

Advances in Environmental Sciences, Development and Chemistry

- **Proceedings of the 2014 International Conference on Energy, Environment, Development and Economics (EEDS 2014)**
- **Proceedings of the 2014 International Conference on Geology and Seismology (GESE 2014)**
- **Proceedings of the 2014 International Conference on Maritime and Naval Science and Engineering (MANASE 2014)**
- **Proceedings of the 2014 International Conference on Water Resources, Hydraulics & Hydrology (WHH 2014)**
- **Proceedings of the 2014 International Conference on Chemistry and Chemical Engineering (CCE 2014)**

Santorini Island, Greece, July 17-21, 2014

Edited by

Nikos Mastorakis
Vladimir Sokolov
Reinhard Neck
Rui Pedro Juliao
Jian Wang
Efthimios Karymbalis
Levent Yilmaz
Ernst D. Schmitter
Marc A. Rosen
Roy Perryman
Ottavia Corbi
Manijeh Razeghi
Jun Zhang
Samuel Lofland

Associate Editors

Luís Loures
Liandong Zhu

ISBN: 978-1-61804-239-2

ADVANCES in ENVIRONMENTAL SCIENCES, DEVELOPMENT and CHEMISTRY

**Proceedings of the 2014 International Conference on Energy,
Environment, Development and Economics (EEDS 2014)**

**Proceedings of the 2014 International Conference on Geology and
Seismology (GESE 2014)**

**Proceedings of the 2014 International Conference on Maritime and
Naval Science and Engineering (MANASE 2014)**

**Proceedings of the 2014 International Conference on Water Resources,
Hydraulics & Hydrology (WHH 2014)**

**Proceedings of the 2014 International Conference on Chemistry and
Chemical Engineering (CCE 2014)**

Santorini Island, Greece

July 17-21, 2014

ADVANCES in ENVIRONMENTAL SCIENCES, DEVELOPMENT and CHEMISTRY

**Proceedings of the 2014 International Conference on Energy,
Environment, Development and Economics (EEDS 2014)**

**Proceedings of the 2014 International Conference on Geology and
Seismology (GESE 2014)**

**Proceedings of the 2014 International Conference on Maritime and
Naval Science and Engineering (MANASE 2014)**

**Proceedings of the 2014 International Conference on Water Resources,
Hydraulics & Hydrology (WHH 2014)**

**Proceedings of the 2014 International Conference on Chemistry and
Chemical Engineering (CCE 2014)**

**Santorini Island, Greece
July 17-21, 2014**

Copyright © 2014, by the editors

All the copyright of the present book belongs to the editors. 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 editors.

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.

ISBN: 978-1-61804-239-2

ADVANCES in ENVIRONMENTAL SCIENCES, DEVELOPMENT and CHEMISTRY

**Proceedings of the 2014 International Conference on Energy,
Environment, Development and Economics (EEDS 2014)**

**Proceedings of the 2014 International Conference on Geology and
Seismology (GESE 2014)**

**Proceedings of the 2014 International Conference on Maritime and
Naval Science and Engineering (MANASE 2014)**

**Proceedings of the 2014 International Conference on Water Resources,
Hydraulics & Hydrology (WHH 2014)**

**Proceedings of the 2014 International Conference on Chemistry and
Chemical Engineering (CCE 2014)**

Santorini Island, Greece

July 17-21, 2014

Organizing Committee

General Chairs (EDITORS)

- Prof. Nikos Mastorakis, Technical University of Sofia, Bulgaria
- Prof. Vladimir Sokolov, University of Karlsruhe, Germany
- Prof. Reinhard Neck, Klagenfurt University, Austria
- Prof. Rui Pedro Juliao, Universidade Nova De Lisboa, Portugal
- Prof. Jian Wang, Los Alamos National Laboratory, USA
- Prof. Efthimios Karymbalis, Harokopio University, Athens, Greece
- Prof. Levent Yilmaz, Istanbul Technical University, Turkey
- Prof. Ernst D. Schmitter, University of Applied Sciences, Germany
- Prof. Marc A. Rosen, University of Ontario, Canada
- Prof. Roy Perryman, University of East London, UK
- Prof. Ottavia Corbi, University of Naples Federico II, Italy
- Prof. Manijeh Razeghi, Northwestern University, USA
- Prof. Jun Zhang, Inner Mongolia University, P. R. China
- Prof. Samuel Lofland, Rowan University, USA

Associate Editors:

