INTERNATIONAL CONFERENCE
VIBROENGINEERING 2014
PROGRAM

International Conference VIBROENGINEERING 2014 will be held on October 13-15, 2014 in Katowice, one of the main industrial conglomerates in Poland. Authors from different Countries (Japan, China, Colombia, Russia, Kazakhstan, Latvia, Belarus, Lithuania, Czech Republic and Poland) will present their latest research efforts during the conference. We will provide a platform to authors for exchanging ideas and research efforts together. The venue for the conference is Novotel Katowice Hotel, City Hall and Silesian University of Technology.

All accepted short papers (4-6 pages length Proceedings format) intend to address the hottest issues in Vibroengineering of dynamical systems and will be published in Vibroengineering PROCEDIA. The papers cover a wide series of topics in this area. The following subjects are principal topics:
Vibration and wave processes;
Vibration and wave technologies;
Nonlinear vibrations;
Vibroshock systems;
Generation of vibrations and waves;
Vibrostabilization;
Transformation of motion by vibrations and waves;
Dynamics of intelligent mechanical systems;
Vibration control, identification, diagnostics and monitoring;
Biomechanical Engineering.

The program of the Conference is arranged into one Invited Speakers Session and Poster Session at Silesian University of Technology in Katowice and 10 Oral Sessions at Novotel Katowice Hotel.

On behalf of the Organizing Committee, we would like to welcome the delegates to International Conference VIBROENGINEERING 2014. We hope that you will enjoy the Conference and find VIBROENGINEERING 2014 Program exciting. We look forward to meeting you in October, Katowice.

Conference Program

Day 1: October. 13   Location: Silesian University of Technology (main hall)

15:30-16:00	**Welcoming Reception** Dr. **Rafal Burdzik** & Prof. **Minvydas Ragulskis**

	Invited Speakers Session
	Session Chairs Prof. **Minvydas Ragulskis** & Prof. **Bogusław Łazarz**
16:00-16:15	Invited Talk by Prof. **Zbigniew Dąbrowski** "Machine dynamics, vibroacoustics and technical diagnostics." (Poland)
16:15-16:30	Invited Talk by Prof. **Andrzej Grządziela** "Parameters of the pressure wave incident on mine hunter hull structure modeled on the simplified vessel hull of Kormoran II project."
16:30-16:45	Invited Talk by Prof. **Maosen Cao** "Wavelet modal curvatures for structural damage detection." (China)

16.45-17:30	**Coffee Break & Catering**

Day 1: October. 13   Location: Silesian University of Technology (next to Main hall)

17:30-18:30	**POSTER SESSION**
	Session Chairs Dr. **Kestutis Pilkauskas** & Prof. **Andrzej Grządziela**
P1	**Algimantas Bubulis** "Continuous emulsification technique of multi-phase liquids by ultrasonic cavitation." (Lithuania)
P2	**Andrzej Zuska** "Analysis of the impact of selected anthropometric parameters on the propagation of vertical vibration in the body of a seated person (driver)" (Poland)
P3	**Kestutis Pilkauskas** "Increase of productivity in brittle material processing by the application of intermediate elastic elements in tool structure" (Lithuania)
P4	**Tomasz Figlus** "Condition monitoring of the camshaft chain tensioner the motorcycle engine" (Poland)
P5	**Saulius Račkauskas** " Piezoelectric actuators and their application in precise-positioning systems and space structures" (Lithuania)

