Ming J. Zuo

List of Publications by Year in descending order

Source: https://exaly.com/author-pdf/6514466/publications.pdf

Version: 2024-02-01

324 16,176 66 115
papers citations h-index g-index

331 331 7286
all docs docs citations times ranked citing authors

#	Article	IF	CITATIONS
1	A review on empirical mode decomposition in fault diagnosis of rotating machinery. Mechanical Systems and Signal Processing, 2013, 35, 108-126.	8.0	1,401
2	Condition monitoring and fault diagnosis of planetary gearboxes: A review. Measurement: Journal of the International Measurement Confederation, 2014, 48, 292-305.	5.0	561
3	Current status of machine prognostics in condition-based maintenance: a review. International Journal of Advanced Manufacturing Technology, 2010, 50, 297-313.	3.0	513
4	Maximum correlated Kurtosis deconvolution and application on gear tooth chip fault detection. Mechanical Systems and Signal Processing, 2012, 33, 237-255.	8.0	467
5	Vibration signal models for fault diagnosis of planetary gearboxes. Journal of Sound and Vibration, 2012, 331, 4919-4939.	3.9	383
6	Dynamic modeling of gearbox faults: A review. Mechanical Systems and Signal Processing, 2018, 98, 852-876.	8.0	346
7	Simulation of spur gear dynamics and estimation of fault growth. Journal of Sound and Vibration, 2008, 317, 608-624.	3.9	336
8	Gearbox fault detection using Hilbert and wavelet packet transform. Mechanical Systems and Signal Processing, 2006, 20, 966-982.	8.0	266
9	An efficient method for reliability evaluation of multistate networks given all minimal path vectors. IIE Transactions, 2007, 39, 811-817.	2.1	262
10	Analytically evaluating the influence of crack on the mesh stiffness of a planetary gear set. Mechanism and Machine Theory, 2014, 76, 20-38.	4.5	260
11	A new adaptive sequential sampling method to construct surrogate models for efficient reliability analysis. Reliability Engineering and System Safety, 2018, 169, 330-338.	8.9	230
12	Gear crack level identification based on weighted K nearest neighbor classification algorithm. Mechanical Systems and Signal Processing, 2009, 23, 1535-1547.	8.0	227
13	Bayesian reliability analysis for fuzzy lifetime data. Fuzzy Sets and Systems, 2006, 157, 1674-1686.	2.7	201
14	Predicting Remaining Useful Life of Rolling Bearings Based on Deep Feature Representation and Transfer Learning. IEEE Transactions on Instrumentation and Measurement, 2020, 69, 1594-1608.	4.7	197
15	A multidimensional hybrid intelligent method for gear fault diagnosis. Expert Systems With Applications, 2010, 37, 1419-1430.	7.6	192
16	Vibration signal modeling of a planetary gear set for tooth crack detection. Engineering Failure Analysis, 2015, 48, 185-200.	4.0	183
17	Inverse Gaussian process models for degradation analysis: A Bayesian perspective. Reliability Engineering and System Safety, 2014, 130, 175-189.	8.9	178
18	Linear and Nonlinear Preventive Maintenance Models. IEEE Transactions on Reliability, 2010, 59, 242-249.	4.6	171

#	Article	IF	CITATIONS
19	Fault diagnosis of machines based on D–S evidence theory. Part 1: D–S evidence theory and its improvement. Pattern Recognition Letters, 2006, 27, 366-376.	4.2	167
20	GENERAL SEQUENTIAL IMPERFECT PREVENTIVE MAINTENANCE MODELS. International Journal of Reliability, Quality and Safety Engineering, 2000, 07, 253-266.	0.6	165
21	Reliability evaluation of multi-state weighted -out-of- systems. Reliability Engineering and System Safety, 2008, 93, 160-167.	8.9	159
22	Multibranch and Multiscale CNN for Fault Diagnosis of Wheelset Bearings Under Strong Noise and Variable Load Condition. IEEE Transactions on Industrial Informatics, 2020, 16, 4949-4960.	11.3	158
23	Fault diagnosis of rotating machinery using an improved HHT based on EEMD and sensitive IMFs. Measurement Science and Technology, 2009, 20, 125701.	2.6	142
24	Selective maintenance for binary systems under imperfect repair. Reliability Engineering and System Safety, 2013, 113, 42-51.	8.9	136
25	The influence of tooth pitting on the mesh stiffness of a pair of external spur gears. Mechanism and Machine Theory, 2016, 106, 1-15.	4.5	134
26	Posbist fault tree analysis of coherent systems. Reliability Engineering and System Safety, 2004, 84, 141-148.	8.9	133
27	An integrated framework for online diagnostic and prognostic health monitoring using a multistate deterioration process. Reliability Engineering and System Safety, 2014, 124, 92-104.	8.9	127
28	Fault diagnosis of planetary gearboxes via torsional vibration signal analysis. Mechanical Systems and Signal Processing, 2013, 36, 401-421.	8.0	123
29	Adaptive Mode Decomposition Methods and Their Applications in Signal Analysis for Machinery Fault Diagnosis: A Review With Examples. IEEE Access, 2017, 5, 24301-24331.	4.2	120
30	Mechanical Fault Detection Based on the Wavelet De-Noising Technique. Journal of Vibration and Acoustics, Transactions of the ASME, 2004, 126, 9-16.	1.6	119
31	Selective maintenance for multi-state series–parallel systems under economic dependence. Reliability Engineering and System Safety, 2014, 121, 240-249.	8.9	119
32	Sequential imperfect preventive maintenance models with two categories of failure modes. Naval Research Logistics, 2001, 48, 172-183.	2.2	110
33	Fault detection method for railway wheel flat using an adaptive multiscale morphological filter. Mechanical Systems and Signal Processing, 2017, 84, 642-658.	8.0	107
34	Selective maintenance of multi-state systems with structural dependence. Reliability Engineering and System Safety, 2017, 159, 184-195.	8.9	106
35	Evaluating the time-varying mesh stiffness of a planetary gear set using the potential energy method. Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science, 2014, 228, 535-547.	2.1	105
36	Fault detection of planetary gearboxes using new diagnostic parameters. Measurement Science and Technology, 2012, 23, 055605.	2.6	104