- Luís Loures
- Liandong Zhu

Senior Program Chair

- Prof. Shoji Arai, Kanazawa University,
Kanazawa, Ishikawa Prefecture,
Japan

Program Chairs

- Prof. Panos Pardalos,
Department of University of Florida,
USA
- Prof. Filippo Neri
Dipartimento di Informatica e Sistemistica
University of Naples "Federico II"
Naples, Italy
- Prof. Bharat Doshi,
John Hopkins University,
Mayrland, USA

Tutorials Chair

- Prof. Pradip Majumdar
Department of Mechanical Engineering
Northern Illinois University
Dekalb, Illinois, USA

Special Session Chair

- Prof. Essam Eldin Khalil,
ASME Fellow,
Cairo University, Cairo,
Egypt

Workshops Chair

- Prof. Hyung Hee Cho, ASME Fellow,
Yonsei University (and National
Academy of Engineering of Korea),
Korea

Local Organizing Chair

- Dr. Claudio Guarnaccia, University of Salerno, Italy

Publication Chair

- Prof. Marcin Kaminski,
Department of Structural Mechanics,
Al. Politechniki 6, 90-924 Lodz, Poland

Publicity Committee

- Prof. Kumar Tamma,
University of Minnesota,
Minneapolis, MN, USA
- Prof. Gang Yao,
University of Illinois at Urbana -
Champaign, USA

International Liaisons

- Prof. Quan Wen,
Department of Economics University of Washington,
Seattle, WA, USA
- Prof. Fotios Rigas,
School of Chemical Engineering,
National Technical University of Athens,
Greece.
- Prof. Vincenzo Niola
Departement of Mechanical Engineering for Energetics
University of Naples "Federico II"
Naples, Italy
- Prof. Christopher G. Provatidis,
National Technical University of Athens,
Zografou, Athens, Greece

Steering Committee

- Prof. Aida Bulucea, University of Craiova, Romania
- Prof. Zoran Bojkovic, Univ. of Belgrade, Serbia
- Prof. Ottavia Corbi, University of Naples Federico II, Italy
- Prof. Imre Rudas, Obuda University, Budapest, Hungary
- Prof. Metin Demiralp, Istanbul Technical University, Turkey
- Prof. Reinhard Neck, Klagenfurt University, Klagenfurt, Austria
- Prof. Ottavia Corbi, University of Naples Federico II, Italy

