Baranidharan Raman

List of Publications by Year
in descending order

51 papers	1,271 citations	430874 18 h-index	395702 33 g-index
61 all docs	61 docs citations	61 times ranked	1293 citing authors

#	Article	IF	Citations
1	Sparse odor representation and olfactory learning. Nature Neuroscience, 2008, 11, 1177-1184.	14.8	137
2	Temporally Diverse Firing Patterns in Olfactory Receptor Neurons Underlie Spatiotemporal Neural Codes for Odors. Journal of Neuroscience, 2010, 30, 1994-2006.	3.6	108
3	A spatiotemporal coding mechanism for background-invariant odor recognition. Nature Neuroscience, 2013, 16, 1830-1839.	14.8	98
4	Bioinspired Polarization Imaging Sensors: From Circuits and Optics to Signal Processing Algorithms and Biomedical Applications. Proceedings of the IEEE, 2014, 102, 1450-1469.	21.3	94
5	Frequency Transitions in Odor-Evoked Neural Oscillations. Neuron, 2009, 64, 692-706.	8.1	68
6	Designing and optimizing microsensor arrays for recognizing chemical hazards in complex environmentsâ˜†. Sensors and Actuators B: Chemical, 2009, 137, 617-629.	7.8	65
7	The potential for and challenges of detecting chemical hazards with temperature-programmed microsensors. Sensors and Actuators B: Chemical, 2007, 121, 282-294.	7.8	62
8	Bioinspired Methodology for Artificial Olfaction. Analytical Chemistry, 2008, 80, 8364-8371.	6.5	52
9	Reversible Photothermal Modulation of Electrical Activity of Excitable Cells using Polydopamine Nanoparticles. Advanced Materials, 2021, 33, e2008809.	21.0	52
10	Non-invasive aerosol delivery and transport of gold nanoparticles to the brain. Scientific Reports, 2017, 7, 44718.	3.3	48
11	SnO_2 Nanostructured Thin Films for Room-Temperature Gas Sensing of Volatile Organic Compounds. ACS Applied Materials & Interfaces, 2018, 10, 29972-29981.	8.0	44
12	Mimicking Biological Design and Computing Principles in Artificial Olfaction. ACS Chemical Neuroscience, 2011, 2, 487-499.	3.5	39
13	Engaging and disengaging recurrent inhibition coincides with sensing and unsensing of a sensory stimulus. Nature Communications, 2017, 8, 15413.	12.8	36
14	Microsensors in Dynamic Backgrounds: Toward Real-Time Breath Monitoring. IEEE Sensors Journal, 2010, 10, 137-144.	4.7	31
15	Detecting Chemical Hazards with Temperature-Programmed Microsensors: Overcoming Complex Analytical Problems with Multidimensional Databases. Annual Review of Analytical Chemistry, 2009, 2, 463-484.	5.4	30
16	Multi-unit Recording Methods to Characterize Neural Activity in the Locust (<em>Schistocerca) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50 14	0.3	29
17	Behavioural correlates of combinatorial versus temporal features of odour codes. Nature Communications, 2015, 6, 6953.	12.8	28
18	Processing of Chemical Sensor Arrays With a Biologically Inspired Model of Olfactory Coding. IEEE Transactions on Neural Networks, 2006, 17, 1015-1024.	4.2	27