#	Article	IF	CITATIONS
37	Selective maintenance modeling for a multistate system with multistate components under imperfect maintenance. IIE Transactions, 2013, 45, 1221-1234.	2.1	104
38	Atomic decomposition and sparse representation for complex signal analysis in machinery fault diagnosis: A review with examples. Measurement: Journal of the International Measurement Confederation, 2017, 103, 106-132.	5.0	101
39	Joint amplitude and frequency demodulation analysis based on local mean decomposition for fault diagnosis of planetary gearboxes. Mechanical Systems and Signal Processing, 2013, 40, 56-75.	8.0	100
40	Estimating ultrasonic time of flight using envelope and quasi maximum likelihood method for damage detection and assessment. Measurement: Journal of the International Measurement Confederation, 2012, 45, 2072-2080.	5.0	99
41	Design and performance analysis of consecutive-K-out-of-n structure. Naval Research Logistics, 1990, 37, 203-230.	2.2	97
42	A joint reliability–redundancy optimization approach for multi-state series–parallel systems. Reliability Engineering and System Safety, 2009, 94, 1568-1576.	8.9	95
43	A fault diagnosis method for planetary gearboxes under non-stationary working conditions using improved Vold-Kalman filter and multi-scale sample entropy. Journal of Sound and Vibration, 2019, 439, 271-286.	3.9	93
44	Time-Varying Meshing Stiffness Calculation and Vibration Analysis for a 16DOF Dynamic Model With Linear Crack Growth in a Pinion. Journal of Vibration and Acoustics, Transactions of the ASME, 2012, 134, .	1.6	92
45	Multivariate EMD and full spectrum based condition monitoring for rotating machinery. Mechanical Systems and Signal Processing, 2012, 27, 712-728.	8.0	91
46	Selective Maintenance for Multistate Series Systems With S-Dependent Components. IEEE Transactions on Reliability, 2016, 65, 525-539.	4.6	90
47	Time–frequency analysis of time-varying modulated signals based on improved energy separation by iterative generalized demodulation. Journal of Sound and Vibration, 2011, 330, 1225-1243.	3.9	89
48	A comprehensive reliability allocation method for design of CNC lathes. Reliability Engineering and System Safety, 2001, 72, 247-252.	8.9	87
49	Ordering Heuristics for Reliability Evaluation of Multistate Networks. IEEE Transactions on Reliability, 2015, 64, 1015-1023.	4.6	86
50	Time-frequency representation based on robust local mean decomposition for multicomponent AM-FM signal analysis. Mechanical Systems and Signal Processing, 2017, 95, 468-487.	8.0	83
51	A windowing and mapping strategy for gear tooth fault detection of a planetary gearbox. Mechanical Systems and Signal Processing, 2016, 80, 445-459.	8.0	81
52	Diagonal slice spectrum assisted optimal scale morphological filter for rolling element bearing fault diagnosis. Mechanical Systems and Signal Processing, 2017, 85, 146-161.	8.0	81
53	Feature separation using ICA for a one-dimensional time series and its application in fault detection. Journal of Sound and Vibration, 2005, 287, 614-624.	3.9	80
54	Vibration signal modeling of a planetary gear set with transmission path effect analysis. Measurement: Journal of the International Measurement Confederation, 2016, 85, 20-31.	5.0	80

#	Article	IF	CITATIONS
55	Efficient reliability analysis based on adaptive sequential sampling design and cross-validation. Applied Mathematical Modelling, 2018, 58, 404-420.	4.2	80
56	Multi-state <i>k-out-of-n</i> systems and their performance evaluation. IIE Transactions, 2008, 41, 32-44.	2.1	79
57	Joint amplitude and frequency demodulation analysis based on intrinsic time-scale decomposition for planetary gearbox fault diagnosis. Mechanical Systems and Signal Processing, 2016, 72-73, 223-240.	8.0	79
58	A new reliability allocation weight for reducing the occurrence of severe failure effects. Reliability Engineering and System Safety, 2013, 117, 81-88.	8.9	76
59	Semi-Markov Process-Based Integrated Importance Measure for Multi-State Systems. IEEE Transactions on Reliability, 2015, 64, 754-765.	4.6	75
60	Replacement–repair policy for multi-state deteriorating products under warranty. European Journal of Operational Research, 2000, 123, 519-530.	5.7	74
61	Three new models for evaluation of standard involute spur gear mesh stiffness. Mechanical Systems and Signal Processing, 2018, 101, 424-434.	8.0	73
62	A Framework for Reliability Approximation of Multi-State Weighted \$k\$-out-of-\$n\$ Systems. IEEE Transactions on Reliability, 2010, 59, 297-308.	4.6	72
63	Fault level diagnosis for planetary gearboxes using hybrid kernel feature selection and kernel Fisher discriminant analysis. International Journal of Advanced Manufacturing Technology, 2013, 67, 1217-1230.	3.0	72
64	Time domain averaging across all scales: A novel method for detection of gearbox faults. Mechanical Systems and Signal Processing, 2008, 22, 261-278.	8.0	71
65	Physics-Informed LSTM hyperparameters selection for gearbox fault detection. Mechanical Systems and Signal Processing, 2022, 171, 108907.	8.0	71
66	Dynamic Reliability Assessment for Multi-State Systems Utilizing System-Level Inspection Data. IEEE Transactions on Reliability, 2015, 64, 1287-1299.	4.6	70
67	Remaining useful life prediction of rolling element bearings based on health state assessment. Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science, 2016, 230, 314-330.	2.1	67
68	Modelling and optimizing sequential imperfect preventive maintenance. Reliability Engineering and System Safety, 2009, 94, 53-62.	8.9	66
69	Fault diagnosis of machines based on D–S evidence theory. Part 2: Application of the improved D–S evidence theory in gearbox fault diagnosis. Pattern Recognition Letters, 2006, 27, 377-385.	4.2	65
70	Vibration signal models for fault diagnosis of planet bearings. Journal of Sound and Vibration, 2016, 370, 372-393.	3.9	65
71	Optimal selective maintenance for multi-state systems in variable loading conditions. Reliability Engineering and System Safety, 2017, 166, 171-180.	8.9	64
72	Amplitudes of characteristic frequencies for fault diagnosis of planetary gearbox. Journal of Sound and Vibration, 2018, 432, 119-132.	3.9	63

