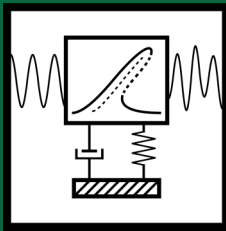


# The 28th International Conference on VIBROENGINEERING

Beijing, China  
October 19-21st, 2017



**JVE** INTERNATIONAL

[www.jvejournals.com](http://www.jvejournals.com)

[www.jveconferences.com](http://www.jveconferences.com)



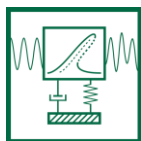
**JVE** INTERNATIONAL

[www.jvejournals.com](http://www.jvejournals.com)  
[www.jveconferences.com](http://www.jveconferences.com)

## **The 28th International Conference on VIBROENGINEERING**

**Vibration-based Fault Diagnosis and Prognostics  
with Industrial Applications**

**19-21st October 2017 Beijing, P. R. China**



**JVE INTERNATIONAL**

[www.jvejournals.com](http://www.jvejournals.com)  
[www.jveconferences.com](http://www.jveconferences.com)

**The 28th International Conference on VIBROENGINEERING** will be held during 19-21st of October, 2017 in Beijing, P. R. China. Its purpose is to provide a platform for scientists, engineers and practitioners throughout the world to exchange ideas and present their latest research results in order to further promote the Vibroengineering and its applications to the aerospace, automobile, energy, and other industries. This Conference is sponsored by *Science & Technology on Reliability & Environmental Engineering Laboratory* (Beihang University) and *JVE International*, organized by *Institute of Reliability Engineering, Beihang University*, and co-organized by *Chinese Society of Aeronautics & Astronautics* and *Beijing Section of IEEE Reliability Society*.

The main theme of the conference focuses on (but not limited to):

**Vibration-based Fault Diagnosis and Prognosis with Industrial Applications.**

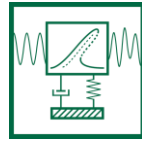
#### **General Topics of the Conference:**

- Acoustics, Noise Control and Engineering Applications
- Chaos, Nonlinear Dynamics and Applications
- Fault Diagnosis Based on Vibration Signal Analysis
- Flow Induced Structural Vibrations
- Fractional Dynamics and Applications
- Mechanical Vibrations and Applications
- Modal Analysis and Applications
- Oscillations in Biomedical Engineering
- Oscillations in Electrical Engineering
- Seismic Engineering and Applications
- Vibration Generation and Control
- Vibration in Transportation Engineering

Internationally renowned invited speakers and contributing authors from all over the world will present the latest advances in the thriving area of Vibroengineering. This conference will feature a broad range of high-level technical papers from all over the world. Invited distinguished experts will present brilliant presentations for our technical sessions and discussions with a focus on the conference theme. The conference will provide you with an opportunity to communicate with other scientists and engineers about recent research advances, and exchange ideas in innovative science and technologies, meet old friends and make new business partners in the diverse areas of vibration engineering.

With your participation, this conference will prove to be a very exciting event, a fruitful opportunity, to promote scientific research and technological development of vibration engineering and its applications.

All papers presented at VIBROENGINEERING Conferences are published as short Conference papers in Vibroengineering PROCEEDIA. Conference papers published in Vibroengineering PROCEEDIA are indexed in EI Compendex, Scopus, Inspec, Gale Cengage, Google Scholar, CNKI Scholar and EBSCO.



**JVE INTERNATIONAL**  
[www.jvejournals.com](http://www.jvejournals.com)  
[www.jveconferences.com](http://www.jveconferences.com)

The authors of best papers presented at the Conference will be invited to prepare the extended version of their papers (10-20 pages) which will be considered for publication in Journal of VIBROENGINEERING (indexed in SCI and other major databases), Journal of Measurements in Engineering (indexed in Web of Science, Inspec, EBSCO and Gale Cengage) and Journal of Mathematical Models in Engineering (indexed in Gale Cengage).

The Conference Venue is located at Vision Hotel, which is an award-winning conference center (addr: No. 39 Xueyuan Road, Haidian District., Beijing).

On behalf of the Organizing Committee, we would like to welcome the delegates to the 28th International Conference on VIBROENGINEERING. We hope that you would enjoy the conference and find the program of the Conference exciting. We look forward to meeting you in October 2017 in Beijing.



