Department of Systems Engineering and Engineering Management

Seminar Series

Dynamic simulation of gearbox operation for prognosis and health management

Prof. Ming J Zuo

Department of Mechanical Engineering
University of Alberta, Canada

Date	2 November 2015 (Monday)
Time	2:30pm (Tea/Coffee service at 2:15pm)
Venue	P6921, 6/F, AC1

Abstract

Dynamic simulation of the operation of a gearbox provides vibration signals expected from the gearbox under given health conditions and operating conditions. It is able to reflect the effects of gear tooth crack, gear surface pitting, backlash, and transmission errors. With the simulated vibration signals, one can use various signal processing techniques to find effective indicators of the health condition of the gearbox. Thus, gearbox dynamic simulations can provide effective guidelines for field gearbox condition monitoring and health management. This talk will cover the advancement in this area of research and future research challenges.

About the Speaker

Dr. Ming J Zuo received the Bachelor of Science degree in Agricultural Engineering in 1982 from Shandong Institute of Technology, China, and the Master of Science degree in 1986 and the Ph.D. degree in 1989 both in Industrial Engineering from Iowa State University, Ames, Iowa, U.S.A. He is currently Full Professor in the Department of Mechanical Engineering at the University of Alberta, Canada. His research interests include system reliability analysis, maintenance modeling and optimization, signal processing, and fault

diagnosis. He is Associate Editor of IEEE Transactions on Reliability, Department Editor of IIE Transactions (2005-2008, 2011-present), Regional Editor for North and South American region for International Journal of Strategic Engineering Asset Management, and Editorial Board Member of Reliability Engineering and System Safety, Journal of Traffic and Transportation Engineering, International Journal of Quality, Reliability and Safety Engineering, and International Journal of Performability Engineering. He is Fellow of the Institute of Industrial Engineers (IIE), Fellow of the Engineering Institute of Canada (EIC), Founding Fellow of the International Society of Engineering Asset Management (ISEAM), and Senior Member of IEEE.

Enquiry: 3442 8408

All are Welcome!

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