15th International Congress on Sound and Vibration 2008

(ICSV 15)

Daejeon, Korea 6-10 July 2008

Volume 1 of 4

ISBN: 978-1-62748-151-9

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© (2008) by the International Institute of Acoustics & Vibration All rights reserved.

Printed by Curran Associates, Inc. (2013)

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

International Institute of Acoustics & Vibration c/o Dr. Malcolm J. Crocker PO Box 13 Auburn, Alabama 36831

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

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: 845-758-2634 Email: curran@proceedings.com Web: www.proceedings.com

Paper List

SS01	: Intelligent Methods of Active Noise and Vibration Control	
SS0087	Modeling and Simulation of Active Noise and Vibration Control Using a Coupled FEM/BEM Formulation Stefan Ringwelski and Ulrich Gabbert	1
SS0566	An Active Pendulum-Type Vibration Absorber for Duffing Systems Gerardo Silva-Navarro, Benjamin Vazquez-Gonzalez and Liliana Macias-Cundapi	9
SS0653	Rectifications of Parametric Instability Due to Asymmetry of Rotating Shaft Malik Muhammad Nazeer, Mian Suleman and Asim Khan	17

SS02-1 : Active Control of Sound

SS0491	Analysis for Robust Active Noise Control Systems of Ducts with a Pair of Loudspeakers Yasuhide Kobayashi and Hisaya Fujioka	25
SS0699	Active Noise Control Using a Steerable Parametric Speaker Motoki Tanaka and Nobuo Tanaka	33
SS0713	Reproduction of a Half-infinite Sound Field by Using Loudspeakers Jiho Chang and Yang-Hann Kim	41
SS0707	Regional Sound Focusing Methods: Acoustic Contrast Control and Modal Spectrum Matching Jin-Young Park and Yang-Hann Kim	49

SS02-2 : Active Control of Sound

	Paper Speaker Made with Cellulose Piezoelectric Paper Heung Soo Kim, Jung Hwan Kim and Jaehwan Kim	57
	Combined Feedback and Feedforward Minimum-Variance Control of Acoustic Noise Marek Pawelczyk	63
SS0100	Synthesis and Generation of Piece-Wise Stationary Random Acoustic Local Fields Figwer Jaroslaw	71

SS03-1 : Nonlinear Acoustics and Vibration

SS0156	Effects of the Magnetic Pull to the Vibration Behaviours of Turbomachinery	79
	Zhemin Cai and Ningsheng Feng	
SS0134	Transitional Processes in the Constructions with the Sudden Structural Reconstructions	87
	Vladimir Gordon, Yuriy Stepanov and Pavel Anokhin	
SS0678	Damage Detection of Systems using Bifurcation Boundary Analysis	95
	Firooz Bakhtiari-Nejad and Ali Eftekhari	

SS0136	Application of Gauge Theory to Acoustic Fields-Revolutionising and Rewriting the Whole Field of Acoustics	103
	Woon Gan	
SS0690	The Incremental Harmonic Balance Method for Nonlinear Vibration of an Impact Oscillator	111
	Anoshirvan Farshidianfar and Neda Nickmehr	

SS03-2 : Nonlinear Acoustics and Vibration

SS0641	Effects of Gas Excitations to the Vibration Behaviors of Turbomachinery Zhemin Cai and Ningsheng Feng	119
SS0737	Nonlinear Modeling of Hydraulic Engine Mounts Using Coupled Momentum Equations of Decoupler and Inertia Track Anoshirvan Farshidianfar and Vahid Maleki	127
SS0149	Design of an Acoustic Perfect Lens for Negative Refraction Woon Gan	135
SS0658	Analyses on Bifurcation and Chaos Behaviors of Rigidity Rotor System with Rubbing Fault Li Yinong and Ling Zheng	139

SS03-3 : Nonlinear Acoustics and Vibration

SS0598	The Periodical Motions of an Automotive with Non-Linear Cubic Suspension and Harmonic Excitation from the Road	147
	Nicolae-Doru Stanescu	
SS0309	The Influence of Pre-compression Changing on the Axial Vibration of the Transformer Winding Shao Yuying, Wu Tana and Rao Zhushi	155
SS0137	Application of Gauge Theory to Nonlinear Acoustics Woon Gan	161

SS04-1 : Passive Techniques in Vibration and Acoustics Attenuation

SS0716	Full Scale Shaking Table Test of a 3 Story Steel Frame with Friction Dampers Chun Hee Bae and Yeoun Whan Kim	168
SS0693	High Vibration Phenomena due to Cylinder Explosion Pressure of Low-Speed Diesel Engine with 7 Cylinders Installed on Land Yeon Whan Kim and Chun Hee Bae	176
SS0432	The Effect of Sample Mounting on Standing Wave Tube Measurements of Absorption and Transmission Loss Kwanwoo Hong and J. Stuart Bolton	184
SS0691	High Vibration and Failure Assessment of Hydraulic Oil Pipe for Control Valve in Steam Turbine Yeon Whan Kim and Chun Hee Bae	192
SS04-	2 : Passive Techniques in Vibration and Acoustics Attenuation	

SS0652 Structure Dynamics Modification of 2.5 Inch HDD for Improving Shock Performance

200

Seungho Lim, Kyungtae Kim, Seol Woong, Young-Bae Chang, No-Cheol Park and Young-Pil Park

SS0576	Three-dimensional Seismic Isolator with a Tilt Prevention Mechanism	207
	Hiroshi Matsuhisa, Yuki Takahashi, Hideo Utsuno, Keisuke Yamada and Masashi Yasuda	

SS04-3 : Passive Techniques in Vibration and Acoustics Attenuation

SS0336	Dynamic Design of Beams Using Crack Tuning	215
	Hai-Ping Lin	
SS0453	Sound Transmission Loss Maximization of Multi-layered Acoustical Foam Having Panel Structure by Topology	223
	Optimization	
	Joong Seok Lee, Yong Jin Kim, Yoon Young Kim and Yeon June Kang	
SS0460	Development of engineering calculation and design methods for mufflers of gas compressor units with gas turbine drive	228
	Alexey Terekhov and Marina Drobakha	
SS0266	Optimize Sound Transmission Loss Through Double Wall System with Coupling	234
	Marek Szary	

SS06-1 : Vibration and Control of Smart Material Systems

SS0563	Analytical and Experimental Investigation of SSDI and SSDV Techniques for Vibration Damping	242
SS0480	Marcus Neubauer and Joerg Wallaschek	250
330400	Analog Hybrid Vibration Suppression in Flexible Structures Using Piezoelectric Elements and a Displacement Sensor Keisuke Yamada, Hiroshi Matsuhisa and Hideo Utsuno	200
SS0164	Fabrication and Characterization of new MR elastomers with high MR effects	258
	Kristin Popp, Xianzhou Zhang, Prabuono Kosasih and Weihua Li	
SS0740	Dynamic Strain Characteristics of Carbon Nanotube Composite Sensor for Structural Health Monitoring Inpil Kang	266
SS0609	Vibration Control of Vehicle Suspension Featuring MR Damper	275
	Seung-Bok Choi and Kum-Gil Sung	
SS0158	Variable stiffness and Damping of MR isolation system	283
	Xingyu Wang, Xianzhou Zhang, Weihua Li and Qingyu Yao	

SS06-2 : Vibration and Control of Smart Material Systems

SS0260	Comparing Fully Coupled and Weakly Coupled Reduction Basis Applied toThermo-dynamical Structures Alexander Steenhoek, Daniel Rixen and Philippe Nachtegaele	291
SS0315	Unified Semiactive Control System Based on MR Damper for Cable Vibration Mitigation and Its Experimental Verification	299
	Heon-Jae Lee, Seok Jun Moon, Hyung-Jo Jung, Sung-Kyung Lee, Eun-Churn Park and Kyung-Won Min4	
SS0247	Investigation of Real Time Control System for MR Dampers Subject to Impact Loads	307

Lijie Zhang, Jiong Wang and Hongsheng Hu

SS0561	Parameter Optimization in Designing an MR Mount	315
	Mohammad Elahinia, The Nguyen and Constantin Ciocanel	
SS0560	Torque Control for a MR Clutch	323
	Mohammad Elahinia, Constantin Ciocanel and The Nguyen	

SS06-3 : Vibration and Control of Smart Material Systems

SS0415	Nondimensional Analysis of Magnetorheological Energy Absorbers for Drop-induced Shock Mitigation Norman M. Wereley and Young Tai Choi	332
SS0427	Self-powered Active Vibration Control of a Structure Using a PiezoelectricTransducer Kimihiko Nakano	340
SS0122	<u>Vibration Control Applications Using Smart Material Actuators</u> Seung-Bok Choi	348
SS0555	Dynamic Performance Evaluation of Tuned Vibration Absorbers Using ShapeMemory Alloys Jeong-Hoi Koo and Mohammad Elahinia	356
SS0283	<u>Self-powered Smart Damping System Using MR Damper</u> Hyung-Jo Jung, Dong-Doo Jang and Heon-Jae Lee	364

SS07+SS13 : Computational Acoustics

SS0464	An Overset Grid Approach for CAA Simulations of Complex Configurations Norbert Schoenwald, Lukasz Panek, Christoph Richter and Frank Thiele	372
SS0655	Computation of Internal Aeroacoustics of Centrifugal Fan for Icing in Refrigerator Seungyub Lee, Gwang-Se Lee, Seung Heo and Cheolung Cheong	380
SS0138	The improved acoustical wave propogator (AWP) technique and its application Shuzhi Peng and Li Cheng	387

