of Double Gate JunctionLess (DG-JL) Transistor for Circuit Design Perspective. Communications in Computer and Information Science, 2017, , 496-503.	0.5	2
63	Analytical modeling of Junctionless Accumulation Mode Cylindrical Surrounding Gate MOSFET (JAMâ€CSCG). International Journal of Numerical Modelling: Electronic Networks, Devices and Fields, 2016, 29, 1036-1043.	1.9	28
64	Gate-Material-Engineered Junctionless Nanowire Transistor (JNT) With Vacuum Gate Dielectric for Enhanced Hot-Carrier Reliability. IEEE Transactions on Device and Materials Reliability, 2016, 16, 360-369.	2.0	16
65	Investigation of Analog/RF performance of High-k spacer Junctionless Accumulation-Mode Cylindrical Gate All Around (JLAM-CGAA) MOSFET. , 2016, , .		2
66	Analytical Modeling and Simulation Based Investigation of Advanced TFET Architecture. , 2016, , .		0
67	Modeling and simulation of cylindrical surrounding double-gate (CSDG) MOSFET with vacuum gate dielectric for improved hot-carrier reliability and RF performance. Journal of Computational Electronics, 2016, 15, 657-665.	2.5	11
68	Physics-based drain current modeling of gate-all-around junctionless nanowire twin-gate transistor (JN-TGT) for digital applications. Journal of Computational Electronics, 2016, 15, 492-501.	2.5	9
69	Analytical model of threshold voltage degradation due to localized charges in gate material engineered Schottky barrier cylindrical GAA MOSFETs. Semiconductor Science and Technology, 2016, 31, 105013.	2.0	14
70	Analytical modeling simulation and characterization of short channel Junctionless Accumulation Mode Surrounding Gate (JLAMSG) MOSFET for improved analog/RF performance. Superlattices and Microstructures, 2016, 100, 1263-1275.	3.1	13
71	Analytical model of junctionless double gate radiation sensitive FET (RADFET) dosimeter. , 2016, , .		0
72	Sensitivity investigation of gate-all-around junctionless transistor for hydrogen gas detection. , 2016, , .		8

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73	Physics based analytical model for surface potential and subthreshold current of cylindrical Schottky Barrier gate all around MOSFET with high-k gate stack. Superlattices and Microstructures, 2016, 90, 215-226.	3.1	28
74	Nanoscale T-shaped Double Gate DG MOSFET: Numerical Investigation for Analog/RF and Digital Performance. Superlattices and Microstructures, 2016, 89, 97-111.	3.1	1
75	Design and analysis of spiral circular inductors for GaN based low noise amplifier (MMICs). , 2015, , .		2
76	Investigation of dielectric modulated (DM) double gate (DG) junctionless MOSFETs for application as a biosensors. Superlattices and Microstructures, 2015, 85, 557-572.	3.1	78
77	Localized Charge-Dependent Threshold Voltage Analysis of Gate-Material-Engineered Junctionless Nanowire Transistor. IEEE Transactions on Electron Devices, 2015, 62, 2598-2605.	3.0	20
78	Modeling and simulation of Double Gate Junctionless Transistor considering fringing field effects. Solid-State Electronics, 2015, 107, 20-29.	1.4	27
79	Capacitance modeling of gate material engineered cylindrical/surrounded gate MOSFETs for sensor applications. Superlattices and Microstructures, 2015, 88, 271-280.	3.1	6
80	Analysis of gate underlap channel double gate MOS transistor for electrical detection of bio-molecules. Superlattices and Microstructures, 2015, 88, 225-243.	3.1	11
81	RF performance analysis and small signal parameter extraction of Cylindrical Surrounding Double Gate MOSFETs for sub-millimeter wave applications. , 2014, , .		2
82	Material engineering in Cylindrical Surrounding Double Gate (CSDG) MOSFETs for enhanced electrostatic integrity and RF performance. , 2014, , .		1