P6	**Maciej Zawisza** "Research of torsional vibration of the internal combustion engine's crankshaft with various dampers (TVD)" (Poland)
P7	**Roman Barczewski** "Ground vibration study under coordinate measuring machines using short-time signal processing techniques" (Poland)
P8	**Piotr Folęga** "Study of dynamic properties of composite flex splines of harmonic drives" (Poland)
P9	**Lukasz Konieczny** "The determining the damping characteristics of hydropneumatic suspension strut on test stand on strut on test stand" (Poland)
P10	**Rafal Burdzik** "Influence of tire stiffness on acceleration of wheel in forced vibration test method" (Poland)
P11	**Paulina Nogowczyk** "The constructional solutions for absorption of vibration in special vehicles operated in terrain" (Poland)
P12	**Gregorz Perun** "Attempt to evaluate the technical condition of the rollers of the belt conveyor by vibration measurements" (Poland)
P13	**Mantas Landauskas** "Numerical analysis of the volume and the energy value of a pool of peat" (Lithuania)
P14	**Vytautas Maskeliūnas** "Quality Assessment of Book Covers Using Shadow Moiré Technique" (Lithuania)
P15	**Darius Eidukynas** "R&D of system for mechanical impact generation" (Lithuania)
P16	**Ignas Grybas** "R&D of high resolution rotary table based on the ultrasonic standing waves" (Lithuania)
P17	**Miroslaw Siergiejczyk** "Numerical analysis of cast partials using the finite element method" (Poland)
P18	**Dongjiang Han** "Experimental Research on Instability Fault of High Speed Aerostatic Bearing-Rotor System" (China)
P19	**Saulius Račkauskas** "Piezoelectric actuators and their application in precise-positioning systems and space structures" (Lithuania)
P20	**Miroslaw Siergiejczyk** "Cast partials analysis using a proprietary test station" (Poland)
P21	**Sławomir Wierzbicki** "Application of the vibration signal in the diagnosis of the valve clearance of an internal combustion engine" (Poland)
P22	**Jan Warczek** "Identification of the parameters of visco-elastic model of the hydraulic vibration absorber" (Poland)
P23	**Piotr Deuszkiewicz** "Critical states of carbon fiber drive shafts" (Poland)
P24	**Jakub Młyńczak** "Application of safety and communication modules as an integrated intelligent system in rail vehicles" (Poland)
P25	**Witold Cioch** "Machine vibrations analysis working in non-stationary states" (Poland)
P26	**Rokas Šakalys, Giedrius Janušas, Arvydas Palevičius** "Optical evaluation of periodical microstructure, replicated using ultrasonic hot imprint, according to process regimes" (Lithuania)
P27	**Wojciech Napadłek, Grzegorz Trawiński, Grzegorz Boruta, Wojciech Chrzanowski** "The possibility to use a vibration signal to estimate friction processes in sliding couples" (Poland)
P28	**Wojciech Napadłek, Grzegorz Trawiński, Grzegorz Boruta** "The possibility to use a vibration signal to estimate a state of rolling bearings after operation" (Poland)

P29	**Łukasz Muślewski, Janus Musiał** "Analysis of vibration history of drive systems for selected engineering objects in the domain of time" (Poland)
P30	**Łukasz Muślewski** "Correlation analysis of vibration time history of ship drive shafts" (Poland)
P31	**Piotr Krauze, Jerzy Kasprzyk** "Vibration control for an experimental off-road vehicle using magneto rheological dampers"

Location: Novotel Katowice Hotel

| 20:00 | **Reception and Buffet** |

Day 2：October 14　　　　**Location: Novotel Katowice Hotel (Hall A)**

09:00-09:15	**Conference Opening** – Dr. **Rafał Burdzik**
	PARALLEL ORAL SESSION 1
	Session Chairs Prof. **Shigeki Toyama** & Dr. **Rafał Burdzik**
09:15-09:30	**Shigeki Toyama** "Intravascular Stent Motor Powered by Ultrasonic Irradiation" (Japan)
09:30-09:45	**Lubomir Pesik** "Dynamic Model of a Chainsaw" (Czech Republic)
09:45-10:00	**Alexander Shokhin** "On an algorithm for automatic adjustment of the vibrational technological machine to the resonance regime" (Russia)
10:00-10:15	**Mateusz Kozioł** "Dynamic and Control Analysis of a Smart Rotor by Combining the Ansys and Matlab Software" (Poland)
10:15-10:30	**Andrzej Katunin** "Improvement of damage identification ability in composite structures using 2D undecimated fractional wavelet transform." (Poland)
10:30-10:45	**Juan C. Blanco** "Multi-objective optimization of the geometry of a double wishbone suspension system" (Colombia)

