NSW DIVISION
TECHNICAL MEETING

Health monitoring of machines – Recent trends, current problems and research directions

Date:	**Thursday, 26th September 2019**
Venue:	**Room G02 in Ainsworth J17 (UNSW)** https://www.learningenvironments.unsw.edu.au/spaces/ainsworth-building/k-j17-g02-ainsworth-g02

Time:	6:00 pm for 6:30 pm start *Refreshments prior to talk*
Speaker:	Pietro Borghesani from Tribology and Machine Condition Monitoring Group, University of New South Wales
RSVP:	**Monday, 23rd September** to Mattia Tabacchi by email Mattia.Tabacchi@renzotonin.com.au AAS members are welcome to attend.
Live streaming:	Join Zoom Meeting https://zoom.us/j/2843263470 Meeting ID: 284 326 3470 Audio: computer audio or dial in +61 2 8015 6011

Guest speaker

Dr Pietro Borghesani is a Senior Lecturer at UNSW Sydney, in the Tribology and Machine Condition Monitoring Group of the School of Mechanical and Manufacturing Engineering. His machine condition monitoring research at UNSW and previously at Politecnico di Milano (Italy) and QUT has involved collaboration with Australian and international firms and government agencies such as SAFRAN Group, Bombardier Transportation, Delta Electricity, Macquarie Generation, Wilmar Sugar, ARC, DETE and ARENA. Pietro is also a member of the Editorial Board of Mechanical Systems and Signal Processing (Elsevier) and of the Standard Australia Committee ME-087 "Machine Condition Monitoring".

Presentation abstract

The popularity of data-driven black-box models (big-data) and the capability of developing sophisticated simulation software (digital twin models) are driving the current Industry 4.0 revolution. These two trends, often competitive, have imparted a massive shift to the research focus in the field of vibration-based machine condition monitoring, and have inspired a change of perspective also in the traditional signal processing arena. After an initial euphoria, researchers are starting to understand the specific constraints in the applications of Industry 4.0 paradigms to machine condition monitoring. Realities such as the complexity of modern machinery and the scarcity of "expensive" fault data must be considered when evaluating condition monitoring approaches. In this presentation, physical, statistical and data-driven approaches for machine health monitoring will be discussed, with an emphasis on their specific value for specific purposes. Ongoing innovative research directions to combine different approaches, tackle outstanding issues and improve the value of condition monitoring will be presented.