SS08 : Architecture and Urban Sound Design

SS0779	Wave Trapping Barriers And The Effects Of The Tilting Angle On Scattered Noise Bradley McGrath, Jie Pan and Jingbo Wang	400
SS0700	A Study on the Design Method for Water Dropping Sounds from the Wall Fountains - The Effects on Acoustic Comfort Due to the Variation of Water Falling Rate, Height and Quantity Chan Kook, Gil-Soo Jang, Min-Jung Song and Hoon Shin	408
SS0517	Sound-masking Technique for Soundscape of Combined Noise in Open Public Spaces Choong II Jeong, Jin You, Pyoung Jik Lee, Jin Yong Jeon and Jian Kang	416
SS0182	Acoustic Design Artifacts and Methods for Urban Soundscapes Bjorn Hellstrom, Mats Nilsson, Peter Becker and Peter Lunden	422

SS09 : Multi-funtional Damping for Aerospace Structures

SS0669	Active Polymer Nanocomposites Zoubeida Ounaies	430
SS0565	Nanotechnology Enabled Multifunctional Damping for Aerospace Composite Structures Jonghwan Suhr, Gopal Mathur and Pulickel Ajayan	438
SS0671	Electrospinning of Cellulose and CNT-Cellulose Nanofibers for Smart Applications Alex Pankonien, Chulho Yang and Zoubeida Ounaies	446

SS10 : Flow Induced Noise and Structural-Acoustic Coupling

SS0726	Trailing-Edge Noise Measurements on NACA 0012 Airfoils Using the Coherent Particle Velocity Method Andreas Herrig, Werner Wuerz, Ewald Kraemer and Siegfried Wagner	454
SS0272	Analysis of Hydrophone Noise Reduction According to the Underwater Acoustic Sensor Array Dimension	462
	Jongkil Lee, Ji-hye Park, Chi-yong Cho and Ku-kyun Shin	

SS11 : Noise and Vibration Diagnostics and Advanced Measurement Techniques

SS0507	Comparison of Vibration and Noise of Insulation Panel for Transformer Jaehwan Jeong, Byeongkeun Choi, yongseok Jang, Dongsoo Lim and Jin Kim	467
SS0440	Web Based Condition Monitoring and Fault Diagnosis System for Fan Engine Cong Yun Chen Jin, Zjap Fagamg	475
SS0373	<u>Ultrasonic Sensing of Methanol Concentration</u> Chia-Chi Sung, Y. L. Tseng and C. Y. Chen	484
SS0702	Application of the Wavelet Transform to Internal Combustion Engines Faults Diagnosis Henryk Madej and Marek Flekiewicz	492
SS0571	Vibration and Noise Diagnostics and Control Techniques for Aerospace Vehicles Gopal Mathur and Naval Agarwal	500
SS0360	Noise Measuring and Characteristic Analysis of Liquid Rocket Engine Feng Li, Xi an Liu and Zexia He	508
SS12	: Sound Quality and Speech Intelligibility	

SS0298	Formant Based Speech Enhancement for Listening Speech Sound in Noisy Place	515
	Yuichi Ueda, Shota Hario and Tadashi Sakata	
T0227	Optimal Design of Source Location and Digital Filters to Manipulate Sound Field in a Room	523
	Takashi Kinoshita and Shinichi Ishizuka	

SS14 : The Advances of GIS Application in Noise Impact Assessment

A GIS Web Application for Decision Support of Noise Impact Assessment	531
Christopher Hoar, Sung Kai Wong and Ngai Ching Rebecca Choi	
Assessment of noise exposed population considering Korean lifestyle	537
In-Sun Park, Sang-Kyu Park and Daejoon Kang	
An Evolution of Road Traffic Noise Modeling Technologies in Hong Kong	544
Law Chi-wing, Chee-kwan Lee, Lui Aaron and Yeung Maurice	
Sustainable SDI in the context of Noise Mapping	551
Hardy Stapelfeldt and Angela Czerwinski	
Interactive Noise Simulation in a Virtual Environment	559
KC Hui, Yuki Chow and Andy Chung	
	Christopher Hoar, Sung Kai Wong and Ngai Ching Rebecca Choi Assessment of noise exposed population considering Korean lifestyle In-Sun Park, Sang-Kyu Park and Daejoon Kang An Evolution of Road Traffic Noise Modeling Technologies in Hong Kong Law Chi-wing, Chee-kwan Lee, Lui Aaron and Yeung Maurice Sustainable SDI in the context of Noise Mapping Hardy Stapelfeldt and Angela Czerwinski Interactive Noise Simulation in a Virtual Environment

SS16-1 : Active Vibration Control of Flexible Structures

SS0195	Nonlinear Vibration Control of FGM Plate with Piezoelectric Sensor/Actuator Layers under Thermal Gradient and Mechanical Load	566
	A.R. Ohadi and Vahid Fakhari	
SS0362	Semi-Active Control for Multiple Building Structures Using Connected Control Method and Magneto-Rheological(MR) Dampers	574
	Shigeru Inaba and Kazuto Seto	
SS0533	Four-Mounted Active Vibration Isolation System Using The Voice Coil Actuators	582
	Kyihwan Park, Dongyoub Choi and Sangyoo Kim	

SS16-2 : Active Vibration Control of Flexible Structures

SS0306	Wave Filtering Method for a Rectangular Panel and Its Application to an Active Wave Control System	590
	Hiroyuki Iwamoto and Nobuo Tanaka	
SS0219	Modal Model Reduction for Vibration Control of Flexible Rotor Supported by Active Magnetic Bearings Han Wook Jeon, Chong-Won Lee and Kazuto Seto	598
	Han wook seon, Chong-won Lee and Kazulo Selo	
SS0308	Nonlinear Control for Limit Cycle Oscillations of Nonlinear Wing in Low Subsonic Flow	604
	Morteza Dardel and Firooz Bakhtiari-Nejad	

SS17-1 : Acoustic Holography

SS0703	An Overview on the Solution of Exterior and Interior Inverse Problems in Acoustics Using Boundary Element Method	612
	Benjamin Soenarko and Daniel Setiadikarunia	
SS0229	Cyclic Sound Intensity and Source Separation from NAH Measurements on a Diesel Engine	620
	Brice Lafon and Jerome Antoni	
SS0692	Spatial Complex Envelope of Sound Field	628
	Choon-Su Park and Yang-Hann Kim	
SS0403	Identify Velocity of a Complex Source with iPTF Method	636

Nicolas Totaro, Jean-Louis Guyader and Céline Sandier

SS0371	Application of Near-field Beamforming Combined with Similar Source Method for Acoustic Holography	644
	Gee-Pinn Too and Bo-Hsien Wu	
SS0414	Applying the Nearfield Acoustical Holography Technique for the Improvement of the Acoustic Quality of Small Size Products?	652

Patrice Pischedda and Daniel Vaucher de la Croix

SS17-2 : Acoustic Holography

SS0293	Visualization of Transient Response of Acoustic Source Field Using the BEM-based NAH Agustinus Oey and Jeong-Guon Ih	660
SS0556	Real-time Nearfield Acoustic Holography : Implementation of the Direct and Inverse Impulse Responses in the Time- wavenumber Domain Jean-Hugh Thomas, Vincent Grulier, Sebastien Paillasseur and Jean-Claude Pascal	666
SS0720	The Incident Sound Power in a Diffuse Sound Field Finn Jacobsen and Xinyi Chen	690
SS0510	Moving Sensors in Inverse Acoustics Jelmer Wind, Marcel Ellenbroek and Andre de Boer	674
SS0312	Active Acousto-holographic Imaging System with Heterodyne Interferometry and Correlation Image Sensor	682

Shigeru Ando, Sayo Ozaki and Akira Kimachi

SS17-3 : Acoustic Holography

SS0250	Inverse Source Strength Reconstruction Techniques for Ducted Acoustic Sources Teresa Bravo and Cedric Maury	696
SS0605	Limitations of Source Imaging Quality in Numerical Reconstruction from Holograms of Acoustic Field Propagating through Anisotropic Media	704
	Mieczys Ł aw Pluta and Michael Schmachtl	
SS0501	Ultrasound Inverse Scattering Computed Tomography from the Quadrangular Observation View Akira Yamada	712

SS18+19 : Flow Duct Acoustics

SS0385	Linear and Non-Linear Acoustic Modelling of Plug Flow Mufflers	718
	Robert Fairbrother and Andreas Dolinar	
	Predicting the Aerodynamic Noise Generation and Propagation Mechanisms in Expansion Chambers Using an Active Bi-port Formulation	726
	Wim De Roeck, Vasilisa Solntseva and Wim Desmet	
SS0393	Two-port Techniques for Acoustic Characterisation Non-linear In-duct Discontinuities	735
	Hans Boden	

SS0344 Flow and Pressure Drop Calculation Using Two-ports Tamer Elnady, Mats Abom and Sara Elsaadany

SS20 : Noise and Vibration in Cruise Ships

SS0639	Development of Vvibro-acoustic Coupling Analysis Software Using Energy Flow Analysis Method and Its Applications to a Cruise Ship	751
	Hyun-Wung Kwon, Suk-Yoon Hong and Jong-Do Kim	
SS0484	Transmission Characteristics of Vibration Energy of Large Panels of a Passenger Ship	759
	Hyuk Kwun, Jeakwang Eom, Juhyun Park, Jaekwon Choi, Dae-Seung Cho, Sung Yong Han and Tae Mook Choi	
SS0479	Ship Model in SEA	765
	Hyun Ju Kang, Jea Seung Kim, Hyun Sil Kim, Bong Ki Kim and Sang Ryul Kim	
SS0613	Noise Reduction in Ship Cabin by Means of Floating Floor	769
	Hyun Sil Kim, Jae Seung Kim, Hyun Ju Kang, Bong-Ki Kim and Sang Ryul Kim	

SS21-1 : Urban Noise

SS0345	Guideline and Policy of Community Noise in Korea	777
	Jeung Tae Kim, Jung Soo Kim and Jung Gon Son	
SS0536	ANN Modeling of Noise Levels due to Vehicular Traffic Flow in Indian Intermediate City	783
	Dhananjay Parbat and Prashant Nagarnaik	
SS0772	Proposal for Noise Limits According to the 2002/49/EC Directive in Greece	789
	Vassilis Vassiliadis and Emmanuel Tzekakis	

