Niranchan Paskaranandavadivel

List of Publications by Year
in descending order

111 papers	1,419 citations	394286 19 h-index	395590 33 g-index
114 all docs	114 docs citations	114 times ranked	508 citing authors

#	Article	IF	Citations
1	The gastrointestinal electrical mapping suite (GEMS): software for analyzing and visualizing high-resolution (multi-electrode) recordings in spatiotemporal detail. BMC Gastroenterology, 2012, 12, 60.	0.8	89
2	The bioelectrical basis and validity of gastrointestinal extracellular slow wave recordings. Journal of Physiology, 2013, 591, 4567-4579.	1.3	74
3	Rapid highâ€amplitude circumferential slow wave propagation during normal gastric pacemaking and dysrhythmias. Neurogastroenterology and Motility, 2012, 24, e299-312.	1.6	72
4	Functional physiology of the human terminal antrum defined by high-resolution electrical mapping and computational modeling. American Journal of Physiology - Renal Physiology, 2016, 311, G895-G902.	1.6	71
5	Comparison of filtering methods for extracellular gastric slow wave recordings. Neurogastroenterology and Motility, 2013, 25, 79-83.	1.6	66
6	Methods for High-Resolution Electrical Mapping in the Gastrointestinal Tract. IEEE Reviews in Biomedical Engineering, 2019, 12, 287-302.	13.1	51
7	Circumferential and functional reâ€entry of in vivo slowâ€wave activity in the porcine small intestine. Neurogastroenterology and Motility, 2013, 25, e304-14.	1.6	47
8	An Improved Method for the Estimation and Visualization of Velocity Fields from Gastric High-Resolution Electrical Mapping. IEEE Transactions on Biomedical Engineering, 2012, 59, 882-889.	2.5	45
9	Patterns of Abnormal Gastric Pacemaking After Sleeve Gastrectomy Defined by Laparoscopic High-Resolution Electrical Mapping. Obesity Surgery, 2017, 27, 1929-1937.	1.1	45
10	A Novel Gastric Pacing Device to Modulate Slow Waves and Assessment by High-Resolution Mapping. IEEE Transactions on Biomedical Engineering, 2019, 66, 2823-2830.	2.5	39
11	Experimental and Automated Analysis Techniques for High-resolution Electrical Mapping of Small Intestine Slow Wave Activity. Journal of Neurogastroenterology and Motility, 2013, 19, 179-191.	0.8	37
12	Highâ€resolution electrical mapping of porcine gastric slowâ€wave propagation from the mucosal surface. Neurogastroenterology and Motility, 2017, 29, e13010.	1.6	37
13	Improved signal processing techniques for the analysis of high resolution serosal slow wave activity in the stomach. , 2011, 2011, 1737-40.		36
14	A Miniature Configurable Wireless System for Recording Gastric Electrophysiological Activity and Delivering High-Energy Electrical Stimulation. IEEE Journal on Emerging and Selected Topics in Circuits and Systems, 2018, 8, 221-229.	2.7	34
15	Multiâ€channel wireless mapping of gastrointestinal serosal slow wave propagation. Neurogastroenterology and Motility, 2015, 27, 580-585.	1.6	32
16	Progress in Mathematical Modeling of Gastrointestinal Slow Wave Abnormalities. Frontiers in Physiology, 2018, 8, 1136.	1.3	30
17	Acute Slow Wave Responses to High-Frequency Gastric Electrical Stimulation in Patients With Gastroparesis Defined by High-Resolution Mapping. Neuromodulation, 2016, 19, 864-871.	0.4	29
18	The virtual intestine: in silico modeling of small intestinal electrophysiology and motility and the applications. Wiley Interdisciplinary Reviews: Systems Biology and Medicine, 2016, 8, 69-85.	6.6	26

