Marcel Fajkus

List of Publications by Year
in descending order

127 papers	964 citations	586496 16 h-index	563245 28 g-index
128 all docs	128 docs citations	128 times ranked	711 citing authors

#	Article	IF	Citations
1	Design of Fiber Bragg Grating Sensor Networks. IEEE Transactions on Instrumentation and Measurement, 2022, 71, 1-11.	2.4	8
2	A Comparison of Alternative Approaches to MR Cardiac Triggering: A Pilot Study at 3 Tesla. IEEE Journal of Biomedical and Health Informatics, 2022, 26, 2594-2605.	3.9	2
3	Fiber-Optic Breathing Mask: An Alternative Solution for MRI Respiratory Triggering. IEEE Transactions on Instrumentation and Measurement, 2022, 71, 1-13.	2.4	2
4	Pressure Membrane FBG Sensor Realized by 3D Technology. Sensors, 2021, 21, 5158.	2.1	5
5	Fiber-Optic Bragg System for the Dynamic Weighing of Municipal Waste: A Pilot Study. IEEE Access, 2021, 9, 99050-99059.	2.6	0
6	PDMS-FBG-Based Fiber Optic System for Traffic Monitoring in Urban Areas. IEEE Access, 2020, 8, 127648-127658.	2.6	3
7	A Novel FBG-Based Triggering System for Cardiac MR Imaging at 3 Tesla: A Pilot Pre-Clinical Study. IEEE Access, 2020, 8, 181205-181223.	2.6	5
8	Design of a New Method for Detection of Occupancy in the Smart Home Using an FBG Sensor. Sensors, 2020, 20, 398.	2.1	10
9	Implementation of Bragg grating to a geotextile for detection a critical infrastructure. , 2020, , .		0
10	MR Fully Compatible and Safe FBG Breathing Sensor: A Practical Solution for Respiratory Triggering. IEEE Access, 2019, 7, 123013-123025.	2.6	24
11	A Low-Cost System for Seismocardiography-Based Cardiac Triggering: A Practical Solution for Cardiovascular Magnetic Resonance Imaging at 3 Tesla. IEEE Access, 2019, 7, 118608-118629.	2.6	12
12	Vital Sign Monitoring and Cardiac Triggering at 1.5 Tesla: A Practical Solution by an MR-Ballistocardiography Fiber-Optic Sensor. Sensors, 2019, 19, 470.	2.1	29
13	Methods of Power Line Interference Elimination in EMG Signal. Journal of Biomimetics, Biomaterials and Biomedical Engineering, 2019, 40, 64-70.	0.5	5
14	Fiber-Optic Breath Sensors: A Comparison Study. Journal of Biomimetics, Biomaterials and Biomedical Engineering, 2019, 40, 56-63.	0.5	5
15	Use of Fiber-Optic Sensors for the Detection of the Rail Vehicles and Monitoring of the Rock Mass Dynamic Response Due to Railway Rolling Stock for the Civil Engineering Needs. Applied Sciences (Switzerland), 2019, 9, 134.	1.3	17
16	Portable Optical Fiber Bragg Grating Sensor for Monitoring Traffic Density. Applied Sciences (Switzerland), 2019, 9, 4796.	1.3	3
17	A novel modular fetal ECG STAN and HRV analysis: Towards robust hypoxia detection. Technology and Health Care, 2019, 27, 257-287.	0.5	5
18	Design of encapsulation of fiber Bragg grating for the traffic applications. , 2019, , .		0