SS21-2 : Urban Noise

SS0289	Influence of Events on Noise and Air Pollution Salvatore Barbaro, Rosario Caracausi, Gaetano Cognata and Francesco Maria Raimondi	797
T0254	Techniques to Accelerate Noise Mapping Calculations for Large Areas and Cities Wolfgang Probst and Ingo Rabe	805
SS0727	Effect of Construction Noise on Acoustical Pollution of City Environment Natalia Minina, Natalia Tyurina, Nickolay Ivanov and Marina Butorina	813

SS22 : Advanced Numerical Methods for Mid-frequency Acoustics and Vibration

SS0659	Comparison of Numerical Prediction Techniques for Sound Propagation in Complex Outdoor Environments	82´
	Bart Bergen, Bert Van Genechten, Timothy Van Renterghem, Bert Pluymers, Dirk Vandepitte, Dick Botteldooren and Wim Desmet	

SS0474 <u>High Frequency Vibration Analysis of Curved Beam Structure</u> Ki-Sang Chae and Jeong-Guon Ih 829

SS0280	Efficient Model of Structure-Borne Noise in a Fully Trimmed Vehicle from 200Hz to 1kHz	837
	Arnaud Charpentier, Prasanth Sreedhar and Kazuki Fukui	
SS0310	An Adaptative and Multiscale Approach for Acoustics Problems over the Medium-Frequency Range Benjamin Sourcis, Pierre Ladeveze, Herve Riou and Beatrice Faverjon	845
<u>6604</u>	1 · Architectural and building accustica	

SS24-1 : Architectural and building acoustics

SS0530	Influence of Study on Sound Transmission in Plasterboard Partitions	853
	Sung Chan Lee, Cyrille Demanet and Jin Yong Jeon	
SS0397	Structural Noise Reduction in Residential Buildings	858
	Istvan Dombi, Maria Bite and Pal Bite	
SS0183	Residential Balconies with Road Traffic Noise: A Combined Source Image and Radiosity Model	864
	Daniel Naish and Andy Tan	
SS0492	Acoustic Classification of Urban Public Underground Spaces	872
	Hong Jiang, Jian Kang and Hong Jin	

SS24-2 : Architectural and building acoustics

SS0525	Acoustical Design for Remodeling the Little Theatre in the Sejong Performing Arts Center	877
	Chun Ki Seo, Pyoung Jik Lee and Jin Yong Jeon	
SS0486	<u>Sound Field In Flat Underground Spaces: A case study in an underground garage</u> Fei Song, Jian Kang and Hong Jin	885
SS0449	An Inverse Method to Estimate the Acoustic Impedance on the Surfaces ofComplex-shaped Interiors Gabriel Pablo Nava, Yosuke Yasuda, Yoichi Sato and Shinichi Sakamoto	891

SS25 : Musical Acoustics

SS0213	Beating of the Sound and the Vibration in Korean Bell Seock Hyun Kim	899
T0405	"All this Buzz About the Sitar: Physical Modelingly Speaking" Tae Hong Park and Zhiye Li	907
T0524	A Study on Timbre Adjustment of Electric Guitar Based on Vibration Control of Pickup Base Kiminobu Nishimura and Subaru Hujiwara	914

SS26-1 : Transport Noise and Vibration

SS0348	On Prediction of High Speed Train Noise During Design Stage: A Preliminary Study On Aerodynamic Noise	921
	Jung Soo Kim, Jeung Tae Kim and Seock Hyun Kim	
SS0205	Sound Transmission Characteristics of Floor Structures in Railway Vehicles	926
	Bum-Sik Shin and Yeon-Sun Choi	

SS0262 <u>The Acoustic Performance of a Multiple-inlet and Multiple-outlet Muffler</u> Younghyun Kim and Kai Ming Li

SS26-2 : Transport Noise and Vibration

SS0395	Experimental and Theoretical Investigation of Adhesion Based on Analysis of Wheel-rail Noise Maksym Spiryagin, Kwan Soo Lee, Hong Hee Yoo, Valentyn Spiryagin and Yuriy Vivdenko	942
SS0331	Sound Insulation Performance of the the Corrugated and Extruded Panels for Railway Vehicles Seock Hyun Kim, Insoo Paek and Jeongtae Kim	950
SS0324	Flexible Part Design of the Robot Body to Save the Energy in the Galloping Quadruped Robot Sung Hun Kwon and Hong Hee Yoo	958
SS0728	Prediction of Exterior Noise in Earth-moving Machines Nickolay Ivanov, David Copley and Natalia Tyurina	966

SS26-3 : Transport Noise and Vibration

SS0265	Identification of Combustion-Related Diesel Engine Noise Moohyung Lee, J. Stuart Bolton and Sanghoon Suh	974
SS0731	Development of a Prediction Rraffic Noise Model to Roads in Duplication Pprocess Frederico RODRIGUES, Carlos Nassi, Cristiano Resende and Antonio Lazaro Rodrigues Junior	982
T0253	The Noise Radiated from the End of Road and Railway Tunnels Wolfgang Probst and Ingo Rabe	988
SS0735	Helicopter Environmental Noise Prediction on the Complicated Ground Using Reflection and Diffraction Model Eunkuk Son, Wooyoung Choi and Soogab Lee	996

SS26-4 : Transport Noise and Vibration

SS0426	<u>Vibratons of Rotating Tire</u> Jeong Hyun Choi and Sang Ju Lee	1004
SS0496	Determination of the Sound Power Levels Emitted by Various Vehicles Dae-Seung Cho and Sungho Mun	1010
SS0760	<u>Study on Prediction Model for Railway Noise at High Places</u> Kiyoshi Nagakura, Yukie Ogata, Toshiki Kitagawa, Yuichi Kozuma, Kaoru Murata and Y. Abe	1018

SS27 : Active Noise and Vibration Control in Practical System Implementations

SS0558	Investigation Concerning Actuator Position in an Active Boring Bar Regarding Its Performance By Means of "3-D" Finite Element Models	1026
	Tatiana Smirnova, Henrik Akesson, Lars Hakansson, Ingvar Claesson and Thomas Lago	
SS0557	Advantageous and Drawbacks Using Different Sensors in Feedback Control in Active Boring Bar Applications	1034

	Henrik Åkesson, Tatiana Smirnova, Lars Hakansson , Ingvar Claesson and Thomas Lago	
SS0673	Flexible Rotor Modeling for a Large Capacity Flywheel Energy Storage System Seong-yeol Yoo, Cheol-hoon Park, Sang-kyu Choi and Myounggyu Noh	1042
SS0463	Active Signal Processing Algorithms for Controlling Electromagnetic Fields: A Tutorial Tommy Hult and Abbas Mohammed	1050
SS0208	Vibration of Vibratory Gyros with Inperfections Chan-shin Chou, Fa-Hwa Shieh and Chia-Ou Chang	1058

SS28 : Underwater and Ship Acoustics

SS0472	Cavitation Tunnel Test for Propeller-induced Noise and Its Comparison with Full-Scale Measurements	1066
	Seung Jae Lee and Jong Soo Seo	
SS0228	Very Shallow Water Noise Impact of Offshore Windfarms. Parameters to Be Considered	1074
	Ranz Guerra Carlos	
SS0621	Design Enhancement of the Underwater Noise Control Linings through a Parsimonious Parametric Study	1082
	Satyanarayan Panigrahi, Manohar Munjal and Sreehari Kumar	

SS29 : Noise, Vibration and Harshness

SS0190	Critical Assessment of Operational Path Analysis: Effect of Neglected Paths	1090
	Peter Gajdatsy, Karl Janssens, Ludo Gielen, Peter Mas and Herman Van der Auweraer	
SS0696	A Study on the Design of CTBA Considering Reduction of Brake Moan Noise	1098
	Seung Hyun Chung, Gueng Su Kim, Gwang Yun Kim, Jihoon Jeong and Moonho Yang	
SS0682	A Study on Reduction of A-Pillar Turbulence Noise	1105
	Jin-Seok Hong, Jeonghan Lee, Kang-Duck Ih and Ki Won Kim	
SS0214	The Influence of Suction Muffler and Pipe Dynamics on Refrigerator Low Frequency Noise	1112
	Andrey G Troshin, Jeong Hoon Kang and Jeong II Park	

SS30-1 : Sound Quality

SS0292	Acoustic Correction of a Sport Centre in Sicily	1119
	Salvatore Barbaro, Rosario Caracausi and Sergio Barbaro	
SS0483	Improvement of Intake Noise at Acceleration with the Modification of Intake Duct System by Introducing Porous Duct.	1127
	Sung-Hwan Shin, Shigeko Hatano, Toshimitsu Tanaka, Takeo Hashimoto, Senji Kitahara, Takashi Tsuchida and Hideo Takao	
SS0365	Brand Sound of Premium Sedans and Its Image Analysis Based on Human Engineering	1135
	Kyung Hoon Lee, Sang-Kwon Lee, Dong Chul Park and Tae Gyu Kim	
T0359	The Simulation of Binaural Sound Pressure Caused by Vibrating Body Moving with High Speed	1143
	J. H. Wang and Po-lin Lee	

SS30-2 : Sound Quality

SS0761	<u>A Virtual Digital Signal Generator for Psychoacoustics Experiments</u> Lingsong He, Malcolm Crocker and Ran Zhou	1151
SS0499	Effect of Visual Scenery and Seat Vibration to the Perception of Sound Quality of Car Interior Noise Shigeko Hatano, Sung-Hwan Shin and Takeo Hashimoto	1159
SS0291	Acoustical Quality of Indoor Spaces. Analysis of the Influence of Design and Building Materias Salvatore Barbaro and Rosario Caracausi	1166
SS0597	Sound Quality Evaluation of Interior Noise of Driving Vehicle Using Mahalanobis Distance Jae Eung Oh, Sang-Gil Park, Kwi-Hyun Kang, Dong-Hyun Jung and Jae-Eung Jung	1172