Day 2：October 14   **Location: Novotel Katowice Hotel (Hall B)**

09:00-09:15	**Conference Opening** – Prof. **Minvydas Ragulskis**
	PARALLEL ORAL SESSION 2
	Session Chairs Prof. **Minvydas Ragulskis** & Prof. **Zbigniew Dąbrowski**
09:15-09:30	**Luis Ernesto Muñoz** "Modelling and frequency analysis of passive, active and semi-active controlled suspension systems of an automobile" (Colombia)
09:30-09:45	**Marek Waligórski** "Digital vibroacoustic signal processing for combustions in heavy-duty diesel engine for operational and environmental machine efficiency" (Poland)
09:45-10:00	**Ales Haba** "Diagnostics of Railway Vehicle Based on Dynamical Response Measurement" (Czech Republic)
10:00-10:15	**Svetlana Polukoshko** "Buckling Stability of Multilayered Rubber-Metal Vibration Isolator" (Latvia)
10:15-10:30	**Bohdan Borowik** "Research on vibration source separation of the Stirling engine based on the Fast ICA algorithm" (Poland)
10:30-10:45	**Svetlana Polukoshko** "Non-stationary Vibration Studying based on Singular Spectrum Analysis" (Latvia)

10.15-11:00	**Coffee Break**

Day 2：October 14   **Location: Novotel Katowice Hotel (Hall A)**

	PARALLEL ORAL SESSION 3
	Session Chairs Dr. **Luis Ernesto Muñoz** & Prof. **Marian Witalis Dobry**
11:00-11:15	**Raisa Smirnova, Mikhail Zakrzhevsky, Igor Schukin** "Global Analysis of the nonlinear Duffing-van der Pol type equation by a bifurcation theory and complete bifurcation groups method" (Latvia)
11:15-11:30	**Jan Petřík** "Hydrodynamic exciter control for durability analysis" (Czech Republic)
11:30-11:45	**Artur Zbiciak** "Vibration reduction of cable-stayed bridge model retrofitted with SMA restrainers" (Poland)
11:45-12:00	**Mariusz Kosobudzki** "The concept of fatigue test of composite materials" (Poland)
12:00-12:15	**Nikolaev Sergei** "Estimation of damping model correctness using experimental modal analysis" (Russia)

12:15-12:30	**Mariusz Hetmańczyk** "The influence of volumetric performance setting of a multi-piston pump on parameters of forced vibrations" (Poland)
12:30-12:45	**Rudolf Martonka, Vitězslav Fliegel** "Control vibrating device hexapod - verification measurements in the car and the hexapod" (Czech Republic)

Day 2：October 14　　　　　　　**Location: Novotel Katowice Hotel (Hall B)**

	PARALLEL ORAL SESSION 4
	Session Chairs Prof. **Alfonsas Vainoras** & Prof. **Iwona Grabarek**
11:00-11:15	**Alfonsas Vainoras** "Study on dynamical characteristics of electrocardiographic parameters during physical load" (Lithuania)
11:15-11:30	**Michał Mazur** "Identification of kinematic excitation function by structural analysis of the system's dynamic" (Poland)
11:30-11:45	**Irina Klizienė** "Strength and vertical jumping performance characteristics" (Lithuania)
11:45-12:00	**Anatoli Vakhguelt** "Finite Amplitude Pressure Wave Propagation in Chemically Active Heterogeneous Mediums" (Kazakhstan)
12:00-12:15	**Eugene Korobko** "Dynamics of vibroprotecting system when using controlled damping fluids with hereditary factor" (Belarus)
12:15-12:30	**Milda Bilinauskaite** "Analysis of Swimmer's Hand Velocity, Orientation and Shape Using Computational Fluid Dynamics" (Lithuania)
12:30-12:45	**Robertas Mikalauskas** "Studies of acoustic field and fan housing interaction and transformations" (Lithuania)
12:45-13:00	**Bilyk Viachaslau** "Estimation of performance characteristics of a controlled shock" (Belarus)

13.00-14:00	**Lunch**

Day 2：October 14　　　　　　　**Location: Novotel Katowice Hotel (Hall A)**

	PARALLEL ORAL SESSION 5
	Session Chairs Prof. **Maosen Cao** & Prof. **Wojciech Skarka**
14:00-14:15	**ENVIBRA Test and Measurement**
14:15-14:30	**Darius Vainilavičius** "Measurement system for analysis of autogyro rotor imbalance" (Lithuania)
14:30-14:45	**EC Test SYSTEMS**
14:45-15:00	**Wojciech Skarka**, **Mateusz Tyczka** "The Optimization of the Parameters of the Energy Recovery Device from Vibration of the Vehicle Suspension" (Poland)