#	Article	IF	CITATIONS
73	Optimal replacement policy for a multistate repairable system. Journal of the Operational Research Society, 2002, 53, 336-341.	3.4	62
74	Multi-State Consecutive- k -out-of- n Systems. IIE Transactions, 2003, 35, 527-534.	2.1	62
75	General model for the risk priority number in failure mode and effects analysis. Reliability Engineering and System Safety, 2018, 169, 321-329.	8.9	62
76	A method for evaluation of reliability indices for repairable circular consecutive-k-out-of-n:F systems. Reliability Engineering and System Safety, 2003, 79, 1-9.	8.9	60
77	Redundancy allocation for multi-state systems using physical programming and genetic algorithms. Reliability Engineering and System Safety, 2006, 91, 1049-1056.	8.9	60
78	Search for all d-MPs for all d levels in multistate two-terminal networks. Reliability Engineering and System Safety, 2015, 142, 300-309.	8.9	60
79	Scaling-Basis Chirplet Transform. IEEE Transactions on Industrial Electronics, 2021, 68, 8777-8788.	7.9	60
80	Health Condition Prediction of Gears Using a Recurrent Neural Network Approach. IEEE Transactions on Reliability, 2010, 59, 700-705.	4.6	59
81	Reliability of multistate consecutively-connected systems. Reliability Engineering and System Safety, 1994, 44, 173-176.	8.9	58
82	Application of regularization dimension to gear damage assessment. Mechanical Systems and Signal Processing, 2010, 24, 1081-1098.	8.0	58
83	Crack propagation assessment for spur gears using model-based analysis and simulation. Journal of Intelligent Manufacturing, 2012, 23, 239-253.	7.3	58
84	A phase angle based diagnostic scheme to planetary gear faults diagnostics under non-stationary operational conditions. Journal of Sound and Vibration, 2017, 408, 190-209.	3.9	58
85	Weighted domain adaptation networks for machinery fault diagnosis. Mechanical Systems and Signal Processing, 2021, 158, 107744.	8.0	58
86	Genetic-algorithm-based optimal apportionment of reliability and redundancy under multiple objectives. IIE Transactions, 2009, 41, 287-298.	2.1	52
87	Improved local mean decomposition for modulation information mining and its application to machinery fault diagnosis. Journal of Sound and Vibration, 2017, 397, 266-281.	3.9	51
88	Optimal system design considering maintenance and warranty. Computers and Operations Research, 1998, 25, 691-705.	4.0	50
89	Optimal design of multi-state weighted k-out-of-n systems based on component design. Reliability Engineering and System Safety, 2008, 93, 1673-1681.	8.9	50
90	Support vector machine based data processing algorithm for wear degree classification of slurry pump systems. Measurement: Journal of the International Measurement Confederation, 2010, 43, 781-791.	5.0	50

#	Article	IF	Citations
91	Machine fault feature extraction based on intrinsic mode functions. Measurement Science and Technology, 2008, 19, 045105.	2.6	49
92	Evaluating the reliability of multi-body mechanisms: A method considering the uncertainties of dynamic performance. Reliability Engineering and System Safety, 2016, 149, 96-106.	8.9	49
93	Stochastic Comparison of Residual Life and Inactivity Time at a Random Time. Stochastic Models, 2004, 20, 229-235.	0.5	48
94	Intelligent interactive multiobjective optimization method and its application to reliability optimization. IIE Transactions, 2005, 37, 983-993.	2.1	48
95	An enhanced morphology gradient product filter for bearing fault detection. Mechanical Systems and Signal Processing, 2018, 109, 166-184.	8.0	48
96	Reliability and Availability Analysis of a Repairable \$k\$-out-of-\$n:G\$ System With \$R\$ Repairmen Subject to Shut-Off Rules. IEEE Transactions on Reliability, 2011, 60, 658-666.	4.6	47
97	Ensemble Empirical Mode Decomposition-Based Teager Energy Spectrum for Bearing Fault Diagnosis. Journal of Vibration and Acoustics, Transactions of the ASME, 2013, 135, .	1.6	47
98	Induction Motor Stator Current AM-FM Model and Demodulation Analysis for Planetary Gearbox Fault Diagnosis. IEEE Transactions on Industrial Informatics, 2019, 15, 2386-2394.	11.3	47
99	A new strategy of using a time-varying structure element for mathematical morphological filtering. Measurement: Journal of the International Measurement Confederation, 2017, 106, 53-65.	5.0	46
100	A bivariate optimal replacement policy for a multistate repairable system. Reliability Engineering and System Safety, 2007, 92, 535-542.	8.9	44
101	An adaptive Morlet wavelet filter for time-of-flight estimation in ultrasonic damage assessment. Measurement: Journal of the International Measurement Confederation, 2010, 43, 570-585.	5.0	43
102	A parameter estimation method for a condition-monitored device under multi-state deterioration. Reliability Engineering and System Safety, 2012, 106, 94-103.	8.9	43
103	Spur Gear Tooth Pitting Propagation Assessment Using Model-based Analysis. Chinese Journal of Mechanical Engineering (English Edition), 2017, 30, 1369-1382.	3.7	43
104	Optimal replacement policy for a deteriorating production system with preventive maintenance. International Journal of Systems Science, 2001, 32, 1193-1198.	5.5	42
105	Reliability evaluation of multistate networks: An improved algorithm using state-space decomposition and experimental comparison. IISE Transactions, 2018, 50, 407-418.	2.4	42
106	Amplitude and frequency demodulation analysis for fault diagnosis of planet bearings. Journal of Sound and Vibration, 2016, 382, 395-412.	3.9	41
107	Computing and Applying the Signature of a System With Two Common Failure Criteria. IEEE Transactions on Reliability, 2010, 59, 576-580.	4.6	40
108	Diagnosis of artificially created surface damage levels of planet gear teeth using ordinal ranking. Measurement: Journal of the International Measurement Confederation, 2013, 46, 132-144.	5.0	40