SS31 : Acoustics, Vibration, or Condition Monitoring

SS0539	Vibration Analysis of the BLDC Axial-gap Type Motor using FEM and Its Application to Understanding Noise Generation Characteristics	1176
	Taeckjin Lee and Junhong Park	
SS0608	Fusion of Vibration Based Features for Gear Condition Classification Suresh Venugopal and Sally Anne McInerny	1183
SS0334	Genetic Algorithm based Sensor Selection for AUV's Vibration Condition Classification Rongwu Xu, Lin He and Linke Zhang	1191

SS32 : Vibro-acoustics of Building Structures, especially for Impact Excitation

SS0537	Evaluation of Floor Impact Sound Levels Using the Beam Transfer Function Method	1199
	SeungYup Yoo, Jin Yong Jeon, JePil Lee and JunHong Park	
SS0413	Structure-borne Sound Transmission from Machines into Lightweight Building Structures	1205
	Barry Gibbs and Andreas Mayr	
SS0364	Uncertainty of the Direction-Averaged Velocity Level Difference	1213
	Jeffrey Mahn and John Pearse	
SS0527	Effect of IACC on the Annoyance of the Heavy-weight Impact Sounds	1219
	Jae Ho Kim, Pyoung Jik Lee, Shin-ichi Sato and Jin Yong Jeon	
SS0328	Low Frequency Impact Sound Transmission through Timber-joisted Floors	1227
	Albano Neves e Sousa	

SS33-1 : Wave Propagation in Solids, Soils and Structures

SS0216	Effect of the Variation in the Cross-section of a Waveguide on Vibration Transmission	1235
	Dae Seung Kim and Jin Oh Kim	
SS0562	Transmission of Vibration Energy in Welded Connections of Thin Plates Jacek Cieslik	1243

SS0667	Wave Reflection and Transmission due to Defects in Railway Tracks at High Frequencies	1251
	Jungsoo Ryue, David Thompson and Paul White	
SS0444	Wave Motion in a Planar Curved Beam	1259
	Bongsu Kang and Chris Riedel	

SS33-2 : Wave Propagation in Solids, Soils and Structures

SS0478	Integrity Evaluation of Grouted Rock Bolts Using Reflected Guided Ultrasonic Waves Jong-Sub Lee, Jung-Doung Yu, Myeong-Ho Bae, Shin-In Han, Yong-Jun Lee and In-Mo Lee	1267
SS0374	Simulation of Rate Dependent Soil Behavior in One-dimensional Seismic Wave Propagation Chang-Gyun Jeong, Duhee Park and Youssef M.A. Hashash	1275
SS0366	Seismic Site Characterization using Harmonic Wavelet Analysis of Wave (HWAW) Method	1283

Dong-Soo Kim, Hyung-Choon Park, Jong-Tae Kim and Heon-Joon Park

SS33-3 : Wave Propagation in Solids, Soils and Structures

SS0361	Linear Wave Motion in Elastic Helical Springs-revisited Sergey Sorokin	1291
SS0357	Understanding the Effects of Complex Structural Features on Guided Wave Propagation Hyun Woo Park, Jung Wuk Hong and Hoon Sohn	1299
SS0297	FE Modeling Method for Analysis of Impact Energy Propagation Phenomenon of Beam-shell Structures Undertaking Ballistic Impact and Burst Wave Hong Seok Lim and Hong Hee Yoo	1307
SS0106	Vibration Theory which May Be Applied in Case of Mechanical Tension Determination for Acoustic Transformers Utilized in Ultrasonic Vibration Technique	1315

Odobescu Liviu

SS34 : Vibration and Damping of Composite Materials SS0650 Stability of a Supercritical Composite Shaft Supported by a Non-Rigid Beam 1323 Eungsoo Shin SS0736 Meso- and Micromechanical Modelling of Cyclically-loaded Composites Using Finite Element Unit Cell Models 1330 Arthur Jones, Sreedhar Kari, Andrew Long, Nicholas Warrior and Leonid Gelman SS0349 Vibration Characteristics of Pre and Post buckled Laminated Composite Spherical Shells 1338 Chinmay Kundu and Jae-Hung Han SS0197 Plastico-Elastic Analyze of Dynamics Shock of a Lamined Plate with Various Thicknesses 1346 Mohamed Ouali Si-Chaib, Mohamed Said Bouamrene, Abdelkader Nour, Rachid Saci and Yvon Chevalier SS0488 Vibration Response of 3-D Space Accessible Sandwich Composites 1354 Uday Vaidya

SS35-1 : Experimental Modal Analysis

SS0482	Development of Windows with Sound Insulation Nishimura Sohei, Nishimura Yuya, Nishimura Tsuyoshi and Yano Takashi	1361
SS0495	Updating of Finite Element Models Including Damping Gun-Myung Lee	1367
SS0585	Modal Analysis of Aluminum Structure Filled with Aluminum Foam Using Scanning Laser Vibrometer Saeed Badshah and Johann Wassermann	1375
SS0398	The Relationship between the Tool Length/Diameter Ratio and Surface Roughness in End Milling Applications Yaser Hadi	1382

SS35-2 : Experimental Modal Analysis

SS0104	Parameter Identification of an Agricultural Tire Considering Tire Lugs Katsuhide Fujita, Shunsuke Miyoshi, Takashi Saito and Mitsugu Kaneko	1390
SS0775	On the Characterisation of Natural Frequency and Response Statistics of Structures with Uncertainty Geoff Lucas, Nicole Kessissoglou and Nathan Kinkaid	1398
SS0672	<u>Eigenvalue Analysis for Structure of Centrifugal Fan</u> Takeo Fujii, Ryuji Matsushita and Noritoshi Nakagawa	1406
SS0607	Vibration Analysis in a Flexible Structure with a Piezo Stack Actuator Using Laser Speckle Interferometry Alexander Schirrer, Johann Wassermann and Martin Kozek	1412

SS36-1 : Machine Fault Diagnosis and Prognosis Session

SS0323	Accurate Condition Monitoring Using Data Fusion and Automatic Alarm Setting Technique	1420
	Gang Niu and Bo-Suk Yang	
SS0358	Study on the Method for Engine Technical State Change Trend Precipitation Based on Combination Forecasting Model	1428
	jianmin Liu, Yanbin Liu and Fuzhou Feng	
SS0547	Simulation of Oscillations of a Beam at Random Vibroloadng Igor N. Ovchinnikov	1435
SS0351	Modeling and Simulation Studies of 1-DOF Hydraulic Servo Vibration Platform Based on AMESim Zhiqiang Chao, Renwei Diao, Aihong Meng, Shousong Han and Pengcheng Jiang	1440

SS36-2 : Machine Fault Diagnosis and Prognosis Session

SS0350	Application Research of GA and SOFM Based Condition Classification for a Certain Diesel Engine Fuzhou Feng, Jianmin Liu, Fengwen Zhao and Yinmao Zhao	1446
SS0326	Application of Ultrasonic Guided Waves for Inspecting and Identifying the Corrosion in Pipeline Xiaojuan Wang and Peter Tse	1452

SS0422 <u>Diagnosis of Engine Mount by Solving Inverse Problem</u> Tadao Kawai and Naoki Kai

SS36-3 : Machine Fault Diagnosis and Prognosis Session

- SS0337 <u>Fault Diagnosis of Low Speed Bearing Based on Acoustic Emission Signal and Multi-Class Relevance Vector Machine</u> 1468 Achmad Widodo, Jong Duk Son, Bo-Suk Yang, Yong-Han Kim, Andy C.C. Tan, Joseph Mathew, Dong Sik Gu and Byeongkeun Choi
- SS0437
 Least Squares Support Vector Machine Based Condition Prediction for Bearing Health
 1476

 Fagang Zhao, Jin Chen and Lei Guo
 1476

SS36-4 : Machine Fault Diagnosis and Prognosis Session

SS0619	Suprresion of Regenerative Chatter in Machine Tools through the Robust Stability Theorem	1483
	Simon S. Park and Ramin Rahnama	
SS0438	Equipment Performance Degradation Assessment based on Wavelet Support Vector Machine	1491
SS0676	Influence on the Resonance of Bearing Casing Structures due to Harmonic Components in a Turbine Rotor System	1498
	Seong Tai Cho, Ohseop Song and Kyeong Hyeon Yang	
SS0623	Damage Detection in an Elastic Rod Using Finite Element Simulation to longitudinal Impact waves	1506
	Nasser Bajaba and Hesham A. Elkaranshawy	

SS37-1 : New Trends on Vibration of Plate and Shell Structures

libration Analysis of Fibrous Composite Plates Reinforced along ArbitraryCurvilinear Fiber Shapes	1514
Shinya Honda, Yoshimasa Oonishi, Yoshihiro Narita and Katsuhiko Sasaki	
ree Vibration of Heated Circular FGM Plate on First-order Theory Kiaohua Fu and Shirong Li	1522
<u>Ionlinear Buckling Analysis of CFRP Isogrid Cylindrical Shells</u> Soichi Ben, Shutaro Sao and Naomi Kishitani	1530
5 - (i	hinya Honda, Yoshimasa Oonishi, Yoshihiro Narita and Katsuhiko Sasaki ree Vibration of Heated Circular FGM Plate on First-order Theory iaohua Fu and Shirong Li onlinear Buckling Analysis of CFRP Isogrid Cylindrical Shells

SS37-2 : New Trends on Vibration of Plate and Shell Structures

SS0288	Strong In-Plane Vibration due to Mode Conversion at the Ends of a Cylindrical Sell	1538
	Hyun Gwon Kil and Chan Lee	
SS0305	A Global Solution Technique in Optimum Lay-up Design for Vibration of LaminatedCurved Panels Yoshihiro Narita	1545
SS0758	Free Vibration of Laminated Cylindrical Shells with Funtionally Graded Middle Layer	1553
	Shirong Li and Xiaohua Fu	