**JVE** INTERNATIONAL

[www.jvejournals.com](http://www.jvejournals.com)  
[www.jveconferences.com](http://www.jveconferences.com)

**Co-Chairs:**

Prof. **Minvydas Ragulskis**, JVE International, Lithuania

Prof. **Chen Lu**, Beihang University, P. R. China

**International Program Committee:**

Subhash Rakheja, Concordia University, Canada

Lei Qiu, Nanjing University of Aeronautics and Astronautics, China

M. Bayat, Tarbiat Modares University, Iran

R. Burdzik, Silesian University of Technology, Poland

Maosen Cao, Hohai University

W.H. Hsieh, National Formosa University, Taiwan

Guangqing Lu, Jinan University, China

V. Lyalin, Izhevsk State Technical University, Russia

Yu. Mao, Zhejiang Gongshang University, China

R. Maskeliunas, Vilnius Gediminas Technical University, Lithuania

Renaldas Raisutis, Ultrasound Institute, Kaunas University of Technology, Lithuania

L.E. Munoz, Universidad de los Andes, Colombia

G. Panovko, Blagonravov Mechanical Engineering Research Institute, Russia

V. Royzman, Khmelnytskyi National University, Ukraine

M.A.F. Sanjuan, University Rey Juan Carlos, Spain

S. Toyama, Tokyo A&T University, Japan

P. Vasiljev, Vilnius Pedagogical University, Lithuania

V. Veikutis, Lithuanian University of Health Sciences, Lithuania

M. Zakrzhevsky, Riga Technical University, Latvia

Shunong Zhang, Beihang University, China

Xiaoyang Li, Beihang University, China

Jian Ma, Beihang University, China

Laifa Tao, Beihang University, China

Yujie Cheng, Beihang University, China

Algazy Zhauyt, Kazakh National Research Technical University, Kazakhstan

Jingjing He, Beihang University, China

**Local Organizing committee:**

Longfei Luo, Beihang University, China

Laifa Tao, Beihang University, China

Yu Ding, Beihang University, China

Dengwei Song, Beihang University, China

Tong Zhang, Beihang University, China

Jiadong Hua, Beihang University, China

Xinliu Zhang, Beihang University, China

Fei Wang, Beihang University, China

Jiayao Jing, Beihang University, China

Likun Chao, Beihang University, China



## Conference Program

**Day 0: October 19**

**Location: Vision Hotel, Beijing**

12:00-20:00	<b>Registration</b>
-------------	---------------------

**Day 1: October 20**

**Location: Vision Ball Room, Vision Hotel, Beijing**

	<b>PLENARY SESSION</b> Session Chairs: <b>Minvydas Ragulskis and Shunong Zhang</b>
09:00-09:05	<b>Conference Opening Ceremony</b>
09:05-09:20	Welcome Speech: <b>Minvydas Ragulskis</b> . Vibroengineering – past, present and the future
09:20-09:50	Invited Keynote Lecture: <b>Rafal Burdzik</b> , (Silesian University of Technology, Katowice, Poland). Research on vibration employed for the train traffic control
09:50-10:20	Invited Keynote Lecture: <b>Yaguo Lei</b> , (Xi'an Jiaotong University, Xi'an, P. R. China). Vibration-based remaining useful life prediction of machines
10:20:10:45	<b>Coffee Break</b>
10:45-11:15	Invited Keynote Lecture: <b>Guang-qing Lu</b> , (Jinan University, Zhuhai, P. R. China). Experimental approach for optical registration of circular time-averaged moiré images
11:15-11:30	Presentation by <b>Vibration Research Inc</b> : <b>Kevin Li</b> , Fatigue damage spectrum application study



**JVE** INTERNATIONAL

www.jvejournals.com  
www.jveconferences.com

11:30-12:00

Invited Keynote Lecture:  
**Lei Qiu**, (Nanjing University of Aeronautics and Astronautics, P. R. China).  
Research on guided wave based structural health monitoring

**Day 1: October 20**

**Location: Vision Hotel, Beijing**

12:00-14:00

**Lunch**

**Day 1: October 20**

**Location: Vision Ball Room, Vision Hotel, Beijing**

14:00-14:30

Invited Keynote Lecture:  
**Xiaoyang Li**, (Beihang University, Beijing, P. R. China).  
Uncertainties in accelerated degradation testing: modeling and design

14:30-15:00

Invited Keynote Lecture:  
**Jian Ma**, (Beihang University, Beijing, P.R. China).  
Vibration-based fault diagnosis and RUL prediction using  
the deep learning theory

