

2016 IEEE International Conference on Prognostics and Health Management (ICPHM 2016)

**Ottawa, Ontario, Canada
20-22 June 2016**



**IEEE Catalog Number: CFP16PHM-POD
ISBN: 978-1-5090-0383-9**

**Copyright © 2016 by the Institute of Electrical and Electronics Engineers, Inc
All Rights Reserved**

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

******This publication is a representation of what appears in the IEEE Digital Libraries. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP16PHM-POD
ISBN (Print-On-Demand):	978-1-5090-0383-9
ISBN (Online):	978-1-5090-0382-2

Additional Copies of This Publication Are Available From:

Curran Associates, Inc
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: (845) 758-0400
Fax: (845) 758-2633
E-mail: curran@proceedings.com
Web: www.proceedings.com

CURRAN ASSOCIATES INC.
proceedings
.com

2016 IEEE International Conference on Prognostics and Health Management (ICPHM)
Table of Contents

h

Session MA1

Incipient fault detection and diagnosis using statistical signal processing (198)
Claude Delpha

Session MA2

Gas Turbine Performance - key to diagnosis (199)
Herb Sarqavanamuttoo

Session MA3

Machine learning based methods for estimating time to failure with application to APU prognostics (201)
Chunsheng Yang

Session MA4

An Improved Fault Diagnosis Approach Based on Support Vector Machine (55)
Qi Zhao

Session MA4

Performance evaluation of accelerated corrosion techniques using electrochemical measurements and acoustic emission parameters (180)
Shilpa Patil

Session MB1

Deep Learning for PHM Applications (200)
Weizhong Yan

Session MB2

State Estimation Methods for Structural Damage Monitoring, Diagnosis and Prognosis (202)
Eric Hernandez

Session MB3

Intelligent Condition Based Monitoring of Rotating Machines. (204)
Nishchal K. Verma

Session MB4

Implementation and Verification of Prognostics and Health Management System Using a Configurable System of Systems Architecture (71)
Song Han

Session MB4

Model-Based Fault Diagnosis and Prognosis for Electric Power Steering Systems (87)

Wen-Chiao Lin

Session MB4

Cost-Wise Readiness Enabled Through Data Driven Fleet Management (DDFM) (137)

Matt Carter

Session TA1

Prognostics by Interacting Multiple Model Estimator (43)

YanJun Yan

Session TA1

Online Sequential Extreme Learning Machines for Fault Detection (88)

Yang Hu

Session TA1

Intermittent Fault Diagnosis of Industrial Systems in a Model-Checking Framework (185)

Mohamed Ghazel

Session TA2

On Cross-domain Feature Fusion in Gearbox Fault Diagnosis under Various Operating Conditions Based on Transfer Component Analysis (104)

Junyao Xie

Session TA2

Support Vector Data Description for Machinery Multi-Fault Classification with Unbalanced Datasets (106)

Lixiang Duan

Session TA2

PHM functions maturation (109)

Audrey Dupont

Session TB1

SOH estimation for lithium-ion batteries: A Cointegration and Error Correction Approach (56)

Kunlong Chen

Session TB1

A Novel Method for Capacity Fade Analysis of Lithium-ion Batteries Based on Multi-Physics Model (67)

Liqiang Zhang

Session TB1

Battery remaining useful life prediction algorithm based on support vector regression and unscented particle filter (102)

Xi Peng

Session TB2

Prognostication of Remaining Useful-Life Assessment of Flexible Batteries in Foldable Wearable Electronics (115)

Pradeep Lall

Session TB2

A Lithium-ion Battery RUL Prognosis Method Using Temperature Changing Rate (159)

Li Yang

Session TB2

Data-driven prognostic techniques for estimation of the remaining useful life of Lithium-ion batteries (167)

Roozbeh Razavi-Far

Session TC1

PHM and Data Analytics in the Energy Industry (206)

Sony Mathew

Session TC2

PHM Standard Working Group Meeting (207)

Sony Mathew

Session TP1

A data-driven prognostics approach for RUL based on principle component and instance learning (14)

Yongxiang Li

Session TP1

Application of PSO-ELM in Electronic System Fault Diagnosis (27)

Shaowei Chen

Session TP1

Model-based method for estimating LiCoO₂ battery state of health and behaviors (38)

Junfu Li

Session TP1

Bearing Defect Signature Analysis based on A SAX-based Association Rule Mining (52)

Tangbo Bai

Session TP1

Aviation BIT Optimal Method for Reducing False Alarm Rate Under Gust Environment (64)

Yangming Guo

Session TP1

Research on Online Detection and Location of Multi-Conductor Cables' Faults (76)

Li Wang

Session TP1

Identification of a roller screw for diagnosis of flight control actuator (86)

Romain Breuneval

Session TP1

Predicting the Lifetimes of LiFePO₄ Batteries on the Basis of the Gamma Process Through Accelerated Degradation Measurements (111)