#	Article	IF	Citations
19	Dynamic contrast enhancement and flexible odor codes. Nature Communications, 2018, 9, 3062.	12.8	27
20	Contrast enhancement of gas sensor array patterns with a neurodynamics model of the olfactory bulb. Sensors and Actuators B: Chemical, 2006, 119, 547-555.	7.8	26
21	A dimensionality-reduction technique inspired by receptor convergence in the olfactory system. Sensors and Actuators B: Chemical, 2006, 116, 17-22.	7.8	23
22	Explosive sensing with insect-based biorobots. Biosensors and Bioelectronics: X, 2020, 6, 100050.	1.7	18
23	Gold-Nanorod-Based Plasmonic Nose for Analysis of Chemical Mixtures. ACS Applied Nano Materials, 2019, 2, 3897-3905.	5.0	15
24	Olfactory learning and spike timing dependent plasticity. Communicative and Integrative Biology, 2008, 1, 170-171.	1.4	13
25	Bilateral olfaction: two is better than one for navigation. Genome Biology, 2008, 9, 212.	9.6	12
26	Differential effects of adaptation on odor discrimination. Journal of Neurophysiology, 2018, 120, 171-185.	1.8	9
27	Room temperature gas sensing mechanism of SnO2 towards chloroform: Comparing first principles calculations with sensing experiments. Applied Surface Science, 2021, 554, 149603.	6.1	9
28	Invariant odor recognition with ON–OFF neural ensembles. Proceedings of the National Academy of Sciences of the United States of America, 2022, 119, .	7.1	9
29	Detecting and recognizing chemical targets in untrained backgrounds with temperature programmed sensors. IEEE Sensors Journal, 2012, 12, 3238-3247.	4.7	7
30	The I/O transform of a chemical sensor. Sensors and Actuators B: Chemical, 2016, 232, 357-368.	7.8	6
31	Structure-Preserving Numerical Integrators for Hodgkin--Huxley-Type Systems. SIAM Journal of Scientific Computing, 2020, 42, B273-B298.	2.8	6
32	Computer based pedestrian landscape design using decision tree templates. Advanced Engineering Informatics, 2006, 20, 23-30.	8.0	5
33	Neuromorphic Processing for Optical Microbead Arrays: Dimensionality Reduction and Contrast Enhancement. IEEE Sensors Journal, 2007, 7, 506-514.	4.7	5
34	Behaving cyborg locusts for standoff chemical sensing. , 2017, , .		4
35	Relating Sensor Responses of Odorants to Their Organoleptic Properties by Means of a Biologically-Inspired Model of Receptor Neuron Convergence onto Olfactory Bulb. Studies in Computational Intelligence, 2009, , 93-108.	0.9	4
36	Genetic and viral approaches to record or manipulate neurons in insects. Current Opinion in Insect Science, 2021, 48, 79-88.	4.4	4

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37	Olfactory Coding: Non-Linear Amplification Separates Smells. Current Biology, 2008, 18, R29-R32.	3.9	2
38	A 220 × 128 120 mW 60 frames/s current mode polarization imager for in vivo optical neural recording. , 2014, , .		2
39	Relating early olfactory processing with behavior: a perspective. Current Opinion in Insect Science, 2015, 12, 54-63.	4.4	2
40	Recent approaches to study the neural bases of complex insect behavior. Current Opinion in Insect Science, 2021, 48, 18-25.	4.4	2
41	Analysis of trial-by-trial variability in stimulus-evoked neural activity. , 2010, 2010, 4320-2.		1
42	A MEMS-based approach that uses temperature-dependent sensing responses to recognize chemical targets in untrained backgrounds. , 2010, , .		1
43	Neural Circuit Dynamics for Sensory Detection. Journal of Neuroscience, 2020, 40, 3408-3423.	3.6	1
44	A Statistical Approach to Materials Evaluation and Selection for Chemical Sensor Arrays. , 2009, , 221-244.		1
45	In Situ Grown Gold Nanoisland-Based Chemiresistive Electronic Nose for Sniffing Distinct Odor Fingerprints. ACS Applied Materials & Interfaces, 2022, 14, 3207-3217.	8.0	1
46	Enabling MEMS Chemical Microsensor Arrays for Trace Analyte Detection. , 2007, , .		0
47	Generating and Using Data of Higher Dimension for Gas-Phase Chemical Sensing. ECS Transactions, 2009, 19, 255-260.	0.5	0
48	Odor Recognition vs. Classification in Artificial Olfaction. , 2011, , .		0
49	Analysis of biological and artificial chemical sensor repsonses to odor mixtures. , 2013, , .		0
50	Live demonstration: Behaving cyborg locusts for standoff chemical sensing. , 2017, , .		0
51	Early Warning Signals Regarding Environmental Suitability in the <i>Drosophila</i> Antenna. SSRN Electronic Journal, 0, , .	0.4	0