SS0176 <u>Static Analysis of Functionally Graded Piezoelectric Beams under Thermal Loads by the Homotopy Perturbation</u> 1561 <u>Method</u>

A. Armin, M. Abbasi, I. Shafiee Nejad and M.R. Eslami

SS37-3 : New Trends on Vibration of Plate and Shell Structures

SS0191	Identification of Core Elastic Parameters for Sandwich Panels Using FEM Eigenvalue Analysis and Nonlinear Optimization Algorithm	1569
	Kenji HOSOKAWA, Kouhei TAKAGI and Toshiyuki SAKATA	
SS0177	Nonlinear Vibration Analysis of Isotropic Cantilever Plate with Viscoelastic Laminate Firooz Bakhtiari-Nejad and Morad Nazari	1576
SS0178	A Study on the Analysis Process Using Structural Foam for High Stiffness and Lightweight Vehicle Ki-Chang Kim, Chan-Mook Kim, Hong-Jae Yim, Tae-Shin Kwon and Jin-Taek Kim	1584
SS0088	Study on Sloshing Response of Floating Roofs in Cylindrical Storage Tanks using FEA Shoichi Yoshida, Kazuyoshi Sekine and Tsukasa Mitsuta	1595
SS0319	The Forced Vibrations of Non-Uniform Plate with Time-Dependent Elastic Boundary Conditions A.R. Ohadi and M. Saeidifar	1603

T01-1 : Acoustics and Vibration Theory

T0688	Vibration Characteristics Analysis of an Impulsively Forced Rotating Cantilever Beam using Wavelet Transform	1611
	Ho Young Park and Hong Hee Yoo	
T0194	Inverse Dynamic Equilibrium Analysis of Mechanical Systems Undergoing Prescribed Rotational Motions Dong Hwan Choi and Jonathan Wickert	1619
T0237	The Fast Multipole Boundary Element Method : Breaking The High Frequency Barrier for Acoustic Simulation of Large Structures	1628
	Koen De Langhe, Raphael Hallez and Toufic Abboud	

T01-2 : Acoustics and Vibration Theory

T0473	Far-Field Sound Radiation from a Baffled Elliptical Piston using a Lumped Parameter Model and Singular Value Decomposition	1633
	Jorge P. Arenas, Jaime Ramis and Jesus Alba	
T0281	Coupled Bending and Torsional Vibration Analysis of Flexible Windturbine Blades by Using Assumed Modes Method Kyung-Taek Kim and Chong-Won Lee	1641
T0142	Coupled Thermoelastic Vibration Analysis of Beams Based on Third-Order Shear Deformation Theory Arash Afshar, Mostafa Abbasi and Mohammad Reza Eslami	1649
T0454	On the Dynamics of Quasi-Standing Waves in a Planar Thin Disc Subjected to Inertial Rotation and Internal Prestress Michael Shatalov, Stephan Victor Joubert and Wilna Pretorius	1657
T0325	<u>Utilisation of Inverse Techniques for Vibration Source Reconstruction</u> Mohammad Hosseini Fouladi. Mohd. Jailani Mohd. Nor and Ahmad Kamal Ariffin	1664

T01-3 : Acoustics and Vibration Theory

T0456	The Influence of Internal Prestress and Damping Inhomogeneity on the Evolution of Standing Waves in Rotating Spherical Shells	1672
	Michael Shatalov, Stephan Victor Joubert, Charlotta Elizabeth Coetzee and Wilna E Pretorius	
T0394	Study on the Vibration and Sound Radiation from Axially Stiffened Finite Cylindrical Shell in Water Chang-jiang Liao, Wei-kang Jiang, Hao Duan and Yun Wang	1680
T0723	The Role of Generalized Gamma Function in Mathematical Theory of Diffraction Wonju Jeon and Duck-Joo Lee	1688

T02-1 : Active Sound and Vibration Control

T0516	Active Vibration Control of Heavy Vehicles with Electromagnetic Suspensions	1696
	Kimihiko Nakano, Katsuhiko Hirayama, Ryuzo Hayashi, Yoshihiro Suda and Yasuhiro Kawamoto	
T0666	Multi-stage Active Vibration Isolation	1704
	Qiao Sun	
T0485	A Method of Input Shaper Design for Residual Vibration Reduction Using Virtual Mode Concept	1712
	Seong-Wook Hong, Sang-Won Park and William Singhose	
T0416	Unbalance GPI Control in an Asymmetrical Rotor-bearing System with Magnetic Bearings	1720
	Manuel Arias-Montiel, Gerardo Silva-Navarro and Richard J. Márguez-Contreras	

T02-2 : Active Sound and Vibration Control

T0741	Tracking of A Piezo-Actuated System Using Adaptive Sliding-Mode Control and Function-Approximation Technique	1728
	Jin-Wei Liang and Hung-Yi Chen	
T0549	Application of a Repetitive Controller with Accelerated Convergence Properties to an Active Vibration Isolation System	1736
	Steve Daley, Fan Zhang and David Owens	
T0157	Design and Model Based Control of Active Control Engine Mount	1744
	Bo-Ha Lee and Chong-Won Lee	
T0538	Theoretical Prediction of the Levitation Force of an Acoustic Levitation System for Disc-shaped Objects	1751
	Su Zhao, Yang Ge and Joerg Wallaschek	

T02-3 : Active Sound and Vibration Control

T0172	Improving Transmission Loss of a Rectangular Panel Using Cluster Control	1759
	Ryoji Fukuda and Nobuo Tanaka	
T0467	Instabilities in a State Space Model of the Human Cochlea	1767
	Emery M. Ku, Stephen Elliott and Ben Lineton	
T0458	Vibroacoustic Control of Piezoelectric Smart Honeycomb Sandwich Panel	1775

Jeng-Jong Ro, Hong-Yi Chang and Shuh-Jang Sun

T0780	Active Vibration Control Using Modal Analysis and Rejection of Resonance	1783
	Vyacheslav V. Potekhin, Maxim P. Kolesnikov and Timur Yu. Chernykh	

T02-4 : Active Sound and Vibration Control

T0749	Adaptive IIR Filter Using Variable Step Size for the Active Noise Control inside the Short Duct	1788
	Ho-Wuk Kim and Sang-Kwon Lee	
T0698	Formulation of Unified Orthogonal Contributor to Construct the Noise and Vibration Control System	1798
	Noritaka Kawajiri, Tsutomu Kaizuka and Nobuo Tanaka	
T0269	Vibration Control of Fluid-Loaded Cylinderical Shells Using Active Constrained Layer Damping	1806
	Zheng Ling, Li Yinong and Amr Baz	
T0140	Control of Three-pole Hybrid Active and Permanent Magnetic Bearing System using Redundant Coordinates	1814
	Sang-Hyun Park and Chong-Won Lee	

T04-1 : Architectural Acoustics

T0406	Sound Absorption Characteristics of PTFE Membrane Material	1822
	Jeong Ho Jeong, Jung Joong Kim and Jang-Yeul Sohn	
T0579	Prediction of Sound Fields in a U-shaped Section of a Long Corridor	1829
	Kai Ming Li and Sai Tung So	
T0192	Acoustical Properties of Vegetal Fibers Used on Multilayered Materials	1835
	Giselle M. Silva and Max D. C. Magalhaes	

T04-2 : Architectural Acoustics

T0258	Characterization of the US Army Research Laboratory's Environment for Auditory Research (EAR)	1842
	Angelique A. Scharine and Timothy Mermagen	
T0578	Predictions of the Reverberation Time in a Street Canyon	1850
	C. Y. C. Lai, Chun Wah Leung and Kai Ming Li	
T0198	Assessment of Mosque Acoustics for Speech Intelligibility Employing Impulse Response Measurements	1858
	Adel A. Abdou	
T0407	Application of PTFE Membrane Material on Multi-Purpose Space	1866
	Jeong Ho Jeong, Jung Joong Kim and Jang-Yeul Sohn	

T05 : Community and Environmental Noise

T0586	Full-scale Noise Measurements in an Underground Tunnel	1870
	William Wai Sun Fung and Kai Ming Li	
T0709	Some Experiences in Continuos Noise Monitoring	1878

Andrea Cerniglia and Natalia Alekseeva

T0664	Noise Mapping of Densely Populated Neighborhoods - Example of Copacabana	1886
	Fernando A.N.C. Pinto and Maysa D. Moreno M.	