15:00-15:15

Presentation by Donghua Testing Technology Co., Ltd.:  
**Xuebao Xia**, (Deputy Director of Donghua Testing Application Research  
Department)  
Basic requirements of data acquisition system for equipment PHM system

15:15-15:45

Invited Keynote Lecture:  
**Renaldas Raisutis**, (Kaunas University of Technology, Kaunas, Lithuania).  
Application of ultrasonic guided waves for non-destructive testing of large and  
complex geometry engineering structures

15:45-16:15

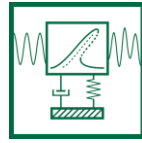
Invited Keynote Lecture:  
**JingJing He**, (Beihang University, Beijing, P.R. China).  
Structural integrity assessment and fatigue life prediction using advanced  
sensor technique

**Day 1: October 20**

**Location: Vision Hotel, Beijing**

19:00-21:00

**GALA Dinner**



**Day 2: October 21**

**Location: Meeting Room #8, New Main Building, Beijing**

<b>PARALLEL SESSION A1</b> Session Chairs: <b>Lei Qiu</b> and <b>Lukasz Konieczny</b>	
9:00-9:15	<b>Won Deok Park.</b> A study on cyber sickness reduction by oculo-motor exercise performed immediately prior to viewing virtual reality (VR) content on head mounted display (HMD)
9:15-9:30	<b>Peng Li.</b> Method to determine test profile in accelerated reliability demonstration test under Type-I censoring
9:30-9:45	<b>Jiangmin Xia.</b> Study on dynamic characteristics of double cylinder double acting bilge pump transmission
9:45-10:00	<b>Chi Xu.</b> Designing and optimizing of a novel sigma-delta modulator using PSO algorithm
10:00-10:15	<b>Hanping Qiu.</b> The application of improved signal summing method into the spacecraft force limited vibration test
10:15-10:30	<b>Coffee Break</b>
10:30-10:45	<b>Cheng Wang.</b> Multiple random fault sources adaptive blind separation in situation of time-varying source signals and system
10:45-11:00	<b>Jiangpan Chen.</b> Research on natural frequency of structure considering elastic joint with interval uncertainty
11:00-11:15	<b>Linjie Kan.</b> A stochastic surrogate model for time-variant reliability analysis of flexible multibody system
11:15-11:30	<b>Diao Yang.</b> Study on measuring method of the angular displacement of muzzle vibration for the small caliber gun

**Day 2: October 21**

**Location: Meeting Room #3, New Main Building, Beijing**

<b>PARALLEL SESSION A2</b> Session Chairs: <b>Jian Ma</b> and <b>Rafal Burdzik</b>	
9:00-9:15	<b>Junho Ko.</b> Characteristic analysis of a photon converter in a medical LINAC using GEANT4
9:15-9:30	<b>Bashir Osman.</b> Analytical method of designing a comparable milling machine model based on Matlab/Simulink
9:30-9:45	<b>Zongyao Liu.</b> A new model for calculating time-varying gearmesh stiffness
9:45-10:00	<b>Chaowei Li.</b> High frequency large stroke design and simulation experimental research on shaking table
10:00-10:15	<b>Dong Tan.</b> A two-step approach for damage detection in beam based on influence line and bird mating optimizer
10:15-10:30	<b>Coffee Break</b>





10:30-10:45	<b>Lukasz Konieczny.</b> Modern suspension systems for automotive vehicles and their test methods
10:45-11:00	<b>Likun Chao.</b> An approach to fault diagnosis for gearbox based on reconstructed energy and support vector machine
11:00-11:15	<b>Chen Yu.</b> Rolling bearing fault detection based on local characteristic-scale decomposition and teager energy operator
11:15-11:30	<b>Jinshuai Yuan.</b> Modeling method of failure dependent system based on time varying copula function

**Day 2: October 21**

**Location: Meeting Room #4, New Main Building, Beijing**

	<b>PARALLEL SESSION A3</b> Session Chairs: <b>Hongmei Liu</b> and <b>Martynas Vaidelys</b>
9:00-9:15	<b>Seong-wook Jang.</b> A development of an epiduroscopy training simulator based on spatial cognition learning
9:15-9:30	<b>Diao Yang.</b> Study on measuring technology of gun firing stability
9:30-9:45	<b>Wei Zhan.</b> Multivariant linear regression model based response prediction in situation of unknown uncorrelated multiple sources load
9:45-10:00	<b>Jinwen Sun.</b> A feature fusion method using WPD-SVD and <i>t</i> -SNE for gearbox fault diagnosis
10:00-10:15	<b>Xi Sheng.</b> The operation modal analysis of the structure crack fault diagnosis based on pseudo-successive data
10:15-10:30	<b>Coffee Break</b>
10:30-10:45	<b>Martynas Vaidelys.</b> Image hiding in dynamic unstable self-organizing patterns
10:45-11:00	<b>Xin Liu.</b> Maintenance decision-making based on remaining useful life considering economy optimal targets and its application
11:00-11:15	<b>Hongying Xu.</b> Experimental research on influence of ground vibration on gun measurement instrument support