Yu-chang Lin

Session TP1

Study on Multi-event Opportunistic Maintenance Decision-making Model Based on Condition (122)

Quanlei Wu

Session TP1

Dynamic Sensor Calibration: A Comparative Study of a Hall Effect Sensor and an Incremental Encoder for Measuring Shaft Rotational Position (134)

David Rapos

Session TP1

Trade-off between energy consumption and lifetime in two tiered wireless sensor networks (148)

Veervrat Singh

Session TP1

Evaluation of Micro-flaws in Metallic Material Based on A Self-Organized Data-driven Approach (162)

teng xudong

Session TP1

A Cloud Based Framework of Prognostics and Health Management for Manufacturing Industry (169)

DJ Ning

Session WA1

Micromechanics Modeling of Skin Panel with Pitting Corrosion for Aircraft Structural Health Monitoring (62)

Fangyi WAN

Session WA1

Simulation of Ultrasonic Testing for Resolution of Corrosion Detection in Pipes (74)

Qianyue Qian

Session WA1

Frequency Analysis on Vibration Signatures for Gearbox Spalling Defect Detection (165)

Weidong Li

Session WA2

Helicopter Main Gearbox Bearing Defect Identification with Acoustic Emission Techniques (125)

Fang Duan

Session WA3

A Fault Diagnosis Method of Engine Rotor Based on Random Forests (77)

Qi Yao

Session WA3

A Modified Mahalanobis-Taguchi System Analysis for monitoring of Ball Screw Health Assessment (142)

Shuai Zhao

Session WA3

Integrated Hilbert Huang Technique for Bearing Defects Detection (208)

Shazali Osman

Session WA4

Time-frequency Demodulation Analysis for Gearbox Fault Diagnosis under Nonstationary Conditions (42)

Xiaowang Chen

Session WA4

A remaining useful life prediction approach for lithium-ion batteries using Kalman filter and an improved particle filter (107)

Baohua MO

Session WA4

Uncertainty quantification using evidence theory in concrete fatigue damage prognosis (129)

Hesheng Tang

Session WA4

Diagnostic Reasoning Framework Combining Fuzzy Logic and Dempster-Shafer Theory (150)

Anna Sztyber

Session WB1

Aviation PHM System Research Framework Based on PHM Big Data Center (49)

Lu Yang

Session WB1

i-RCAM: Intelligent expert system for root cause analysis in maintenance decision making (59)

Peter Chemweno

Session WB2

Model Identification of Lithium ion batteries in the Portable Power System (95)

Xing Zhou

Session WB2

Condition Based Maintenance for Complex Distributed Systems (154)

Becky Norman

Session WB3

Uncertainty Analysis of Phased Mission Systems with Probabilistic Timed Automata (48)

Zhaoguang Peng

Session WB3

Failure simulation and identification of shock absorber in carrier-based aircraft landing gear (65)

Fangyi WAN

Session WB3

Modeling Method for the Correlation of Zonal Products Based on Improved Generalized Directed Graphs (121)

Yaoyao Wang

Session WB4

On-line reliability assessment for an electronic system subject to condition monitoring (23)

Shuai Zhao

Session WB4

Correlation Analysis for Impedance-based Health Monitoring of Electromagnetic Coils (93)

N. Jordan Jameson

Session WB4

ANN based RUL Assessment for Copper-Aluminum Wirebonds Subjected to Harsh Environments (114)

Pradeep Lall

Session WB4

Surface Acoustic Wave Vibration Sensors for Measuring Aircraft Flutter (123)

Cy Wilson

Session WC1

Milling Tool Wear Monitoring Through Time-frequency Analysis of Sensory Signals (54)

Jianming Shi

Session WC1

An Improved Correlation-Based Anomaly Detection Approach for Condition Monitoring Data of Industrial Equipment (112)

Shisheng Zhong

Session WC1

APU Feature Integration Based on Multi-Variant Flight Data Analysis (178)

Xi Chen

Session WC2

Forecasting the health of gas turbine components through an integrated performance-based approach (57)

Elias Tsoutsanis

Session WC2

Diagnosing Wind Turbine Faults Using Machine Learning Techniques Applied to Operational Data (140)

Kevin Leahy

Session WC2

A Boosting Classifier for Induction Motor Fault Diagnosis (194)

Dezhi Li

Session WC3

Integrated model-based control and health management for industrial gas turbines (41)

Vili Panov

Session WC3

Developing machine learning-based models to estimate time to failure for PHM (197)

Chungseng Yang

Session WC4

A Prediction Method for Aero-engine Health Management Based on Nonlinear Time Series Analysis (22)

Qiang Huang

Session WC4

Generating Feature Sets for Fault Diagnosis using Denoising Stacked Auto-encoder (157)

Raghuveer Thirukovalluru

Session WC4

A Hydrogenerator Model-Based Failure Detection Framework to support Asset Management (160)

Olivier Blancke