

ISSN 1027-5851

# **International Journal of Acoustics and Vibration**

September 2016

Volume 21, Number 3

**Printed from e-media with permission by:**

Curran Associates, Inc.  
57 Morehouse Lane  
Red Hook, NY 12571



**Some format issues inherent in the e-media version may also appear in this print version.**

Copyright© (2016) by International Institute of Acoustics & Vibration  
All rights reserved.

Printed by Curran Associates, Inc. (2016)

For permission requests, please contact International Institute of Acoustics & Vibration  
at the address below.

International Institute of Acoustics & Vibration  
c/o Dr. Malcolm J. Crocker  
1418 Wiggins Hall  
Auburn, AL 36849, USA

Phone: (334) 844-3248  
Fax: (334) 844-3306

[www.iiav.org](http://www.iiav.org)

**Additional copies of this publication are available from:**

Curran Associates, Inc.  
57 Morehouse Lane  
Red Hook, NY 12571 USA  
Phone: 845-758-0400  
Fax: 845-758-2633  
Email: [curran@proceedings.com](mailto:curran@proceedings.com)  
Web: [www.proceedings.com](http://www.proceedings.com)

## EDITORIAL OFFICE

EDITOR-IN-CHIEF  
Malcolm J. Crocker

MANAGING EDITOR  
Marek Pawelczyk

ASSOCIATE EDITORS  
Dariusz Bismor  
Nickolay Ivanov  
Zhuang Li

ASSISTANT EDITORS  
Teresa Glowka  
Sebastian Kurczyk  
Karol Jablonski

EDITORIAL ASSISTANT  
Macie Franklin  
Neha Patel

## EDITORIAL BOARD

Jorge P. Arenas  
Valdivia, Chile

Jonathan D. Blotter  
Provo, USA

Leonid Gelman  
Cranfield, UK

Samir Gerges  
Florianópolis, Brazil

Colin H. Hansen  
Adelaide, Australia

Hugh Hunt  
Cambridge, England

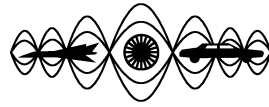
Dan Marghitu  
Auburn, USA

Manohar Lal Munjal  
Bangalore, India

Kazuhide Ohta  
Fukuoka, Japan

Goran Pavic  
Villeurbanne, France

Subhash Sinha  
Auburn, USA



# International Journal of Acoustics and Vibration

A quarterly publication of the International Institute of Acoustics and Vibration

Volume 21, Number 3, September 2016

## EDITORIAL

What I Don't Know Part 2 of 2  
*Richard J. Peppin* . . . . . 238

## ARTICLES

Investigation on a High-Frequency Controller for Rotor BVI Noise Alleviation  
*Alessandro Anobile, Giovanni Bernardini and Massimo Gennaretti* . . . . . 239

Reliability-Based Optimization of the Coupled Structural-Acoustic System with Random Parameters  
*Xiaojun Wang, Yunlong Li, Zhiliang Ma and Zhiping Qiu* . . . . . 249

Frequency Identification of Flexible Hub-Beam System Using Control Data  
*Xie Yong, Liu Pan and Cai Guo-Ping* . . . . . 257

Exact Solution for a Free Vibration of Thermoelastic Hollow Cylinder Under GNIII Model  
*Ibrahim A. Abbas* . . . . . 266

The Effect of Crack Geometry on the Nondestructive Fault Detection in a Composite Beam  
*Sadettin Orhan, Murat Lüy, M. Hüsnü Diriköglu and Gazi Mustafa Zorlu* . . . 271

Fault Diagnosis For Exhaust Fan Using Experimental Predictive Maintenance Method  
*Hamdi Taplak, Emrah Kurt and Mehmet Parlak* . . . . . 274

Dynamic Analysis of Draft Gear and Draft Pad of Freight Wagon due to Localized Defects using FEM  
*Sachin S. Hara, Satish C. Sharma and S. P. Harsha* . . . . . 281

Effects of Young's Modulus on Disc Brake Squeal using Finite Element Analysis  
*Ali Bellhocine and Nouby M. Ghazaly* . . . . . 292

Acoustic Characteristic Analysis of Prestressed Cylindrical Shells in Local Areas  
*Lu-yun Chen and Yong Liu* . . . . . 301

Nonlinear Vibrations and Chaos in Rectangular Functionally Graded Plates with Thermo-mechanical Coupling  
*Seyedeh Elnaz Naghibi and Mojtaba Mahzoon* . . . . . 308

Response of a Cylindrical Shell with Finite Length Ring Stiffeners  
*Andrew J. Hull and Geoffrey R. Moss* . . . . . 317

Aeroelastic Analysis of Unrestrained Aircraft Wing with External Stores Under Roll Maneuver  
*Seyed Ahmad Fazelzadeh, Amir Hosein Ghasemi and Abbas Mazidi* . . . . . 327

Research on Fault Feature Extraction of Rubbing Rotor Based on Vector-bispectrum Energy  
*Zhang Chao* . . . . . 334

Performance of Sound Insulation in Buildings — A Case Study  
*Marcus Vinicius Manfrin de Oliveira Filho and Paulo Henrique Trombetta Zannin* . . . . . 339

Dynamic Feature Extraction for Speech Signal Based On MUSIC and Modulation Spectrum  
*Han Zhiyan and Wang Jian* . . . . . 346

About the Authors . . . . . 352