



**Editors: Imre J. Rudas, Azami Zaharim,
Kamaruzzaman Sopian, Jiri Strouhal**

Recent Researches in Engineering Mechanics, Urban & Naval Transportation and Tourism

- **Proceedings of the 5th WSEAS International Conference on Engineering Mechanics, Structures, Engineering Geology (EMESEG '12)**
- **Proceedings of the 5th WSEAS International Conference on Urban Planning and Transportation (UPT '12)**
- **Proceedings of the 5th WSEAS International Conference on Maritime and Naval Science and Engineering (MN '12)**
- **Proceedings of the 5th WSEAS International Conference on Cultural Heritage and Tourism (CUHT '12)**



Cambridge, UK, February 25-27, 2012



ISBN: 978-1-61804-071-8

Recent Researches in Engineering Mechanics, Urban & Naval Transportation and Tourism



RECENT RESEARCHES in ENGINEERING MECHANICS, URBAN & NAVAL TRANSPORTATION and TOURISM

**Proceedings of the 5th WSEAS International Conference on
Engineering Mechanics, Structures, Engineering Geology
(EMESEG '12)**

**Proceedings of the 5th WSEAS International Conference on Urban
Planning and Transportation (UPT '12)**

**Proceedings of the 5th WSEAS International Conference on
Maritime and Naval Science and Engineering (MN '12)**

**Proceedings of the 5th WSEAS International Conference on Cultural
Heritage and Tourism (CUHT'12)**

**Cambridge, UK
February 25-27, 2012**

RECENT RESEARCHES in ENGINEERING MECHANICS, URBAN & NAVAL TRANSPORTATION and TOURISM

**Proceedings of the 5th WSEAS International Conference on
Engineering Mechanics, Structures, Engineering Geology
(EMESEG '12)**

**Proceedings of the 5th WSEAS International Conference on Urban
Planning and Transportation (UPT '12)**

**Proceedings of the 5th WSEAS International Conference on
Maritime and Naval Science and Engineering (MN '12)**

**Proceedings of the 5th WSEAS International Conference on Cultural
Heritage and Tourism (CUHT'12)**

**Cambridge, UK
February 25-27, 2012**

Published by WSEAS Press www.wseas.org - Copyright © 2012, by WSEAS Press

All the copyright of the present book belongs to the World Scientific and Engineering Academy and Society Press. All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior written permission of the Editor of World Scientific and Engineering Academy and Society Press.

All papers of the present volume were peer reviewed by no less than two independent reviewers. Acceptance was granted when both reviewers' recommendations were positive.
See also: <http://www.worldses.org/review/index.html>

ISBN: 978-1-61804-071-8



World Scientific and Engineering Academy and Society

RECENT RESEARCHES in ENGINEERING MECHANICS, URBAN & NAVAL TRANSPORTATION and TOURISM

**Proceedings of the 5th WSEAS International Conference on
Engineering Mechanics, Structures, Engineering Geology
(EMESEG '12)**

**Proceedings of the 5th WSEAS International Conference on Urban
Planning and Transportation (UPT '12)**

**Proceedings of the 5th WSEAS International Conference on
Maritime and Naval Science and Engineering (MN '12)**

**Proceedings of the 5th WSEAS International Conference on Cultural
Heritage and Tourism (CUHT'12)**

**Cambridge, UK
February 25-27, 2012**

Editors:

Prof. Imre J. Rudas, Obuda University, Hungary

Prof. Azami Zaharim, Universiti Kebangsaan, Malaysia

Prof. Kamaruzzaman Sopian, Universiti Kebangsaan, Malaysia

Prof. Jiri Strouhal, University of Economics Prague, Czech Republic

International Program Committee Members:

Haiyin Sun

Mo.Jamishi

P. Tjeerd

J.Upadhyaya

Chang

Maria Specovius

Aleksander Treschev

S. Ablameyko

Tsung

Genoveffa Tortora

Santo Banerjee

Vladimir O. Safonov

Sikh Namh C.

