

# Felix Scholkmann

## List of Publications by Year in descending order

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Version: 2024-02-01

106  
papers

6,084  
citations

147566

31  
h-index

79541

73  
g-index

109  
all docs

109  
docs citations

109  
times ranked

5059  
citing authors

#	ARTICLE	IF	CITATIONS
1	A review on continuous wave functional near-infrared spectroscopy and imaging instrumentation and methodology. <i>NeuroImage</i> , 2014, 85, 6-27.	2.1	1,371
2	How to detect and reduce movement artifacts in near-infrared imaging using moving standard deviation and spline interpolation. <i>Physiological Measurement</i> , 2010, 31, 649-662.	1.2	469
3	False positives and false negatives in functional near-infrared spectroscopy: issues, challenges, and the way forward. <i>Neurophotonics</i> , 2016, 3, 031405.	1.7	378
4	An Efficient Algorithm for Automatic Peak Detection in Noisy Periodic and Quasi-Periodic Signals. <i>Algorithms</i> , 2012, 5, 588-603.	1.2	275
5	General equation for the differential pathlength factor of the frontal human head depending on wavelength and age. <i>Journal of Biomedical Optics</i> , 2013, 18, 105004.	1.4	269
6	Applications of Functional Near-Infrared Spectroscopy (fNIRS) Neuroimaging in Exercise—Cognition Science: A Systematic, Methodology-Focused Review. <i>Journal of Clinical Medicine</i> , 2018, 7, 466.	1.0	263
7	Current Status and Issues Regarding Pre-processing of fNIRS Neuroimaging Data: An Investigation of Diverse Signal Filtering Methods Within a General Linear Model Framework. <i>Frontiers in Human Neuroscience</i> , 2018, 12, 505.	1.0	251
8	Functional near-infrared spectroscopy in movement science: a systematic review on cortical activity in postural and walking tasks. <i>Neurophotonics</i> , 2017, 4, 041403.	1.7	176
9	Between-brain connectivity during imitation measured by fNIRS. <i>NeuroImage</i> , 2012, 63, 212-222.	2.1	165
10	Best practices for fNIRS publications. <i>Neurophotonics</i> , 2021, 8, 012101.	1.7	142
11	Human Intracranial High Frequency Oscillations (HFOs) Detected by Automatic Time-Frequency Analysis. <i>PLoS ONE</i> , 2014, 9, e94381.	1.1	128
12	Signal Processing in Functional Near-Infrared Spectroscopy (fNIRS): Methodological Differences Lead to Different Statistical Results. <i>Frontiers in Human Neuroscience</i> , 2017, 11, 641.	1.0	125
13	A new methodical approach in neuroscience: assessing inter-personal brain coupling using functional near-infrared imaging (fNIRI) hyperscanning. <i>Frontiers in Human Neuroscience</i> , 2013, 7, 813.	1.0	111
14	Permutation entropy based time series analysis: Equalities in the input signal can lead to false conclusions. <i>Physics Letters, Section A: General, Atomic and Solid State Physics</i> , 2017, 381, 1883-1892.	0.9	100
15	Modelling confounding effects from extracerebral contamination and systemic factors on functional near-infrared spectroscopy. <i>NeuroImage</i> , 2016, 143, 91-105.	2.1	99
16	Heart Rate Variability as a Prognostic Factor for Cancer Survival — A Systematic Review. <i>Frontiers in Physiology</i> , 2018, 9, 623.	1.3	78
17	Testing the potential of a virtual reality neurorehabilitation system during performance of observation, imagery and imitation of motor actions recorded by wireless functional near-infrared spectroscopy (fNIRS). <i>Journal of NeuroEngineering and Rehabilitation</i> , 2010, 7, 57.	2.4	77
18	Between-brain coherence during joint n-back task performance: A two-person functional near-infrared spectroscopy study. <i>Behavioural Brain Research</i> , 2012, 234, 212-222.	1.2	77

