



Athens Institute for Education and Research
4th Annual International Conference on Industrial, Systems and Design Engineering
20-23 June 2016, Athens, Greece

Organized by the [Engineering & Architecture Research Division](#) of ATINER
sponsored by the [Athens Journal of Technology and Engineering](#)



Conference Venue: [Titania Hotel](#), 52 Panepistimiou Street, 10678 Athens, Greece

Monday 20 June 2016

(all sessions include 10 minutes break)

08:00-08:30 Registration and Refreshments

08:30-09:00 Welcome & Opening Address (ROOM B-Mezzanine Floor)

- Gregory T. Papanikos, President, ATINER.
- George Poulos, Vice-President of Research, ATINER & Emeritus Professor, University of South Africa, South Africa.

09:00-10:30 Session I (ROOM G-10th Floor): Engineering the Future I

Chair: Theodore Trafalis, Head, Industrial Engineering Research Unit, ATINER, Professor of Industrial and Systems Engineering & Director, Optimization & Intelligent Systems Laboratory, The University of Oklahoma, USA.

1. *Alex Papadopoulos, Associate Professor, DePaul University, USA. Dreams of Metalized Bodies, Smart Cities, and Evolving Artificial Sentiences: Cyberpunk Speculative Fiction as Herald of Humanity's Twilight.
2. [Christianne Heselmans](#), Lecturer, Fontys Academy for Creative Industries, The Netherlands & Linda Hofman, Lecturer, Fontys Academy for Creative Industries, The Netherlands. Prototyping for a Sustainable Future to tackle the Grand Societal Challenges.
3. [Frank Hartmann](#), Senior Researcher, Technical University of Applied Sciences Wildau, Germany, Markus Lahr, Research Associate, Technical University of Applied Sciences Wildau, Germany & Dana Mietzner, Professor, Technical University of Applied Sciences Wildau, Germany. Maker Movement as a Path for Digital Transformation? Current Understanding and How it may Change the Social and Economic Environment.

10:30-12:00 Session II (ROOM G-10th Floor): Engineering Design

Chair: Robert E. Thomas, Emeritus Professor, Auburn University, USA.

1. Joon-Hoon Park, Professor, Korea National University of Transportation, South Korea. Application of Haar Transform to High Order Multiple Variables System Design.
2. [Jerry Davis](#), Associate Professor, Auburn University, USA & Robert E. Thomas, Emeritus Professor, Auburn University, USA. Smoke Hood Design Considerations for Stairwell Evacuation.
3. *Alexandre De Bernardinis, Researcher Scientist, IFSTTAR/SATIE TEMA, France. Potentialities of Wide-Band Gap Power Converters for Fuel Cell Hybrid System Design and Continuity of Service within Urban Microgrids.
4. [Sabrina Herbst](#), Scientific Assistant / Ph.D. Student, Ernst-Abbe-Hochschule Jena, Germany, Frank Engelmann, Professor, Ernst-Abbe-Hochschule Jena, Germany & Karl-Heinrich Grote, Dean, Otto-von-Guericke-Universität Magdeburg, Germany. Product Development Process Requirements in non-Electrical Explosion Protection Require Innovations.

10:30-12:00 Session III (ROOM H-10th Floor): Futures Studies

Chair: *Alex Papadopoulos, Associate Professor, DePaul University, USA.

1. Dennis Morgan, Professor, Hankuk University of Foreign Studies, South Korea. Conducting an Innovation/Issues Change Tracking and Forecasting Term Project in an Undergraduate Futures Studies Course.