15:00-15:15	**Mariusz Kuczaj** "Nonlinear dynamics of a two-stage gear system with consideration given to the torsional stiffness of the countershaft" (Poland)
15:15-15:30	**Michał Majzner** "Diagonal driveline as a conception of 4X4 propulsion optimization for special vehicles" (Poland)

Day 2：October 14   **Location: Novotel Katowice Hotel (Hall B)**

	PARALLEL ORAL SESSION 6
	Session Chairs Prof. **Mikhail Zakrzhevsky** & Prof. **Andrzej Puchalski**
14:00-14:15	**EC Test SYSTEMS**
14:15-14:30	**Wojciech Poćwiardowski** "Kinematics of concurrent vibratory rolling – screw system on the example of screen" (Poland)
14:30-14:45	**ENVIBRA Test and Measurement**
14:45-15:00	**Jakub Obuchowski** "Bearings damage detection in presence of heavy non-Gaussian noise via cyclo-stationary analysis" (Poland)
15:00-15:15	**Igor Schukin, Mikhail Zakrzhevsky** "Chaotic Attractors in the Trilinear System" (Latvia)
15:15-15:30	**Mariusz Hetmańczyk** "Multi-criteria optimization of the Dither current intensity in the case of proportional valve" (Poland)
15:30-15:45	**Bartłomiej Greń** "Vibration velocity RMS in online monitoring systems – frequency spectra based algorithm approach" (Poland)

15:45-16.00	**Coffee Break**

Day 2：October 14   **Location: Novotel Katowice Hotel (Hall A)**

	PARALLEL ORAL SESSION 7
	Session Chairs Dr. **Jan Petrik** & Prof. **Radosław Zimroz**
16:00-16:15	**Iwona Komorska, Andrzej Puchalski** "Looking for a vibrational measure of vehicle powertrain damage using multifractal analysis" (Poland)
16:15-16:30	**Eugeniusz Kornatowski** "Vibroacoustic Diagnostics of Power Transformers in a Steady and Transient State" (Poland)
16:30-16:45	**Michal Kozupa** "Investigation on noise radiation to structure vibration correlation in vibroacoustic of transformer" (Poland)
16:45-17:00	**Krzysztof Łasiński** "Application of FMEA to assessing the quality of measurement modules" (Poland)
17:00-17:15	**Maciej Kłaczyński** " Electroaccoustic Methods of Determining the Parameters of Speechsound Generator" (Poland)

Day 2：October 14　　　　　　　　　**Location: Novotel Katowice Hotel (Hall B)**

	PARALLEL ORAL SESSION 8
	Session Chairs Dr. **Raisa Smirnova** & Prof. **Artur Zbiciak**
16:00-16:15	**Marian Witalis Dobry** "Energy Efficiency of Passive Vibroisolation in Machines and Devices" (Poland)
16:15-16:30	**Edgaras Vaštakas** "Acoustic wave synthesis in dispersive media" (Lithuania)
16:30-16:45	**Darius Šaliūnas** "Low frequency traffic noise prediction and modelling of noise barriers using FEM" (Lithuania)
16:45-17:00	**Iwona Grabarek, Maciej Kozłowski** "Design and computer simulation of ECO-car" (Poland)

Day 2：October 14　　　　　　　　　**Location: Novotel Katowice Hotel**

19:00-22.00	**GALA DINNER**

Day 3：October 15　　　　　　　　　**Location: Novotel Katowice Hotel**

	ORAL SESSION 9
	Session Chairs Prof. **Maciej Kozłowski** & Prof. **Minvydas Ragulskis**
09:00-09:30	<u>Invited Talk</u> by **Prof. Włodzimierz Choromański** "The problems of vibration and vibration damping in modern means of transport and medicine."
09:30-09:45	**Marek Chodnicki** "Vibration surveillance for efficient milling of the flexible details fixed in variable stiffness holder" (Poland)
09:45-10:00	**Olga Kononova** "Strength of composite materials reinforced by 3D knitted fabric" (Latvia)