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19	Altered colonic motility is associated with low anterior resection syndrome. Colorectal Disease, 2021, 23, 415-423.	0.7	25
20	Strategies to Refine Gastric Stimulation and Pacing Protocols: Experimental and Modeling Approaches. Frontiers in Neuroscience, 2021, 15, 645472.	1.4	23
21	High-resolution mapping of gastric slow-wave recovery profiles: biophysical model, methodology, and demonstration of applications. American Journal of Physiology - Renal Physiology, 2017, 313, G265-G276.	1.6	20
22	A comparison of gold versus silver electrode contacts for high-resolution gastric electrical mapping using flexible printed circuit board arrays. Physiological Measurement, 2011, 32, N13-N22.	1.2	19
23	A theoretical study of the initiation, maintenance and termination of gastric slow wave re-entry. Mathematical Medicine and Biology, 2015, 32, dqu023.	0.8	19
24	Relationships between gastric slow wave frequency, velocity, and extracellular amplitude studied by a joint experimentalâ€theoretical approach. Neurogastroenterology and Motility, 2018, 30, e13152.	1.6	17
25	High-resolution Mapping of Hyperglycemia-induced Gastric Slow Wave Dysrhythmias. Journal of Neurogastroenterology and Motility, 2019, 25, 276-285.	0.8	17
26	Automated Classification and Identification of Slow Wave Propagation Patterns in Gastric Dysrhythmia. Annals of Biomedical Engineering, 2014, 42, 177-192.	1.3	16
27	Highâ€resolution optical mapping of gastric slow wave propagation. Neurogastroenterology and Motility, 2019, 31, e13449.	1.6	16
28	Multi-day, multi-sensor ambulatory monitoring of gastric electrical activity. Physiological Measurement, 2019, 40, 025011.	1.2	16
29	Simultaneous anterior and posterior serosal mapping of gastric slowâ€wave dysrhythmias induced by vasopressin. Experimental Physiology, 2016, 101, 1206-1217.	0.9	15
30	A novel retractable laparoscopic device for mapping gastrointestinal slow wave propagation patterns. Surgical Endoscopy and Other Interventional Techniques, 2017, 31, 477-486.	1.3	15
31	Dynamic slowâ€wave interactions in the rabbit small intestine defined using highâ€resolution mapping. Neurogastroenterology and Motility, 2019, 31, e13670.	1.6	15
32	Gastric ablation as a novel technique for modulating electrical conduction in the in vivo stomach. American Journal of Physiology - Renal Physiology, 2021, 320, G573-G585.	1.6	15
33	Time-Delay Mapping of High-Resolution Gastric Slow-Wave Activity. IEEE Transactions on Biomedical Engineering, 2017, 64, 166-172.	2.5	14
34	Suppression of ventilation artifacts for gastrointestinal slow wave recordings. , 2017, 2017, 2769-2772.		14
35	Bioelectrical Signals for the Diagnosis and Therapy of Functional Gastrointestinal Disorders. Applied Sciences (Switzerland), 2020, 10, 8102.	1.3	14
36	The influence of interstitial cells of Cajal loss and aging on slow wave conduction velocity in the human stomach. Physiological Reports, 2021, 8, e14659.	0.7	14