12:00-13:30 Session IV (ROOM G-10 th Floor): Composites/Manufacturing	12:00-13:30 Session V (ROOM H-10 th Floor): Sustainable Futures I
<p>Chair: *Alexandre De Bernardinis, Researcher Scientist, IFSTTAR / SATIE TEMA, France.</p>	<p>Chair: Christianne Heselmans, Lecturer, Fontys Academy for Creative Industries, The Netherlands.</p>
<ol style="list-style-type: none"> 1. *<u>Thomas Attard</u>, Professor, The University of Alabama at Birmingham, USA & Zhenhua Shi, Ph.D. Student, The University of Alabama at Birmingham, USA. Application of an Advanced Expansive / Dissipative Composites in Bridge Connection Systems. 2. Ru-Shi Liu, Professor, National Taiwan Normal University, Taiwan. Engineered Heterostructure of Si and CoSe₂ or CoS₂: Promising Photocathodes Based on Non-noble Metal Catalysts for Photoelectrochemical Hydrogen Evolution. 3. <u>Glen Bright</u>, Professor, University of KwaZulu-Natal, South Africa & Anthony Walker, Lecturer, University of KwaZulu-Natal, South Africa. An Industrial Steady State Sequence Disorder Model for Flow Controlled Multi-Input Single-Output Queues in Manufacturing Systems. 4. *<u>Mariana d'Orey Gaivao Portella Braganca</u>, Researcher, Institutos Lactec, Brazil, Kleber Franke Portella, Researcher, Institutos Lactec, Brazil, Camila Marcal Gobi, Researcher, Institutos Lactec/Universidade Federal do Paraná, Brazil, Evandro de Mesquita Silva, Technician, Institutos Lactec, Brazil & Emerson Alberti, Researcher, Centrais Elétricas do Rio Jordao, Brazil. The Use of 1% Nano-Fe₃O₄ and 1% Nano-TiO₂ as Partial Replacement of Cement to Enhance the Chemical Performance of Reinforced Concrete Structures. 	<ol style="list-style-type: none"> 1. <u>Gayoung Yoo</u>, Associate Professor, Kyung Hee University, South Korea, Yesol Kim, Associate Professor, Kyung Hee University, South Korea, Bo Eun Sim, Graduate Student, Kyung Hee University, South Korea & Kyung-hee Shin, Research Fellow, Korea Environment Institute, South Korea. Life Cycle Assessment of Biochar Applied Rice Paddy Soil. (Monday June 20, morning session) 2. <u>Theodore Kokkoris</u>, Visiting Professor, NMMU, South Africa, Chris Adendorff, Adjunct Professor, NMMU, South Africa & C.J. Osmond, Student, NMMU, South Africa. The Future of Sustainable Water Resource Development and Management in South Africa. 3. Yeora Chae, Senior Researcher, Korea Environment Institute, South Korea. Development of Socio-Economic Scenarios for Climate Change Policy Analysis in Korea.