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19	Measuring tissue hemodynamics and oxygenation by continuous-wave functional near-infrared spectroscopy—how robust are the different calculation methods against movement artifacts?. <i>Physiological Measurement</i> , 2014, 35, 717-734.	1.2	67
20	Electron microscopy of SARS-CoV-2: a challenging task – Authors' reply. <i>Lancet</i> , The, 2020, 395, e100.	6.3	64
21	Wearable and modular functional near-infrared spectroscopy instrument with multidistance measurements at four wavelengths. <i>Neurophotonics</i> , 2017, 4, 1.	1.7	57
22	Non-neuronal evoked and spontaneous hemodynamic changes in the anterior temporal region of the human head may lead to misinterpretations of functional near-infrared spectroscopy signals. <i>Neurophotonics</i> , 2017, 5, 1.	1.7	48
23	False positives and false negatives in functional near-infrared spectroscopy: issues, challenges, and the way forward. <i>Neurophotonics</i> , 2016, 3, 030401.	1.7	47
24	Short-channel regression in functional near-infrared spectroscopy is more effective when considering heterogeneous scalp hemodynamics. <i>Neurophotonics</i> , 2020, 7, 035011.	1.7	46
25	Microbial Colonization From the Fetus to Early Childhood—A Comprehensive Review. <i>Frontiers in Cellular and Infection Microbiology</i> , 2020, 10, 573735.	1.8	42
26	Effect of short-term colored-light exposure on cerebral hemodynamics and oxygenation, and systemic physiological activity. <i>Neurophotonics</i> , 2017, 4, 1.	1.7	40
27	Order out of Randomness: Self-Organization Processes in Astrophysics. <i>Space Science Reviews</i> , 2018, 214, 1.	3.7	38
28	A Distinct Role of the Autonomic Nervous System in Modulating the Function of Lymphatic Vessels under Physiological and Tumor-Draining Conditions. <i>Cell Reports</i> , 2019, 27, 3305-3314.e13.	2.9	38
29	The Effect of Inner Speech on Arterial CO <sub>2</sub> and Cerebral Hemodynamics and Oxygenation: A Functional NIRS Study. <i>Advances in Experimental Medicine and Biology</i> , 2013, 789, 81-87.	0.8	37
30	The Pulse-Respiration Quotient: A Powerful but Untapped Parameter for Modern Studies About Human Physiology and Pathophysiology. <i>Frontiers in Physiology</i> , 2019, 10, 371.	1.3	35
31	Trial-to-trial variability differentiates motor imagery during observation between low versus high responders: A functional near-infrared spectroscopy study. <i>Behavioural Brain Research</i> , 2012, 229, 29-40.	1.2	34
32	The relationship between sympathetic nervous activity and cerebral hemodynamics and oxygenation: A study using skin conductance measurement and functional near-infrared spectroscopy. <i>Behavioural Brain Research</i> , 2014, 270, 95-107.	1.2	34
33	In vivo visualization and quantification of collecting lymphatic vessel contractility using near-infrared imaging. <i>Scientific Reports</i> , 2016, 6, 22930.	1.6	33
34	Non-chemical and non-contact cell-to-cell communication: a short review. <i>American Journal of Translational Research (discontinued)</i> , 2013, 5, 586-93.	0.0	29
35	Cerebral hemodynamic and oxygenation changes induced by inner and heard speech: a study combining functional near-infrared spectroscopy and capnography. <i>Journal of Biomedical Optics</i> , 2014, 19, 017002.	1.4	28
36	Extension of mental preparation positively affects motor imagery as compared to motor execution: A functional near-infrared spectroscopy study. <i>Cortex</i> , 2012, 48, 593-603.	1.1	27

