

Kai Goebel

List of Publications by Year in descending order

Source: <https://exaly.com/author-pdf/2509570/publications.pdf>

Version: 2024-02-01

169
papers

5,923
citations

172207

29
h-index

155451

55
g-index

170
all docs

170
docs citations

170
times ranked

3243
citing authors

#	ARTICLE	IF	CITATIONS
1	Damage propagation modeling for aircraft engine run-to-failure simulation. , 2008, , .		774
2	Prognostics Methods for Battery Health Monitoring Using a Bayesian Framework. IEEE Transactions on Instrumentation and Measurement, 2009, 58, 291-296.	2.4	609
3	Prognostics in Battery Health Management. IEEE Instrumentation and Measurement Magazine, 2008, 11, 33-40.	1.2	415
4	Comparison of prognostic algorithms for estimating remaining useful life of batteries. Transactions of the Institute of Measurement and Control, 2009, 31, 293-308.	1.1	336
5	Metrics for evaluating performance of prognostic techniques. , 2008, , .		245
6	Model-Based Prognostics With Concurrent Damage Progression Processes. IEEE Transactions on Systems, Man, and Cybernetics: Systems, 2013, 43, 535-546.	5.9	110
7	Uncertainty Management for Diagnostics and Prognostics of Batteries using Bayesian Techniques. Aerospace Conference Proceedings IEEE, 2008, , .	0.0	100
8	An integrated approach to battery health monitoring using bayesian regression and state estimation. IEEE Autotestcon Proceedings, 2007, , .	0.0	99
9	Resilience-based network design under uncertainty. Reliability Engineering and System Safety, 2018, 169, 364-379.	5.1	94
10	In-situ fatigue life prognosis for composite laminates based on stiffness degradation. Composite Structures, 2015, 132, 155-165.	3.1	89
11	Uncertainty Quantification in Remaining Useful Life Prediction Using First-Order Reliability Methods. IEEE Transactions on Reliability, 2014, 63, 603-619.	3.5	84
12	Aircraft Engine Run-to-Failure Dataset under Real Flight Conditions for Prognostics and Diagnostics. Data, 2021, 6, 5.	1.2	80
13	Fusing physics-based and deep learning models for prognostics. Reliability Engineering and System Safety, 2022, 217, 107961.	5.1	80
14	Ensemble of optimized echo state networks for remaining useful life prediction. Neurocomputing, 2018, 281, 121-138.	3.5	79
15	Advances in uncertainty representation and management for particle filtering applied to prognostics. , 2008, , .		76
16	Standardizing research methods for prognostics. , 2008, , .		76
17	A multi-feature integration method for fatigue crack detection and crack length estimation in riveted lap joints using Lamb waves. Smart Materials and Structures, 2013, 22, 105007.	1.8	76
18	Metrics for Offline Evaluation of Prognostic Performance. International Journal of Prognostics and Health Management, 2010, 1, .	0.6	73

#	ARTICLE	IF	CITATIONS
19	Battery health management system for electric UAVs. , 2011, , .		72
20	Prognostics approach for power MOSFET under thermal-stress aging. , 2012, , .		72
21	Evaluating algorithm performance metrics tailored for prognostics. , 2009, , .		71
22	A knowledge-based system approach for sensor fault modeling, detection and mitigation. Expert Systems With Applications, 2012, 39, 10977-10989.	4.4	71
23	Degradation Modeling and Remaining Useful Life Prediction of Aircraft Engines Using Ensemble Learning. Journal of Engineering for Gas Turbines and Power, 2019, 141, .	0.5	71
24	A neural network filtering approach for similarity-based remaining useful life estimation. International Journal of Advanced Manufacturing Technology, 2019, 101, 87-103.	1.5	67
25	An agile accelerated aging, characterization and scenario simulation system for gate controlled power transistors. , 2008, , .		62
26	Condition-based prediction of time-dependent reliability in composites. Reliability Engineering and System Safety, 2015, 142, 134-147.	5.1	57
27	Prognostic Health-Management System Development for Electromechanical Actuators. Journal of Aerospace Information Systems, 2015, 12, 329-344.	1.0	57
28	Accelerated aging system for prognostics of power semiconductor devices. , 2010, , .		56
29	Bayesian hierarchical model-based prognostics for lithium-ion batteries. Reliability Engineering and System Safety, 2018, 172, 25-35.	5.1	55
30	Model-based prognostics under limited sensing. , 2010, , .		52
31	Prognostics Health Management of Electronic Systems Under Mechanical Shock and Vibration Using Kalman Filter Models and Metrics. IEEE Transactions on Industrial Electronics, 2012, 59, 4301-4314.	5.2	52
32	Bayesian model selection and parameter estimation for fatigue damage progression models in composites. International Journal of Fatigue, 2015, 70, 361-373.	2.8	49
33	Relation between prognostics predictor evaluation metrics and local interpretability SHAP values. Artificial Intelligence, 2022, 306, 103667.	3.9	49
34	A novel Bayesian imaging method for probabilistic delamination detection of composite materials. Smart Materials and Structures, 2013, 22, 125019.	1.8	42
35	A Bayesian framework for fatigue life prediction of composite laminates under co-existing matrix cracks and delamination. Composite Structures, 2018, 187, 58-70.	3.1	41
36	Distributed prognostic health management with gaussian process regression. , 2010, , .		39