Program Committee

Prof. Bharat Doshi, John Hopkins University, Mayrland, USA
Prof. Gang Yao, University of Illinois at Urbana - Champaign, USA
Prof. Lu Peng, Luisian State University, Baton Rouge, LA, USA
Prof. Y. Baudoin, Royal Military Academy, Brussels, Belgium
Prof. F.Rigas, School of Chemical Engineering, National Technical University of Athens, Greece.
Prof. S. Sohrab, Northwestern University, IL, USA
Prof. A. Stamou, National Technical University of Athens, Greece
Prof. A. I. Zouboulis, Dept. of Chemistry, Aristotle University of Thessaloniki, Greece
Prof. Z. A. Vale, ISEP - Instituto Superior de Engenharia do Porto Rua Antonio Bernardino de Almeida, Portugal
Prof. M. Heiermann, Dr., Department of Technology Assessment and Substance Flow, Potsdam, Germany
Prof. I. Kazachkov, National Technical University of Ukraine (NTUU KPI), Kyiv, Ukraine
Prof. A. M.A. Kazim, UAE University, United Arab Emirates
Prof. A. Kurbatskiy, Novosibirsk State University, Department of Physics, Russia
Prof. S. Linderoth, Head of Research on Fuel Cells and Materials Chemistry at Riso National Laboratory. Denmark
Prof. P. Lunghi, Dipartimento di Ingegneria Industriale, University degli Studi di Perugia, Italy
Prof. J. Van Mierlo, Department of Electrotechnical Engineering and Energy Technology (ETEC) Vrije Universiteit Brussel, Belgium
Prof. Pavel Loskot, Swansea University, UK
Prof. N. Afgan, UNESCO Chair Holder, Instituto Superior Tecnico, Lisbon, Portugal
Prof. F. Akgun, Gebze Kocaeli, Turkey
Prof. Fernando Alvarez, Prof. of Economics, University of Chicago, USA
Prof. Mark J. Perry, Prof. of Finance and Business Economics, University of Michigan-Flit, USA
Prof. Biswa Nath Datta, IEEE Fellow, Distinguished Research Prof., Northern Illinois University, USA
Prof. Panos Pardalos, Distinguished Prof. Director, Center for Applied Optimization, University of Florida, USA
Prof. Gamal Elnagar, University of South Carolina Upstate, Spartanburg, SC, USA
Prof. Luis Tavares Rua, Cmte Guyubricht, 119. Conj. Jardim Costa do Sol. Atalaia, Brazil
Prof. Igor Kuzle, Faculty of electrical engineering and computing, Zagreb, Croatia
Prof. Maria do Rosario Alves Calado, University of Beira Interior, Portugal
Prof. Gheorghe-Daniel Andreescu, "Politehnica" University of Timisoara, Romania
Prof. Jiri Strouhal, University of Economics Prague, Czech Republic
Prof. Morris Adelman, Prof. of Economics, Emeritus, MIT, USA
Prof. Germano Lambert-Torres, Itajuba, MG, Brazil
Prof. Jiri Klima, Technical faculty of CZU in Prague, Czech Republic
Prof. Goricanec Darko, University of Maribor, Maribor, Slovenia
Prof. Ze Santos, Rua A, 119. Conj. Jardim Costa do Sol, Brazil
Prof. Ehab Bayoumi, Chalmers University of Technology, Goteborg, Sweden
Prof. Robert L. Bishop, Prof. of Economics, Emeritus, MIT, USA
Prof. Glenn Loury, Prof. of Economics, Brown University, USA
Prof. Patricia Jota, Av. Amazonas 7675, BH, MG, Brazil
Prof. S. Ozdogan, Marmara University, Goztepe Campus, Kuyubasi, Kadikoy, Istanbul, Turkey
Prof. Morris Adelman, Professor of Economics, Emeritus, MIT, USA
Prof. Robert L. Bishop, Professor of Economics, Emeritus, MIT, USA
Prof. Glenn Loury, Professor of Economics, Brown University, USA
Prof. Fernando Alvarez, Professor of Economics, University of Chicago, USA
Prof. Mark J. Perry, Professor of Finance and Business Economics, University of Michigan-Flit, USA
Prof. Quan Wen, Department of Economics University of Washington, Seattle, WA, USA
Prof. David E. Giles, Department of Economics, University of Victoria, Canada
Prof. Joao Ricardo Faria, University of Texas at El Paso, El Paso, Texas, USA
Prof. Jacob Engwerda, Tilburg University, The Netherlands
Prof. Thomas D. Crocker, University of Wyoming, 1000 E. University Ave. Laramie, USA

Prof. Jean-Marie Dufour, McGill University, Montreal, Quebec, Canada
Prof. Laura Gardini, Università degli studi di Urbino Carlo Bo, Urbino PU, Italy
Prof. Junsen Zhang, The Chinese University of Hong Kong, Hong Kong
Prof. Reinhard Neck, Department of Economics, Klagenfurt University, Klagenfurt, Austria
Prof. Panos Pardalos, Department of University of Florida, USA
Prof. Shuliang Li, The University of Westminster, London, UK
Prof. Jiri Strouhal, University of Economics Prague, Czech Republic
Prof. Morris Adelman, Prof. of Economics, Emeritus, MIT, USA
Prof. Robert L. Bishop, Prof. of Economics, Emeritus, MIT, USA
Prof. Glenn Loury, Prof. of Economics, Brown University, USA
Prof. Fernando Alvarez, Prof. of Economics, University of Chicago, USA
Prof. Mark J. Perry, Prof. of Finance and Business Economics, University of Michigan-Flint, USA
Prof. Biswa Nath Datta, IEEE Fellow, Distinguished Research Prof., Northern Illinois University, USA
Prof. Gamal Elnagar, University of South Carolina Upstate, Spartanburg, SC, USA
Prof. Jiri Klima, Technical faculty of CZU in Prague, Czech Republic
Prof. Ze Santos, Rua A, 119. Conj. Jardim Costa do Sol, Brazil
Prof. Ehab Bayoumi, Chalmers University of Technology, Goteborg, Sweden
Prof. Maria do Rosario Alves Calado, University of Beira Interior, Portugal
Prof. Gheorghe-Daniel Andreescu, "Politehnica" University of Timisoara, Romania
Prof. Zhuo Li, Beijing University Of Technology, Beijing, China
Prof. Pradip Majumdar, Northern Illinois University, DeKalb, Illinois, USA
Prof. Ricardo Gouveia Rodrigues, University of Beira Interior, Portugal
Prof. Jiri Strouhal, University of Economics Prague, Czech Republic