#	Article	IF	Citations
109	An improved algorithm for finding all minimal paths in a network. Reliability Engineering and System Safety, 2016, 150, 1-10.	8.9	40
110	An LSSVR-based algorithm for online system condition prognostics. Expert Systems With Applications, 2012, 39, 6089-6102.	7.6	39
111	Availability of a general k-out-of-n:G system with non-identical components considering shut-off rules using quasi-birth–death process. Reliability Engineering and System Safety, 2011, 96, 489-496.	8.9	38
112	A diagnostic signal selection scheme for planetary gearbox vibration monitoring under non-stationary operational conditions. Measurement Science and Technology, 2017, 28, 035003.	2.6	38
113	A time series model-based method for gear tooth crack detection and severity assessment under random speed variation. Mechanical Systems and Signal Processing, 2021, 156, 107605.	8.0	38
114	Evaluating a warm standby system with components having proportional hazard rates. Operations Research Letters, 2009, 37, 56-60.	0.7	37
115	Life cycle reliability assessment of new products—A Bayesian model updating approach. Reliability Engineering and System Safety, 2013, 112, 109-119.	8.9	37
116	A Non-Probabilistic Metric Derived From Condition Information for Operational Reliability Assessment of Aero-Engines. IEEE Transactions on Reliability, 2015, 64, 167-181.	4.6	37
117	Sparse time series modeling of the baseline vibration from a gearbox under time-varying speed condition. Mechanical Systems and Signal Processing, 2019, 134, 106342.	8.0	37
118	Reliability and component importance of a consecutive-k-out-of-n system. Microelectronics Reliability, 1993, 33, 243-258.	1.7	36
119	Analysis of the Vibration Response of a Gearbox With Gear Tooth Faults. , 2004, , 785.		36
120	An improved model for dependent competing risks considering continuous degradation and random shocks. Reliability Engineering and System Safety, 2020, 193, 106641.	8.9	36
121	Multiobjective optimization of three-stage spur gear reduction units using interactive physical programming. Journal of Mechanical Science and Technology, 2005, 19, 1080-1086.	1.5	35
122	Reliability analysis of a repairable k-out-of-n system with some components being suspended when the system is down. Reliability Engineering and System Safety, 2006, 91, 305-310.	8.9	35
123	Optimal Replacement Last With Continuous and Discrete Policies. IEEE Transactions on Reliability, 2014, 63, 868-880.	4.6	35
124	Improved Hilbert–Huang transform with soft sifting stopping criterion and its application to fault diagnosis of wheelset bearings. ISA Transactions, 2022, 125, 426-444.	5.7	35
125	Reliability analysis for a circular consecutive-2-out-of-n:F repairable system with priority in repair. Reliability Engineering and System Safety, 2000, 68, 113-120.	8.9	34
126	Preservation of stochastic orders for random minima and maxima, with applications. Naval Research Logistics, 2004, 51, 332-344.	2.2	34

#	Article	IF	CITATIONS
127	Extraction of Periodic Components for Gearbox Diagnosis Combining Wavelet Filtering and Cyclostationary Analysis. Journal of Vibration and Acoustics, Transactions of the ASME, 2004, 126, 449-451.	1.6	34
128	Selective maintenance scheduling over a finite planning horizon. Proceedings of the Institution of Mechanical Engineers, Part O: Journal of Risk and Reliability, 2016, 230, 162-177.	0.7	34
129	Using neural network function approximation for optimal design of continuous-state parallel–series systems. Computers and Operations Research, 2003, 30, 339-352.	4.0	33
130	The Hierarchical Weighted Multi-State \$k\$-out-of-\$n\$ System Model and Its Application for Infrastructure Management. IEEE Transactions on Reliability, 2010, 59, 593-603.	4.6	33
131	Optimal preventive maintenance policy under fuzzy Bayesian reliability assessment environments. IIE Transactions, 2010, 42, 734-745.	2.1	33
132	Optimal burn-in and preventive maintenance warranty strategies with time-dependent maintenance costs. IIE Transactions, 2013, 45, 1024-1033.	2.1	33
133	Age replacement policy based on imperfect repair with random probability. Reliability Engineering and System Safety, 2016, 149, 24-33.	8.9	33
134	Railway bearing and cardan shaft fault diagnosis via an improved morphological filter. Structural Health Monitoring, 2020, 19, 1471-1486.	7.5	33
135	System reliability and system resilience. Frontiers of Engineering Management, 2021, 8, 615-619.	6.1	33
136	Nonlinear lateral-torsional coupled motion of a rotor contacting a viscoelastically suspended stator. Nonlinear Dynamics, 2012, 69, 325-339.	5.2	32
137	A Stochastic Approach for the Analysis of Fault Trees With Priority AND Gates. IEEE Transactions on Reliability, 2014, 63, 480-494.	4.6	32
138	Gear Damage Assessment Based on Cyclic Spectral Analysis. IEEE Transactions on Reliability, 2011, 60, 21-32.	4.6	31
139	An improved singular value decomposition-based method for gear tooth crack detection and severity assessment. Journal of Sound and Vibration, 2020, 468, 115068.	3.9	31
140	Transient meshing performance of gears with different modification coefficients and helical angles using explicit dynamic FEA. Mechanical Systems and Signal Processing, 2011, 25, 1786-1802.	8.0	30
141	Spectral negentropy based sidebands and demodulation analysis for planet bearing fault diagnosis. Journal of Sound and Vibration, 2017, 410, 124-150.	3.9	30
142	Planetary Gearbox Fault diagnosis via Joint Amplitude and Frequency Demodulation Analysis Based on Variational Mode Decomposition. Applied Sciences (Switzerland), 2017, 7, 775.	2.5	30
143	ACCUGRAM: A novel approach based on classification to frequency band selection for rotating machinery fault diagnosis. ISA Transactions, 2019, 95, 346-357.	5.7	30
144	Reliability-Based Design of Systems Considering Preventive Maintenance and Minimal Repair. International Journal of Reliability, Quality and Safety Engineering, 1997, 04, 55-71.	0.6	29