#	ARTICLE	IF	CITATIONS
37	A Recursive Receding Horizon Planning for Unmanned Vehicles. IEEE Transactions on Industrial Electronics, 2015, 62, 2912-2920.	5.2	39
38	An Instance-Based Method for Remaining Useful Life Estimation for Aircraft Engines. Journal of Failure Analysis and Prevention, 2008, 8, 199-206.	0.5	37
39	Prognostics using Kalman-Filter models and metrics for risk assessment in BGAs under shock and vibration loads. , 2010, , .		37
40	Methodologies for uncertainty management in prognostics. , 2009, , .		36
41	Correcting Sensor Drift and Intermittency Faults With Data Fusion and Automated Learning. IEEE Systems Journal, 2008, 2, 189-197.	2.9	35
42	Interrogation of system state for damage assessment in lead-free electronics subjected to thermo-mechanical loads. , 2008, , .		35
43	Integrated diagnostic/prognostic experimental setup for capacitor degradation and health monitoring. , 2010, , .		35
44	Risk-Sensitive Particle-Filtering-based Prognosis Framework for Estimation of Remaining Useful Life in Energy Storage Devices<. Studies in Informatics and Control, 2010, 19, .	0.6	35
45	Resistance spectroscopy-based condition monitoring for prognostication of high reliability electronics under shock-impact. , 2009, , .		34
46	Prognostics of power MOSFET. , 2011, , .		34
47	Optimizing battery life for electric UAVs using a Bayesian framework. , 2012, , .		33
48	Modeling aging effects of IGBTs in power drives by ringing characterization. , 2008, , .		32
49	Analytical algorithms to quantify the uncertainty in remaining useful life prediction. , 2013, , .		32
50	Remaining Useful Life Prediction of Bearings Using Ensemble Learning: The Impact of Diversity in Base Learners and Features. Journal of Computing and Information Science in Engineering, 2021, 21, .	1.7	31
51	Multiple damage progression paths in model-based prognostics. , 2011, , .		30
52	Accelerated aging in electrolytic capacitors for prognostics. , 2012, , .		30
53	Prognostics-enhanced Automated Contingency Management for advanced autonomous systems. , 2008, , .		29
54	Evaluating prognostics performance for algorithms incorporating uncertainty estimates. , 2010, , .		28

#	ARTICLE	IF	CITATIONS
55	Probabilistic fatigue damage prognosis of lap joint using Bayesian updating. Journal of Intelligent Material Systems and Structures, 2015, 26, 965-979.	1.4	28
56	Accelerated aging experiments for capacitor health monitoring and prognostics. , 2012, , .		27
57	Requirements Flowdown for Prognostics and Health Management. , 2012, , .		25
58	Network Reconfiguration for Increasing Transportation System Resilience Under Extreme Events. Risk Analysis, 2019, 39, 2054-2075.	1.5	25
59	Filtering and prediction techniques for model-based prognosis and uncertainty management. , 2010, , .		20
60	Conceptual design of cogeneration plants under a resilient design perspective: Resilience metrics and case study. Applied Energy, 2018, 215, 736-750.	5.1	20
61	Experimental Validation of a Prognostic Health Management System for Electro-Mechanical Actuators. , 2011, , .		19
62	Novel metrics and methodologies for the verification and validation of prognostic algorithms. , 2011, , .		18
63	Sustained damage and remaining useful life assessment in leadfree electronics subjected to sequential multiple thermal environments. , 2012, , .		18
64	Prognostication Based on Resistance-Spectroscopy for High Reliability Electronics Under Shock-Impact. , 2009, , .		17
65	Prognostication of latent damage and residual life in leadfree electronics subjected to multiple thermal-environments. , 2009, , .		16
66	Use of prognostics in risk-based decision making for BGAs under shock and vibration loads. , 2010, , .		16
67	Prognostication of Residual Life and Latent Damage Assessment in Lead-Free Electronics Under Thermomechanical Loads. IEEE Transactions on Industrial Electronics, 2011, 58, 2605-2616.	5.2	16
68	Prognostic Fusion for Uncertainty Reduction. , 2007, , .		15
69	Towards Prognostics of Electrolytic Capacitors. , 2011, , .		15
70	A new algorithm for prognostics using Subset Simulation. Reliability Engineering and System Safety, 2017, 168, 189-199.	5.1	15
71	More effective prognostics with elbow point detection and deep learning. Mechanical Systems and Signal Processing, 2021, 146, 106987.	4.4	15
72	Requirements Specification for Prognostics Performance - An Overview. , 2010, , .		14