T06-1 : Computational Acoustics

T0461	A BEM Model of a Tunnel in an Orthotropic Medium	1894
	Wolfgang Kreuzer and Holger Waubke	
T0428	Asymptotic Analysis for the Coupled Wavenumbers in an Infinite Fluid-filled Flexible Cylindrical Shell: The Beam Mode Venkata R. Sonti and Abhiiit Sarkar	1902
T0679	Numerical Simulation of Blade Elastic Motion Effect on Helicopter Blade-Vortex Interaction Noise	1910
	Choongmo Yang and Takashi Aoyama	

T06-2 : Computational Acoustics

T0634	Aerodynamic Sound Prediction in Consideration of Acoustic Resonance Phenomenon by the Combination of Fluid	1918
	Analysis and Acoustic Analysis	
	Takashi Nakano, Hiroshi Muraoka and Takeshi Toi	
T0506	Interior Noise Reduction of Wheel Loader Using Boundary Element Method	1924
	Chang Woo Shin, Sung Yong Park, Yeon June Kang, Seong Jae Kim and Young Sik Kwon	
T0447	Methods of Calculation and Results of Proving of Steam Jet Noise Suppressor of the Combined Type	1932
	Vladimir Tupov and Dmitry Chugunkov	
T0304	Noise Prediction Method of the Axial Fan in Electronic and Aircooling Systems	1940
	Chan Lee and Hyun Gwon Kil	

T07-1 : Condition Monitoring and Vibration Testing

T0384	Joint Properties Identification from Frequency Response Functions Kyu-Sik Kim and Yeon June Kang	1948
T0606	Different Design of Vertical Auxiliary Tables and Flatness Evaluation Bor-Tsuen Wang, Yu-Xian Huang and David Lee	1956
T0218	A Feasibility Study on the Damage Detection of Beam Structures using Structural Intensities Young Cheol Huh, Jae Kwan Kim, Jong Won Lee and Jae Kwan Kil	1964
T0352	<u>Vibration-Testing-Based Development of Space Boom for a 50kg-Class Micro-Satellite</u> Yoshihiko Sugiyama, Takeshi Sakai, Katsu Kakiuchi, Yusuke Sonoda, Hisayoshi Honda, Yosuke Nakamura, Koji Nakaya and Takuro Kawamae	1973

T07-2 : Condition Monitoring and Vibration Testing

T0277 Fault Detection of Slow Speed Rolling Element Bearings with Noise Removal Techniques

Eric Y Kim, Andy C.C. Tan and Bo-Suk Yang

T0489	Structural Damage Detection from Coupling Forces between Substructures	1989
	Siuseong Law, Kun Zhang and Zhongdong Duan	
T0697	An Application of Remote Control Vibration Experiment through Internet for Mechatronics Education Kee-june Mun, In-sub Kim, Seung-han Yang and Young-suk Kim	1997
T0107	Investigation on Fault Diagnosis of Diesel Engines from Engine Surface Vibration Jianyuan Zhu	2004
T0528	Solution to Inverse Problem of Timoshenko Shaft/beam with an Edge Crack Sachin S. Naik and Surjya K. Maiti	2012

T08 : Damping Technology and Materials

T0651	Damping Technology and Materials -Its Usage in Centrifugal Pumps Ravi S. Birajdar and Uday M Katti	2020
T0155	Particle Damping with Granular Materials for Multi-body System Isao Yokomichi, Yoshito Tanaka and So-Nam Yun	2026

T09 : Duct Acoustics

T0377	A Methodology to Compute Acoustic Propagation in Ducts Carrying a Complex three Dimensional Flow Samuel Rodriguez, Vincent Gibiat, Stéphane Guilain and Alain Lefebvre	2034
T0286	Prediction of Break-out Noise of a Rectangular HVAC Duct with Acoustic Lagging M. L. Munjal, B. Venkatesham and Mayank Tiwari	2042
T0353	Noise Generated by Control Dampers Miroslav Ku•era and Richard Novy	2050
T0750	Study on Coupled Acoustic Wave Propagation of Circular Metal Pipe Ho-Wuk Kim, Min-Soo Kim and Sang-Kwon Lee	2058
T0680	Prediction of the Acoustic Performance of Mufflers for Sleep Apnea Devices:Preliminary Study Peter Jones and Nicole Kessissoglou	2069
T0644	Generalized Formulae for the Valve Lift History and the Effect thereof on the Exhaust Noise of I.C. Engines Rabindra Nath Hota and Manohar Lal Munjal	2078

T10-1 : Fault Diagnosis and Prognosis

T0776	Detection of Crack Signal from Coupling Fault Rotor Systems Hongliang Yao, Qingkai Han, Zhaohua Cui and Bangchun Wen	2086
T0632	Gearbox Fault Diagnosis Based on Adaptive Time-Frequency Representation Farzad Aminravan, Firooz Bakhtiari-Nejad and Hamidreza Amindavar	2094
T0279	A Simple Method for Identifying the Location of a Crack in a Rotating Shaft	2102

Yun-Ho Seo, Chong-Won Lee and K. C. Park

T10-2 : Fault Diagnosis and Prognosis

T0511	Detection of the Failures Via Acoustic Emission Using Envelop Analysis and Wavelet Transform Dong Sik Gu, Jeong Hwan Lee, Byeongkeun Choi, Jong Duk Son, Bo-Suk Yang and Achmad Widodo	2111
T0388	Investigation into Surface Treatment on Fatigue life for Cylinder block of Linear Engine using Frequency Response Approach Md. Mustafizur Rahman and Rosli Abu Bakar	2119
T0249	Energetic Modes in Describing the Process of Structural Degradation of Mechanical Objects Henryk Kazmierczak, Tadeusz Pawlowski, Jacek Kromulski and R. Barczewski	2128
T0263	Simulation of Dynamic Characteristics of Faulty Multi-Span Rotor System through FEA Xiaopeng Li, Zhaohui Ren, Hongliang Yao and Bangchun Wen	2136
T0627	Intelligent Fault Diagnosis of Gearbox Under Running-up Condition Farzad Aminravan, Firooz Bakhtiari-Nejad and Hamidreza Amindavar	2141

T11 : Fluid-Structure Interaction

T0595	Identification of Bridge Aerodynamic Coefficients from Measured Displacement or Acceleration	2150
	Siuseong Law, Kun Zhang and Zhongdong Duan	
T0211	Aeroelastic Characteristics of Helicopter Rotor System in Hovering Flight Using Free-Wake Method	2158
	SeungJae Yoo, InGyu Lim, In Lee, DoHyung Kim and DoegKwan Kim	
T0169	Free Vibration Analysis of Rectangular Bottom Plate Structures in Contact with Fluid Using the Assumed Mode Method	2166
	Byung-Hee Kim, Dae-Seung Cho and Ki-Moon Lee	
SS0354	Investigating the Effects of the System Parameters on the Response of a Coupled Structural-acoustic System Using	2174
	the Impedance and Mobility Approach	
	A.R. Ohadi and S. Rastegar Sepehr	

T13-1 : Human Response to Sound and Vibration

T0370	Squeaking Noise Psychoacoustic Evaluation for Car Passengers	2182
	Federico Rossi and Andrea Nicolini	
T0717	Development of Experimental Dummy and Measurements of Head-Related Transfer Functions (HRTF) for Averaged Korean Head Shape	2188
	Dooho Lee, Tae-Soo Ahn and SUN-YONG KIM	
T0420	A Consideration on Psychological and Physiological Evaluations of Room Sound and other Room Environmental Factors	2195
	Hirofumi Iwashige and Mitsuo Ohta	
T0649	Comparison of Subjective Assessments on Ride Comfort between Expert and General Drivers Min-Seok Kim, Kun-Woo Kim, Ji-Hoon Lee and Wan-Suk Yoo	2201

T0267	Annoyance Related to Low Frequency Noise under Laboratory and Field Exposure Conditions	2209
	Malgorzata Pawlaczyk-Luszczynska, Adam Dudarewicz and Mariola Sliwinska-Kowalska	
T0108	The Effect of Low Noise Levels Exposure in Workers'Cognitive Performance: A Case Study in an Office	2217
	Pedro Arezes and Sara Santos	

T13-2 : Human Response to Sound and Vibration

T0521	Differences in Annoyance Responses to Combined Noise from Different Region-Classifications Seo II Chang, Jin Hee Son, Kun Lee and Su Jin Park	2225
T0225	Effect of Forearm Supination or Pronation on Biodynamic Response of Human Hand Nobuyuki Shibata and Setsuo Maeda	2233
T0230	Active Modeling of Cochlear Basilar Membrane Biomechanics Using Hspice Soon Suck Jarng	2239
T0618	Determination of Automobile Seat Comfort Using Comprehensive Evaluation Framework Jae-In Kim, Bo Kyung Kim, Hak-Kyum Kim and Sungsoo Na	2247

T14 : Industrial and Occupational Noise

T0128	Noise Control of Open Plan Offices: Case Studies Marc Asselineau	2255
T0754	Standardized Model Development for Korean's Ear Canal Soon Suck Jarng and Hae Jung Yang	2261
T0423	<u>Noise Reduction in the Gorenje Industrial Hall</u> Nikola Hole•ek	2269

T16 : Low Noise Pavements

T0410	ERA-NET ROAD FTP2: A Decision Support Guide for the Performance Management of Low Noise Pavements	2277
	Luc Goubert, Hans Bendtsen, Jorgen Kragh, Guy Descornet, Erik Nielsen and Joëlle De Visscher	
T0630	Effectiveness of Low Noise Pavement as Countermeasures against Road Traffic Noise on Arterial Roads of Whole Urban Area Hiroaki Minomo, Yoshinori Watanabe, Ryosuke Tateishi and Kenichi Teramachi	2285

T17-1 : Machinery Noise and Vibration

T0503	Acoustic Noise Characteristics of High-Speed Rotating Polygon Scanner Motor in Printing Systems	2293
	Jun-Hyeon Jo, Jae-Hwan Yoo and Won-Jun Cha	
T0392	Vibration Analysis of Rotating Beams with Constant Angular Velocity	2301
	Chih Ling Huang and Kuo Mo Hsiao	
T0224	Precise Modeling of Vibration Damping of Engine Crankshaft Based on the Experimental Observations	2309

Won-Hyun Kim and Soo-Mok Lee

T0402	Wiener Filter Estimation Methods for Rolling Bearing Vibration Analysis	2317
	Adam Docekal, Marcel Kreidl, Radislav Smid and Lubomir Riha	
T0706	Influence of Gearbox Dynamics Properties on Structure Borne Sound	2325
	Andrzej Wilk, Piotr Fol•ga, Bogus Ław Łazarz and Grzegorz Peru•	

T17-2 : Machinery Noise and Vibration

T0756	Rotordynamic Characteristics of High-Speed Color Wheel Mounted on Herringbone Groove Air Journal Bearing	2331
	An Sung Lee	
T0631	Optimal Rib Stiffening for Noise Reduction of Constant Speed Gearboxes Anne Shen and Robert B. Randall	2339
T0196	Numerical and Experimental Investigation of the Dynamic Behavior of a Vertical Rotor	2347
	Mohand Ouali Si-Chaib, Ahmed Chellil, Abdelkader Nour, Rachid Saci, Nouredine Chikh and Yvon Chevalier	