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37	Intsy: a low-cost, open-source, wireless multi-channel bioamplifier system. Physiological Measurement, 2018, 39, 035008.	1.2	13
38	Design and Validation of a Surface-Contact Electrode for Gastric Pacing and Concurrent Slow-Wave Mapping. IEEE Transactions on Biomedical Engineering, 2021, 68, 2574-2581.	2.5	13
39	A Formal Approach for Scalable Simulation of Gastric ICC Electrophysiology. IEEE Transactions on Biomedical Engineering, 2019, 66, 3320-3329.	2.5	11
40	Mapping small intestine bioelectrical activity using high-resolution printed-circuit-board electrodes. , 2011, 2011, 4951-4.		10
41	Correct techniques for extracellular recordings of electrical activity in gastrointestinal muscle. Nature Reviews Gastroenterology and Hepatology, 2017, 14, 372-372.	8.2	10
42	ManoMap: an automated system for characterization of colonic propagating contractions recorded by high-resolution manometry. Medical and Biological Engineering and Computing, 2021, 59, 417-429.	1.6	10
43	Targeted ablation of gastric pacemaker sites to modulate patterns of bioelectrical slow wave activation and propagation in an anesthetized pig model. American Journal of Physiology - Renal Physiology, 2022, 322, G431-G445.	1.6	10
44	Quantification of velocity anisotropy during gastric electrical arrhythmia. , 2011, 2011, 4402-5.		9
45	Feasibility of High-Resolution Electrical Mapping for Characterizing Conduction Blocks Created by Gastric Ablation. , 2019, 2019, 170-173.		9
46	A novel approach for model-based design of gastric pacemakers. Computers in Biology and Medicine, 2020, 116, 103576.	3.9	9
47	Electroceutical Approaches for Gastroparesis. , 2020, , 967-982.		9
48	High-Resolution Colonic Manometry Pressure Profiles Are Similar in Asymptomatic Diverticulosis and Controls. Digestive Diseases and Sciences, 2021, 66, 832-842.	1.1	8
49	Localized gastric distension disrupts slow-wave entrainment leading to temporary ectopic propagation: a high-resolution electrical mapping study. American Journal of Physiology - Renal Physiology, 2021, 321, G656-G667.	1.6	8
50	Effects of magnetogastrography sensor configurations in tracking slow wave propagation. Computers in Biology and Medicine, 2021, 129, 104169.	3.9	7
51	Effects of Electrode Diameter and Contact Material on Signal Morphology of Gastric Bioelectrical Slow Wave Recordings. Annals of Biomedical Engineering, 2020, 48, 1407-1418.	1.3	7
52	High-Resolution Spatiotemporal Quantification of Intestinal Motility With Free-Form Deformation. IEEE Transactions on Biomedical Engineering, 2022, 69, 2077-2086.	2.5	7
53	Development and feasibility of an ambulatory acquisition system for fiberâ€optic highâ€resolution colonic manometry. Neurogastroenterology and Motility, 2019, 31, e13704.	1.6	6
54	Muscle-Specific High-Density Electromyography Arrays for Hand Gesture Classification. IEEE Transactions on Biomedical Engineering, 2022, 69, 1758-1766.	2.5	6

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55	Hyperactive Distal Colonic Motility and Recovery Patterns Following Right Colectomy: A High-Resolution Manometry Study. Diseases of the Colon and Rectum, 2023, 66, 579-590.	0.7	6
56	Iterative Covariance-Based Removal of Time-Synchronous Artifacts: Application to Gastrointestinal Electrical Recordings. IEEE Transactions on Biomedical Engineering, 2016, 63, 2262-2272.	2.5	5
57	High-Density Electromyography Based Control of Robotic Devices: On the Execution of Dexterous Manipulation Tasks. , 2020, , .		5
58	Highâ€resolution in vivo monophasic gastric slow waves to quantify activation and recovery profiles. Neurogastroenterology and Motility, 2022, 34, .	1.6	5
59	Detection of the Recovery Phase of in vivo gastric slow wave recordings. , 2015, 2015, 6094-7.		4
60	Design and application of a novel gastric pacemaker. , 2017, 2017, 2181-2184.		4
61	A Framework for Spatiotemporal Analysis of Gastrointestinal Spike Burst Propagation. , 2019, 2019, 4619-4622.		4
62	A Novel High-Density Electromyography Probe for Evaluating Anorectal Neurophysiology: Design, Human Feasibility Study, and Validation with Trans-Sacral Magnetic Stimulation. Annals of Biomedical Engineering, 2021, 49, 502-514.	1.3	4
63	Improved Visualization of Gastrointestinal Slow Wave Propagation Using a Novel Wavefront-Orientation Interpolation Technique. IEEE Transactions on Biomedical Engineering, 2018, 65, 319-326.	2.5	3
64	High-Resolution Mapping of Intestinal Spike Bursts and Motility. , 2020, 2020, 1779-1782.		3
65	Transmural recordings of gastrointestinal electrical activity using a spatially-dense microelectrode array. Physiological Measurement, 2021, 42, 035009.	1.2	3
66	An Improved Understanding of Gut Function through High-Resolution Mapping and Multiscale Computational Modeling of the Gastrointestinal Tract. , 2014, , 273-301.		2
67	A system for automated quantification of cutaneous electrogastrograms. , 2015, 2015, 6098-101.		2
68	Mo1593 A Miniature Wireless Gastric Stimulator for High-Energy Stimulation. Gastroenterology, 2016, 150, S723.	0.6	2
69	Ambulatory gastric mucosal slow wave recording for chronic experimental studies. , 2017, 2017, 755-758.		2
70	Detection of Monophasic Slow-wave Activation Phase Using Wavelet Decomposition. , 2019, 2019, 7157-7160.		2
71	Design and Application of an Inflatable Cuff to Aid High-Resolution Intestinal Slow Wave Recordings *. , 2020, 2020, 3953-3956.		2
72	A V-Net Based Deep Learning Model for Segmentation and Classification of Histological Images of Gastric Ablation. , 2020, 2020, 1436-1439.		2