Kobelev Vladimir

Yanlong Cao

M. Jamishi

Y. F. Lv

Nikolay Tutyshkin

Anthony F.J

Ruiping Xie

Jin Zhao

Werner Varnhorn

Svetlana

B. Craciun

S. S. Tang

Kenji Saito

P. Q. Wu

Muslim

Ray Klefstad

Y. Liu

Jiri Neustupa

Adelia Sequeira

Yoshihiro Shibata

Nickolay Smirnov

W. Pan

Aouni Lakis

Ming Xu

S. Komitthe

Sharad Mehrotra

Xiaolin Zheng

Min He

Shi

Yubao Wang

Jianchun Jiang

G. X. Liu

L. Shen

Jasmko Tochiny

Deng Sun

Azami Zaharim

Blaise Nsom

Dimitrios Pavlou

C Booth

R Brandtweiner

Enrique Arias

Faridatulazna Ahmad Shahabuddin

Gavriletea Marius

Gherghinescu Sorin

G Fadda

S Macedo

Bruno Grbac

Claudio Guarnaccia

Cruceanu Catalin

David Greiner

Horatiu Teodorescu

Khan Amanat

Kuei

M.Reza Emami Azadi

Madalina Calbureanu

Matthew Karlaftis

Michelle Duffy

Mircea Badescu

Murude Celikag

Roxana Marinescu

Saeed

Seyed Yousef Sadjadi

Shahriar Quayyum

Slavka Zekovic

Smaranda Adina Cosma

Sonia Degeratu

Vassilis Gekas

Abir Kassem

Agita Livina

Ahadollah A'zami

Androniki Tsouchlaraki

Ang

Asghar Mohammad Moradi

Xin Wang

Ammeen Edward S.

Ricard Rodriguez

Francesc Xavier Martin Ez De Oses

Boyan Mednikarov

Anzalone G.

Carlos Perez

Adam Weintrit

Ebling G.

Esteban S.

Frangopoulos C.

Babineau G.

Maturana F

Murchie A. Lt Cdr

Neerincx M.A.

Nguyen T.

Discenzo F.
Byeong
Dmitry Zhukov
Giron
Hebner R.
Jatskevich J.
Orlovsky M.
Prousalidis J.
Ioannides I.
Ramirez A.
Ramos
Thompson H.A.
Van der Ploeg B.

Preface

This year the the 5th WSEAS International Conference on Engineering Mechanics, Structures, Engineering Geology (EMESEG '12), the 5th WSEAS International Conference on Urban Planning and Transportation (UPT '12), the 5th WSEAS International Conference on Maritime and Naval Science and Engineering (MN '12) and the 5th WSEAS International Conference on Cultural Heritage and Tourism (CUHT'12) were held in Cambridge, UK, in February 25-27, 2012. The multiconference provided a platform to discuss computational and experimental mechanics, nonlinear dynamics, structural dynamics and control, vibrations, acoustics, and noise control, mechatronics, urban planning and environment. environmental protection, urban tourism, transportation engineering, monuments and maintenance, sustainable tourism, marine navigation, sea transport and transportation technology etc. with participants from all over the world, both from academia and from industry.

Its success is reflected in the papers received, with participants coming from several countries, allowing a real multinational multicultural exchange of experiences and ideas.

The accepted papers of this multiconference are published in this Book that will be sent to international indexes. They will be also available in the E-Library of the WSEAS. Extended versions of the best papers will be promoted to many Journals for further evaluation.

A multiconference such as this can only succeed as a team effort, so the Editors want to thank the International Scientific Committee and the Reviewers for their excellent work in reviewing the papers as well as their invaluable input and advice.