#	Article	IF	CITATIONS
145	Preface: reliability and quality management in stochastic systems. Annals of Operations Research, 2019, 277, 1-2.	4.1	29
146	Optimal design of series-parallel systems considering maintenance and salvage value. Computers and Industrial Engineering, 2001, 40, 323-337.	6.3	28
147	Reliability estimation in a Weibull lifetime distribution with zero-failure field data. Quality and Reliability Engineering International, 2010, 26, 691-701.	2.3	28
148	Effects of friction and stochastic load on transient characteristics of a spur gear pair. Nonlinear Dynamics, 2018, 93, 599-609.	5.2	27
149	The effects of the shape of localized defect in ball bearings on the vibration waveform. Proceedings of the Institution of Mechanical Engineers, Part K: Journal of Multi-body Dynamics, 2013, 227, 261-274.	0.8	26
150	Multistate degradation and supervised estimation methods for a condition-monitored device. IIE Transactions, 2014, 46, 131-148.	2.1	26
151	Feature selection for fault level diagnosis of planetary gearboxes. Advances in Data Analysis and Classification, 2014, 8, 377-401.	1.4	26
152	A sparse multivariate time series model-based fault detection method for gearboxes under variable speed condition. Mechanical Systems and Signal Processing, 2022, 167, 108539.	8.0	26
153	Optimal design and maintenance of a repairable multi-state system with standby components. Journal of Statistical Planning and Inference, 2012, 142, 2409-2420.	0.6	25
154	Optimum component reassignment for balanced systems with multi-state components operating in a shock environment. Reliability Engineering and System Safety, 2021, 210, 107514.	8.9	25
155	Optimal mission abort policy with multiple abort criteria for a balanced system with multi-state components. Computers and Industrial Engineering, 2021, 160, 107544.	6. 3	25
156	Temporized coloured Petri nets with changeable structure (CPN-CS) for performance modelling of dynamic production systems. International Journal of Production Research, 2000, 38, 1917-1945.	7. 5	24
157	Optimal allocation of reliability improvement target based on the failure risk and improvement cost. Reliability Engineering and System Safety, 2018, 180, 104-110.	8.9	24
158	Colored Petri Nets with changeable structures (CPN-CS) and their applications in modeling one-of-a-kind production (OKP) systems. Computers and Industrial Engineering, 2001, 41, 279-308.	6.3	23
159	On the behaviour of some new ageing properties based upon the residual life of k-out-of-n systems. Journal of Applied Probability, 2002, 39, 426-433.	0.7	23
160	Reliability Bounds for Multi-State \$k\$-out-of-\$n\$ Systems. IEEE Transactions on Reliability, 2008, 57, 53-58.	4.6	23
161	Constrained ($\langle i\rangle k\langle i\rangle, \langle i\rangle d\langle i\rangle$)-out-of- $\langle i\rangle n\langle i\rangle$ systems. International Journal of Systems Science, 2010, 41, 679-685.	5. 5	23
162	A data clustering algorithm for stratified data partitioning in artificial neural network. Expert Systems With Applications, 2012, 39, 7004-7014.	7.6	23

#	Article	IF	CITATIONS
163	A general discrete degradation model with fatal shocks and age- and state-dependent nonfatal shocks. Reliability Engineering and System Safety, 2020, 193, 106648.	8.9	23
164	A dependence-based feature vector and its application on planetary gearbox fault classification. Journal of Sound and Vibration, 2018, 431, 192-211.	3.9	22
165	Fatigue Life Estimation of an Aircaft Engine Under Different Load Spectrums. International Journal of Turbo and Jet Engines, 2012, 29, .	0.7	20
166	Predictive analytics using a nonhomogeneous semi-Markov model and inspection data. IIE Transactions, 2015, 47, 505-520.	2.1	20
167	A deep bi-directional long short-term memory model for automatic rotating speed extraction from raw vibration signals. Measurement: Journal of the International Measurement Confederation, 2020, 158, 107719.	5.0	20
168	A stochastic power curve for wind turbines with reduced variability using conditional copula. Wind Energy, 2016, 19, 1519-1534.	4.2	19
169	A bibliometric analysis of process system failure and reliability literature. Engineering Failure Analysis, 2019, 106, 104152.	4.0	19
170	A multi-criterion evaluation approach to selection of the best statistical distribution. Computers and Industrial Engineering, 2004, 47, 165-180.	6.3	18
171	A New Ductility Exhaustion Model for High Temperature Low Cycle Fatigue Life Prediction of Turbine Disk Alloys. International Journal of Turbo and Jet Engines, 2011, 28, .	0.7	18
172	Denoising ultrasonic pulse-echo signal using two-dimensional analytic wavelet thresholding. Measurement: Journal of the International Measurement Confederation, 2012, 45, 255-267.	5.0	18
173	Approximate Reliability Evaluation of Large-Scale Multistate Series-Parallel Systems. IEEE Transactions on Reliability, 2019, 68, 539-553.	4.6	18
174	Motion periods of sun gear dynamic fault meshing positions in planetary gear systems. Measurement: Journal of the International Measurement Confederation, 2020, 162, 107897.	5.0	18
175	O(kn) Algorithms for Analyzing Repairable and Non-repairable k-out-of-n:G Systems., 2008,, 309-320.		18
176	Detection of Bearing Faults Using a Novel Adaptive Morphological Update Lifting Wavelet. Chinese Journal of Mechanical Engineering (English Edition), 2017, 30, 1305-1313.	3.7	17
177	Optimal design of series consecutive-k-out-of-n: G systems. Reliability Engineering and System Safety, 1994, 45, 277-283.	8.9	16
178	Fault diagnosis for planetary gearboxes using multi-criterion fusion feature selection framework. Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science, 2013, 227, 2064-2076.	2.1	16
179	Some results on the relative ordering of two frailty models. Statistical Papers, 2017, 58, 287-301.	1.2	16
180	A Decision-making Model for Corrective Maintenance of Offshore Wind Turbines Considering Uncertainties. Energies, 2019, 12, 1408.	3.1	16

