

Comadem 2018 Conference Programme

FLUKE



Monday, 2 July



8:00-9:30	Registration (Foyer of the Kratan room)	
8:00 - 15:00	Thermography workshop Prof Roderick Thomas Venue: Kratan room (Sun City Conference Centre) 9:30-15:00	Centre for Asset Integrity Management research seminar University of Pretoria 8:30 - 15:30
18:00-19:00	Registration (Elephant Atrium of the Palace Hotel)	
19:00 - 21:00	Welcome reception Venue: Elephant Atrium and Courtyard (Palace Hotel)	

Tuesday, 3 July



8:00-9:00	Registration (Foyer of the Warriors Hall)	
8:30-9:00	Coffee Venue: Stir Coffee Shop	
9:00 - 10:30	Keynote lecture: Driving the digital enterprise Raff Leinen (Siemens) Session chair: prof Raj Rao	
10:30-11:00	Coffee Venue: Stir Coffee Shop	
	Mechanical systems Session chair: prof Stephan Heyns Venue: Warriors Hall 1	Electrical systems Session chair: Pieter van Vuuren Venue: Warriors Hall 2
11:00-11:20	[68] Mathematical Modelling and Experimental Validation for Condition Monitoring of Reciprocating Compressor System Haba, Brethee, Alabied, Mondal, Gu, Ball	[31] Ageing Models for Lightly Loaded Distribution Power Transformer Mukuddem, Jooste
11:25-11:45	[95] Modelling the Vibration Response of a Journal Bearing for Condition Monitoring Hassin, Ma, Gu, Ball	[43] Measurement and Visualization of the Corona Inception Gradient under the Effect of Wet Condition on HVDC Transmission line Djeumen, Walker, West
11:50-12:10	[27] A Study of the Influence of Gear Tooth Broken on the Time-varying Meshing Stiffness in Gear Transmission Systems Liu, Zhang, Zhen, Zhang, Shi	[53] A New Fuzzy Logic-based Approach to Predict Fault in Transformer Oil Based on Health Index using Dissolved Gas Analysis Mulyodinoto, Suwarno, Abu-Siada
12:15-12:35	[86] Experimental Study on Vibration Reduction Characteristics of a Helical Gear Coupling System Based on ISFD Zhang, He & Lu	[56] Condition monitoring thermal properties of a 20A hydraulic-magnetic MCB Kleyhans, Van Vuuren, Thomas
12:40-13:00	[77] An Outer Ring Fault Quantitative Diagnosis Method of Ball Bearing Based on the Detail Impact Characteristic Cui, Huang, Zhang	[17] A Comparative Study of Partial Discharge Measurement using Electrical and Inductive Coupling Sensors Kyere, Becker, Walker
13:00-14:00	Lunch Venue: Stir Coffee Shop	
	Integrated maintenance management Session chair: dr. Henri Marais Venue: Warriors Hall 1	Renewable energy systems & Energy storage systems Session chair: prof Kenny Uren Venue: Warriors Hall 2
14:00 - 14:20	[20] A Condition Based Reliability Simulator Framework based on a Heuristic Fault Model Swanepoel, Wichers	[22] Deep online analysis of dielectric parameters for lubricants and insulation oils with an innovative oil sensor system Mauntz, Peuser
14:20-14:40	[63] Cloud based Real-time Condition Monitoring Model for Effective Maintenance of Machines Dhandapani, Veilumuthu	[7] Real-Time Monitoring of Temperature Distribution in a Lithium-Ion Battery Pack Aucamp, Janse van Rensburg
14:40-15:00	[13] Arc Tangent Failure Rate Distribution Method Hu, Yang, Zhang, Qiu, Liu	
15:00-15:30	Coffee Venue: Stir Coffee Shop	
	Asset management Session chair: prof George van Schoor Venue: Warriors Hall 1	Signal processing 1 Session chair: Pieter van Vuuren Venue: Warriors Hall 2
15:30-15:50	[14] Trends in rotating equipment technology and maintenance Matheta, Amadi-Echendu	[10] Discrepancy analysis for gearbox condition monitoring: A comparison of different healthy data models Schmidt, Heyns, Gryllias
15:50 - 16:10	[32] A Policy Framework for Integrating Smart Asset Management within Operating Theatres in a Private Healthcare Group to Mitigate Critical System Failure Hirschowitz, Jooste	[19] An Enhanced Synchroextracted Transform (ESET) for nonlinear and nonstationary signal analysis Chen, Wang, Zuo
16:10-16:30	[23] Identifying current challenges of data-based maintenance management: a case study Marttonen-Arola, Baglee	[83] Research and Application of Weak Fault Diagnosis Method Based on Asymmetric Potential Stochastic Resonance in Strong Noise Background Li, Wang, Han, Kang, Li, Shi, Liu
16:30-16:50	[40] Investigations on augmented reality based maintenance practices within SMEs Müller, Stegelmeyer, Mishra	[35] A Deep Statistical Feature Learning Method Based on Stacked Auto-Encoder for Intelligent Diagnosis of Rolling Bearing Han, Long, Liu, Jiang

