Partha Bhattacharyya

List of Publications by Year
in descending order

90 papers	2,477 citations	218677 26 h-index	214800 47 g-index
90 all docs	90 docs citations	90 times ranked	2621 citing authors

#	Article	IF	Citations
1	Capacitive Mode Vapor Sensing Phenomenon in ZnO Homojunction: An Insight Through Space Charge Model and Electrical Equivalent Circuit. IEEE Sensors Journal, 2022, 22, 9483-9490.	4.7	6
2	Correlation Between Ammonia Selectivity and Temperature Dependent Functional Group Tuning of GO. IEEE Nanotechnology Magazine, 2021, 20, 129-136.	2.0	5
3	Fabrication Strategies and Measurement Techniques for Performance Improvement of Graphene/Graphene Derivative Based FET Gas Sensor Devices: A Review. IEEE Sensors Journal, 2021, 21, 10231-10240.	4.7	11
4	ZnO/RGO Heterojunction Based near Room Temperature Alcohol SENSOR with Improved Efficiency. Engineering Proceedings, 2021, 6, .	0.4	0
5	Understanding the Highly Selective Methanol Sensing Mechanism of Electrodeposited Pristine MoS₂ Using First Principle Analysis. IEEE Sensors Journal, 2021, 21, 16484-16491.	4.7	8
6	Impact of Device Configurations on Sensing Performance of WS₂-Based Gas Sensors: A Review. IEEE Sensors Journal, 2021, 21, 22414-22425.	4.7	19
7	Honeycomb Texturing of Hierarchical Nanoflowers of WO3 as an Efficient Route to Improve Repeatability and Stability of Room Temperature Vapor Sensor. IEEE Transactions on Device and Materials Reliability, 2020, 20, 84-91.	2.0	7
8	Prediction and Implementation of Graphene and Other Two-Dimensional Material Based Superconductors: A Review. IEEE Transactions on Applied Superconductivity, 2020, 30, 1-9.	1.7	8
9	Fabrication, Structural, Electrical, and Optical Characterizations of p-Nanoparticle- and n-Nanotube-Based ZnO Homojunction. IEEE Transactions on Electron Devices, 2020, 67, 4256-4261.	3.0	3
10	Understanding the Improved Vapor Sensor Device Performance of Dual Surface Engineered WO3 Nanospheres Using Semi-Quantitative Energy Band Model. IEEE Electron Device Letters, 2020, 41, 912-915.	3.9	2
11	A review on the sensing performances for three different ternary hybrid (Pd/RGO/TiO2-NTs,) Tj ETQq1 1 0.784314 rgBT /Overlock 10 T 117-122.	1.0	3
12	Functionalization of Graphene and Its Derivatives for Developing Efficient Solid-State Gas Sensors: Trends and Challenges. Materials Horizons, 2020, , 245-284.	0.6	3
13	Fabrication, Characterization, and Gas Sensing Performance of Pd, RGO, and MnO2 Nanoflowers-Based Ternary Junction Device. IEEE Transactions on Electron Devices, 2019, 66, 3982-3987.	3.0	10
14	An Integrated CO2 Sensor Using TiO2NT/RGO Hybrid Sensing Layer with embedded Micro hot Plate. , 2019, , .		0
15	Time Dependent Morphological Evolution of Hydrothermally Derived MnO₂ Nanostructures and Corresponding Methanol Vapor Sensing Performance. IEEE Nanotechnology Magazine, 2019, 18, 502-508.	2.0	4
16	An Efficient Room Temperature Ethanol Sensor Device Based on p-n Homojunction of TiO₂ Nanostructures. IEEE Transactions on Electron Devices, 2019, 66, 1063-1068.	3.0	21
17	Data-driven design of ternary alloy catalysts for enhanced oxide-based gas sensorsâ€™ performance. Computational Materials Science, 2019, 161, 255-260.	3.0	5
18	Noise Analysis-Resonant Frequency-Based Combined Approach for Concomitant Detection of Unknown Vapor Type and Concentration. IEEE Transactions on Instrumentation and Measurement, 2019, 68, 3004-3011.	4.7	5