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37	Systemic physiology augmented functional near-infrared spectroscopy: a powerful approach to study the embodied human brain. <i>Neurophotonics</i> , 2022, 9, .	1.7	26
38	Long range physical cell-to-cell signalling via mitochondria inside membrane nanotubes: a hypothesis. <i>Theoretical Biology and Medical Modelling</i> , 2016, 13, 16.	2.1	25
39	Autopsy-Based Pulmonary and Vascular Pathology: Pulmonary Endotheliitis and Multi-Organ Involvement in COVID-19 Associated Deaths. <i>Respiration</i> , 2022, 101, 155-165.	1.2	25
40	A New Approach for Automatic Removal of Movement Artifacts in Near-Infrared Spectroscopy Time Series by Means of Acceleration Data. <i>Algorithms</i> , 2015, 8, 1052-1075.	1.2	24
41	Phosphenes, retinal discrete dark noise, negative afterimages and retinogeniculate projections: A new explanatory framework based on endogenous ocular luminescence. <i>Progress in Retinal and Eye Research</i> , 2017, 60, 101-119.	7.3	24
42	In vivo precision assessment of a near-infrared spectroscopy-based tissue oximeter (OxyPrem v1.3) in neonates considering systemic hemodynamic fluctuations. <i>Journal of Biomedical Optics</i> , 2018, 23, 1.	1.4	24
43	The Role of Methemoglobin and Carboxyhemoglobin in COVID-19: A Review. <i>Journal of Clinical Medicine</i> , 2021, 10, 50.	1.0	24
44	Physiological effects of mechanical pain stimulation at the lower back measured by functional near-infrared spectroscopy and capnography. <i>Journal of Integrative Neuroscience</i> , 2014, 13, 121-142.	0.8	23
45	Dog behavior but not frontal brain reaction changes in repeated positive interactions with a human: A non-invasive pilot study using functional near-infrared spectroscopy (fNIRS). <i>Behavioural Brain Research</i> , 2015, 281, 172-176.	1.2	22
46	Individual Differences in Hemodynamic Responses Measured on the Head Due to a Long-Term Stimulation Involving Colored Light Exposure and a Cognitive Task: A SPA-fNIRS Study. <i>Brain Sciences</i> , 2021, 11, 54.	1.1	22
47	Cortical Sensorimotor Processing of Painful Pressure in Patients with Chronic Lower Back Pain—An Optical Neuroimaging Study using fNIRS. <i>Frontiers in Human Neuroscience</i> , 2016, 10, 578.	1.0	20
48	New Directions in Exercise Prescription: Is There a Role for Brain-Derived Parameters Obtained by Functional Near-Infrared Spectroscopy?. <i>Brain Sciences</i> , 2020, 10, 342.	1.1	20
49	New Parents Experienced Lower Parenting Self-Efficacy during the COVID-19 Pandemic Lockdown. <i>Children</i> , 2021, 8, 79.	0.6	20
50	Cerebral and systemic physiological effects of wearing face masks in young adults. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2021, 118, .	3.3	20
51	Systematic Analysis of Mouse Genome Reveals Distinct Evolutionary and Functional Properties Among Circadian and Ultradian Genes. <i>Frontiers in Physiology</i> , 2018, 9, 1178.	1.3	19
52	A new method for fusion, denoising and enhancement of x-ray images retrieved from Talbot's Lau grating interferometry. <i>Physics in Medicine and Biology</i> , 2014, 59, 1425-1440.	1.6	17
53	Color-dependent changes in humans during a verbal fluency task under colored light exposure assessed by SPA-fNIRS. <i>Scientific Reports</i> , 2021, 11, 9654.	1.6	16
54	Frontal cerebral oxygenation asymmetry: intersubject variability and dependence on systemic physiology, season, and time of day. <i>Neurophotonics</i> , 2020, 7, 1.	1.7	16

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55	Assessment of intermittent UMTS electromagnetic field effects on blood circulation in the human auditory region using a near-infrared system. <i>Bioelectromagnetics</i> , 2012, 33, 40-54.	0.9	15
56	Two emerging topics regarding long-range physical signaling in neurosystems: Membrane nanotubes and electromagnetic fields. <i>Journal of Integrative Neuroscience</i> , 2015, 14, 135-153.	0.8	15
57	Different mechanosensory stimulations of the lower back elicit specific changes in hemodynamics and oxygenation in cortical sensorimotor areas—A fNIRS study. <i>Brain and Behavior</i> , 2016, 6, e00575.	1.0	15
58	Cerebral hemodynamic responses in preterm-born neonates to visual stimulation: classification according to subgroups and analysis of frontotemporal-occipital functional connectivity. <i>Neurophotonics</i> , 2019, 6, 1.	1.7	13
59	The Physical Mechanism for Retinal Discrete Dark Noise: Thermal Activation or Cellular Ultraweak Photon Emission?. <i>PLoS ONE</i> , 2016, 11, e0148336.	1.1	12
60	Relationship between intelligence and spectral characteristics of brain biophoton emission: Correlation does not automatically imply causation. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2016, 113, E5540-1.	3.3	12
61	Short-term pulse rate variability is better characterized by functional near-infrared spectroscopy than by photoplethysmography. <i>Journal of Biomedical Optics</i> , 2016, 21, 091308.	1.4	12
62	Impact of Changes in Systemic Physiology on fNIRS/NIRS Signals: Analysis Based on Oblique Subspace Projections Decomposition. <i>Advances in Experimental Medicine and Biology</i> , 2018, 1072, 119-125.	0.8	12
63	Systemic physiology augmented functional near-infrared spectroscopy hyperscanning: a first evaluation investigating entrainment of spontaneous activity of brain and body physiology between subjects. <i>Neurophotonics</i> , 2022, 9, 026601.	1.7	12
64	Enhancement of motor imagery-related cortical activation during first-person observation measured by functional near-infrared spectroscopy. <i>European Journal of Neuroscience</i> , 2012, 35, 1513-1521.	1.2	11
65	Oscillations of ultra-weak photon emission from cancer and non-cancer cells stressed by culture medium change and TNF- $\alpha$ . <i>Scientific Reports</i> , 2017, 7, 11249.	1.6	10
66	Multimodal recording of brain activity in term newborns during photic stimulation by near-infrared spectroscopy and electroencephalography. <i>Journal of Biomedical Optics</i> , 2012, 17, 086011.	1.4	9
67	Additional evidence supporting the view of the neural signal as a propagating density pulse—A comment on Barz et al. (2013). <i>Medical Hypotheses</i> , 2014, 82, 243.	0.8	9
68	Phosphene perception is due to the ultra-weak photon emission produced in various parts of the visual system: glutamate in the focus. <i>Reviews in the Neurosciences</i> , 2016, 27, 291-299.	1.4	9
69	A Multi-Layered Study on Harmonic Oscillations in Mammalian Genomics and Proteomics. <i>International Journal of Molecular Sciences</i> , 2019, 20, 4585.	1.8	9
70	Characterizing reproducibility of cerebral hemodynamic responses when applying short-channel regression in functional near-infrared spectroscopy. <i>Neurophotonics</i> , 2022, 9, 015004.	1.7	9
71	The circadecadal rhythm of oscillation of umbilical cord blood parameters correlates with geomagnetic activity—An analysis of long-term measurements (1999–2011). <i>Chronobiology International</i> , 2016, 33, 1136-1147.	0.9	8
72	Absolute Values of Optical Properties ( $\mu_a$ , $\mu_s$ , $\mu_{eff}$ and DPF) of Human Head Tissue: Dependence on Head Region and Individual. <i>Advances in Experimental Medicine and Biology</i> , 2018, 1072, 325-330.	0.8	8