83	Analytical modeling of a split-gate dielectric modulated metal-oxide-semiconductor field-effect transistor for application as a biosensor. , 2014, , .		4
84	Impact of gate material engineering(GME) on analog/RF performance of nanowire Schottky-barrier gate all around (GAA) MOSFET for low power wireless applications: 3D T-CAD simulation. Microelectronics Journal, 2014, 45, 1508-1514.	2.0	73
85	Temperature dependent subthreshold model of long channel GAA MOSFET including localized charges to study variations in its temperature sensitivity. Microelectronics Reliability, 2014, 54, 37-43.	1.7	13
86	Performance Evaluation and Reliability Issues of Junctionless CSG MOSFET for RFIC Design. IEEE Transactions on Device and Materials Reliability, 2014, 14, 418-425.	2.0	71
87	A new T-Shaped Source/Drain Extension (T-SSDE) Gate Underlap GAA MOSFET with enhanced subthreshold analog/RF performance for low power applications. Solid-State Electronics, 2014, 101, 13-17.	1.4	16
88	An analytical subthreshold current modeling of cylindrical gate all around (CGAA) MOSFET incorporating the influence of device design engineering. Microelectronics Journal, 2014, 45, 408-415.	2.0	40
89	Numerical analysis of localised charges impact on static and dynamic performance of nanoscale cylindrical surrounding gate MOSFET based CMOS inverter. Microelectronics Reliability, 2013, 53, 236-244.	1.7	9
90	Gate-All-Around Nanowire MOSFET With Catalytic Metal Gate For Gas Sensing Applications. IEEE Nanotechnology Magazine, 2013, 12, 939-944.	2.0	52

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91	Hot-Carrier Reliability of Gate-All-Around MOSFET for RF/Microwave Applications. IEEE Transactions on Device and Materials Reliability, 2013, 13, 245-251.	2.0	19
92	Investigation of Dielectric-Modulated Double-Gate Junctionless MOSFET for detection of biomolecules. , 2013, , .		10
93	Temperature-Dependent Analytical Model for Microwave and Noise Performance Characterization of $\text{In}_{0.52}\text{Al}_{0.48}\text{As}/\text{In}_m\text{Ga}_{1-m}\text{As}$ ( $0.53 \leq m \leq 1$ ) Tj ETQq1 1.0.784314 rgBT / (C)	1.0	14
94	Gate All Around MOSFET With Vacuum Gate Dielectric for Improved Hot Carrier Reliability and RF Performance. IEEE Transactions on Electron Devices, 2013, 60, 1820-1827.	3.0	48
95	Gate-to-Drain Capacitance Dependent Model for Noise Performance Evaluation of InAlAs/InGaAs Double-gate HEMT. Journal of Semiconductor Technology and Science, 2013, 13, 331-341.	0.4	1
96	Analytical Model of Double Gate MOSFET for High Sensitivity Low Power Photosensor. Journal of Semiconductor Technology and Science, 2013, 13, 500-510.	0.4	16
97	Performance Investigation of Insulated Shallow Extension Silicon On Nothing (ISE-SON) MOSFET for Low Volatge Digital Applications. Journal of Semiconductor Technology and Science, 2013, 13, 622-634.	0.4	2
98	Two Dimensional Analytical Subthreshold Model of Nanoscale Cylindrical Surrounding Gate MOSFET Including Impact of Localised Charges. Journal of Computational and Theoretical Nanoscience, 2012, 9, 602-610.	0.4	18
99	A comprehensive charge control based analysis of the effect of donor-layer doping and donor-layer thickness on the P, R and C noise coefficients of a symmetric tied-gate InAlAs/InGaAs DG-HEMT. Proceedings of SPIE, 2012, , .	0.8	0
100	Numerical Model of Gate-All-Around MOSFET With Vacuum Gate Dielectric for Biomolecule Detection. IEEE Electron Device Letters, 2012, 33, 1756-1758.	3.9	50
101	An Accurate Small Signal Modeling of Cylindrical/Surrounded Gate MOSFET for High Frequency Applications. Journal of Semiconductor Technology and Science, 2012, 12, 377-387.	0.4	14