T17-3 : Machinery Noise and Vibration

T0199	Rolling Bearing Fault Detection Using Overall Vibration Measurements: A Case Study of Application in a Sample of Rotating Equipment	2355
	Alberto Tamagna and Alexandre Ribeiro Menna	
T0765	Possibilities of suppression Mechanical Vibration Jiri Vondrich	2363
T0121	Vibration Exposure of Fettlers	2369
	Esko Rytkonen, Esko Sorainen, Marko Oksanen and Aki Vähänikkilä	

T17-4 : Machinery Noise and Vibration

T0508	Stopping Noise Reduction of Vehicle Starting Motors by Electric Circuit Modification Byoung Duk Lim and Soon-Sik Park	2373
T0656	Balancing of a Cryogenic Turbo-Expander Assembly	2381
T0625	Muhammad Suleman, Malik Muhammad Nazeer and Abdul Qayyum <u>Nonlinear Vibration of Vertical Rotor with Shaft-bearing Friction</u>	2387
T0124	Xiao-Zhang Zhang, LIming Wang, Yiliang Li and Guangming Yang <u>The Reqularities of Vibro-Acoustic Characteristics Formation of the Technological Equipment for Foodstuff Production</u> I.N. Zapletnicov, A.A. Chubin and Y.V. Gidkov	2393

T17-5 : Machinery Noise and Vibration

T0232	Follower Rest Design Using Vibration Absorbers for Ball Screw Grinding	
	Chih Chun Cheng, Fu Ching Wang and Wen Nan Cheng	

T0161	Reduction of Residual Vibration in a Wafer Positioning System with Input Shaping	2406
	Taekil Ahn and Jaechul Yim	
T0355	Gas Turbines Noise	2414
	Vladimir B. Tupov and Sergey B. Semin	
T0242	Laser Doppler Vibrometer and Impulse Signal Phase Demodulation in Rotation Uniformity Measurements	2419
	Jiri Tuma	
T0624	Vibration of Vertical Rotor with Impact Dampers under Seismic Excitation	2427
	Xiao-Zhang Zhang, Ziliang Wu and Liming Wang	

T18-1 : Measurement Techniques

T0683	Effects of Hysteresis and Eddy Currents on the Performance of Inductive Position Sensor	2434
	Seong-yeol Yoo, Dong-chul Han and Myounggyu Noh	
T0167	Measurement and Analysis of Non-linear Distortion of Electro-acoustic and Audio Systems Frantisek Kadlec, Antonin Novak, Laurent Simon and Pierrick Lotton	2441
T0766	To Calculation of Serviceability of Collision Sensor for Air- Bag Safety Systems	2449
	Lyudmila Ph. Drozdova, Aleksandr A. Bazhenov and Valery I. Yarovikov	

T18-2 : Measurement Techniques

T0708	Experimental Determination of PORO-Elastic Properties of Materials Commonly Used for Noise and Vibration Control	2457
	Andrea Cerniglia, Giovanni Amadasi and B. Duperray	
T0518	Measurements of Viscoelastic Properties of Non-Newtonian Fluids	2465
	Seung joon Kim and Junhong Park	
T0767	System for Continuous Measurements of Noise and Vibration in Urbanised AreasAffected by Present and Past	2471
	Underground Mining	
	Henryk Passia, Janusz Kompala, Zbigniew Motyka and Adam Szade	
T0271	Opto - Acoustic Microphone System Based on Fraunhofer Diffraction Principle	2477
	Md.Tawhidul Islam Khan, Kenbu Teramoto and Akito Uekihara	

T18-3 : Measurement Techniques

T0105	UAV Wings Distributed Vibration Sensors	2485
	Marcellin Zahui	
T0380	Measurement of the Normal Acoustic Impedance Using Beamforming Chang Woo Shin, Jong Choen Sun and Yeon June Kang	2501
T0299	Design of Ramp Profile to Improve the Unloading Performance in Small Form Factor HDD	2509
	Yonghyun Lee, No-Cheol Park, Kyoung-Su Park, Hyunseok Yang, Young-Pil Park, Ki-Hoon Kim, Seokhwan Kim and Yong-Eun Lee	

T18-4 : Measurement Techniques

T0502	Dynamic Characteristics of New Electro-dynamic Angular Exciter SangMyong Park and Wan-Sup Cheung	2517
T0573	Correction Method for Estimation of Arrival Direction in Near Sound Field Motoatsu Miwa and Norikane Kanai	2525
T0401	Torsion measurement Using Fiber Bragg Grating Sensors and a Rotary Optical Coupler Kyungmok KIM, Jong Min Lee and Yoha Hwang	2529

T20-1 : Modal Analysis

T0622	<u>Vibration Analysis of High Precision Stage for Nano Imprint Machine</u> Hong Jae Yim, Jaewoo Lee and Jay II Jeong	2537
T0535	Curve-fitted Enhanced Frequency Domain Decomposition - A Robust Technique to Harmonic Excitation in Operational Modal Analysis	2542
	Niels-Jørgen Jacobsen and Palle Andersen	
T0404	Modal Analysis of an Airborne Dunk Body	2550
	Lijo Vijayan, R Ganesh, Nixon Bevera and S. Usha	
T0587	Mode Shape Reconstruction Using CSLDV and HHT	2558
	Yongsoo Kyong, Semyung Wang, Daesung Kim, Jedol Dayou Dayou and Kyihwan Park	

T20-2 : Modal Analysis

T0217	Coupling Effect of Piezoelectric Patches on Displacement Mode Shapes of Plate-like Structures YY Li	2566
T0421	Dynamic Reanalysis Using the Structural Synthesis Method for Nonlinear Resiliently Mounted System Seok Jun Moon, Jeong-II Kwon and Byung-Hyun Kim	2573
T0584	<u>A Study of Mode Confinement in Caribbean Steel Drums</u> Soren Maloney, Claire Y. Barlow and Jim Woodhouse	2580
T0505	<u>The Study about Mistuning Effect in the Wind Turbine Blade</u> HyoJung Kim, ByeongKeun Choi, YongSeok Jang and JangIk Lim	2588

T20-3 : Modal Analysis

T0387	Acoustical Beat Characteristics of a Slightly Asymmetric Ring	2595
	Sung jong Ahn, Yeon june Kang, Seock hyun Kim and Sung yong Park	
T0123	Research on Vibration Mode Localization of Large Antennas in Satellites with Small Disorder Xiangqiu Liu, Cong Wang, Zhenzhu Zou and Wei-yuan Wang	2603
T0383	Measurement of Beat and Damping Ratio of Korean Bell Based on Wavelet Transform	2611
	Sung Yong Park, Yeon June Kang and Seock Hyun Kim	

T22 : Noise and Vibration in Buildings

T0513	Variation of Subjective Response to Indoor Noise with Different Background Noise Level TAI-KANG LEE, GIL-SOO Jang and SUN-WOO KIM	2619
T0252	Efficient Interior Noise Source Identification based on Conformal Mapping using SONAH Holography for Details on Selected Panels	2627
	Svend Gade, Jørgen Hald, Jacob Mørkholt and Jesper Gomes	
T0238	Effect on the Sound Insulation Performance of Flush Doors by Aperture Conditions between Door and Doorsill Ji-Hyeong An, Myung-Jun Kim, Chang-Geun Cho and Min-Joo Lee	2635
T0184	Vibration Control for House Structures beyond 3 Story Using Adjustable Pendulum-Type Controller under Ground Excitation	2643
	Keiko Kai, Kazuto Seto and Toru Watanabe	
T0185	Development of Seismic Type Absolute Displacement Sensor for measuring low frequency range below 1 Hz Toru Watanabe	2651

T25 : Noise Source Identification

T0686	Experimental Characterization of BSR Noise Sources in Automotive Doors UsingAcoustic Visualization Technique with Four Post Excitation System	2659
	Su-Hyun Shin and Cheolung Cheong	
T0599	Combining Acoustic Imaging Techniques to Localize and Identify Sources Filip Deblauwe, Bernard Beguet and Maxime Robin	2663
T0768	Operational Transfer Path Analysis: Comparison with Conventional Methods Martin Lohrmann	2671
T0270	A Study on the Noise and Vibration Characteristics of a Three-Phase Induction Motor Woohyung Kim and Jintai Chung	2677

T26-1 : Noise, Vibration and Harshness

T0739	A Simple and Portable Method of In-situ Acoustic Performance Assessment of Vehicle Carpet Systems Xu Wang, Edsil Dilla, Stephen Rudakov, Jason Miller and Brian Lawry	2685
T0689	Modal Analysis of a Rotating Pre-twisted Multi-Packet Blade System Min Kwon Kim and Hong Hee Yoo	2692
T0287	Measurement of Ultrasonic Noise Radiated from IH Cooking Heater Nobuyoshi Masuzawa	2700
T0685	Robust Design Optimization of the Vehicle Ride Comfort Considering Tolerance Effect Pil Gon Song, Maksym Spiryagin and Hong Hee Yoo	2706

T26-2 : Noise, Vibration and Harshness

T0476	Noise Characteristics of Linear Compressor for Refrigerators	2714
	Hyuk Lee, Sunghyun Ki, Junghwan Kang, Seung-Man Yang and Won-hag Rhee	
T0222	<u>Necessary Conditions for Creep Groan Generation on a Simple Caliper-slider Model</u> Zahrul Fuadi, Koshi Adachi, Hideaki Ikeda, Hisataka Naito and Koji Kato	2720
T0274	Development of a Predictive Model for Optimization of Cabin Mounts on Transmission of Structure-borne Noise Hee Cho, Han kee Jang, Seong Jae Kim and Young sik Kwon	2728