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19	Smart Home room's occupancy monitoring using Fiber Bragg grating sensor. , 2019, , .		0
20	Ballistocardiography Signal Processing by Wavelet Transform. , 2018, , .		0
21	Use of wavelet transform for fetal phonocardiography processing. , 2018, , .		2
22	Compact Fiber Optic Trackside Sensor for Rail Vehicle Detection and Analysis. IFAC-PapersOnLine, 2018, 51, 220-224.	0.5	2
23	Utilization of Interoperability between the BACnet and KNX Technologies for Monitoring of Operational-Technical Functions in Intelligent Buildings by Means of the PI System SW Tool. IFAC-PapersOnLine, 2018, 51, 372-377.	0.5	3
24	Assessment of the Quality of Speech Signal Processing Within Voice Control of Operational-Technical Functions in the Smart Home by Means of the PESQ Algorithm. IFAC-PapersOnLine, 2018, 51, 202-207.	0.5	6
25	Comparison of fetal phonocardiography de-noising by wavelet transform and the FIR filter. , 2018, , .		5
26	SMART medical polydimethylsiloxane for monitoring vital signs of the human body. , 2018, , .		4
27	Magnetic Resonance Imaging Compatible Non-Invasive Fibre-Optic Sensors Based on the Bragg Gratings and Interferometers in the Application of Monitoring Heart and Respiration Rate of the Human Body: A Comparative Study. Sensors, 2018, 18, 3713.	2.1	33
28	Using the PI ProcessBook Software Tool to Monitor Room Occupancy in Smart Home Care. , 2018, , .		1
29	Use of a FIR filter for fetal phonocardiography processing. , 2018, , .		1
30	An Interferometric Sensor for Monitoring Respiratory and Heart Rate of the Human Body. , 2018, , .		1
31	Design of hybrid EPON network with fiber-optic breath sensors. , 2018, , .		0
32	Improved method of heuristic classification of vowels from an acoustic signal. Turkish Journal of Electrical Engineering and Computer Sciences, 2018, 26, 2901-2915.	0.9	1
33	Speech Signal Processing using Microphones NI 9234 and LabVIEW. , 2018, , .		2
34	Comparative Effectiveness of ICA and PCA in Extraction of Fetal ECG From Abdominal Signals: Toward Non-invasive Fetal Monitoring. Frontiers in Physiology, 2018, 9, 648.	1.3	86
35	Comparison of the LMS, NLMS, RLS, and QR-RLS algorithms for vehicle noise suppression. , 2018, , .		9
36	Speech Quality Assessment Based on Virtual Instrumentation. , 2018, , .		2

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37	Fetal ECG Preprocessing Using Wavelet Transform. , 2018, , .		11
38	Adaptive Signal Processing of Fetal PCG Recorded by Interferometric Sensor. Advances in Intelligent Systems and Computing, 2018, , 235-243.	0.5	6
39	Analysis of encapsulation the fiber Bragg sensors for biomedical applications. , 2018, , .		2
40	Sensor system based on the Mach-Zehnder interferometer for the rail transport. , 2018, , .		2
41	Deformation sensor composed of fiber Bragg grating and the strain gauge for use in civil engineering. , 2018, , .		1
42	A comparison of probes based on Bragg grating sensor and microphones for heart sounds measurement. , 2018, , .		3
43	Fetal phonocardiography signal processing from abdominal records by non-adaptive methods. , 2018, , .		3
44	Fiber-optic interferometric sensor for monitoring automobile and rail traffic. Turkish Journal of Electrical Engineering and Computer Sciences, 2018, 26, 2987-2996.	0.9	8
45	Analysis of transmission properties of optical couplers made from the polydimethylsiloxane (PDMS). , 2018, , .		0
46	Fiber-optic Bragg grating sensors signal processing for vital signs monitoring. , 2018, , .		0
47	Advanced methods for fiber-optic sensor signal processing. , 2018, , .		0
48	Pre-processing and extraction techniques for vital signs analysis from phonocardiographic-based interferometric fiber-optic sensor. , 2018, , .		0
49	Standard optical fibers for load measuring of concrete structures using BOTDR. , 2018, , .		0
50	Temperature sensor with using of optical fibers. , 2018, , .		0
51	FBG strain sensor mounted on plastic carrier. , 2018, , .		0
52	Detection of magnetic field with use of optical sensors. , 2018, , .		0
53	Analysis of the attenuation characteristics of cylindrical waveguides made from the polydimethylsiloxane (PDMS) polymer. , 2018, , .		0
54	Standard optical cables for building structures monitoring with BOTDR in harsh environments. , 2018, , .		0