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73	Continuum Based Bioelectrical Simulations using Structurally Realistic Gastrointestinal Pacemaker Cell Networks. , 2020, 2020, 2483-2486.		2
74	Intraoperative serosal extracellular mapping of the human distal colon: a feasibility study. BioMedical Engineering OnLine, 2021, 20, 105.	1.3	2
75	Reconstruction of stomach geometry using magnetic source localization. , 2021, 2021, 4234-4237.		2
76	Quantification of Gastric Contractions Using MRI with a Natural Contrast Agent. , 2021, 2021, 3601-3604.		2
77	Circumferential Loop and Functional Re-Entry as Novel Mechanisms of Small Intestine Pacesetting. Gastroenterology, 2011, 140, S-374.	0.6	1
78	The Gastric Electrical Mapping Suite (GEMS): Software for Analyzing and Visualizing Gastrointestinal Multi-Electrode Recordings. Gastroenterology, 2011, 140, S-120.	0.6	1
79	Extending the automated gastrointestinal analysis pipeline: Removal of invalid slow wave marks in gastric serosal recordings. , 2015, 2015, 1938-41.		1
80	Determining the efficient inter-electrode distance for high-resolution mapping using a mathematical model of human gastric dysrhythmias. , 2015, 2015, 1448-51.		1
81	Tu1222 A Multi-Channel Laparoscopic Device for Mapping Gastric Slow Wave Activation Patterns: A Pilot Clinical Trial. Gastroenterology, 2015, 148, S-826.	0.6	1
82	Mo1587 Gastric Ablation As a Novel Therapeutic Technique for Modulating Gastric Slow Wave Activity. Gastroenterology, 2016, 150, S721.	0.6	1
83	Mo1588 High-Resolution Mapping of Slow Wave Propagation From the Gastric Mucosa Using Flexible Printed Circuit Electrodes. Gastroenterology, 2016, 150, S721.	0.6	1
84	Source localization for gastric electrical activity using simulated magnetogastrographic data. , 2019, 2019, 2336-2339.		1
85	Methods for Visualization of Gastric Endoscopic Mapping Data From Three-Dimensional, Non-Uniform Electrode Arrays. , 2019, 2019, 2222-2225.		1
86	Quantification of Dynamic Gastric Slow Wave Activity using Recurrence Plots. , 2019, 2019, 729-732.		1
87	Trace Mapping: A New Visualization Technique for Analyzing Gastrointestinal High-Resolution Electrical Mapping Data. , 2020, 2020, 5212-5215.		1
88	Transmural Temperature Monitoring to Quantify Thermal Conduction And Lesion Formation During Gastric Ablation, an Emerging Therapy for Gastric Dysrhythmias. , 2020, 2020, 5259-5262.		1
89	Computational Reconstruction of 3D Stomach Geometry using Magnetic Field Source Localization. , 2020, 2020, 2376.		1
90	Detection of Slow Wave Propagation Direction Using Bipolar High-Resolution Recordings. , 2020, 2020, 837-840.		1