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19	Resistive and Capacitive Measurement of Nano-Structured Gas Sensors. Environmental Chemistry for A Sustainable World, 2019, , 25-62.	0.5	9
20	Prediction of Adsorption Probability of Oxidizing and Reducing Species on 2-D Hybrid Junction of rGO-ZnO From First Principle Analysis. IEEE Nanotechnology Magazine, 2019, 18, 119-125.	2.0	2
21	Chemically Functionalized Penta-Graphene for Electronic Device Applications: Journey from Theoretical Prediction to Practical Implementation. Carbon Nanostructures, 2019, , 335-361.	0.1	0
22	Influence of rGO Cladding in Improving the Sensitivity and Selectivity of ZnO Nanoflowers-Based Alcohol Sensor. IEEE Sensors Journal, 2018, 18, 1820-1827.	4.7	20
23	Influence of distributed reduced graphene oxide clusters on methanol sensing performance of TiO2 nanotube based device. CSI Transactions on ICT, 2018, 6, 71-76.	1.0	1
24	Hierarchical MnO<inf>2</inf> Nanoflowers Based Efficient Room Temperature Alcohol Sensor. , 2018, , .		3
25	Improvement of Acetone Sensing Performance in rGO Modified ZnO Nanotubes Based Binary Hybrid Structure at Low Temperature. , 2018, , .		0
26	Understanding the Apparent Non-Reliability in the Sensing Characteristics of MnO2 Self-Assembled Hierarchical Nanostructure. IEEE Transactions on Device and Materials Reliability, 2018, 18, 628-635.	2.0	6
27	Selective molecular sieving by tailoring the etch hole dimensions of rGO in rGO-ZnO nanotubes based hybrid structure. , 2018, , .		0
28	A Comparative Study on Performance Improvement of ZnO Nanotubes Based Alcohol Sensor Devices by Pd and rGO Hybridization. IEEE Transactions on Electron Devices, 2018, 65, 3528-3534.	3.0	27
29	Irreversible n to p Transition and Corresponding Performance Improvement of RGO/TiO₂ Nanotubes Hybrid Vapor Sensor Devices by Varying Electrophoretic Deposition Time. IEEE Nanotechnology Magazine, 2018, 17, 1098-1105.	2.0	4
30	Resonant Frequency Tuning Technique for Selective Detection of Alcohols by TiO2 Nanorod-Based Capacitive Device. IEEE Nanotechnology Magazine, 2017, 16, 820-825.	2.0	13
31	Tuning of electronic properties of edge oxidized armchair graphene nanoribbon by the variation of oxygen amounts and positions. Journal of Materials Science: Materials in Electronics, 2017, 28, 9039-9047.	2.2	10
32	A Proton Hopping-Guided 3-D Space Charge Model for Quantitative Understanding of Humidity-Dependent Gas Sensing by TiO2 Nanoflower-Based Devices. IEEE Nanotechnology Magazine, 2017, 16, 180-188.	2.0	11
33	Efficient Gas Sensor Devices Based on Surface Engineered Oxygen Vacancy Controlled TiO₂ Nanosheets. IEEE Transactions on Electron Devices, 2017, 64, 2357-2363.	3.0	13
34	A potential gas sensor device based on Pd/RGO/TiO 2 nanotube ternary hybrid junction. Microelectronics Reliability, 2017, 78, 299-306.	1.7	15
35	Selectivity Tuning of Graphene Oxide Based Reliable Gas Sensor Devices by Tailoring the Oxygen Functional Groups: A DFT Study Based Approach. IEEE Transactions on Device and Materials Reliability, 2017, 17, 738-745.	2.0	43
36	Potentiality of Density-Functional Theory in Analyzing the Devices Containing Graphene-Crystalline Solid Interfaces: A Review. IEEE Transactions on Electron Devices, 2017, 64, 4738-4745.	3.0	8