#	Article	IF	CITATIONS
181	OPTIMAL DESIGN OF A MULTI-STATE WEIGHTED SERIES-PARALLEL SYSTEM USING PHYSICAL PROGRAMMING AND GENETIC ALGORITHMS. Asia-Pacific Journal of Operational Research, 2011, 28, 543-562.	1.3	15
182	Selective maintenance considering two types of failure modes. International Journal of Strategic Engineering Asset Management, 2014, 2, 37.	0.6	15
183	Modeling of the safe region based on support vector data description for health assessment of wheelset bearings. Applied Mathematical Modelling, 2019, 73, 19-39.	4.2	15
184	Bearing fault diagnosis based on flexible analytical wavelet transform and fuzzy entropy approach. Materials Today: Proceedings, 2021, 43, 629-635.	1.8	15
185	An improved phenomenological model of vibrations for planetary gearboxes. Journal of Sound and Vibration, 2021, 496, 115919.	3.9	15
186	Performance Evaluation of Decreasing Multi-State Consecutive-k-out-of-n: G Systems. International Journal of Reliability, Quality and Safety Engineering, 2003, 10, 345-358.	0.6	14
187	Optimizing wind farm layout by addressing energy-variance trade-off: A single-objective optimization approach. Energy, 2019, 189, 116149.	8.8	14
188	RELIABILITY EVALUATION OF A LINEAR k-WITHIN-(r,s)-OUT-OF-(m,n):F LATTICE SYSTEM. Probability in the Engineering and Informational Sciences, 2000, 14, 435-443.	0.8	13
189	Health condition prognostics of gears using a recurrent neural network approach. Reliability and Maintainability Symposium (RAMS), Annual, 2009, , .	0.0	13
190	Selective maintenance for binary systems using age-based imperfect repair model. , 2012, , .		13
191	Optimizing the Periodic Inspection Interval for a 1â€outâ€ofâ€2 Cold Standby System Using the Delayâ€Time Concept. Quality and Reliability Engineering International, 2012, 28, 648-662.	2.3	13
192	An improved Kriging-based approach for system reliability analysis with multiple failure modes. Engineering With Computers, 2022, 38, 1813-1833.	6.1	13
193	Planetary Gearbox Dynamic Modeling Considering Bearing Clearance and Sun Gear Tooth Crack. Sensors, 2021, 21, 2638.	3.8	13
194	Identification of weak ultrasonic signals in testing of metallic materials using wavelet transform. Smart Materials and Structures, 2006, 15, 1531-1539.	3.5	12
195	A fuzzy set based solution method for multiobjective optimal design problem of mechanical and structural systems using functional-link net. Neural Computing and Applications, 2006, 15, 239-244.	5.6	12
196	Generating an indicator for pump impeller damage using half and full spectra, fuzzy preference-based rough sets and PCA. Measurement Science and Technology, 2012, 23, 045607.	2.6	12
197	Construction of customized redundant multiwavelet via increasing multiplicity for fault detection of rotating machinery. Mechanical Systems and Signal Processing, 2014, 42, 206-224.	8.0	12
198	A New Strategy for Rotating Machinery Fault Diagnosis Under Varying Speed Conditions Based on Deep Neural Networks and Order Tracking. , 2018, , .		12

#	Article	IF	CITATIONS
199	Sinusoidal FM patterns of fault-related vibration signals for planetary gearbox fault detection under non-stationary conditions. Mechanical Systems and Signal Processing, 2021, 155, 107623.	8.0	12
200	Development of crack induced impulse-based condition indicators for early tooth crack severity assessment. Mechanical Systems and Signal Processing, 2022, 165, 108327.	8.0	12
201	An image-based feature extraction method for fault diagnosis of variable-speed rotating machinery. Mechanical Systems and Signal Processing, 2022, 167, 108524.	8.0	12
202	A Gaussian radial basis function based feature selection algorithm. , 2011, , .		11
203	Understanding vibration properties of a planetary gear set for fault detection., 2014,,.		11
204	An efficient method for evaluating the effect of input parameters on the integrity of safety systems. Reliability Engineering and System Safety, 2016, 145, 111-123.	8.9	11
205	A New Subtraction-Based Algorithm for the $\langle i \rangle d \langle i \rangle$ -MPs for All $\langle i \rangle d \langle i \rangle$ Problem. IEEE Transactions on Reliability, 2019, 68, 999-1008.	4.6	11
206	A hybrid approach for identification of root causes and reliability improvement of a die bonding process—a case study. Reliability Engineering and System Safety, 1999, 64, 43-48.	8.9	10
207	Two fault classification methods for large systems when available data are limited. Reliability Engineering and System Safety, 2007, 92, 585-592.	8.9	10
208	Optimal design of a repairable k-out-of-n system considering maintenance. , 2011, , .		10
209	Classification of gear damage levels in planetary gearboxes., 2011,,.		10
210	Feature ranking for support vector machine classification and its application to machinery fault diagnosis. Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science, 2013, 227, 2077-2089.	2.1	10
211	Derating design for optimizing reliability and cost with an application to liquid rocket engines. Reliability Engineering and System Safety, 2016, 146, 13-20.	8.9	10
212	Parameter selection for Gaussian radial basis function in support vector machine classification. , 2012, , .		9
213	Customized lifting multiwavelet packet information entropy for equipment condition identification. Smart Materials and Structures, 2013, 22, 095022.	3.5	9
214	Reliability estimation considering usage rate profile and warranty claims. Proceedings of the Institution of Mechanical Engineers, Part O: Journal of Risk and Reliability, 2016, 230, 297-308.	0.7	9
215	Prognosis of Bearing Degeneration Using Adaptive Quaternion Least Mean Biquadrate Under Framework of Hypercomplex Data. IEEE Sensors Journal, 2020, 20, 2659-2670.	4.7	9
216	AK-PDF: An active learning method combining kriging and probability density function for efficient reliability analysis. Proceedings of the Institution of Mechanical Engineers, Part O: Journal of Risk and Reliability, 2020, 234, 536-549.	0.7	9

#	Article	IF	Citations
217	Application of Stationary Wavelet Transforms to Ultrasonic Crack Detection. , 2006, , .		8
218	Using ultrasonic pulse-echo B-scan signals for estimation of time of flight. Measurement: Journal of the International Measurement Confederation, 2013, 46, 3593-3599.	5.0	8
219	Principal Components of Superhigh-Dimensional Statistical Features and Support Vector Machine for Improving Identification Accuracies of Different Gear Crack Levels under Different Working Conditions. Shock and Vibration, 2015, 2015, 1-14.	0.6	8
220	Reliability analysis of multi-state systems with s-dependent components. , 2015, , .		8
221	Dynamics-Based Vibration Signal Modeling for Tooth Fault Diagnosis of Planetary Gearboxes. , 0, , .		8
222	Sweep excitation with order tracking: A new tactic for beam crack analysis. Journal of Sound and Vibration, 2018, 420, 129-141.	3.9	8
223	Reliability evaluation of furnace systems. Reliability Engineering and System Safety, 1999, 65, 283-287.	8.9	7
224	Estimating crack size and location in a steel plate using ultrasonic signals and CFBP Neural Networks. Canadian Conference on Electrical and Computer Engineering, 2008, , .	0.0	7
225	OPTIMAL DESIGN OF BINARY WEIGHTED k-OUT-OF-n SYSTEMS. International Journal of Reliability, Quality and Safety Engineering, 2008, 15, 425-440.	0.6	7
226	Group judgment of relationship between product reliability and quality characteristics based on Bayesian theory and expert's experience. Expert Systems With Applications, 2010, 37, 6844-6849.	7.6	7
227	Effects of subsystem mission time on reliability allocation. IIE Transactions, 2015, 47, 285-293.	2.1	7
228	Markov process based time limited dispatch analysis with constraints of both dispatch reliability and average safety levels. Reliability Engineering and System Safety, 2017, 167, 84-94.	8.9	7
229	Effect of Truncated Input Parameter Distribution on the Integrity of Safety Instrumented Systems Under Epistemic Uncertainty. IEEE Transactions on Reliability, 2017, 66, 735-750.	4.6	7
230	Convolutional Neural Networks for Fault Diagnosis Using Rotating Speed Normalized Vibration. Applied Condition Monitoring, 2019, , 67-76.	0.4	7
231	Dynamic modeling of a planetary gear system with sun gear crack under gravity and carrier-ring clearance. Procedia Manufacturing, 2020, 49, 55-60.	1.9	7
232	Multiperformance Measure Multistate Systems: General Definitions and Concepts. IEEE Transactions on Reliability, 2021, 70, 2-12.	4.6	7
233	A multiâ€state <i>k</i> â€outâ€ofâ€∢i>n:F balanced system with a rebalancing mechanism. Quality and Reliability Engineering International, 2022, 38, 2908-2920.	2.3	7
234	Fault Tree Analysis Based on Fuzzy Logic. , 2007, , .		6