#	ARTICLE	IF	CITATIONS
73	Physics based Degradation Modeling and Prognostics of Electrolytic Capacitors under Electrical Overstress Conditions. , 2013, , .		14
74	Assessment of residual damage in leadfree electronics subjected to multiple thermal environments of thermal aging and thermal cycling. , 2010, , .		13
75	Developing IVHM Requirements for Aerospace Systems. , 0, , .		13
76	Quantifying the Resilience-Informed Scenario Cost Sum: A Value-Driven Design Approach for Functional Hazard Assessment. Journal of Mechanical Design, Transactions of the ASME, 2019, 141, .	1.7	13
77	A self-organizing map and a normalizing multi-layer perceptron approach to baselining in prognostics under dynamic regimes. Neurocomputing, 2021, 456, 268-287.	3.5	13
78	When will it break? A hybrid soft computing model to predict time-to-break margins in paper machines. , 2002, , .		12
79	A Discussion on Uncertainty Representation and Interpretation in Model-based Prognostics Algorithms based on Kalman Filter Estimation Applied to Prognostics of Electronics Components. , 2012, , .		12
80	Prognostics of Power Electronics, methods and validation experiments. , 2012, , .		11
81	Remaining Useful Life Estimation in Prognosis: An Uncertainty Propagation Problem. , 2013, , .		11
82	Integrated experimental and numerical investigation for fatigue damage diagnosis in composite plates. Structural Health Monitoring, 2014, 13, 537-547.	4.3	11
83	An investigation of strain energy release rate models for real-time prognosis of fiber-reinforced laminates. Composite Structures, 2017, 165, 99-114.	3.1	11
84	Probabilistic Risk-Based Operational Safety Bound for Rotary-Wing Unmanned Aircraft Systems Traffic Management. Journal of Aerospace Information Systems, 2020, 17, 171-181.	1.0	11
85	Modeling Propagation of Gas Path Damage. , 2007, , .		10
86	Prognostics and health monitoring of electronic systems. , 2011, , .		10
87	Prognostication of accrued damage in board assemblies under thermal and mechanical stresses. , 2012, , .		10
88	Prognostics Applied to Electric Propulsion UAV. , 2015, , 1053-1070.		10
89	Predicting Real-Time Safety of the National Airspace System. , 2016, , .		10
90	A verification methodology for prognostic algorithms. , 2010, , .		9

#	ARTICLE	IF	CITATIONS
91	Extended Kalman Filter models and resistance spectroscopy for prognostication and health monitoring of leadfree electronics under vibration. , 2011, , .		9
92	Particle filter models and phase sensitive detection for prognostication and health monitoring of leadfree electronics under shock and vibration. , 2011, , .		9
93	Level of damage and remaining useful life assessment in leadfree electronics subjected to multiple thermo-mechanical environments. , 2012, , .		9
94	In- Time Safety Assurance Systems for Emerging Autonomous Flight Operations. , 2018, , .		9
95	Interrogation of accrued damage and remaining life in field-deployed electronics subjected to multiple thermal environments of thermal aging and thermal cycling. , 2011, , .		8
96	Implementation of prognostic methodologies to cryogenic propellant loading testbed. , 2013, , .		8
97	Uncertainty Quantification in Remaining Useful Life of Aerospace Components using State Space Models and Inverse FORM. , 2013, , .		8
98	PHM-based residual life computation of electronics subjected to a combination of multiple cyclic-thermal environments. , 2010, , .		7
99	Comparison of Kalman-filter and extended Kalman-filter for prognostics health management of electronics. , 2012, , .		7
100	Real-Time Prediction of Safety Margins in the National Airspace. , 2017, , .		7
101	Case studies for prognostics-enhanced Automated Contingency Management for aircraft systems. , 2010, , .		6
102	Prognostics Health Management and Physics Based Failure Models for Electrolytic Capacitors. , 2012, , .		6
103	Resilient System Design Using Cost-Risk Analysis With Functional Models. , 2017, , .		6
104	A neural network framework for similarity-based prognostics. MethodsX, 2019, 6, 383-390.	0.7	6
105	A Data Fusion Approach for Aircraft Engine Fault Diagnostics. , 2007, , 767.		5
106	Real-time Probabilistic Forecasting of Wear Degradation using a Macro-scale Physical Model. Aerospace Conference Proceedings IEEE, 2008, , .	0.0	5
107	Identification of failure modes in portable electronics subjected to mechanical-shock using supervised learning of damage progression. , 2011, , .		5
108	Interrogation of thermo-mechanical damage in field-deployed electronics. , 2012, , .		5