102	Two-Dimensional Analytical Drain Current Model for Double-Gate MOSFET Incorporating Dielectric Pocket. IEEE Transactions on Electron Devices, 2012, 59, 2567-2574.	3.0	31
103	Laterally-asymmetric-channel-insulated-shallow-extension-silicon-on-nothing LAC-ISE-SON MOSFET for improved reliability and digital circuit simulation. , 2012, , .		0
104	An Investigation of Linearity Performance and Intermodulation Distortion of GME CGT MOSFET for RFIC Design. IEEE Transactions on Electron Devices, 2012, 59, 3263-3268.	3.0	137
105	An analytical drain current model for dual material engineered cylindrical/surrounded gate MOSFET. Microelectronics Journal, 2012, 43, 17-24.	2.0	71
106	Effect of localised charges on nanoscale cylindrical surrounding gate MOSFET: Analog performance and linearity analysis. Microelectronics Reliability, 2012, 52, 989-994.	1.7	49
107	Temperature dependent drain current model for Gate Stack Insulated Shallow Extension Silicon On Nothing (ISESON) MOSFET for wide operating temperature range. Microelectronics Reliability, 2012, 52, 974-983.	1.7	16
108	An Accurate Charge-Control-Based Approach for Noise Performance Assessment of a Symmetric Tied-Gate InAlAs/InGaAs DG-HEMT. IEEE Transactions on Electron Devices, 2012, 59, 1644-1652.	3.0	17

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109	Analytical Modeling and Simulation for Dual Metal Gate Stack Architecture (DMGSA) Cylindrical/Surrounded Gate MOSFET. Journal of Semiconductor Technology and Science, 2012, 12, 458-466.	0.4	24
110	Simulation Study of Stack Gate Insulated Shallow Extension Silicon On Nothing ISE-SON MOSFET for RFICs Design. , 2011, , .		0
111	TCAD Assessment of Device Design Technologies for Enhanced Performance of Nanoscale DG MOSFET. IEEE Transactions on Electron Devices, 2011, 58, 2936-2943.	3.0	72
112	Scattering parameter based modeling and simulation of symmetric tied-gate InAlAs/InGaAs DG-HEMT for millimeter-wave applications. Solid-State Electronics, 2011, 63, 149-153.	1.4	12
113	Impact of doping concentration and donor-layer thickness on the dc characterization of symmetric double-gate and single-gate InAlAs/InGaAs/InP HEMT for nanometer gate dimension-A comparison. , 2010, , .		9
114	Analytical modeling and simulation of subthreshold behavior in nanoscale dual material gate AlGaIn/GaN HEMT. Superlattices and Microstructures, 2008, 44, 37-53.	3.1	35
115	3-dimensional analytical modeling and simulation of fully depleted AlGaIn/GaN modulation doped field effect transistor. , 2007, , .		2
116	An analysis for AlGaIn/GaN modulation doped field effect transistor using accurate velocity-field dependence for high power microwave frequency applications. Microelectronics Journal, 2006, 37, 1339-1346.	2.0	22
117	An improved intrinsic small-signal equivalent circuit model of delta-doped AlGaAs/InGaAs/GaAs HEMT for microwave frequency applications. Microwave and Optical Technology Letters, 2003, 37, 376-379.	1.4	6
118	Carrier-concentration-dependent low-field-mobility model for InAlAs/InGaAs/InP lattice-matched HEMT for microwave application. Microwave and Optical Technology Letters, 2001, 29, 66-70.	1.4	16
119	Impact of heavy ion particle strike induced single event transients on conventional and " Gate AlGaIn/GaN HEMTs. Semiconductor Science and Technology, 0, , .	2.0	5
120	TCAD Investigation for Dual-Gate MISHEMT with Improved Linearity and Current Collapse for LNAs. IETE Technical Review (Institution of Electronics and Telecommunication Engineers, India), 0, , 1-12.	3.2	0