**Day 2: October 21**

**Location: Vision Hotel, Beijing**

12:00-13:30	<b>Lunch</b>
-------------	--------------

**Day 2: October 21**

**Location: Meeting Room #8, New Main Building, Beijing**

	<b>PARALLEL SESSION B1</b> Session Chairs: <b>Xiaoyang Li</b> and <b>Valentina Strautmene</b>
14:00-14:15	<b>Zhengminqing Li.</b> Solutions of active vibration suppression associated with web structures on face gear drives



14:15-14:30	<b>Yujin He.</b> Active vibration control of support sting in wind tunnel by using adaptive method
14:30-14:45	<b>Hao Li.</b> Flow-induced vibration in the compressible cavity flow
14:45-15:00	<b>Hougui Zhang.</b> A scaled experimental research on reducing metro railway vibration by using trench and barriers
15:00-15:15	<b>Coffee Break</b>
15:15-15:30	<b>Qiong Wu.</b> Simulation on propagation characters of ground vibration induced by in-tunnel excitation source
15:30-15:45	<b>Yan-qi Liu.</b> Study on dynamic response of track structures under a variable speed moving harmonic load
15:45-16:00	<b>Dongying Wang.</b> A new type of high frequency mechanical vibration table

**Day 2: October 21**

**Location: Meeting Room #3, New Main Building, Beijing**

	<b>PARALLEL SESSION B2</b> Session Chairs: <b>Laifa Tao</b> and <b>Renaldas Raisutis</b>
14:00-14:15	<b>Valentina Strautmene.</b> The impact of rotor elastic suspension settings on the acceleration of the automatic balancer compensating mass
14:15-14:30	<b>Maolin Luo.</b> Dynamic mechanism modeling for dual-impulse behavior excited by a spall on outer race of ball bearing
14:30-14:45	<b>Yuyun Lu.</b> Double-impulse feature extraction of faulty hybrid ceramic ball bearings based on DTCWPT
14:45-15:00	<b>Peng Hou.</b> Fault diagnosis of rolling element bearing using Naïve Bayes classifier
15:00-15:15	<b>Coffee Break</b>
15:15-15:30	<b>Hong Pang.</b> An online monitoring, diagnosis and control system based on virtual instrument for CNC spindle
15:30-15:45	<b>Fei Wang.</b> Bearing fault diagnosis based on intrinsic time-scale decomposition and extreme learning machine
15:45-16:00	<b>Tong Zhang.</b> Rolling bearing fault diagnosis based on health baseline method

**Day 2: October 21**

**Location: Meeting Room #4, New Main Building, Beijing**

	<b>PARALLEL SESSION B3</b> Session Chairs: <b>Jiadong Hua</b> and <b>Bashir Osman</b>
14:00-14:15	<b>Xin Cao.</b> Equivalent method for frequency division of complicated impact signal



**JVE** INTERNATIONAL

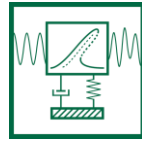
www.jvejournals.com  
www.jveconferences.com

14:15-14:30	<b>Yu Jie Xiao.</b> Reconstructing the acoustic far-field using a semi-circular sensor array
14:30-14:45	<b>Jibin Liu.</b> Research of piezoelectric acoustic liner
14:45-15:00	<b>Dengwei Song.</b> Gearbox fault diagnosis based on VMD-MSE and Adaboost classifier
15:00-15:15	<b>Coffee Break</b>
15:15-15:30	<b>Jiayao Jing.</b> Fault diagnosis of electro-mechanical actuator based on WPD-STFT time-frequency entropy and PNN
15:30-15:45	<b>Qing Ji.</b> Research on the near field sound source localization method for small snapshots
15:45-16:00	<b>Jiadong Hua.</b> Detection and localization of closely distributed damages via lamb wave sparse reconstruction