#	ARTICLE	IF	CITATIONS
109	Autonomous Decision Making for Planetary Rovers Using Diagnostic and Prognostic Information. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2012, 45, 289-294.	0.4	5
110	A battery certification testbed for small satellite missions. , 2015, , .		5
111	Initial Demonstration of the Real-Time Safety Monitoring Framework for the National Airspace System Using Flight Data. , 2016, , .		5
112	Reconstructing secondary test database from PHM08 challenge data set. Data in Brief, 2018, 21, 2464-2469.	0.5	5
113	Leading-Indicators Based on Impedance Spectroscopy for Prognostication of Electronics Under Shock and Vibration Loads. , 2009, , .		5
114	Computational architecture for autonomous decision-making in unmanned aerial vehicles. , 2018, , .		5
115	Fault classification with Gauss-Newton optimization and real-time simulation. , 2011, , .		4
116	Assessment of Accrued Damage and Remaining Useful Life in Leadfree Electronics Subjected to Multiple Thermal Environments of Thermal Aging and Thermal Cycling. IEEE Transactions on Components, Packaging and Manufacturing Technology, 2012, 2, 634-649.	1.4	4
117	An Uncertainty Quantification Framework for Prognostics and Condition-Based Monitoring. , 2014, , .		4
118	Uncertainty in prognostics: Computational methods and practical challenges. , 2014, , .		4
119	Distributed prognostics using wireless embedded devices. , 2008, , .		3
120	Observer based junction temperature estimator in thermoelectrical aging. , 2010, , .		3
121	Decorrelated feature space and neural nets based framework for failure modes clustering in electronics subjected to mechanical-shock. , 2011, , .		3
122	Comparison of particle filter using SIR algorithm with self-adaptive filter using ARMA for PHM of Electronics. , 2012, , .		3
123	Prognostication Based on Resistance-Spectroscopy and Phase-Sensitive Detection for Electronics Subjected to Shock-Impact. Journal of Electronic Packaging, Transactions of the ASME, 2012, 134, .	1.2	3
124	Leading indicators for prognostic health management of electrical connectors subjected to random vibration. , 2012, , .		3
125	Particle swarm optimization with extended Kalman filter for prognostication of accrued damage in electronics under temperature and vibration. , 2012, , .		3
126	Damage pre-cursor based assessment of impact of high temperature storage on reliability of leadfree electronics. , 2013, , .		3

#	ARTICLE	IF	CITATIONS
127	A testbed for implementing prognostic methodologies on cryogenic propellant loading systems. , 2014, , .		3
128	Resilience evaluation of the environmental control and life support system of a spacecraft for deep space travel. Acta Astronautica, 2018, 152, 360-369.	1.7	3
129	Decomposing Incentives for Early Resilient Design: Method and Validation. , 2019, , .		3
130	Temporal Fault Injection Considerations in Resilience Quantification. , 2020, , .		3
131	Bearing Life Prediction With Informed Hyperprior Distribution: A Bayesian Hierarchical and Machine Learning Approach. IEEE Access, 2021, 9, 157002-157011.	2.6	3
132	Prognostics for Ground Support Systems: Case Study on Pneumatic Valves. , 2011, , .		2
133	Cost assessment for implementation of embedded prognostic health management for electronic systems. , 2012, , .		2
134	Prognostic health monitoring for a micro-coil spring interconnect subjected to drop impacts. , 2013, , .		2
135	Fatigue Damage Diagnosis and Prognosis Using Bayesian Updating. , 2013, , .		2
136	Real Time Safety Monitoring: Concept for Supporting Safe Flight Operations. , 2017, , .		2
137	How Uncertain Is Too Uncertain? Validity Tests for Early Resilient and Risk-Based Design Processes. Journal of Mechanical Design, Transactions of the ASME, 2021, 143, .	1.7	2
138	Evaluation of Multiple Damage-Mode Models for Prognostics of Carbon Fiber-reinforced Polymers. , 0, , .		2
139	A Model-based Avionic Prognostic Reasoner (MAPR). , 2012, , .		2
140	Preliminary Investigation of Impact of Technological Impairment on Trajectory-Based Operation. , 2017, , .		2
141	Using Value Assessment to Drive PHM System Development in Early Design. Proceedings of the Annual Conference of the Prognostics and Health Management Society Prognostics and Health Management Society Conference, 2019, 11, .	0.2	2
142	Communication optimizations for a wireless distributed prognostic framework. , 2009, , .		1
143	Tackling V&V for Prognostics. , 2010, , .		1
144	Cost Assessment for Implementation of Embedded Prognostic Health Management for Electronic Systems. , 2012, , .		1