Additional Reviewers

Santoso Wibowo

Lesley Farmer

Xiang Bai

Jon Burley

Genqi Xu

Zhong-Jie Han

Kazuhiko Natori

João Bastos

José Carlos Metrôlho

Hessam Ghasemnejad

Matthias Buyle

Minhui Yan

Takuya Yamano

Yamagishi Hiromitsu

Francesco Zirilli

Sorinel Oprisan

Ole Christian Boe

Deolinda Rasteiro

James Vance

Valeri Mladenov

Angel F. Tenorio

Bazil Taha Ahmed

Francesco Rotondo

Jose Flores

Masaji Tanaka

M. Javed Khan

Frederic Kuznik

Shinji Osada

Dmitrijs Serdjuks

Philippe Dondon

Abelha Antonio

Konstantin Volkov

Manoj K. Jha

Eleazar Jimenez Serrano

Imre Rudas

Andrey Dmitriev

Tetsuya Yoshida

Alejandro Fuentes-Penna

Stavros Ponis

Moran Wang

Kei Eguchi

Miguel Carriegos

George Barreto

Tetsuya Shimamura

CQ University, Australia

California State University Long Beach, CA, USA

Huazhong University of Science and Technology, China

Michigan State University, MI, USA

Tianjin University, China

Tianjin University, China

Toho University, Japan

Instituto Superior de Engenharia do Porto, Portugal

Instituto Politecnico de Castelo Branco, Portugal

Kingston University London, UK

Artesis Hogeschool Antwerpen, Belgium

Shanghai Maritime University, China

Kanagawa University, Japan

Ehime University, Japan

Sapienza Università di Roma, Italy

College of Charleston, CA, USA

Norwegian Military Academy, Norway

Coimbra Institute of Engineering, Portugal

The University of Virginia's College at Wise, VA, USA

Technical University of Sofia, Bulgaria

Universidad Pablo de Olavide, Spain

Universidad Autónoma de Madrid, Spain

Polytechnic of Bari University, Italy

The University of South Dakota, SD, USA

Okayama University of Science, Japan

Tuskegee University, AL, USA

National Institute of Applied Sciences, Lyon, France

Gifu University School of Medicine, Japan

Riga Technical University, Latvia

Institut polytechnique de Bordeaux, France

Universidade do Minho, Portugal

Kingston University London, UK

Morgan State University in Baltimore, USA

Kyushu University, Japan

Obuda University, Budapest, Hungary

Russian Academy of Sciences, Russia

Hokkaido University, Japan

Universidad Autónoma del Estado de Hidalgo, Mexico

National Technical University of Athens, Greece

Tsinghua University, China

Fukuoka Institute of Technology, Japan

Universidad de Leon, Spain

Pontificia Universidad Javeriana, Colombia

Saitama University, Japan

Table of Contents

<u>Plenary Lecture 1: Floating Offshore Wind Turbines: The Technologies and the Economics</u>	17
<i>Paul D. Sclavounos</i>	
<u>Plenary Lecture 2: The Influence of a Magnetic Field in the Fuel of a Gasoline Engine</u>	19
<i>Charalampos Arapatsakos</i>	
<u>Embedding Sustainability Dynamics in Energy Conversion Chain on Electric Railway Vehicles with Traction Synchronous Motors</u>	21
<i>Cornelia A. Bulucea, Doru A. Nicola, Daniel C. Cismaru, Nikos E. Mastorakis, Carmen A. Bulucea, Constantin Brindusa</i>	
<u>Modelling of the Unsteady Flow-Sediment Interaction – Grain Size Approach</u>	29
<i>Srdjan R. Kolakovic, Ljubomir M. Budinski, Goran B. Jeftenic, Borislav T. Masic, Slobodan S. Kolakovic, Svetlana R. Vujovic</i>	
<u>Simulation Methodology with Control Approach for Water Distribution Networks</u>	37
<i>Diego Ricardo Diaz Vela</i>	
<u>The Market Value of in Use Industrial Machinery</u>	46
<i>Benedetto Manganelli, Pierluigi Morano, Francesco Tajani</i>	
<u>Insurance and Chain Bankruptcy Theory</u>	51
<i>Bijan Bidabad, Nikos Mastorakis</i>	
<u>Studies Regarding the Irrigation to the Hilly and Terraced Surfaces</u>	55
<i>B. Lepadatescu, A.-E. Dumitrascu, A. Nedelcu</i>	
<u>Development of Autonomous Energy Supply System Using a Sail Type Wind Turbine</u>	62
<i>A. Jakovics, S. Sakipova, K. Kussaiynov, Zh. Kambarova, Ye. Kussaiynov</i>	
<u>Assessing Pollution of Outdoor Insulators in the Cretan Power System</u>	67
<i>D. Pylarinos, K. Siderakis, I. Pellas, E. Thalassinakis</i>	
<u>Solar Powered LNG Regasification: Enhancing Power Generation and Water Desalination</u>	73
<i>Asad A. Salem, Emad Hudiab</i>	
<u>Credit Risk Evaluation and Analysis on Chinese Commercial Banks Using Logistic Model</u>	79
<i>Xiaorong Zou</i>	
<u>Development of Comsol 3D Model for Heat Collection under a Water Body</u>	87
<i>Hafiz M. K. U. Haq, Birgitta Martinkauppi, Erkki Hiltunen</i>	
<u>Fuel Consumption at Conditions of the Israel's Highways Driving Cycle</u>	92
<i>M. Ben Chaim, E. Leybovitch</i>	