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73	Long-Term Changes in Optical Properties ( $\mu_a$ , $\mu_s$ , $\mu_{eff}$ and DPF) of Human Head Tissue During Functional Neuroimaging Experiments. <i>Advances in Experimental Medicine and Biology</i> , 2018, 1072, 331-337.	0.8	8
74	Assessment of Potential Short-Term Effects of Intermittent UMTS Electromagnetic Fields on Blood Circulation in an Exploratory Study, Using Near-Infrared Imaging. <i>Advances in Experimental Medicine and Biology</i> , 2012, 737, 83-88.	0.8	7
75	Electromagnetic fields and optomechanics in cancer diagnostics and treatment. <i>Frontiers in Bioscience - Landmark</i> , 2018, 23, 1391-1406.	3.0	7
76	Reference Ranges for Hemoglobin and Hematocrit Levels in Neonates as a Function of Gestational Age (22-42 Weeks) and Postnatal Age (0-29 Days): Mathematical Modeling. <i>Children</i> , 2019, 6, 38.	0.6	7
77	Comparison of Two NIRS Tissue Oximeters (Moxy and Nimo) for Non-Invasive Assessment of Muscle Oxygenation and Perfusion. <i>Advances in Experimental Medicine and Biology</i> , 2020, 1232, 253-259.	0.8	7
78	Absorption spectra of early stool from preterm infants need to be considered in abdominal NIRS oximetry. <i>Biomedical Optics Express</i> , 2019, 10, 2784.	1.5	7
79	Endogenous spontaneous ultraweak photon emission in the formation of eye-specific retinogeniculate projections before birth. <i>Reviews in the Neurosciences</i> , 2016, 27, 411-419.	1.4	6
80	Changes in Spinal Muscle Oxygenation and Perfusion During the Biering-Sørensen Test: Preliminary Results of a Study Employing NIRS-Based Muscle Oximetry. <i>Advances in Experimental Medicine and Biology</i> , 2018, 1072, 103-109.	0.8	6
81	Correlations between Background Radiation Inside a Multilayer Interleaving Structure, Geomagnetic Activity, and Cosmic Radiation: A Fourth-Order Cumulant-Based Correlation Analysis. <i>Mathematics</i> , 2020, 8, 344.	1.1	6
82	COVID-19: The Significance of Platelets, Mitochondria, Vitamin D, Serotonin and the Gut Microbiota. <i>Current Medicinal Chemistry</i> , 2021, 28, 7634-7657.	1.2	6
83	Newborn Incubators Do Not Protect from High Noise Levels in the Neonatal Intensive Care Unit and Are Relevant Noise Sources by Themselves. <i>Children</i> , 2021, 8, 704.	0.6	6
84	The Role of Systemic Physiology in Individual Hemodynamic Responses Measured on the Head Due to Long-Term Stimulation Involving Colored Light Exposure and a Cognitive Task: An SPA-fNIRS Study. <i>Brain Sciences</i> , 2022, 12, 597.	1.1	6
85	Characterizing Fluctuations of Arterial and Cerebral Tissue Oxygenation in Preterm Neonates by Means of Data Analysis Techniques for Nonlinear Dynamical Systems. <i>Advances in Experimental Medicine and Biology</i> , 2016, 876, 511-519.	0.8	5
86	In Vitro Comparisons of Near-Infrared Spectroscopy Oximeters: Impact of Slow Changes in Scattering of Liquid Phantoms. <i>Advances in Experimental Medicine and Biology</i> , 2018, 1072, 375-379.	0.8	5
87	Exposure to High-Frequency Sound and Ultrasound in Public Places: Examples from Zurich, Switzerland. <i>Acoustics</i> , 2019, 1, 816-824.	0.8	5
88	Characterization of the optical properties of color pastes for the design of optical phantoms mimicking biological tissue. <i>Journal of Biophotonics</i> , 2019, 12, e201800300.	1.1	5
89	Long-Term Blue Light Exposure Changes Frontal and Occipital Cerebral Hemodynamics: Not All Subjects React the Same. <i>Advances in Experimental Medicine and Biology</i> , 2021, 1269, 217-222.	0.8	5
90	Pulse oximetry, racial bias and statistical bias: further improvements of pulse oximetry are necessary. <i>Annals of Intensive Care</i> , 2022, 12, 19.	2.2	5