13:30-14:30 Lunch

14:30-16:00 Session VI (ROOM G-10th Floor): Modeling/Prediction/Optimization	14:30-16:00 Session VII (ROOM H-10th Floor): Manufacturing/Metal Cutting and Other Issues
Chair: *Ingo Ehrlich, Professor, OTH Regensburg, Germany.	Chair: Jerry Davis, Associate Professor, Auburn University, USA.
<ol style="list-style-type: none"> 1. Miryam Barad, Professor, Tel Aviv University, Israel. Petri Nets – An Adaptable Modeling Approach. 2. Rolf Steinbuch, Professor, Reutlingen University, Germany. Virtual Hybrid - and Meta-Optimization of Forming Processes. 3. Nick Vayenas, Professor, Laurentian University, Canada. Equipment Failure Prediction using Genetic Algorithms: A Study of an Underground Mine Hoist. (Monday June 20, 2016) 4. <u>Marco Siegl</u>, Ph.D. Student, Ostbayerische Technische Hochschule Regensburg, Germany & Ingo Ehrlich, Professor, Ostbayerische Technische Hochschule Regensburg, Germany. Transformation of the Mechanical Properties of Fiber Reinforced Plastic Tubes from the Cartesian Coordinate System into the Cylindrical Coordinate System for the Application of Bending Models. 	<ol style="list-style-type: none"> 1. Tommaso Coppola, Associate Professor, University of Naples, Italy. Economic and Environmental Analysis Relates to Ships and Shore-Side Power. 2. <u>Yahya Isik</u>, Lecturer, Uludag University, Turkey & Abdil Kus, Associate Professor, Uludag University, Turkey. An Experimental Investigation on Effect of Internally Cooled Cutting Tools in the Machining of Difficult-to-Cut Materials. 3. <u>Andreas Kastenmeier</u>, Ph.D. Student, Ostbayerische Technische Hochschule Regensburg, Germany, <u>Vinzent Schmid</u>, Ph.D. Student, Ostbayerische Technische Hochschule Regensburg, Germany & Ingo Ehrlich, Professor, Ostbayerische Technische Hochschule Regensburg, Germany. Specimen Preparation and Material Characterization of Filament Wound GFRP Composite Tubes. 4. <u>Christian Pongratz</u>, Master Student, Ostbayerische Technische Hochschule Regensburg, Germany, <u>Matthias Schlamp</u>, Ph.D. Student, Ostbayerische Technische Hochschule Regensburg, Germany, <u>Bastian Jungbauer</u>, Laboratory Engineer, Ostbayerische Technische Hochschule Regensburg, Germany & Ingo Ehrlich, Professor, Ostbayerische Technische Hochschule Regensburg, Germany. Detection of Delamination Damages in thin CFRP Composite Plates using Noncontact Measurement of Structural Behaviour. 5. Warda Daranfed, University of Constantine 1, Algeria. Role of Substrate Temperature on the Structural and Morphological Properties of Cu₂ZnSnS₄ Thin Films deposited by Ultrasonic Spray Pyrolysis. 6. *Zohra Ouchiha, Assistant Professor, USTHB, Algeria. Friction and Fast Transitions in Liquid Flow.
16:00-17:30 Session VIII (ROOM G-10th Floor): Supply Chain/Scheduling/Project Management	
Chair: <u>Christian Schuh</u> , Research Staff, Bayreuth University, Germany, Bernd Rosemann, Chief Executive Engineer, Bayreuth University, Germany	
<ol style="list-style-type: none"> 2. Avraham Shtub, Professor, Technion - Israel Institute of Technology, Israel. New Product Development - Experience from Distance Learning and Simulation-Based Training. 1. <u>Jaejin Jang</u>, Associate Professor, University of Wisconsin, Milwaukee, USA & Vijay Viswanathan, Research Associate, University of Wisconsin, Milwaukee, USA. Strategic Inventories under a Commitment Contract in a Supply Chain with Downstream Cournot Duopoly Competition. 2. <u>Beyazit Ocaktan</u>, Industrial Engineer, Balikesir University, Turkey, Aslan Deniz Karaoglan, Assistant Professor, Balikesir University, Turkey & Abdullah Cicibas, Industrial Engineer, BEST Transformers, Turkey. Flow Time and Due Date Estimation for Customer Orders According to Design Criteria: A Case Study of BEST Transformers Company. 3. <u>Ali Namazian</u>, University of Tehran, Iran & Siamak Haji Yakhchali, University of Tehran, Iran. Project Portfolio and Contractor Selection Problem Based on Project Scheduling. 	

17:30-20:00 Session IX (ROOM A-Mezzanine Floor): A Round Table Discussion on ‘The Future of Sciences, Engineering and Technology’

Chair: Lampros A. Pyrgiotis, Scholar & President, Greek Society of Regional Scientists, Greece.

1. Dr **Miryam Barad**, Professor, Tel Aviv University, Israel.
2. Dr **Rolf Steinbuch**, Professor, Reutlingen University, Germany
3. Dr **Venkatachalam Rapur**, Professor, National Institute of Technology, India.
4. Dr **Ru-Shi Liu**, Professor, National Taiwan University, Taiwan.
5. Dr **Mahmoud Aminlari**, Professor, Shiraz University, Iran.
6. Dr **Ingo Ehrlich**, Professor, Ostbayerische Technische Hochschule Regensburg, Germany.
7. Dr **Theodore Trafalis**, Head, [Industrial Engineering Research Unit](#), ATINER, Professor of Industrial and Systems Engineering & Director, Optimization & Intelligent Systems Laboratory, The University of Oklahoma, USA.