<u>Overview of the Most Developed Instances of Eco-Industrial Parks in Italy</u>	95
<i>Sara Tessitore, Tiberio Daddi, Francesco Testa</i>	
<u>Using Direct and Indirect Methods of Landscape Evaluation on Environmental Amenities' Valuation</u>	104
<i>L. Loures, A. Loures, J. Nunes, T. Panagopoulos</i>	
<u>Energy Efficiency and Sustainability of Low Energy Houses in Latvian Climate Conditions</u>	109
<i>Andris Jakovics, Stanislavs Gendelis, Ansis Ozolins, Saule Sakipova</i>	
<u>Thermal Behavior of a Simplistic Asphalt Pavement Model for Heat Pulses</u>	115
<i>J. Birgitta Martinkauppi, Anne Mäkiranta, Jukka Kijärvi, Erkki Hiltunen</i>	
<u>A Computational Study of a Prebiotic Synthesis of L-Leucine and L-Isoleucine</u>	121
<i>N. Aylward</i>	
<u>Examination of Deterioration on Diesel Engine when used as Fuel Mixture of Diesel-Vegetable Oil</u>	130
<i>Charalampos Arapatsakos, Anastasios Karkanis, Ioannis Pantokratoras, Eirini Markidou</i>	
<u>Assessing the Relation between Soil Edaphic Properties and Phosphorus Adsorption in Extremadura (Spain) Vertisols</u>	136
<i>L. Loures, J. Nunes, A. López-Piñeiro, A. Loures, A. Navarro</i>	
<u>New Tree Species for Agroforestry and Energy Purposes</u>	142
<i>Andrea Vityi, Béla Marosvölgyi</i>	
<u>Power-Information Models of Operation and Development of Megapolises Power Supply Systems</u>	145
<i>Stepan A. Dmitriev, Sergey E. Kokin, Alexandra I. Khalyasmaa</i>	
<u>Assessment of Water Quality of Artificial Water Bodies in Vojvodina (Serbia) using Factor and Cluster Analysis</u>	151
<i>Srđan R. Kolaković, Svetlana R. Vujović, Slobodan S. Kolaković, Borislav T. Mašić, Goran B. Jeftenić, Ljubomir M. Budinski</i>	
<u>Analysis of Multiannual Fluctuations and Long Term Trends of Hydrological Time Series</u>	156
<i>O. Marusiak, J. Pekar</i>	
<u>Log-Normality of the Tsunami Run-up Heights along the Eastern Coastal Line of Korean Peninsula</u>	160
<i>Kim D., Cho H., Cho Y.-S.</i>	
<u>Challenges for a Sustainable Ecosystem Management of Carpathian Forests</u>	163
<i>Simona Frone, Dumitru Florin Frone</i>	