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55	Analysis the effect of thermal load on the insertion loss of the optical couplers. , 2018, , .		2
56	Numerical modeling and measurement of polydimethylsiloxane deformation with fiber Bragg grating sensor. , 2018, , .		0
57	Fiber-optic sensors encapsulated into biocompatible polymer material for monitoring the heart rate of the human body. , 2018, , .		1
58	Influence of different encapsulation types and shapes of polydimethylsiloxane on the temperature sensitivity of the FBG. , 2017, , .		1
59	Impact of fixing materials on the frequency range and sensitivity of the fiber-optic interferometer. Proceedings of SPIE, 2017, , .	0.8	1
60	Fiber optic sensor encapsulated in polydimethylsiloxane for heart rate monitoring. , 2017, , .		3
61	Analysis of the impact of the deposition optical fibers on the deformation measurement with a distributed system BOTDR. , 2017, , .		0
62	The influence of temperature loading on the optical fiber passive components. , 2017, , .		0
63	Various optical fibers fixing methods for mechanical stress measurements. , 2017, , .		0
64	Masonry moisture measurement using the distributed temperature sensing system. , 2017, , .		0
65	Study combination of luminophore and polydiethylsiloxane for alternative option of passive energy lighting. Proceedings of SPIE, 2017, , .	0.8	0
66	Analysis of the impact of the deposition optical fibers on the deformation measurement with a distributed system BOTDR. Proceedings of SPIE, 2017, , .	0.8	0
67	Analysis encapsulation of fiber Bragg gratings into polydimethylsiloxane for the needs of dynamic weighing. Proceedings of SPIE, 2017, , .	0.8	0
68	Analysis of optical properties of special fibers of polydimethylsiloxane (PDMS) depending on the different methods of mixing PDMS and curing agent. , 2017, , .		0
69	Analysis of the detection materials as resonant pads for attaching the measuring arm of the interferometer when sensing mechanical vibrations. , 2017, , .		1
70	Comparison of the FBG sensor encapsulated into PDMS and FBG sensor glued on the plexiglass pad for respiratory and heart rate monitoring. Proceedings of SPIE, 2017, , .	0.8	4
71	Comparison of BCG, PCG and ECG signals in application of heart rate monitoring of the human body. , 2017, , .		11
72	Monitoring of the daily living activities in smart home care. Human-centric Computing and Information Sciences, 2017, 7, .	6.1	53

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73	Analysis of the highway tunnels monitoring using an optical fiber implemented into primary lining. Journal of Electrical Engineering, 2017, 68, 364-370.	0.4	14
74	Fetal heart rrate processing based on adaptive least mean squared algorithm. , 2017, , .		2
75	The effect of matched filtering with programmable root raised cosine filter on error vector magnitude of M-QAM broadband over visible light. , 2017, , .		3
76	A Non-Invasive Multichannel Hybrid Fiber-Optic Sensor System for Vital Sign Monitoring. Sensors, 2017, 17, 111.	2.1	102
77	A Phonocardiographic-Based Fiber-Optic Sensor and Adaptive Filtering System for Noninvasive Continuous Fetal Heart Rate Monitoring. Sensors, 2017, 17, 890.	2.1	75
78	Non-Invasive Fetal Monitoring: A Maternal Surface ECG Electrode Placement-Based Novel Approach for Optimization of Adaptive Filter Control Parameters Using the LMS and RLS Algorithms. Sensors, 2017, 17, 1154.	2.1	86
79	Fiber optic sensor based on Mach-Zehnder interferometer for securing entrance areas of buildings. , 2017, , .		2
80	Analysis of non-invasive FBG sensor for monitoring patient vital signs during MRI. , 2017, , .		4
81	Non-Invasive Fiber Optic Probe Encapsulated Into PolyDiMethylSiloxane for Measuring Respiratory and Heart Rate of the Human Body. Advances in Electrical and Electronic Engineering, 2017, 15, .	0.2	43
82	Non-Invasive Fiber-Optic Biomedical Sensor for Basic Vital Sign Monitoring. Advances in Electrical and Electronic Engineering, 2017, 15, .	0.2	31
83	Validation of a Novel Fiber-Optic Sensor System for Monitoring Cardiorespiratory Activities During MRI Examinations. Advances in Electrical and Electronic Engineering, 2017, 15, .	0.2	19
84	Noninvasive Fetal Heart Rate Monitoring: Validation of Phonocardiography-Based Fiber-Optic Sensing and Adaptive Filtering Using the NLMS Algorithm. Advances in Electrical and Electronic Engineering, 2017, 15, .	0.2	5
85	Influence of gestation age on the performance of adaptive systems for fetal ECG extraction. Advances in Electrical and Electronic Engineering, 2017, 15, .	0.2	16
86	Measurement of spectral characteristics and CCT mixture of PDMS and the luminophore depending on the geometric parameters and the concentration of the samples of the special optical fibers. Proceedings of SPIE, 2017, , .	0.8	0
87	Analysis of creating an innovative micro-lens made of polydimethylsiloxane polymer on the end of the optical fibers. , 2017, , .		0
88	Analysis of the influence location of the fiber optic sensor on the measurement and determination the heart rate of the human body. , 2017, , .		0
89	Fiber optic sensor for monitoring a density of road traffic. , 2017, , .		0
90	Fiber optic perimeter system for security in smart city. , 2017, , .		0