The Editors

Table of Contents

<u>Urban Planing and Public Transport</u>	13
<i>Mojca Sasek Divjak</i>	
<u>The Effect of Fibonacci Spiral Curve Fold on Shell Structures Behaviour</u>	19
<i>Hadi Soltanzadeh, Choong Kok Keong</i>	
<u>Surveying and Analyzing Parking Conditions in the Campus of the Technical University of Crete</u>	24
<i>A. Tsouchlaraki, G. Achilleos, Ch. Karavas</i>	
<u>Strengthening Timber Beams using Externally Bonded Carbon – Fiber Reinforced Polymer</u>	31
<i>Pavla Neubauerova, Marcela Karmazinova, Pavla Bukovska</i>	
<u>Analyzing Sustainable Indicators in the Last Decade and Giving a Best Way of Urban Regeneration Manner, Sahand New Town</u>	37
<i>Mahsa Faramarzi Asli, Mojtaba Hokmabadi Ghoshouni</i>	
<u>Modeling of Steam Turbine Combined Cycle Power Plant Based on Soft Computing</u>	44
<i>Ali Ghaffari, Ali Chaibakhsh, Ali Mostafavi Manesh</i>	
<u>Control Steam Turbine Combined Cycle Power Plant Based on Soft Computing</u>	49
<i>Ali Ghaffari, Ali Chaibakhsh, Ali Mostafavi Manesh</i>	
<u>On Consistent Reissner Beam Formulation using Quaternion Algebra</u>	55
<i>Eva Zupan, Dejan Zupan, Miran Saje</i>	
<u>Finite Element Simulation of Deep Rolling and Evaluate the Influence of Parameters on Residual Stress</u>	61
<i>Afshin Manouchehrifar, Kianoush Alasvand</i>	
<u>Experimental Research on Prefabricated Chimneys' Behaviour to Dynamic Actions</u>	68
<i>Laszlo Schrek, Gabriela Gherghel</i>	
<u>Experimental Plant for Laboratory Research of Thermal Fatigue Phenomenon</u>	73
<i>Camelia Bretotean Pinca, Ana Josan</i>	
<u>The Significance of City Logo in City Branding Strategy</u>	79
<i>Octaviyanti Dwi Wahyurini</i>	
<u>Analysis of Traffic Problems in Kuwait</u>	85
<i>Mohammed A. Hajeesh</i>	
<u>SkyLineDroid: An Outdoor Mobile Augmented Reality Application for Virtual Heritage</u>	91
<i>Giuseppe Armano, Andrea Bottino, Andrea Martina</i>	
<u>Logistics Facilities Designing Method and its Implementation into Designing Software</u>	97
<i>Kostrzewski Mariusz</i>	

<u>Torsion Stiffness of Thin-walled Steel Beams with Web Holes</u>	103
<i>Martin Horacek, Jindrich Melcher</i>	
<u>Strengthened and Rehabilitation of Transylvanian Saxon House</u>	109
<i>Gabriela Gherghel, Laszlo Schrek</i>	
<u>A Novel Technique using the Acoustic Emission Features in Bone Tissues: a Pilot Study</u>	115
<i>M. Loman , C. K. E. Nizwan, Z. M. Hafizi, M. I. Yusof</i>	
<u>Comparative Analysis of Territorial Development in the Belgrade Metropolitan Area and in Serbian part of the Danube River Basin</u>	120
<i>Slavka Zekovic, Miodrag Vujosevic, Tamara Maricic</i>	
<u>The Influence of Chemical Composition on the Mechanical Properties of Steels used for Manufacturing Monoblock Railway Wheels</u>	126
<i>Constantin Andronache, Ana Socalici, Lucia Vilceanu, Teodor Heput</i>	
<u>Perspectives in the Development of Tourism Market in Southeast Europe</u>	130
<i>Daniela Nechita, Costel Nistor, Ludmila Daniela Manea</i>	
<u>Waste and Resource Management Practices, Legislation and Policy Encouraging and Influencing ‘regeneration Reuse’ of Property Assets</u>	136
<i>Morgan J. Bleek</i>	
<u>Considerations Regarding the Working Life of the Component Wires in a Wire-Rope</u>	142
<i>Lucia Vilceanu, Eugen Ghita, Vasile Putan</i>	
<u>Wheel-Rail Contact Issues on Railway and Light-Rail Transportation</u>	147
<i>Eugen Ghita, Lucia Vilceanu</i>	
<u>The Effect of Vehicle Structural Deformation on Seatbelt Wearing Effectiveness in Preventing Road Traffic Injuries</u>	153
<i>L. Fauziana, A. Noor Kamaliah, M. F. Siti Atiqah, S. V. Wong, L. Miminorazeansuhaila</i>	
<u>Numerical Modeling and Analysis of Geosynthetic Reinforced Pile Supported Embankments</u>	158
<i>Anjana Bhasi, K.Rajagopal</i>	
<u>The Effect of Urban Vegetation and Traffic Intensity on Walking Speed</u>	163
<i>Marek Franek</i>	
<u>Steering Among a Sea of Multicultural Islands</u>	167
<i>Ioana Raluca Visan, Mircea Georgescu</i>	
<u>Buckling Resistance of Steel Tubular Columns Filled by High-strength Concrete</u>	172
<i>Pavla Bukovska, Marcela Karmazinova, Pavla Neubauerova</i>	
<u>Evaluation of Sustainable Regional Land Use</u>	178
<i>Vladimira Silhankova, Michael Pondelicek</i>	
<u>Calculus and Materials for Stirling Engine’s Bolter and Regenator</u>	183
<i>Traian Florea, Anastase Pruiu, Marian Ristea, Nicu Olaru, George Dogarescu, Traian Vasile Florea</i>	