<u>Effect of Secondary Pulp Mill Sludge Application as Soil Organic Amendment in Nitrate Leaching</u>	169
<i>J. Rato Nunes, F. Cabral, A. López-Piñeiro, L. Loures, D. Becerra</i>	
<u>Tisza River Modelling on the Common Interest Section of Hungary and Serbia</u>	173
<i>Srdjan R. Kolakovic, Slobodan S. Kolaković, Goran B. Jeftenic, Borislav T. Masic, Svetlana R. Vujovic</i>	
<u>Statistical Analysis of Low Flows in Eastern Slovakia</u>	181
<i>M. Zeleňáková, P. Purcz, T. Soláková, D. Simonová</i>	
<u>Svedberg's Number in Diffusion Processes</u>	187
<i>Alfredo Constaín, Duvan Mesa, Carlos Peña-Guzmán, Paola Acevedo</i>	
<u>Wet Scrubber for Cleaning of Syngas from Biomass Gasification</u>	195
<i>Marek Balas, Martin Lisy, Zdenek Skala, Jiri Pospisil</i>	
<u>The Effect of Regulatory Uncertainty on Water-Right Prices: The Case of the Loa Basin in the Antofagasta Region of Chile</u>	202
<i>Oscar Cristi, Carlos Díaz, Gonzalo Edwards, Eric Edwards</i>	
<u>Accounting Aspects of Risk Management and Improvement of the Entrepreneurial Venture Enterprise</u>	209
<i>Nenad R. Lalić, Srdjan M. Lalić, Dragan Milovanović, Biljana Kovačević</i>	
<u>The Comparison of Wood Chips and Cocoa Shells Combustion</u>	217
<i>Michal Spilacek, Martin Lisy, Marek Balas, Zdenek Skala</i>	
<u>Experimental Measurement of Load and Exhaust Gas Emissions on an Outboard Engine</u>	221
<i>Anastasios Karkanis, Charalampos Arapatsakos, Christina Anastasiadou</i>	
<u>The Impact of Salinity on Development the Most Important Copepoda Taxa in Baltic Sea</u>	228
<i>Lidia Dzierzbicka-Głowacka, Maja Musialik, Anna Lemieszek</i>	
<u>Geochemical Baseline Concentrations of Available Heavy Metals in Mediterranean Agricultural Soils: A Case Study in Calcareous Soils of Southwest Iberian Peninsula</u>	235
<i>J. Rato Nunes, J. Ramos-Miras, A. Lopez-Piñeiro, L. Loures, C. Gil, J. Coelho, D. Peña</i>	
<u>Thermochemical Characteristics of the Modern Gearboxes Housing Material</u>	241
<i>Ion Silviu Boroza, Veronica Argeşanu, Inocenţiu Maniu, Raul Miklos Kulcsar, Mihaela Jula</i>	
<u>Managing Value Chain Relationships in Cross-Level Organizations - Compare Cellar-Phone Manufacturing and Sport Shoemaking Supply Chain</u>	247
<i>Chang Jang-Li, Lin Yu-Chuan</i>	
<u>Transformation of Soil Texture Classifications by Ensemble Modeling</u>	252
<i>Milan Cisty, Greta Dolakova, Jana Skalova, Peter Minaric</i>	

<u>The Analysis of Stormwater Runoff and Overflow from the Novi Sad Catchment</u>	258
<i>Srdjan R. Kolakovic, Matija B. Stipic, Goran B. Jeftenic, Borislav T. Masic, Filip M. Stipic, Slobodan S. Kolakovic, Svetlana R. Vujovic</i>	
<u>Fate of Metribuzin Affected by De-Oiled Two Phase Olive Mill Waste Amendment in an Olive Grove Soil</u>	265
<i>D. Peña, A. López-Piñeiro, A. Albarrán, D. Becerra, J. Sánchez-Llerena, J. Rato-Nunes</i>	
<u>Assessment of Surface Water Quality for Sustainable Water Management in Samut Songkram Province, Thailand</u>	270
<i>Tatsanawalai Utarasakul, Sivapan Choo-In, Chaisri Tharasawatpipat, Srisuwan Kasemsawat, Sathaporn Monprapussorn</i>	
<u>The Effect of Roof Material on Rain Water Quality Parameters in Conditions of Slovak Republic</u>	275
<i>Mohamed Ahmidat, Daniela Kaposztasova, Gabriel Markovic, Zuzana Vranayova</i>	
<u>Socio-Hydrological Vulnerability: A New Science through Remote Sensing and GIS</u>	281
<i>Mukesh Singh Boori, Vit Voženílek</i>	
<u>Improvement of Power Management System in Electro-Solar Vehicle</u>	286
<i>Hemza Saidi, Abdelhamid Mudoun</i>	
<u>Novel Data-Mining Methodologies for Detecting Drug-Drug Interactions: A Review of Pharmacovigilance Literature</u>	301
<i>I. Heba, A. Amany, S. E. Ahmed, S. Amr</i>	
<u>Conversion of 2D Medical Scan Data into 3D Printed Models</u>	315
<i>Eva Hnatkova, Petr Kratky, Zdenek Dvorak</i>	
<u>Fault Throw and Sealing Thickness Relationship of Middle Cretaceous Muglad Basin, South Sudan</u>	319
<i>Dorar Hamdoba Elshaikh, Zuhar Zahir Bin Tuan Harith</i>	
<u>Environmental Impact of Masonry and RC Frame Structures</u>	324
<i>A. Puskás, J. Virág, L. M. Moga, H. Szilágyi, M. Bindea, Sz. A. Köllő</i>	
<u>Long-Term Water Balance Changes of the Pristine Bela River Basin</u>	330
<i>D. Halmova, P. Miklanek, P. Pekarova</i>	
<u>Short Term Effect of Different Management Practices on Rice Production and Agronomic Behavior in Mediterranean Conditions</u>	336
<i>D. Becerra, J. Sánchez-Llerena, D. Peña, A. López-Piñeiro, A. Albarrán, J. Rato-Nunes, L. Loures</i>	