Wednesday, 4 July



8:30-9:00	Coffee Venue: Stir Coffee Shop	
9:00 - 10:30	Keynote lecture: Reliability Prof Ming Zuo (University of Alberta) Session chair: prof Stephan Heyns	
10:30-11:00	Coffee Venue: Stir Coffee Shop	
	Diagnosis and Prognosis Session chair: dr. Henri Marais Venue: Warriors Hall 1	Signal processing 2 Session chair: prof Kenny Uren Venue: Warriors Hall 2
11:00-11:20	[41] Rolling Element Bearings Prognostics Using High-Frequency Spectrum of Offline Vibration Condition Monitoring Data Behzad, Arghand, Bastami	[28] Fault diagnosis method of rolling element bearing based on wavelet packet energy and Hilbert envelope analysis Guo, Li, Zhen, Zhang, Shi, Gu
11:25-11:45	[34] Time-frequency domain analysis of varying speed vibration response of dual-rotor system Yang, Liu, Jiang	[39] Application of Adaptive Variable Scale Stochastic Resonance in Bearing Fault Diagnosis Wang, Zhang, He
11:50-12:10	[71] Predictive Maintenance with Feedforward and Recurrent Neural Networks for General System Prognostics Applications Louw, Heyns	[74] Characterization and modelling of a customs operation Hoffman
12:15-12:35	[25] Condition Monitoring of a Fan using Neural Network Passi, Zhang, Timusk	[64] The Improvement of Instantaneous Angular Speed Estimation using Signals from a Dual Read Head for Monitoring Planetary Gearboxes Zang, Alqataweh, Xu, Shao, Gu, Ball
12:40-13:00		
13:00-14:00	Lunch Venue: Stir Coffee Shop	
15:00 - 18:00	Game drive Pick-up point: Conference centre Bring along: warm clothing, water, camera	

Thursday, 5 July



8:30-9:00	Coffee Venue: Stir Coffee Shop	
9:00 - 10:30	Panel discussion: The issues and the future Panel members: Stephan Heyns, Fengshou Gu, Ming Zuo, Konstantinos Gryllias Session chair: Pieter van Vuuren	
10:30-11:00	Coffee Venue: Stir Coffee Shop	
	Structural health monitoring 1 Session chair: Pieter van Vuuren Venue: Warriors Hall 1	Fault detection & localization Session chair: prof Alwyn Hoffman Venue: Warriors Hall 2
11:00-11:20	[21] Investigation of Infrared Thermography as a Dual Online Diagnostic Tool for Dynamic Structural Health Monitoring Dasai, Talai, Heyns	[50] A vision of energy-based visualisation of large scale industrial systems Van Schoor, Uren
11:25-11:45	[49] Corrosion monitoring with Acoustic Emission of steel embedded in concrete that is subjected to different environmental conditions Sigoba, Howse, Sikakana	[36] Online performance monitoring of discrete legs in a convective heat exchanger of a coal fired power plant boiler Prinsloo, Gosai, Rousseau
11:50-12:10	[82] Experimentally validated numerical simulation of prediction of structural vibration frequencies from interfacial frictional temperature signature Talai, Desai, Heyns	[59] A low-cost condition monitoring solution for industrial bakery equipment Marais, Black
12:15-12:35	[93] Variations in vibration responses of an ice-going vessel during wave slamming Bekker, Van Zijl	
12:40-13:00		
13:00-14:00	Lunch Venue: Stir Coffee Shop	
	Structural health monitoring 2 Session chair: Pieter van Vuuren Venue: Warriors Hall 1	Fault detection & localization 2 Session chair: Prof Stephan Heyns Venue: Warriors Hall 2
14:00 - 14:20	[87] An improved resonance demodulation technique based on spectral kurtosis and fault characteristic harmonic-to-noise ratio Yan, Lin, Zhao, Zeng	[67] Simulation Based LOX/Methane Rocket Engine Fault Features Analysis Xiong, Wu, Cheng
14:20-14:40	[18] Remote Monitoring of Wind Turbine Blades based on High-speed Photogrammetry Li, Wang, Liu, Tang, Gu, Ball	[78] Pipe network leak detection: Sensor placement evaluation using Support Vector Machines on model-based leak detection Van der Walt, Heyns, Wilke
14:40-15:00		[58] Performance visualisation of a transcritical CO2 heat pump under fault conditions de Bruin, Uren, Van Schoor, Van Eldik
15:00-15:30	Coffee Venue: Stir Coffee Shop	
	Electrical systems 2 Session chair: Prof George van Schoor Venue: Warriors Hall 1	
15:30-15:50	[90] Review of Transmission Line Fault Location using Travelling Wave Method Wijaya, Suwarno, Abu-Siada	
15:50 - 16:10	[61] On Line Partial Discharge (OLPD) system as an essential Condition Based Monitoring (CBM) Tool for busbar insulation monitoring on Air Insulated Switchgear (AIS) Bisset, Van Vuuren, Walker, Rens	
16:10-16:30	[75] Novel bearing fault detection using generative adversarial networks Baggeröhr, Booyse, Heyns, wilke	
16:30-16:50		
18:00 - 23:00	Conference dinner Venue: King's Ballroom 2	