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91	Analysis of the use of fiber optic technology for the monitoring heart rate of the pregnant and fetus. , 2017, , .		0
92	Analyzing of chromaticity temperature of novel bulb composed of PDMS and phosphor. , 2017, , .		0
93	Noninvasive encapsulated fiber optic probes for interferometric measurement. , 2017, , .		0
94	Device for the alternative option of temperature measurement. , 2017, , .		0
95	Monitoring system of hydraulic lifting device based on the fiber optic sensors. , 2017, , .		0
96	Analysis of the bending radius of the cylindrical waveguide of polydimethylsiloxane for the purpose of lighting. , 2017, , .		0
97	Characterization and visual illustration of the consequences motion of human body for the determination of heart rate. , 2017, , .		0
98	Bragg grating sensors for the monitoring load of production press machines. , 2017, , .		0
99	Processing of fetal heart rate through non-invasive adaptive system based on recursive least squares algorithm. , 2017, , .		0
100	Fiber optic sensor system for entrance areas monitoring. , 2017, , .		0
101	Monitoring of the structural loads of tunnels using a distributed optical system BOTDR. , 2017, , .		0
102	Analysis of using PDMS polymer as the sensors of the pressure or weight. , 2017, , .		3
103	Measurement of electric current using optical fibers: A Review. Przeglad Elektrotechniczny, 2017, 1, 142-147.	0.1	2
104	Influence of PDMS encapsulation on the sensitivity and frequency range of fiber-optic interferometer. , 2016, , .		9
105	Fiber optic interferometer as a security element. Proceedings of SPIE, 2016, , .	0.8	1
106	Mathematical model of optimized design of multi-point sensoric measurement with Bragg gratings using wavelength divison multiplex. Proceedings of SPIE, 2016, , .	0.8	3
107	Effect of the geometric deformations on the Brillouin scattering in the standard single-mode optical fiber. , 2016, , .		2
108	Frequency analysis of the new prototype of the security window sensor. Proceedings of SPIE, 2016, , .	0.8	1

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109	FBG sensor of breathing encapsulated into polydimethylsiloxane. Proceedings of SPIE, 2016, , .	0.8	6
110	The influence of thermal aging on the optical coupler. , 2016, , .		0
111	Sensitivity distribution of a vibration sensor based on Mach-Zehnder interferometer designed inside the window system. Proceedings of SPIE, 2016, , .	0.8	1
112	Fiber optic system design for vehicle detection and analysis. Proceedings of SPIE, 2016, , .	0.8	5
113	Fixing methods for the use of optical fibers in interferometric arrangements. Proceedings of SPIE, 2016, , .	0.8	2
114	Perimeter System Based on a Combination of a Mach-Zehnder Interferometer and the Bragg Gratings. Advances in Electrical and Electronic Engineering, 2016, 14, .	0.2	20
115	Analysis of the Applicability of Singlemode Optical Fibers for Measurement of Deformation with Distributed Systems BOTDR. Advances in Electrical and Electronic Engineering, 2016, 14, .	0.2	3
116	Encapsulation of FBG Sensor into the PDMS and its Effect on Spectral and Temperature Characteristics. Advances in Electrical and Electronic Engineering, 2016, 14, .	0.2	21
117	Non-destructive Fiber-optic Sensor System for the Measurement of Speed in Road Traffic. Advances in Electrical and Electronic Engineering, 2016, 14, .	0.2	20
118	Fiber-optic Bragg Sensors for the Rail Applications. International Journal of Mechanical Engineering and Robotics Research, 2016, 7, 292-295.	0.7	6
119	Study of the effect of temperature on the optical connectors. , 2015, , .		0
120	Concrete deflection measurement using fiber optic distributed strain system. Proceedings of SPIE, 2015, , .	0.8	2
121	Building GSM network in extreme conditions. Proceedings of SPIE, 2015, , .	0.8	1
122	Capacity of Wavelength and Time Division Multiplexing for Quasi-Distributed Measurement Using Fiber Bragg Gratings. Advances in Electrical and Electronic Engineering, 2015, 13, .	0.2	23
123	Multiple Transcoding Impact on Speech Quality in Ideal Network Conditions. Advances in Electrical and Electronic Engineering, 2015, 13, .	0.2	2
124	Speech Quality Measurement of GSM Infrastructure Built on USRP N210 and OpenBTS Project. Advances in Electrical and Electronic Engineering, 2014, 12, .	0.2	4
125	The Usability Analysis of Different Standard Single-Mode Optical Fibers and Its Installation Methods for the Interferometric Measurements. Advances in Electrical and Electronic Engineering, 2013, 11, .	0.2	13
126	Measurement of attenuation changes of PON elements with temperature. , 2012, , .		1

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127	Simulator of Foetal Phonocardiographic Recordings and Foetal Heart Rate Calculator. Journal of Biomimetics, Biomaterials and Biomedical Engineering, 0, 39, 57-64.	0.5	4