T26-3 : Noise, Vibration and Harshness

T0411	Vehicle Floor Carpet Acoustic Optimization Using Statistical Energy Analysis Method Xu Wang, Aleksandar Subic, Jason Miller and Brian Lawry	2736
T0762	Analytical Method to Investigate the Tolerance Effects on the Vehicle Ride Comfort Beom Seok Kim, Bong Soo Kim and Hong Hee Yoo	2744
T0412	Simulation (SEA) Based Acoustic Optimization of Vehicle Carpet Systems Thomas K John, Xu Wang, Edsil Dilla and Simon Watkins	2752
T0663	Influence of City Road Surface on Vehicle Vibration Stjepan Lakusic, Marijan Bogut and Miroslav Simun	2760

T27-1 : Nonlinear Acoustics and Vibration

T0470	Modeling Nonlinear Behavior of Bolted Joints in Assembled Structures Sadegh Rahrovani, Hamid Ahmadian Sadegh Rahrovani and Hamid Ahmadian	2768
T0614	Study of Nonlinear Oscillation of Mechanical System with Clearance Considering Impact Phenomena Makoto Suzuki, Shozo Kawamura, Hossain MD. Zahid and Hirofumi Minamoto	2776
T0186	Shock and Vibration Isolation Performance of Double-Stage Oleo-PneumaticShock Absorber for Rotorcraft Yoon-kyu Lee, Sang-wook Lee and Kwang-joon Kim	2784
T0497	A Dynamic Model of a Flexible Flapping Wing for Fluid-Structure Interaction Analysis Dae-Kwan Kim and Jae-Hung Han	2792

T27-2 : Nonlinear Acoustics and Vibration

T0446	Effect of the Tangential Force on Golf Ball Spin Rate Woo-Jin Roh and Chong-Won Lee	2800
T0379	Rocking Vibration of Rigid Block under Sinusoidal Excitation with Noise Man Yong Jeong	2807
T0769	Stability of the Motion for the Coupling Systems of the Power Sources at Automobiles with Hybrid Propulsion Nicolae Pandrea, Dinel Popa and Marina Pandrea	2815
T0154	Study on Nonlinear Characteristics of Two-Span Rotor System with Crack Fault Yuegang LUO, Songhe Zhang and Bangchun Wen	2821

 T0273
 Modeling of Nonlinear Vibration Isolation Elements Based on Amplitude-Dependent and Frequency-Modulated
 2827

 Complex Stiffness for Further Dynamic Analysis in Time Domain
 Ki-Sun Kim and Kwang-joon Kim

T29-1 : Passive Noise and Vibration Control

T0133	<u>A New Structural Design Method by using Structural Intensity</u> Toru Yamazaki, Nozomu Numata, Katsuhiko Kuroda and Shinichi Ohno	2835
T0434	An Energy Flow Model for Poroelatic Material JUNGSOO KIM and YEONJUNE KANG	2843
T0296	Estimation and Reduction of Vibration at Workstations of M&Ms Dragee Glazing Line Ilya Tsukernikov and Igor Nekrasov	2851
T0170	Stability Analysis of Ball-Type Automatic Balancer for Long Rigid Rotors Chung-Jen Lu and Ming-Cheng Wang	2857

T29-2 : Passive Noise and Vibration Control

T0171	Measurement of Vibration Damping Quality of Clips Used to Tighten the Pipes withMotor-car Structure	2865
	Bouadjelane Mohamed	
T0705	Transmission Loss of a Periodic Plate KangHyun Chu and Yang-Hann Kim	2873
T0611	Absorption From Finite-sized Micro-perforated Panel at Arbitrary Incidence Angles	2879
	Taewook Yoo, J. Stuart Bolton, Jonathan Alexander and David Slama	

T30-1 : Signal Processing

T0248	A Stochastic Signal Processing Theory and Its Principle Experiment for Mutual Correlation between Acoustic and EM Fields around Cellular Phone and VDT	2887
	Yoshifumi Fujita and Mitsuo Ohta	
T0189	Sound Source Localization using the Compensation Method in Robot Platform Byoungho Kwon, Youngjin Park and Youn-sik Park	2895
T0236	On the Necessary Delay for the Design of Causal and Stable Recursive Inverse Filters Avelino Marques and Diamantino Freitas	2903
T0643	Modelling of Bat Echolocation Signals to Differentiate Object Dimensions and Materials Suyeon Kim, Timos Papadopoulos, Robert Allen and Daniel Rowan	2911

T30-2 : Signal Processing

T0477	Defects Detection for Thin Plate by Eigenvalue Imaging Method
	Kenbu Teramoto and Tauhidul Islam Khan

2918

T0487	New Learning Hybrid Model For The Room Impulse Response	2924
	Mincheol Shin and Semyung Wang	
T0390	<u>Stability-Based Algorithm for Lms Step Size Adjustment</u> Dariusz Bismor	2931
T0564	An Improved Method for TDOA-Based Speech Source Localization	2939
	Hamid Reza Abutalebi and Hossein Momenzadeh Haghighi	

T30-3 : Signal Processing

T0381	Nondestructive Detection of a Defect in a Concrete Structure by Estimating Both the Surface Wave and Reflections Caused by an Impulse Hammer	2947
	Masato Abe, Toyota Fujioka and Yoshifumi Nagata	
T0704	Linearly Constrained Adaptive Constant Directivity Beam-formers (LCA-CDBs) for Speech Enhancement	2955
	Hamid Reza Abutalebi and Avid Avokh	
T0268	Approximation of Head Related Transfer Function Using Prolate Spheroidal Head Model	2963
	Hyun Jo, Youngjin Park and Youn-sik Park	
T0327	Order Tracking by Adaptive Amplitude Demodulation (AAD): Principles and Comparison to Existing Techniques	2971
	Karl Janssens, Pieter Van Vlierberghe and Herman Van der Auweraer	
T0165	Musical Noise Reduction by Processing Spectrogram of Spectral Subtraction Output	2979
	Hamid Reza Abutalebi and Behdad Dashtbozorg	

T31-1 : Smart Materials and Structures

T0372	Vibration Tuning of a Composite Helical Spring Fabricated with Polymeric Sleeved Wire	2987
	Chun-Ying Lee, Tzu-Hung Yang and Mei-wen Wu	
T0475	Biomechanical Research on the Radial Corrugation Structure of ProsternalTympanal Membranes in the Parasitoid Fly Ormia Ochracea	2995
	Qingsheng Wang, Na Ta and Zhushi Rao	
T0368	Control of the Unbalance Response in a Rotor-Bearing System with a Semiactive Suspension Based on MR Dampers	3001
	Alvaro Cabrera-Amado and Gerardo Silva-Navarro	
T0718	Fiber Optic Smart Monitoring of Railway Structures	3009
	Ki Soo Kim	

T31-2 : Smart Materials and Structures

T0275	Experimental Study on PID Control of Magnetorheological Shock Absorber under Impact Load Yancheng Li and Jiong Wang	3022
T0235	Vibration Control of Rotor-Bearing System With Smart Bearings Using Magnetorheologic Fluids A.R. Ohadi, A.H. Ghasemi and M.H.Ghaffari Saadat	3029
T0417	Performance Evaluation of Multi-Tier Energy Harvesters Using Macro-Fiber Composite Patches	3037

Hyun Jeong Song, Young Tai Choi, Norman M. Wereley and Ashish S. Purekar

T0125 Reinforcement of Carbon Nanofibers for IPMC Actuators Employing Sulfonated Poly(styrene-b-ethylene-co-butyleneb-styrene) Lonomers 3045 Xuan-Lun Wang and II-Kwon Oh Xuan-Lun Wang and II-Kwon Oh

T37 : Underwater and Ship Acoustics

T0675	Exterior Noise Predictions of Commercial Ships using Energy Flow Analysis Methods	3051
	Sung-Hee Kim, Suk-Yoon Hong, Hyun-Wung Kwon, Jee-Hun Song and Seung Jae Lee	
T0212	Transient Analysis of Acoustic Wave Backscattering Using Time Domain Physical Optics Kookhyun Kim, Dae-Seung Cho and Jin-Hyeong Kim	3059
T0144	<u>Comparison of the Dynamics and Wave Propagation in Composite Polymers Containing Various Particles</u> Xuhong Miao, Jihong Wen, Di Jia and Honggang Zhao	3067

T38-2 : Wave Propagation in Solids and Structures

T0638	Impedance-Based Technique and Guided Wave Method for Damage Assessment Using Smart Materials	3075
	Yong Hong, Gao-Ping Wang, Hyen-Woo Park and Dong-Pyo Hong	
T0243	Group-theoretical Analyses of In-plane Modes in Two-dimensional Phononic Crystals	3083
	Li Cai, Xiaoyun Han, Jianyu Fang and Shengbing Chen	
T0471	In-plane Free Vibration of Curved Beams	3091
	Seung-Kyu Lee, Brian Mace and Michael Brennan	
T0542	The Influence of Material Properties on the Behaviour of Edge Waves in Thin Orthotropic Structures	3099
	Jan Cerv and Frantisek Vales	
T0127	Finite Element Analysis with Paraxial Boundary Condition for Elastic Wave Propagation	3107
	Hee Seok Kim and Jong Seh Lee	

T39 : Thermo Acoustics and Vibration

SS0778	Aero-Thermo-Mechanical Characteristics of Shape Memory Alloy HybridComposite Panels with Initial Geometric Imperfection	3115
	Hesham H. Ibrahim, Mohammad Tawfik , Hong Hee Yoo and Kwan Soo Lee	
SS0777	Nonlinear Flutter of Shape Memory Alloy Hybrid Composite Panels Subject To Thermal and Random Acoustic Loads Hesham H. Ibrahim, Mohammad Tawfik , Hani M. Negm and Hong Hee Yoo	3123
T0146	Research on Sound Wave Propagation through a Combustion Temperature-field in a Power Boiler Genshan Jiang, Liansuo An, Jing Tian, Lin Wang and Bo Jiang	3131