#	ARTICLE	IF	CITATIONS
145	Comparison of Prognostic Health Management Algorithms for Assessment of Electronic Interconnect Reliability. , 2013, , .		1
146	Damage Pre-Cursors Based Prognostication of Accrued Damage and Assessment of Operational Readiness of Leadfree Electronics. , 2013, , .		1
147	Application of Model-based Prognostics Framework to Pneumatic Valves on Cryogenic Testbed. , 2015, , .		1
148	A testbed for implementing prognostic methodologies on cryogenic propellant loading systems. IEEE Instrumentation and Measurement Magazine, 2015, 18, 5-15.	1.2	1
149	Optimizing Function-Based Fault Propagation Model Resilience Using Expected Cost Scoring. , 2018, , .		1
150	Improving tail accuracy of the predicted cumulative distribution function of time of failure. Reliability Engineering and System Safety, 2021, 207, 107333.	5.1	1
151	Exploring Architectures for Integrated Resilience Optimization. Journal of Aerospace Information Systems, 2021, 18, 665-678.	1.0	1
152	Risk-Based Dynamic Anisotropic Operational Safety Bound for Rotary UAV Traffic Control. Proceedings of the Annual Conference of the Prognostics and Health Management Society Prognostics and Health Management Society Conference, 2019, 11, .	0.2	1
153	Prognostic Health Monitoring of Damage Progression in Leadfree Electronics Under Sequential Exposure to Thermal Aging and Thermal Cycling. , 2010, , .		0
154	Load allocation for risk management in overactuated systems experiencing incipient failure conditions. , 2010, , .		0
155	Leading indicator based assessment of operational readiness in electronics subjected to multiple environments. , 2012, , .		0
156	Classification of location of damage in package-on-package (PoP) assemblies using ANN with feature vectors for progression of accrued damage. , 2012, , .		0
157	Classification of multiple failure modes in package-on-package (PoP) assemblies using feature vectors for progression of accrued damage. , 2012, , .		0
158	Towards Characterizing the Variability in the Loading Demands of an Unmanned Aerial Vehicle. , 2015, , .		0
159	Microstructural Indicators for Assessment of Effect of Prolonged and Intermittent Storage on Reliability of Lead-free Electronics. IEEE Transactions on Device and Materials Reliability, 2016, 16, 304-317.	1.5	0
160	Model Validation in Early Phase of Designing Complex Engineered Systems. , 2018, , .		0
161	Conflict Probability Estimation Using a Risk-Based Dynamic Anisotropic Operational Safety Bound for UAS Traffic Management. , 2020, , .		0
162	Remaining Useful-Life Based on Damage Pre-Cursors for Leadfree Electronics Subjected to Multiple Thermal-Environments. , 2009, , .		0

#	ARTICLE	IF	CITATIONS
163	PHM of Leadfree Interconnects Using Resistance Spectroscopy Based Particle Filter Models for Shock and Vibration Environments. , 2011, , .		0
164	KL Transform and Neural-Net Based Framework for Failure Modes Classification in Electronics Subjected to Mechanical-Shock. , 2011, , .		0
165	Method for Assessment of Prolonged and Intermittent Storage on Reliability of Leadfree Electronics Using Leading Indicators. , 2013, , .		0
166	Prognostics and Health Monitoring: Application to an Unmanned Electric Aircraft. , 2018, , 219-242.		0
167	Prognostics Applied to Electric Propulsion UAV. , 2019, , 1-18.		0
168	A Comparative Study on Computation of Cumulative Distribution Function in Predicting Time of Failure of Engineering Systems. Proceedings of the Annual Conference of the Prognostics and Health Management Society Prognostics and Health Management Society Conference, 2019, 11, .	0.2	0
169	A Novel Model-Based Framework for Power Consumption Prognosis in Multirotors Applied to the Battery End of Discharge Prognostics. Journal of Nondestructive Evaluation, Diagnostics and Prognostics of Engineering Systems, 2020, 3, .	0.7	0