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37	Highly Sensitive ppb Level Methanol Sensor by Tuning C:O Ratio of rGO-TiO2 Nanotube Hybrid Structure. IEEE Nanotechnology Magazine, 2017, 16, 1122-1128.	2.0	18
38	Capacitive Mode Methanol Sensing by ZnO Nanorods Based Devices. International Journal of Materials Mechanics and Manufacturing, 2017, 5, 92-95.	0.2	2
39	Performance Improvement of Pd/ZnO-NR/Si MIS Gas Sensor Device in Capacitive Mode: Correlation With Equivalent-Circuit Elements. IEEE Transactions on Electron Devices, 2016, 63, 1266-1273.	3.0	22
40	Voltage Controlled Rupturing of TiO₂ Nanotubes for Gas Sensor Device Applications: Correlation With Surface and Edge Energy. IEEE Transactions on Electron Devices, 2016, 63, 4933-4938.	3.0	7
41	Ti/TiO₂Nanotube Array/Ti Capacitive Device for Non-polar Aromatic Hydrocarbon Detection. IEEE Transactions on Device and Materials Reliability, 2016, 16, 235-242.	2.0	35
42	Alcohol sensing performance of ZnO hexagonal nanotubes at low temperatures: A qualitative understanding. Sensors and Actuators B: Chemical, 2016, 228, 373-386.	7.8	69
43	Hybrid 3D structures of ZnO nanoflowers and PdO nanoparticles as a highly selective methanol sensor. Analyst, The, 2016, 141, 2977-2989.	3.5	71
44	Highly Efficient Room-Temperature Gas Sensor Based on TiO₂Nanotube-Reduced Graphene-Oxide Hybrid Device. IEEE Electron Device Letters, 2016, 37, 656-659.	3.9	66
45	Highly Selective Low-Temperature Acetone Sensor Based on Hierarchical 3-D TiO₂Nanoflowers. IEEE Sensors Journal, 2016, 16, 3488-3495.	4.7	56
46	n-TiO<inf>2</inf>/p-Si heterojunction devices as a potential ethanol sensor. , 2015, , .		0
47	A highly sensitive BTX sensor based on electrochemically derived wall connected TiO2 nanotubes. Applied Surface Science, 2015, 354, 353-361.	6.1	38
48	Ultrathin Films of TiO₂ Nanoparticles at Interfaces. Langmuir, 2015, 31, 1385-1392.	3.5	22
49	Low Temperature Methanol Sensing by p-Type Nano-titania: Correlation with Defects States and Schottky Barrier Model. IEEE Nanotechnology Magazine, 2015, 14, 187-195.	2.0	28
50	An efficient BTX sensor based on p-type nanoporous titania thin films. Microelectronics Reliability, 2015, 55, 558-564.	1.7	19
51	An efficient BTX sensor based on ZnO nanoflowers grown by CBD method. Solid-State Electronics, 2015, 106, 18-26.	1.4	39
52	Vertical Mode Gas Sensing Performance of TiO₂ Nanotube Array by Tuning of Surface Area and Carrier Transport Length. IEEE Sensors Journal, 2015, 15, 5919-5926.	4.7	26
53	Hybrid Fabrication of Highly Rectifying <inline-formula> <tex-math notation="LaTeX">p </tex-math></inline-formula>-<inline-formula> <tex-math notation="LaTeX">n </tex-math></inline-formula> Homojunction Based on Nanostructured TiO₂. IEEE Electron Device Letters, 2015, 36, 505-507.	3.9	16
54	Role of Junction Geometry in Determining the Rectification Performance of Nanostructured TiO₂-Based p-n Junctions. IEEE Transactions on Electron Devices, 2015, 62, 1984-1990.	3.0	15

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55	Stoichiometry, Length, and Wall Thickness Optimization of TiO₂ Nanotube Array for Efficient Alcohol Sensing. ACS Applied Materials & Interfaces, 2015, 7, 9336-9348.	8.0	69
56	Highly stable low temperature alcohol sensor based on hydrothermally grown tetragonal titania nanorods. RSC Advances, 2015, 5, 82159-82168.	3.6	33
57	Operating Temperature, Repeatability, and Selectivity of TiO ₂ Nanotube-Based Acetone Sensor: Influence of Pd and Ni Nanoparticle Modifications. IEEE Transactions on Device and Materials Reliability, 2015, 15, 376-383.	2.0	44
58	Highly Repeatable Low-ppm Ethanol Sensing Characteristics of p-TiO₂-Based Resistive Devices. IEEE Sensors Journal, 2015, 15, 408-416.	4.7	46
59	Performance Analysis of a Low-Power High-Speed Hybrid 1-bit Full Adder Circuit. IEEE Transactions on Very Large Scale Integration (VLSI) Systems, 2015, 23, 2001-2008.	3.1	196
60	Vedic division methodology for highâ€speed very large scale integration applications. Journal of Engineering, 2014, 2014, 51-59.	1.1	7
61	Tailoring of the Gas Sensing Performance of TiO₂ Nanotubes by 1-D Vertical Electron Transport Technique. IEEE Transactions on Electron Devices, 2014, 61, 3483-3489.	3.0	48
62	Room temperature alcohol sensing by oxygen vacancy controlled TiO2 nanotube array. Applied Physics Letters, 2014, 105, .	3.3	74
63	Repeatability and Stability of Room-Temperature Acetone Sensor Based on <inline-formula> <tex-math notation="TeX">$hbox{TiO}_{2}$</tex-math></inline-formula> Nanotubes: Influence of Stoichiometry Variation. IEEE Transactions on Device and Materials Reliability, 2014, 14, 961-967.	2.0	49
64	Low temperature acetone detection by p-type nano-titania thin film: Equivalent circuit model and sensing mechanism. Solid-State Electronics, 2014, 99, 84-92.	1.4	55
65	Structural and Optical Characterizations of Electrochemically Grown Connected and Free-Standing TiO2 Nanotube Array. Journal of Electronic Materials, 2014, 43, 3229-3235.	2.2	10
66	Improved matrix multiplier design for highâ€speed digital signal processing applications. IET Circuits, Devices and Systems, 2014, 8, 27-37.	1.4	19
67	Formation Mechanism of Anodically Grown Free-Standing TiO₂ Nanotube Array Under the Influence of Mixed Electrolytes. Science of Advanced Materials, 2014, 6, 714-719.	0.7	37
68	Influence of temperature, voltage and hydrogen on the reversible transition of electrical conductivity in solâ€“gel grown nanocrystalline TiO2 thin film. Journal of Materials Science: Materials in Electronics, 2013, 24, 1658-1663.	2.2	11
69	High Dynamic Range Methanol Sensor Based on Aligned ZnO Nanorods. IEEE Sensors Journal, 2013, 13, 1669-1676.	4.7	43
70	Reciprocal Unit Based on Vedic Mathematics for Signal Processing Applications. , 2013, , .		1
71	Electrochemically grown nono-structured TiO<inf>2</inf> based low power resistive random access memory. , 2013, , .		3
72	Integration of ZnO nanoflakes with MEMS platform and its application as gas sensor. , 2013, , .		1

