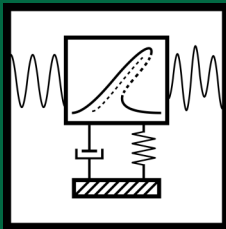


# The 27th International Conference on VIBROENGINEERING

Katowice, Poland  
September 26-28th, 2017



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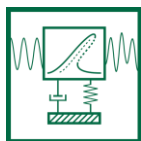
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## **The 27<sup>th</sup> International Conference on VIBROENGINEERING**

**September 26-28, 2017, Katowice, Poland**

Conference Contacts:

Prof. Rafal Burdzik: 48605617723



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## **International Conference on VIBROENGINEERING**

September 26-28, 2017, Katowice, Poland.

The main theme of the Conference: **“Vibration in Transportation Engineering – Problems and Applications”**

Topics of the Conference:

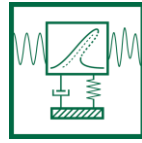
- Acoustics, Noise Control and Engineering Applications
- Chaos, Nonlinear Dynamics and Applications
- Fault Diagnosis Based on Vibration Signal Analysis
- Flow Induced Structural Vibrations
- Fractional Dynamics and Applications
- Mechanical Vibrations and Applications
- Modal Analysis and Applications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

International Conference on VIBROENGINEERING will be held in Katowice, Poland. 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. The Conference is organized by JVE International and Silesian University of Technology.

Internationally renowned invited speakers and contributing authors from all over the world will present the latest advances in the area of Vibroengineering. This conference will feature a broad range of high-level technical presentations including invited distinguished experts. The conference will provide an opportunity to communicate your recent research advances, exchange ideas in innovative engineering technologies, meet old friends and make new business partners in the area of Vibroengineering. With your participation, this Conference will prove to be an exciting scientific event, a fruitful opportunity to promote scientific research and technological development of Vibroengineering and its applications.

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

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) and other esteemed International Journals.



### **Chairs of the Conference:**

**Prof. Minvydas Ragulskis** (Kaunas University of Technology, Kaunas, Lithuania)

**Prof. Rafal Burdzik** (Silesian University of Technology, Poland)

### **Members of Organizing Committee:**

M. Ciesla (Silesian University of Technology, Poland)

P. Folega (Silesian University of Technology, Poland)

L. Konieczny (Silesian University of Technology, Poland)

P. Slowinski (Silesian University of Technology, Poland)

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A. Vakhguel't (Nazarbayev University, Kazakhstan)

P. Vasiljev (Vilnius Pedagogical University, Lithuania)

V. Veikutis (Lithuanian University of Health Sciences, Lithuania)

J. Viba (Riga Technical University, Latvia)

V. Volkovas (Kaunas University of Technology, Lithuania)

J. Wallaschek (Leibniz University Hannover, Germany)

Mao Yuxin (Zhejiang Gongshang University, China)

M. Zakrzhevsky (Riga Technical University, Latvia)

A. Zhauyt (Kazakh National Research Technical University, Kazakhstan)



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## Conference Program

**Day 1: September 26**

**Location: Novotel Hotel, Katowice**

9:00-10:00	<b>Registration</b>
10:00-11:00	<b>Official Reception</b>
11:30	Free transportation from Novotel Hotel, Katowice to Goldstein Palace, Katowice

**Day 1: September 26**

**Location: Goldstein Palace, Katowice**

	<b>PLENARY SESSION</b> Session Chairs: <b>Rafal Burdzik, Minvydas Ragulskis</b>
12:00-12:15	<b>Conference Opening Ceremony</b>
12:15-12:45	Plenary Speech: <b>Shigeki Toyama.</b> Micro ultrasonic motor for miniature robot arm
12:45-13:15	Plenary Speech: <b>Martin Sturm.</b> Two-mass linear vibratory conveyor with reduced vibration transmission to the ground
13:15-13:45	Plenary Speech: <b>Radosław Zimroz.</b> Kernel PCA in nonlinear visualization of a healthy and a faulty planetary gearbox data

