

2014 IEEE Conference on Prognostics and Health Management

(PHM 2014)

**Cheney, Washington, USA
22-25 June 2014**



**IEEE Catalog Number: CFP14PHM-POD
ISBN: 978-1-4799-4942-7**

Table of Contents 2014 International Conference on Prognostics and Health Management

M.A.2 Mechanical PHM

Application of order tracking rationale to non-rotating cantilever beam analysis. (3)

Kesheng Wang, Yaohui Wang, Dashuang Luo, Qianhong He

A particle filtering-based approach for remaining useful life predication of rolling element bearings (9)

Naipeng Li, Yaguo Lei

A Review and Strategy for the Diagnosis of Speed-Varying Machinery (37)

Jing Lin, Ming Zhao, Yaguo Lei

M.A.3 Mechanical PHM

Fault Diagnosis of Rolling Element Bearing using Quadratic Nonlinearity Features (46)

Yong Li, Xiufeng Wang, Jing Lin

A Framework of Software Safety Engineering (P IC)

Xin He, Changbin Xue, Qing Zhou

M.B.2 Electronics PHM

A Prognostic Method for DC-DC Converters under Variable Operating Conditions (52)

Yi Wu, Youren Wang, Yuanyuan Jiang, Quan Sun

New Algorithms for Diagnosing Defects of an Air-Operated Valve for Self Diagnostic Monitoring System (59)

Wooshik Kim, Jangbum Chai

M.B.3 Electrical PHM

Prognostics of proton exchange membrane fuel cell stack in a particle filtering framework including characterization disturbances and voltage recovery (65)

Marine Jouin, Rafael Gouriveau, Daniel Hissel, Marie-Cécile Péra, Noureddine Zerhouni

Progress Towards Prognostic Health Management of Passive Components in Advanced Small Modular Reactors (6;)

Ryan Meyer

M.C.2 PHM Research

Tqdww'O wnkxctkvg'Uc vulecn'Gpugo drgu'hqt'Dgctkpi 'Hcwm'F ggevkqp'cpf 'K gpwlecvkqp'*79+

Jamie Godwin. 'Rgvt 'O cvj gy u. 'Ej tkwqrj gt 'Y cuqp

Comparison of Resampling Algorithms for Particle Filter based Remaining Useful Life Estimation (8:)

Limeng Guo, Yu Peng, Datong Liu, Yue Luo

M.C.3 PHM Research

Using Edge-detector to Model Wake Effects on Wind Turbines (98)

Yanjun Yan, James Zhang

T.A.2 Mechanical PHM

Application of Fault Management Theory to the Quantitative Selection of a Launch Vehicle Abort Trigger Suite (: 9)

Yunnhon Lo, Stephen B. Johnson, Jonanthan Breckenridge

A Vibration-Based Approach for Diesel Engine Fault Diagnosis (325)

Chao Jin, Wenyu Zhao, Zongchang Liu, Jay Lee, Xiao He

ASSESSMENT OF GRINDING WHEEL RECONDITIONING PROCESS USING MACHINE VISION (334)

Arunachalam Narayanaperumal

T.A.3 PHM Research

Critical Zone Recognition: Classification Vs. Regression (339)

Sergey Porotsky, Zigmund Bluvband, Shimon Tropper

Bayesian Probabilistic Model for Life Prediction and Fault Mode Classification of Solid State Luminaires (344)

Pradeep Lall, Junchao Wei, Peter Sakalaukus

Prognostication of the Effect of Mean Temperature of Thermal Cycle on SAC305 Leadfree Reliability Using Damage Pre-Cursors (354)

Pradeep Lall, Kazi Mirza

T.A.4 Mechanical PHM

Understanding Vibration Properties of a Planetary Gear Set for Fault Detection (368)

xihui liang, Ming J. Zuo, Mohammad R. Hoseini

REMAINING USEFUL LIFE ASSESSMENT OF END MILLING CUTTER USING TEXTURE ANALYSIS OF MACHINED SURFACE IMAGE DATA (P IC)

Arunachalam Narayanaperumal

Effects of Sampling Decimation on a Gas Turbine Performance Monitoring (373)

Houman Hanachi, Jie (Peter) Liu, Avisekh Banerjee, Ying Chen

T.A.5 PHM 2014 Poster Session

Improved multi-kernel LS-SVR for time series online prediction with incremental learning (379)
Yangming Guo, Jiezhong Ma

A New Hybrid Hierarchy Model Description Method (385)
Qi Zhao, Wenfeng Zhang, Gan Zhou, Xiumei Guan

