Mathematical Problems in Engineering

Special Issue on
Mathematical Methods and Modeling in Machine Fault Diagnosis 2016

CALL FOR PAPERS

Modern mathematics has often been utilized as an effective tool to model mechanical equipment so that their dynamic characteristics can be studied analytically. This will help to identify potential failures of mechanical equipment through observing change of dynamic parameters associated with them. On the other hand, dynamic signals are important and reliable information carriers on working status of equipment. Development of modern mathematics has also provided us a systematic way to design and implement various signal processing methods, which are used to analyze these dynamic signals and enhance intrinsic signal components that are directly related to machine failures.

This issue is aiming to stimulate not only new insights on mathematical methods for modeling but also recently developed signal processing methods such as sparse decomposition with potential applications to machine fault diagnosis. Therefore, the main objective of this special issue is to bring the ideas of the worldwide research community to present the latest developments and to advance the field of machine fault diagnosis through applications of the modern mathematical methods.

We invite authors to submit original research and review articles to this special issue.

Potential topics include, but are not limited to:

- ▶ Mechanical failure mechanism modeling
- ▶ Damage model of composite materials
- ▶ Wavelet finite element analysis
- ▶ Wavelet transform
- ▶ Time-frequency analysis
- ▶ Sparse decomposition
- ▶ Stochastic resonance
- ▶ Nonlinear time series analysis
- ▶ Advanced neural and fuzzy signal processing algorithms
- ▶ Advanced intelligent systems and algorithms

Authors can submit their manuscripts via the Manuscript Tracking System at http://mts.hindawi.com/submit/journals/mpe/mafa16/.

Lead Guest Editor

Ruqiang Yan, Southeast University, Nanjing, China
ruqiang@seu.edu.cn

Guest Editors

Weihua Li, South China University of Technology, Guangzhou, China
whlee@scut.edu.cn

Wenyu Zhao, Schlumberger Limited, Houston, USA
wzhao10@slb.com

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