**Day 1: September 26**

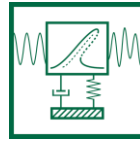
**Location: Goldstein Palace, Katowice**

13:45-14:45	<b>Lunch</b>
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**Day 1: September 26**

**Location: Goldstein Palace, Katowice**

15:00	<b>Excursion into Cultural Zone and Silesian Museum in Katowice</b>
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**Day 1: September 26**

**Location: Novotel Hotel, Katowice**

20:00	<b>Welcome Reception</b>
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**Day 2: September 27**

**Location: Novotel Hotel, Katowice**

8:00-9:00	<b>Registration</b>
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**Day 2: September 27**

**Location: Novotel Hotel, Katowice**

	<b>SESSION 1</b> Session Chairs: <b>Radosław Zimroz</b> and <b>Shigeki Toyama</b>
9:00-9:15	<b>Artur Andrearczyk.</b> Vibration based diagnostics of the multi-stage microturbine operating in the medium-temperature ORC system
9:15-9:30	<b>Fulin Wang.</b> Micro spherical ultrasonic motor using single spiral wire stators
9:30-9:45	<b>Grzegorz Żak.</b> Fault detection in different types of noise environments
9:45-10:00	<b>Jedrzej Blaut.</b> Application of Teager-Kaiser energy operator to the analysis of the water shaft bearings
10:00-10:15	<b>Robert Kostek.</b> Low cost diagnostics system dedicated to rolling bearings
10:15-10:30	<b>Agnieszka Wylomanska.</b> Long term vibration data analysis from wind turbine – statistical vs energy based features
10:30-10:45	<b>Przemysław Drozyner.</b> Prediction of fatigue damage with the use of dissipation energy
10:45-11:00	<b>Wojciech Jamrozik.</b> Diversity controlled rotating machinery fault detection
11:00-11:15	<b>Edmundas Kibirkištis.</b> Study of defectoscopy of partially biodegradable LDPE films



11:15-11:30

**Marek Kuchta.** Modeling of the denture's elastic base

**Day 2: September 27**

**Location: Novotel Hotel, Katowice**

11:30-12:00

**Coffee Break**

**Day 2: September 27**

**Location: Novotel Hotel, Katowice**

**SESSION 2**

Session Chairs: **Marianna Jacyna** and **Martin Sturm**

12:00-12:15

**Andrzej Puchalski.** Binomial multifractal features of worldwide harmonized light duty vehicles test cycle

12:15-12:30

**Bogumil Chiliński.** A proposition of application of the complex functions in the design of the machine shaft based on the stiffness criterion

12:30-12:45

**Tien Tran Xuan.** FEM model of pneumatic spring assembly

12:45-13:00

**Kamil Rehak.** Numerical simulation of gearbox structure dynamics focused on backlash influence

13:00-13:15

**Marianna Jacyna.** The study of transport impact on the environment with regard to sustainable development

13:15-13:30

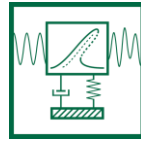
**Mariusz Izdebski.** Scenario analyses for a sustainable transport system development

13:30-13:45

**Mariusz Kostrzewski.** Analysis of selected vibroacoustic signals recorded on EMU vehicle running on chosen routes under supervised operating conditions

13:45-14:00

**Vibration Research presentation**



**Day 2: September 27**

**Location: Novotel Hotel, Katowice**

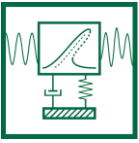
14:00-15:00	LUNCH
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**Day 2: September 27**