<u>Being Successful in the Air Transport Sector: The Role of Strategy Implementation</u>	187
<i>Susana Teles, Manuela Sarmento</i>	
<u>Developing Qatar's Regional Transit Network: Proposed Scenarios for Linking Doha City to Al-Wakra City and Mesaieed Industrial City</u>	193
<i>Rania F. Khalil, Khaled S. Shaaban</i>	
<u>Reduction of Squeal on Laminated Brake Disc Fastened with Distributed Contact Pressure</u>	199
<i>Y. Kubota, K. Okubo, T. Fujii</i>	
<u>An Economic Proposal in the Design of the One Storey – Level Steel Structure. The Use of Castellated and Sinusoidal Steel Sections</u>	205
<i>George Xanthakis, Lambrini Panagopoulou</i>	
<u>Assessment of Crashworthiness and Seatbelt Performance of Small Cars in Road Crashes</u>	211
<i>L. Fauziana, A. Noor Kamaliah, M. F. Siti Atiqah, S. V. Wong, L. Miminorazeansuhaila</i>	
<u>Greenery in Multi-Family Housing Estates in Poznan</u>	216
<i>Marzena Banach</i>	
<u>Theoretical and Experimental Analysis of Load-Carrying Capacity of Steel-Concrete Composite Beams with Glass-Fibre-Concrete Slab</u>	221
<i>Marcela Karmazinova, Pavla Bukovska, Pavla Neubauerova</i>	
<u>Cultural Authenticity in Tourist Settings: Traditional Turkish Coffeehouse Interiors</u>	227
<i>Ayşe Muge Bozdayi, Nur Ayalp</i>	
<u>Effect of Humic Acid on the Selenite Adsorption onto Hematite</u>	232
<i>Myoung-Jin Kim, Mijeong Jang, Se Young Pak</i>	
<u>Urban Planning New Aspects using Information Technology in Information Age</u>	237
<i>Ehsan Solatiyan</i>	
<u>Effectiveness of Strengthening Steel Beams using External Bonded CFRP lamellas</u>	243
<i>Marcela Karmazinova, Pavla Neubauerova, Pavla Bukovska</i>	
<u>Two-Dimensional Dielectrophoretic Motions of Multiple Particles in a Viscous Fluid</u>	248
<i>Sangmo Kang, Sung-Chin Hahn, Ki-Dong Song</i>	
<u>Ranking of Efficient Approaches to Urban Infrastructures Management by using TOPSIS Method: Case Study of Iran</u>	252
<i>Arash Emami Saleh, Amir Yavari, Milad Maleki, Sina Mohammadi Alamouti</i>	
<u>Blends of Diesel-Maize Oil and Diesel-Soy Oil in a Four Stroke Diesel Engine</u>	258
<i>Charalampos Arapatsakos, Anastasios Karkanis, Dimitrios Christoforidis, Marianthi Moschou</i>	
<u>The Relation between the Inlet and Outlet Temperature of Catalyst and Gas Emissions by using Artificial Neural Networks</u>	263
<i>Charalampos Arapatsakos, Dimitrios Cristoforidis</i>	
<u>Mixtures of Gasoline-Ethanol and Gasoline –methanol in a Two Stroke Outboard Low Output Engine</u>	268
<i>Charalampos Arapatsakos, Marianthi Moschou</i>	