T.B.2 Battery PHM

Method for Estimating Capacity and Predicting Remaining Useful Life of Lithium-Ion Battery (389)
Chao Hu, Gaurav Jain, Prabhakar Tamirisa, Tom Gorka

Multiphysics-based Failure Mode Identification for Lithium-ion Battery Prognostics (397)
Guangxing Bai, Pingfeng Wang

A Self-cognizant Dynamic System Approach for Battery State of Health Estimation (3: 3)
Guangxing Bai, Pingfeng Wang

T.B.3 PHM Research

An Operating Condition Classified Prognostics Approach for Remaining Useful Life Estimation (3; 3)
Li Qi, Gao Zhanbao, Shao Liqun

T.B.4 Electronics PHM

Defining reasons for deterioration of visual brand identities to prolong their life span (422+)
Henrik Lisby, Lars Klint

Prognostic Indicators for Cu-Al Wirebond Degradation Under Operation at Elevated Temperature and Combined Temperature Humidity (42:)
Pradeep Lall, Shantanu Deshpande, Luu Nguyen, Masood Murtuza

T.C.3 PHM Challenge Session Battery PHM-Fuel Cell

Proton Exchange Membrane Fuel Cells (PEMFC) Impedance Estimation Using Regression Analysis (443)
Wlamir Vianna, Bernardo Aflalo, Joao Pedro Malere, Ivo Medeiros, Leonardo Rodrigues

Switching Vector Autoregressive Models with Higher-Order Regime Dynamics: Application to Prognostics and Health Monitoring (44;)
Axel Hochstein, Hyung-Il Ahn, Ying Tat Leung, Matthew Denesuk

PEM fuel cell prognostics using particle filter with model parameter adaptation (45;)
James Kuria Kimotho, Tobias Meyer, Walter Sextro

An degenerated equivalent circuit model and hybrid prediction for state-of-health (SOH) of PEM fuel cell (467)
Taejin Kim, Hyunjae Kim, Jongmoon Ha, Keunsu Kim, Joung T. Yoon, Joonha Jung, Byeng D. Youn

W.A.1 Mechanical PHM

A model-based faults injection system for aircraft wing structure (474)

Fangyi WAN

Fault Diagnostic Opportunities for Solenoid Operated Valves using Physics-of-Failure Analysis (47:)

Noel Jameson, Michael Azarian, Michael Pecht

Detection and Classification for Faults in Drilling Process using Vibration Analysis (486)

Sonal Dixit, Adarsh Kumar, J Ramkumar, Nishchal K. Verma

W.A.2 PHM Applications

Development of Asset Fault Signatures for Prognostic and Health Management in the Nuclear Industry (492)

Vivek Agarwal, Nancy Lybeck, Randall Bickford, Richard Rusaw

Implementation of Condition Based Maintenance in Manufacturing Industry (499)

Ali Rastegari, Marcus Bengtsson, Antti Salonen, Mats Jackson

Rolling Element Bearing Fault Detection Using Density-Based Clustering (4: 7)

Jing Tian, Michael Azarian, Michael Pecht

W.B.1 Electronics PHM

A Method for Dependency Matrix Combination Based on Port Connection Relationship (4; 4)

Long Chen, Junyou Shi

Novel RUL prediction of Assets based on the Integration of Auto-Regressive Models and an RUSBoost Classifier (4; ;)

Georgios Fagogenis, David Flynn, David Lane

Anomaly Detection based on Data Stream Monitoring and Prediction with Improved Gaussian Process Regression Algorithm (527)

Jingyue Pang, Datong Liu, Yu Peng

W.B.2 PHM Research

Integrated Gaussian Process and Bayesian Framework for Remaining Useful Life Prediction (534)

Ahmed Mosallam, Kamal MEDJAHHER, Nouredine Zerhouni

Computational Algorithm for Dynamic Hybrid Bayesian Network in On-line System Health Management Applications (53:)

Chonlagarn Iamsumang, Ali Mosleh, Mohammad Modarres

W.C.1 PHM Framework

Estimating the Remaining Useful Life of Power Grid Transmission Lines using Synchrophasor Data (548)

Thomas Walsh, Saqer Alhloul, Meghdad Hajimorad

System Engineering of Autonomous Space Vehicles (556)

Michael Watson, Stephen B. Johnson, Luis Trevino

W.C.2 PHM Framework

Prognostic Decision Making to Extend a Platform Useful Life under Service Constraint (564)

Nathalie HERR, Christophe Varnier, Jean-Marc NICOD

Return-on-Investment Potential for US Army Missile Health Monitoring (575)

Stephen Marotta, David Simmons