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91	Simulation-based Analysis of Magnetogastrography Sensor Configurations for Characterizing Gastric Slow Wave Dysrhythmias*. , 2020, 2020, 2512-2515.		1
92	Quantification of Gastric Slow Wave Velocity Using Bipolar High-Resolution Recordings. IEEE Transactions on Biomedical Engineering, 2022, 69, 1063-1071.	2.5	1
93	A novel mechanism for acute colonic pseudoâ€obstruction revealed by highâ€resolution manometry: A case report. Physiological Reports, 2021, 9, e14950.	0.7	1
94	Potential causes of the preoperative increase in the rectosigmoid cyclic motor pattern: A highâ€resolution manometry study. Physiological Reports, 2021, 9, e15091.	0.7	1
95	A framework for the design of a closed-loop gastric pacemaker for treating conduction block. Computer Methods and Programs in Biomedicine, 2022, 216, 106652.	2.6	1
96	Emergence of Circumferential Slow Wave Propagation During Gastric Dysrhythmias in Diabetic Gastroparesis. Gastroenterology, 2011, 140, S-705.	0.6	0
97	Quantitative Analysis of Electrical Activity in the Gastrointestinal Tract. Lecture Notes in Computational Vision and Biomechanics, 2013, , 71-93.	0.5	0
98	Automated classification of spatiotemporal characteristics of gastric slow wave propagation. , 2013, 2013, 7342-5.		0
99	Su2014 A Multichannel Wireless Mapping System for Monitoring Gastric Slow Wave Propagation. Gastroenterology, 2014, 146, S-523.	0.6	0
100	Su1867 Simultaneous Anterior and Posterior High-Resolution Mapping of Gastric Dysrhythmias Induced by Vasopressin in Canine. Gastroenterology, 2015, 148, S-538.	0.6	0
101	Su1425 Effects of High-Frequency Gastric Electrical Stimulation on Slow Wave Activity in Gastroparesis, Evaluated by High-Resolution Mapping. Gastroenterology, 2015, 148, S-506.	0.6	0
102	Su1855 The Frequency-Velocity Correlation of Porcine Gastric Slow Waves Defined Through High-Resolution Entrainment Mapping. Gastroenterology, 2015, 148, S-534-S-535.	0.6	0
103	Su1856 High-Resolution Mapping of Slow Wave Activity in the Terminal Gastric Antrum in Humans. Gastroenterology, 2015, 148, S-535.	0.6	0
104	Su1445 A Finite-State Machine Model for Real-Time Analysis of Gastric Rhythmic Activity. Gastroenterology, 2015, 148, S-513-S-514.	0.6	0
105	Sa1684 Quantification of the Anisotropic Ratio of Gastric Tissue Conductivities: Methods and Application. Gastroenterology, 2016, 150, S345.	0.6	0
106	Sa1700 Spatiotemporal and Morphological Differences in Serosal and Mucosal Electrical Recording of Porcine Colonic Slow Wave. Gastroenterology, 2016, 150, S350-S351.	0.6	0
107	Sa1704 Recovery Phase Mapping of Slow Waves in High-Resolution. Gastroenterology, 2016, 150, S351-S352.	0.6	0
108	Reply. Experimental Physiology, 2017, 102, 135-135.	0.9	0

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109	Relationships between Slow Wave Frequency, Conduction Velocity and Amplitude in the Human Stomach. Gastroenterology, 2017, 152, S518.	0.6	0
110	A Spatially-dense Microfabricated Photolithographic Electrode Array for Gastrointestinal Slow Wave Recordings *. , 2020, 2020, 3957-3960.		0
111	Characterization of Slow Wave Activity in Ex-vivo Porcine Small Intestine Segments. , 2021, 2021, 7296-7299.		0