**Location: Novotel Hotel, Katowice**

	<b>SESSION 3</b> Session Chairs: <b>Zbigniew Dąbrowski</b> and <b>Fulin Wang</b>
15:00-15:15	<b>Tomasz Barszcz.</b> Informative frequency band identification for automatic extraction of impulsive components in vibration data from rotating machinery
15:15-15:30	<b>Anna Michalak.</b> Association rules discovery from diagnostic data-application to gearboxes used in mining industry
15:30-15:45	<b>Loreta Saunorienė.</b> Near-optimal pitch of a moiré grating for image hiding applications in dynamic visual cryptography
15:45-16:00	<b>Zbigniew Motyka.</b> Laser method of sound emission control from vibrating surfaces of noise road barriers
16:00-16:15	<b>Jaroslav Kašpárek.</b> Experimental verification of the regulated vibration on the subsoil
16:15-16:30	<b>Michal Kontny.</b> Machine vision methods for estimation of size distribution of aggregate transported on conveyor belts
16:30-16:45	<b>Uichi Nishizawa.</b> Development of active stent moving by ultrasonic vibration
16:45-17:00	<b>Bogumił Chiliński.</b> Experimental and analytical investigation of the circular thin plate vibrations





**Day 2: September 27**

**Location: Novotel Hotel, Katowice**

17:00-17:30	<b>Coffee Break</b>
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**Day 2: September 27**

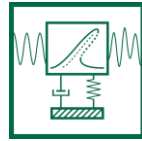
**Location: Novotel Hotel, Katowice**

	<b>SESSION 4</b> Session Chairs: <b>Wojciech Batko</b> and <b>Uichi Nishizawa</b>
17:30-17:45	<b>Alicja Kowalska-Koczwara.</b> Human perception of vibrations according different assessment methods
17:45-18:00	<b>Filip Pachla.</b> Vibration induced by railway traffic-zones of influence on buildings and humans
18:00-18:15	<b>Paweł Słowiński.</b> Rail transport – rail safety from a human risk point of view
18:15-18:30	<b>Michał Venglár.</b> Experimental and finite element vibration analysis of biaxial voided flat slab

**Day 2: September 27**

**Location: Novotel Hotel, Katowice**

18:30-19:15	<b>POSTER SESSION</b> Session Chairs: <b>Sławomir Wierzbicki</b> and <b>Witold Cioch</b>
P1	<b>Łukasz Konieczny.</b> Measurement and mathematical function of the actuation force of the rail switch drive
P2	<b>Maciej Klaczynski.</b> Noise and vibration exposure of hybrid PEM power supply users during its operation
P3	<b>Piotr Deuzkiewicz.</b> Analysis of critical states of composite drive shafts with two reduced masses – selection of the right model
P4	<b>Rafał Burdzik.</b> Research on influence of impulse force on vertical vibration of the rail



P5	<b>Jan Warczek.</b> Research on the effectiveness of the time shutdown of the damper to improve vibroisolation
P6	<b>Tomasz Korbiel.</b> Analysis of the effect of circulating pumps on the vibration of the SOLARIS synchrotron base plate

**Day 2: September 27**

**Location: Novotel Hotel, Katowice**

20:00	<b>Gala Dinner</b>
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**Day 3: September 28**

**Location: Novotel Hotel, Katowice**

	<b>SESSION 5</b> Session Chairs: <b>Andrzej Puchalski</b> and <b>Łukasz Konieczny</b>
9:00-9:15	<b>Pawel Boron.</b> Nonlinear performance of a concrete gravity dam under a moderate seismic shock
9:15-9:30	<b>Tomasz Haniszewski.</b> Preliminary modeling studies of sudden release of a part of the hoist load with using experimental miniature test crane
9:30-9:45	<b>Anna Michalak.</b> Automatic calculation of thresholds for load dependent condition indicators by modelling of probability distribution functions – maintenance of gearboxes used in mining conveying system
9:45-10:00	<b>Bogumil Chiliński.</b> Proposition of crankshaft stiffness matrix modeling methodology
10:00-10:15	<b>Marcin Wiklo.</b> Experimental vibration test of the cycloidal gearbox with different working conditions

**Day 3: September 28**

**Location: Novotel Hotel, Katowice**

10:15-10:45	<b>Coffee Break</b>
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Day 3: September 28

Location: Novotel Hotel, Katowice

	<b>CLOSING SESSION</b> Session Chairs: <b>Rafal Burdzik</b>
10:45-11:00	<b>Best Papers Awards, Closing Ceremony</b>

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