<u>Engine Performance and Economic Impact Study of Gasoline-Like Tyre Pyrolysis Oil in Thailand</u>	340
<i>C. Wongkhorsub, N. Chindaprasert, S. Peanprasit</i>	
<u>Parameters of Insolvency Proceedings in Developed Countries and Their Dependence on Economic Performance</u>	345
<i>Luboš Smrčka, Markéta Arltová, Jaroslav Schönfeld, Lee Louda</i>	
<u>HVDC Transmission Corridor - Cost Benefit Analysis</u>	353
<i>Udrea Oana, Gheorghe Lazaroiu, Ungureanu Gabriela</i>	
<u>The Ability of Water Reservoir to Assure Required Water Supply under Changed Climate Conditions</u>	359
<i>D. Halmova, M. Melo, P. Pekarova</i>	
<u>Backstepping Control Based Three Phase Shunt Active Power Filter</u>	364
<i>I. Ghadbane, M. T. Benchouia</i>	
<u>The Role of Research and Development in the Central Region of Romania using Fuzzy Super FRM Model</u>	371
<i>Moga Monika, Calefariu Gavrilă, Sârbu Flavius Aurelian</i>	
<u>Oxidation of 2-Propanol at Low Temperature over Pt/γ-Al₂O₃ Catalyst</u>	375
<i>F. Aghazadeh, D. Omidifar, A. Niaei, D. Salari</i>	
<u>Significant Factors of Satisfaction of Bank Customers. Case Study from the Czech Republic</u>	379
<i>J. Belás, A. Chocholáková, L. Gabčová</i>	
<u>Solute Transfer in Layered Porous Media: An Approach Based on Differential Quadrature Method (DQ)</u>	384
<i>Meysam Ghamariadyan, Abbas Ghaheiri</i>	
<u>Catastrophic Danube Flood Scenario between Kienstock and Nagymaros Using NLN Model</u>	393
<i>V. Bacova Mitkova, P. Pekarova, J. Pekar</i>	
<u>Renewable, Non-Renewable Energy Consumption, Economic Growth and CO₂ Emission: Evidence for Iran</u>	399
<i>Soheila Khoshnevis Yazdi, Bahman Khanalizadeh, Nikos Mastorakis</i>	
<u>The Assessment of the Effectiveness of Reforms in Various Countries</u>	405
<i>Samson Davoyan, Tatevik Sahakyan</i>	
<u>The Easiest and Least Expensive Way to Control Water Hammer in Irrigation and Drainage Network of Sivand Dam</u>	417
<i>Reza Gharehkhani, Sayed Abbas Mousavi, Fatemeh Kazemi</i>	

<u>Differences between Structural, Textural and Rheological Properties of two Cameroonian Mineral Clays Used as Cosmetic Mask</u>	425
<i>Orléans Ngomo, Joseph Marie Sieliechi, Jean Bosco Tchatchueng, Richard Kamga, Aurel Tabacaru, Rodica Dinica, Mirela Praisler</i>	
<u>Impact of Steering Committee Configuration and Decisions on Project Success in Pakistan</u>	432
<i>Sabina S. Shirazi</i>	
<u>Assessing Environmental Impacts of Aviation on Connected Cities via Environmental Vulnerability Studies and Fluid Dynamics: An Indian Case Study</u>	438
<i>Gautham Ramchandran, Jethro Nagawkar, Karthik Ramaswamy, Sat Ghosh</i>	
<u>Effects of Environmental Factors on Noise Emissions from Pig Housing</u>	450
<i>M. Šístková, J. Brouček, P. Bartoš, I. Celjak, A. Dolan</i>	
<u>Decrease the Scourge of Malnutrition in Sub-Saharan Africa through the Implementation of EU Financial Instruments</u>	454
<i>Ionel Bostan, Carmen Năstase, Dana Drugus, Alunica Morariu, Ovidiu Bunget</i>	
<u>Performance Measure of Switching Device (MOSFET) in Photo-voltaic System</u>	460
<i>Kamala J., Janarthanan V., Santhosh K.</i>	
<u>Novel Methods for Desulfurization of Petroleum Fractions</u>	465
<i>H. Hosseini</i>	
<u>New Land Use in Rural Marginal Areas. Renewable Energy vs Landscape Preservation</u>	468
<i>Donatella Cialdea, Luigi Mastronardi</i>	
<u>Economic Analysis of a Pumped Storage Project for Iran Generating System Based on a Dynamic Modeling</u>	475
<i>A. R. Sohrabi</i>	
<u>Authors Index</u>	481