#	Article	IF	CITATIONS
235	Ultrasonic time-of-flight diffraction crack size identification based on cross-correlation. Canadian Conference on Electrical and Computer Engineering, 2008, , .	0.0	6
236	An improved EMD method for fault diagnosis of rolling bearing. , 2016, , .		6
237	Prognostics of rolling element bearings with the combination of paris law and reliability method., 2017,,.		6
238	A necessary condition for optimal consecutive-k-out-of-n:G system design. Microelectronics Reliability, 1994, 34, 485-493.	1.7	5
239	EMD, Ranking Mutual Information and PCA Based Condition Monitoring. , 2010, , .		5
240	Crack Level Estimation Approach for Planetary Gear Sets Based on Simulation Signal and GRA. Journal of Physics: Conference Series, 2012, 364, 012076.	0.4	5
241	A mesh stiffness evaluation model to reflect tooth pitting growth of a pair of external spur gears. , 2016, , .		5
242	A new method of system reliability multi-objective optimization using genetic algorithms. , 0, , .		4
243	Joint Optimization of Inventory Control and Maintenance Policy. , 2007, , .		4
244	Availability analysis of systems with suspended animation. , 2008, , .		4
245	A SVM classifier combined with PCA for ultrasonic crack size classification. Canadian Conference on Electrical and Computer Engineering, 2008, , .	0.0	4
246	Teager Energy Spectrum for Fault Diagnosis of Rolling Element Bearings. Journal of Physics: Conference Series, 2011, 305, 012129.	0.4	4
247	Modified relative arrival time technique for sizing inclined cracks. Measurement: Journal of the International Measurement Confederation, 2014, 50, 86-92.	5.0	4
248	Parameters determination for adaptive bathtub-shaped curve using artificial fish swarm algorithm., 2012,,.		3
249	Fault diagnosis for multi-state equipment with multiple failure modes. , 2012, , .		3
250	Multi-state degradation analysis for a condition monitored device with unobservable states. , 2012, , .		3
251	Effect of sliding friction on transient characteristics of a gear transmission under random loading. , 2017, , .		3
252	An Efficient Algorithm for Finding Modules in Fault Trees. IEEE Transactions on Reliability, 2019, , 1-13.	4.6	3

#	Article	IF	Citations
253	Modeling Multi-State Equipment Degradation with Non-Homogeneous Continuous-Time Hidden Semi-Markov Process., 2013,, 151-181.		3
254	Normalization of gearbox vibration signal for tooth crack diagnosis under variable speed conditions. Quality and Reliability Engineering International, 2022, 38, 3072-3098.	2.3	3
255	Detection of rub in rotating machineries by Wavelet analysis of vibration data., 2007,,.		2
256	Vibration-Based Fault Diagnosis of Slurry Pumps Using the Neighborhood Rough Set Model. , 2009, , .		2
257	Experimental studies of crack sizing and location based on ultrasonic nondestructive testing. , 2009, , .		2
258	Demodulation of gear vibration signals for fault detection. , 2009, , .		2
259	Rotating Machinery Fault Detection Using EEMD and Bispectrum., 2009,,.		2
260	Gear Crack Assessment Using Correlation Dimension. Applied Mechanics and Materials, 2010, 29-32, 1627-1633.	0.2	2
261	Fault diagnosis of gearbox based on matching pursuit. , 2010, , .		2
262	Optimising burn-in procedure and warranty policy in lifecycle costing. , 2011, , .		2
263	Unified uncertainty analysis using the maximum entropy approach and simulation. , 2012, , .		2
264	Design FMEA for a diesel engine using two risk priority numbers. , 2012, , .		2
265	Gear crack level classification based on multinomial logit model and cumulative link model. , 2012, , .		2
266	Chapter 2: Selective Maintenance for Complex Systems Considering Imperfect Maintenance Efficiency. , 2014, , 17-49.		2
267	Time series modeling of vibration signals from a gearbox under varying speed and load condition. , 2018, , .		2
268	Investigation of Gear Dynamic Characteristics under Stochastic External Excitations. IOP Conference Series: Materials Science and Engineering, 2019, 576, 012013.	0.6	2
269	Use of Autoregressive Conditional Heteroskedasticity Model to Assess Gear Tooth Surface Roughness., 2020,,.		2
270	Application of Fuzzy Preference Based Rough Set Model to Condition Monitoring. Lecture Notes in Computer Science, 2010, , 688-697.	1.3	2