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91	Liquid Blood Phantoms to Validate NIRS Oximeters: Yeast Versus Nitrogen for Deoxygenation. <i>Advances in Experimental Medicine and Biology</i> , 2018, 1072, 381-385.	0.8	4
92	Right-Left Asymmetry of Prefrontal Cerebral Oxygenation: Does it Depend on Systemic Physiological Activity, Absolute Tissue Oxygenation or Hemoglobin Concentration?. <i>Advances in Experimental Medicine and Biology</i> , 2020, 1232, 105-112.	0.8	4
93	Possible role of biochemiluminescent photons for lysergic acid diethylamide (LSD)-induced phosphenes and visual hallucinations. <i>Reviews in the Neurosciences</i> , 2017, 28, 77-86.	1.4	3
94	Exoplanet Predictions Based on Harmonic Orbit Resonances. <i>Galaxies</i> , 2017, 5, 56.	1.1	3
95	Influence of study design on effects of mask wearing on fMRI BOLD contrast and systemic physiology – A comment on Law et al. (2021). <i>NeuroImage</i> , 2021, 244, 118549.	2.1	3
96	The Effect of Venous and Arterial Occlusion of the Arm on Changes in Tissue Hemodynamics, Oxygenation, and Ultra-Weak Photon Emission. <i>Advances in Experimental Medicine and Biology</i> , 2013, 765, 257-264.	0.8	3
97	Myelin sheath and cyanobacterial thylakoids as concentric multilamellar structures with similar bioenergetic properties. <i>Open Biology</i> , 2021, 11, 210177.	1.5	3
98	Error detection and error memory in spatial navigation as reflected by electrodermal activity. <i>Cognitive Processing</i> , 2013, 14, 377-389.	0.7	2
99	The RONO (Rank-Order-Normalization) Procedure for Power-Spectrum Analysis of Datasets with Non-Normal Distributions. <i>Algorithms</i> , 2020, 13, 157.	1.2	2
100	No alteration of back muscle oxygenation during isometric exercise in individuals with non-specific low back pain. <i>Scientific Reports</i> , 2022, 12, 8306.	1.6	2
101	Changes in Water Properties in Human Tissue after Double Filtration Plasmapheresis – A Case Study. <i>Molecules</i> , 2022, 27, 3947.	1.7	2
102	Comment on “A new method for fusion, denoising and enhancement of x-ray images retrieved from Talbot–Lau grating interferometry”. <i>Physics in Medicine and Biology</i> , 2015, 60, 925-928.	1.6	1
103	Reply to: Role of ambient humidity underestimated in research on correlation between radioactive decay rates and space weather. <i>Scientific Reports</i> , 2022, 12, 2530.	1.6	1
104	The Influence of Inner and Heard Speech in Arts Speech Therapy on Brain Oxygenation and Hemodynamics. <i>Journal of Alternative and Complementary Medicine</i> , 2014, 20, A78-A78.	2.1	0
105	Synchronized Oscillations of Arterial Oxygen Saturation, Cerebral Tissue Oxygenation and Heart Rate in Preterm Neonates: Investigation of Long-Term Measurements with Multiple Einstein’s Cross Wavelet Analysis. <i>Advances in Experimental Medicine and Biology</i> , 2018, 1072, 157-161.	0.8	0
106	A four-month cycle in COVID-19 cases in Switzerland. <i>Innovation(China)</i> , 2022, 3, 100232.	5.2	0