10:00-10:45	Chairs Prof. **Włodzimierz Choromański** & Dr. **Rafał Burdzik** **Ideas, cooperation and projects meeting**

10:45-11:15	**Coffee Break**

Day 3：October 15   **Location: Novotel Katowice Hotel**

	CLOSING SESSION
	Session Chairs Prof. **Włodzimierz Choromański** & Prof. **Minvydas Ragulskis**
11:15-11:30	**ENVIBRA Test and Measurement**
11:30-11:45	**EC Test SYSTEMS**
11:45-12:00	**BEST PAPER AWARD**
12:00-13:00	**CONCLUDING REMARKS – CLOSING SESSION** **Dr. Rafal Burdzik & Prof. Minvydas Ragulskis**

13.00-14:00	**Lunch**

CONFERENCE SPONSORS:

Conference Partners:

NOVOTEL KATOWICE CENTRUM- HOTEL INFORMATION

For participants of Vibroengineering Novotel Katowice has prepared special offer for accommodation.

Rooms will be confirmed upon availability on special offer:
Single: 199 pln
Double: 228 pln
Supplement to Superior room: 40 pln

Rates include buffet breakfast and tax and car park.
Guest can use also Fitness Center: swimming pool, sauna, Jacuzzi, gym.
Hotel offer WiFi free of charge in all rooms, meeting room and public area.

Special rate will be valid until 6th October 2014.

www.jveconferences.com

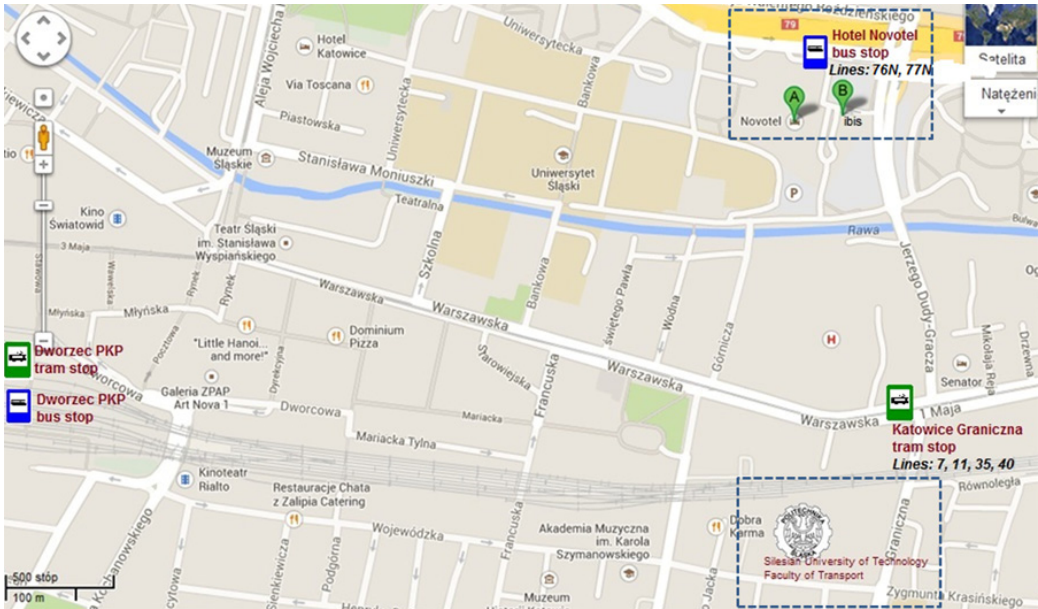Reservations/ requests shall be sent on e-mail address:

Magdalena Dochniak
E-mail: h3377-sl@accor.com
Phone: +48 32 200 44 52
Password: Vibroengineering

Novotel Hotel & Silesian University of Technology Faculty of Transport Locations:

For more information, please visit: www.jveconferences.com

Contact Information:

JVE International Ltd.   Faculty of Transport
Prof. Minvydas Ragulskis   Silesian University of Technology
+37069822456   Dr. Rafal Burdzik
m.ragulskis@jve.lt   +48605617723

Tautvydas Ragulskis
+37067001533