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73	Low temperature acetone sensor based on Sol-gel grown nano TiO<inf>2</inf> thin film. , 2013, , .		6
74	ASIC implementation of high speed processor for computing fast hartley transformation. , 2013, , .		1
75	Low temperature low ppm acetone detection by Pd/TiO<inf>2</inf>/p-Si Metal-Insulator-Semiconductor devices. , 2013, , .		1
76	Development of an ethanol sensor based on CBD grown ZnO nanorods. Solid-State Electronics, 2013, 87, 43-50.	1.4	44
77	ZnO nanoflake based metal-insulator-metal methane sensor for underground coalmine application. , 2012, , .		0
78	Recent developments on graphene and graphene oxide based solid state gas sensors. Sensors and Actuators B: Chemical, 2012, 173, 1-21.	7.8	631
79	Ultrasensitive Pdâ€“Ag/ZnO/Nickel Alloy-Based Metalâ€“Insulator-Metal Methane Sensor on Micromachined Silicon Substrate. IEEE Sensors Journal, 2012, 12, 2526-2527.	4.7	15
80	A highly sensitive methane sensor with nickel alloy microheater on micromachined Si substrate. Solid-State Electronics, 2012, 76, 84-90.	1.4	40
81	CVD Grown Materials for High Temperature Electronic Devices : A Review. Transactions of the Indian Ceramic Society, 2011, 70, 1-9.	1.0	3
82	Vedic Divider: Novel Architecture (ASIC) for High Speed VLSI Applications. , 2011, , .		19
83	High speed ASIC design of complex multiplier using Vedic Mathematics. , 2011, , .		62
84	Vedic Mathematics Based 32-Bit Multiplier Design for High Speed Low Power Processors. International Journal on Smart Sensing and Intelligent Systems, 2011, 4, 268-284.	0.7	9
85	Methane Detection by MIM Sensor Devices Based on Nano ZnO Thin Films Obtained by Sol-Gel and by Anodization: A Comparative Study. , 2010, , .		1
86	Microcontroller based Power Efficient Signal Conditioning Unit for Detection of a Single Gas using MEMS based Sensor. International Journal on Smart Sensing and Intelligent Systems, 2010, 3, 771-782.	0.7	6
87	The Effect of Catalytic Metal Contact on Methane Sensing Performance of Nanoporous ZnO -Si Heterojunction. International Journal on Smart Sensing and Intelligent Systems, 2010, 3, 273-291.	0.7	3
88	MEMS based nano crystalline zinc oxide methane gas sensors. , 2007, , .		3
89	Deposition of nanocrystalline ZnO thin films on p-Si by novel galvanic method and application of the heterojunction as methane sensor. Journal of Materials Science: Materials in Electronics, 2007, 18, 823-829.	2.2	33
90	Data-Driven Search for the Optimal Agâ€“Pdâ€“Pt-Based Electrode Alloy Chemistry for ZnO-Based Methane Sensor. Journal of the Institution of Engineers (India): Series D, 0, , .	1.0	0