Plenary Lecture 1

Floating Offshore Wind Turbines: The Technologies and the Economics



Prof. Paul D. Sclavounos

Professor of Mechanical Engineering and Naval Architecture
Massachusetts Institute of Technology (MIT)
77 Massachusetts Avenue
Cambridge MA 02139-4307
USA
E-mail: pauls@mit.edu

Abstract: Wind is a vast, renewable and clean energy source that stands to be a key contributor to the world energy mix in the coming decades. The horizontal axis three-bladed wind turbine is a mature technology and onshore wind farms are cost competitive with coal fired power plants equipped with carbon sequestration technologies and in many parts of the world with natural gas fired power plants.

Offshore wind energy is the next frontier. Vast sea areas with higher and steadier wind speeds are available for the development of offshore wind farms that offer several advantages. Visual, noise and flicker impacts are mitigated when the wind turbines are sited at a distance from the coastline. A new generation of 6-10MW wind turbines with diameters exceeding 160m have been developed for the offshore environment. They can be fully assembled at a coastal facility and installed by a low cost float-out operation. Floater technologies are being developed for the support of multi-megawatt turbines in waters of moderate to large depth, drawing upon developments by the offshore oil & gas industry.

The state of development of the offshore wind energy sector will be discussed. The floating offshore wind turbine technology will be reviewed drawing upon research carried out at MIT since the turn of the 21st century. Floating wind turbine installations worldwide and planned future developments will be presented. The economics of floating offshore wind farms will be addressed along with the investment metrics that must be met for the development of large scale floating offshore wind power plants.

Brief Biography of the Speaker: Paul D. Sclavounos is Professor of Mechanical Engineering and Naval Architecture at the Massachusetts Institute of Technology. His research interests focus upon the marine hydrodynamics of ships, offshore platforms and floating wind turbines. The state-of-the-art computer programs SWAN and SML developed from his research have been widely adopted by the maritime, offshore oil & gas, and wind energy industries. His research

activities also include studies of the economics, valuation and risk management of assets in the crude oil, natural gas, shipping and wind energy sectors. He was the Georg Weinblum Memorial Lecturer in 2010-2011 and the Keynote Lecturer at the Offshore Mechanics and Arctic Engineering Conference in 2013. He is a member of the Board of the North American Committee of Det Norske Veritas since 1997, a member of the Advisory Committee of the US Navy Tempest program since 2006 and a member of the Advisory Board of the Norwegian Center for Offshore Wind Energy Technology since 2009. He has consulted widely for the US Government, shipping, offshore, yachting and energy industries.

<http://meche.mit.edu/people/?id=76>

Plenary Lecture 2

The Influence of a Magnetic Field in the Fuel of a Gasoline Engine



Professor Charalampos Arapatsakos

Department of Production and Management Engineering
Democritus University of Thrace
GREECE
E-mail: xarapat@pme.duth.gr

Abstract: This work examines the effect of magnetic field in a four stroke gasoline engine. The magnetic field that was created affected the fuel just before it enters to the engine. As a result there was a change in the combustion of the engine as well as variations in the exhaust gases. The engine was functioned without and under full load.

Brief Biography of the Speaker: Dr Charalampos Arapatsakos is a Greek citizen, who has been born in Athens. He has studied Mechanical Engineering. He is Professor on Democritus University of Thrace in Greece. Prof C. Arapatsakos has participated in many research programs about biofuels, gas emissions and antipollution technology. His research domains are mainly on biofuels and their use in internal combustion engines, the power variation from the use of biofuels, the gas emissions, mechanical damages, internal combustion engines, antipollution technology, renewable sources of energy, gas emissions, vehicle design, elements of machines, resistance of materials, technical mechanics, heat transmission.