#	Article	IF	CITATIONS
271	CONSTRUCTION OF POSSIBILITY DISTRIBUTIONS FOR RELIABILITY ANALYSIS BASED ON POSSIBILITY THEORY. , 2004, , .		2
272	Application of Mathematical Programming to a Large-Scale Agricultural Production and Distribution System. Journal of the Operational Research Society, 1991, 42, 639.	3.4	1
273	Fault Diagnosis Using Multi-Source Information Fusion. , 2006, , .		1
274	Use of neural networks to predict rear axle gear damage. , 2009, , .		1
275	Bayesian theory based identification of relationship between product reliability and quality characteristics using expert's experience., 2009,,.		1
276	Features of Early Cracks in a Gear Based on a 16DOF Nonlinear Time-Varying Stiffness Dynamic Model. , 2009, , .		1
277	Spur Gear Crack Propagation Assessment Using Model-Based Analysis and Simulation. Key Engineering Materials, 2009, 413-414, 299-304.	0.4	1
278	Application of cyclic spectral analysis to gear damage assessment. , 2010, , .		1
279	Two dimensional analytic wavelet thresholding and its application to ultrasonic pulse-echo B-scan denoising. , 2010, , .		1
280	Gearbox diagnosis based on cyclic spectral analysis. , 2012, , .		1
281	Condition-based replacement policy for a device using interval-censored inspection data. , 2013, , .		1
282	An adaptive signal processing method for extraction of a weak bearing signal. , 2013, , .		1
283	An improved d-MP search algorithm for multi-state networks. , 2015, , .		1
284	Copula-Based Time-Frequency Distribution Analysis for Planetary Gearbox Fault Detection., 2017,,.		1
285	A Class Incremental Learning Approach Based on Autoencoder Without Manual Feature Extraction for Rail Vehicle Fault Diagnosis. , 2018 , , .		1
286	Dynamic Modeling of Gear Tooth Pitting Propagation to Neighbouring and Mating Teeth., 2018,,.		1
287	Efficient analytical method to obtain the responses of a gear model with stochastic load and stochastic friction. IOP Conference Series: Materials Science and Engineering, 2019, 542, 012063.	0.6	1
288	Wind Turbine Power Output Estimation with Probabilistic Power Curves. , 2020, , .		1

#	Article	IF	Citations
289	Health Index Development for a Planetary Gearbox. Procedia Manufacturing, 2020, 49, 155-159.	1.9	1
290	A sparse FP-VAR model for representing multichannel non-stationary baseline vibration signals from a gearbox. , 2020, , .		1
291	Normalization of gearbox vibration signal for tracking tooth crack severity progression under time-varying operating conditions. , 2020, , .		1
292	Dynamic Modeling of a Planetary Gearbox with Sun Gear Crack and Bearing Clearance. , 2020, , .		1
293	Adversarial Domain Adaptation for Gear Crack Level Classification Under Variable Load. , 2020, , .		1
294	Time Series Modelling of Non-stationary Vibration Signals for Gearbox Fault Diagnosis., 2021,, 337-354.		1
295	Optimal Redundancy Allocation of Multi-State Systems with Genetic Algorithms. Studies in Computational Intelligence, 2007, , 191-214.	0.9	1
296	Reliability For High System Utilization. International Journal of Modelling and Simulation, 1991, 11, 7-11.	3.3	0
297	Scheduling A Meat-Packing Production Line With Simulation. International Journal of Modelling and Simulation, 1998, 18, 54-59.	3.3	0
298	Gear crack assessment based on cyclic correlation analysis. , 2009, , .		0
299	Wear degree prognostics for slurry pumps using support vector machines. , 2009, , .		O
300	Comparison of maintenance policies in hazard rate order., 2009,,.		0
301	Ultrasonic Material Crack Detection With Adaptive LMS-Based Wavelet Filter. , 2009, , .		0
302	Fault detection of gearbox with vibration signal analysis by a linear combination of adaptive wavelets. , 2009, , .		0
303	Application of cyclic spectral analysis to gear crack assessment. , 2009, , .		0
304	A general framework to make a sequential preventive maintenances decision using proportional hazards model (PHM). , 2010 , , .		0
305	A New Life Prediction Model Based on Ductility Exhaustion Theory for High Temperature Low Cycle Fatigue of Turbine Disk Alloys. , 2010, , .		0
306	Ordinal semi-supervised k-nearest neighbor algorithm for small training datasets. , 2011, , .		0

#	Article	IF	CITATIONS
307	Diagnosis of pitting damage levels of planet gears based on ordinal ranking., 2011,,.		0
308	Adapting an age-reduction model to extend the useful-life duration. , 2012, , .		0
309	Dynamic simulation of a planetary gear set and estimation of fault growth on the sun gear. , 2013, , .		0
310	Dependence analysis of planetary gearbox vibration marginals. , 2016, , .		0
311	Adaptive Signal Decomposition Methods for Vibration Signals of Rotating Machinery. , 0, , .		0
312	A Probabilistic Classifier for Transformer Dissolved Gas Analysis Using Various Input Variables. , 2018, , .		0
313	Application of Modified Morphological Pattern Spectrum and LSSVM for Fault Diagnosis of Train Wheeltset Bearings. , 2018, , .		0
314	Early gear tooth crack detection based on singular value decomposition. , 2019, , .		0
315	Virtual rotating speed meter: extracting machinery rotating speed from vibration signals based on deep learning and transfer learning. , 2020, , .		0
316	Optimal structure screening for large-scale multi-state series-parallel systems based on structure ordinal optimization. IISE Transactions, 2020, , 1-13.	2.4	0
317	Modelling of Inspection Cycles for Power Distribution Transformers. , 2020, , .		0
318	Study on A Special Category of FM Signals with Applications to Planetary Gearbox Fault Diagnosis under Non-stationary Conditions. , 2020, , .		0
319	False Lipschitz Penalty Sparse Low-Rank Matrix and Chaotic Bionic Optimization for Prognosis of Bearing Degradation. IEEE Transactions on Reliability, 2024, , 1-17.	4.6	0
320	Evaluating the failure risk with and without failure data. Journal of the Korean Statistical Society, 0, , $1. $	0.4	0
321	Vibration-Based Wear Assessment in Slurry Pumps. Engineering Asset Management Review, 2012, , 105-123.	0.1	O
322	Generating Indicators for Diagnosis of Fault Levels by Integrating Information from Two or More Sensors., 2013,, 74-97.		0
323	Corrections to "Prognosis of Bearing Degeneration Using Adaptive Quaternion Least Mean Biquadrate Under Framework of Hypercomplex Data―[Mar 20 2659-2670]. IEEE Sensors Journal, 2020, 20, 10316-10316.	4.7	O
324	Generating Indicators for Diagnosis of Fault Levels by Integrating Information from Two or More Sensors. , 0, , 288-309.		0