**Day 2: October 21**

**Location: Meeting Room #8, New Main Building, Beijing**

	<b>CLOSING SESSION</b> Session Chairs: <b>Minvydas Ragulskis</b>
16:15-16:45	<b>Best Papers Awards, Closing Ceremony</b>



**JVE** INTERNATIONAL

[www.jvejournals.com](http://www.jvejournals.com)

[www.jveconferences.com](http://www.jveconferences.com)

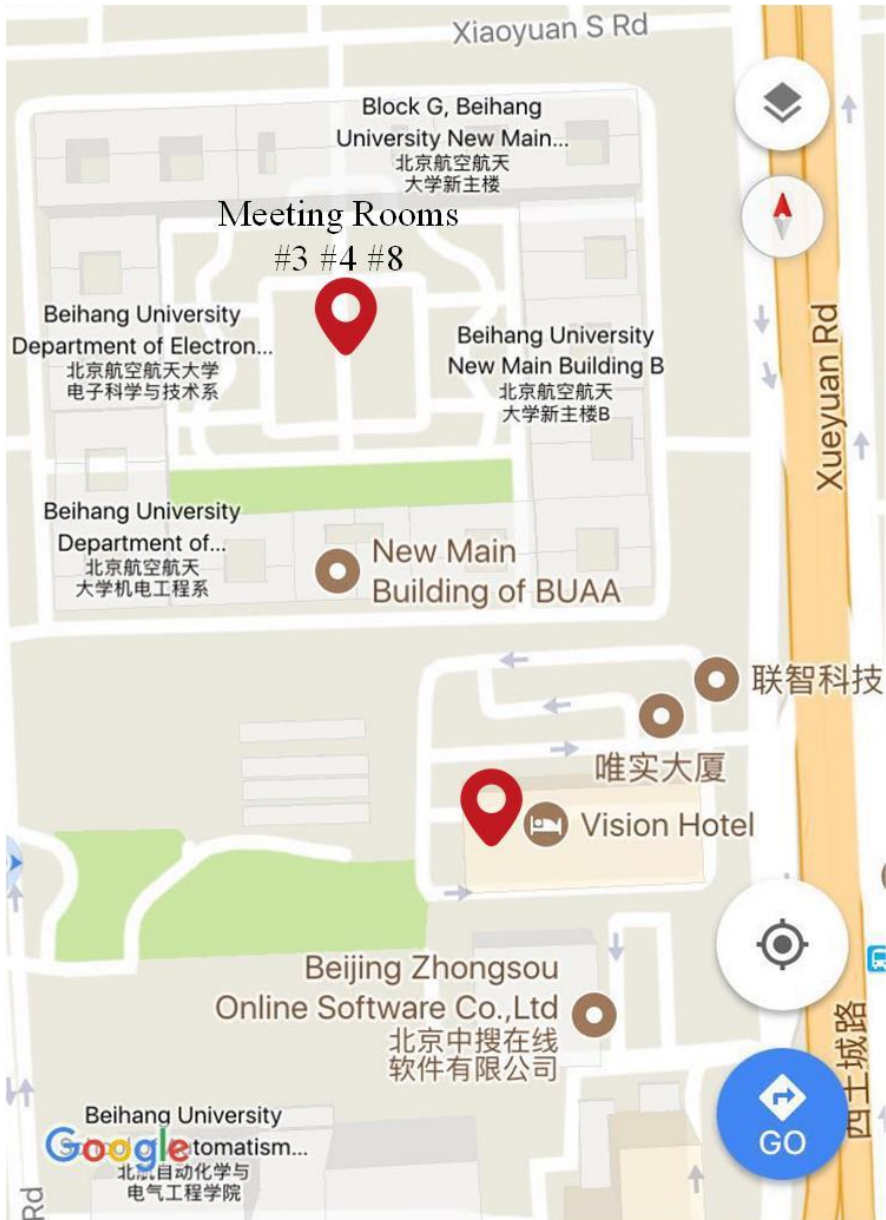
## Conference Venue

Vision Hotel: Located at No. 39 Xueyuan Road, Haidian District, Beijing.

New Main Building: In the campus of Beihang University nearby Vision Hotel.

Distance between Vision Hotel and New Main Building: 500m, 5 minutes by walk.

All participants will be guided between the two places with guidepost during the conference.





**JVE** INTERNATIONAL

www.jvejournals.com  
www.jveconferences.com

**CONFERENCE PATRON:**



**CONFERENCE TECHNICAL SPONSORS:**



可靠性与环境工程技术重点实验室  
Science & Technology on Reliability & Environmental Engineering Laboratory