21:00-23:00 Greek Night and Dinner (Details during registration)

Tuesday 21 June 2016

08:00-09:30 Session X (ROOM B- Mezzanine Floor): Production Flexibility

Chair: *Flavio Antonio Santos, Professor, CEFET-MG, Brazil & Danielle de Paula Alvim, Student, CEFET-MG, Brazil.

1. Rahul Patil, Assistant Professor, Shailesh J. Mehta School of Management, IIT Bombay, India. Pricing and Lead Time Competition in the Presence of Process Variability.
2. Hilal Atici, Research Assistant, Balikesir University, Turkey, Demet Gonen, Assistant Professor, Balikesir University, Turkey, Ali Oral, Associate Professor, Balikesir University, Turkey & Bünyamin Kaya, Nursan Wiring Harness R&D Center, Tavsanlı – Kutahya, Turkey. Risk Assessment and Its Effects on Sustainability of Production.
3. Julian Popp, Research Assistant, University of Stuttgart, Germany, Christian Kuber, Ph.D. Student, University of Stuttgart, Germany & Karl-Heinz Wehking, Managing Director, University of Stuttgart, Germany. Innovative Production Logistics for a Convertible and Flexible Automotive Production.
4. Adrian Santangelo, Research Assistant, Leibniz Universität Hannover, Germany, Bernd - Arno Behrens, Professor, Leibniz Universität Hannover, Germany & Matthias Dannenberg, Ph.D. Student, Leibniz Universität Hannover, Germany. A New Method for a Production-Adjusted Design of Hot Die Forging Tools.

09:30-11:00 Session XI (ROOM B- Mezzanine Floor): The Future of Engineering Applications

Chair: Avraham Shtub, Professor, Technion - Israel Institute of Technology, Israel.

1. *Flavio Antonio Santos, Professor, CEFET-MG, Brazil & Danielle de Paula Alvim, Student, CEFET-MG, Brazil. Verification of Continuous Flight Auger Piles Ultimate Load Methods through Dynamic Load Testing.
2. Venkatachalam Rapur, Professor, National Institute of Technology, India, Anirudh R. Iyer, Postgraduate Student, National Institute of Technology, India & Bala Raju, Associate Professor, Madanapally Institute of Technology and Science, Madanapally, India. Dynamic Response of a Semi-Independently Suspended Automobile due to Periodic Pulses.
3. Christian Schuh, Research Staff, Bayreuth University, Germany, Bernd Rosemann, Chief Executive Engineer, Bayreuth University, Germany & Oliver Oechsle, Head of Department, Fraunhofer Project Group Process Innovation, Germany. Collaborative Process Optimization - An Approach to Individual Packaging Hollows.
4. Christian Rohrandt, Ph.D. Student, University of Applied Sciences, Germany, Pay Giesselmann, MSc Student, University of Applied Sciences, Germany, Dr. Ulrich Jetzek, Professor, University of Applied Sciences, Germany & Dr. Franz-Josef Mueller, Head of Laboratory, Zentrum für Integrative Psychiatrie Kiel, Germany. Optimizing DNA-Alignment Algorithms for an Embedded SoC/FPGA Platform.
5. *Luis Evangelista, Associate Professor, University of Stavanger, Norway, Sara Almeida Santos, MSc, Universidade de Lisboa, Portugal, Pedro Raposeiro da Silva, Assistant Professor, Instituto Superior de Engenharia de Lisboa, Portugal & Jorge de Brito, Professor, Universidade de Lisboa, Portugal. Fresh State Properties of Self-Compacting Concrete with Recycled Aggregates.

09:30-11:00 Session XII (ROOM C- Mezzanine Floor): Sustainable Futures II

Chair: Frank Hartmann, Senior Researcher, Technical University of Applied Sciences Wildau, Germany

1. Monica Veeger, Lecturer, Fontys Academy for Creative Industries, The Netherlands. Who wants to Live Forever? Mapping and Analysing Possible Future Consequences of Large Increases of Human Age.
2. Doris Wilhelmer, Engineer & Expert Advice, AIT Austrian Institute of Technology GmbH, Austria. Society in Need of Transformation. Citizen Foresight as a Method to Co-Create Urban Future.

11:00-14:00 Educational and Cultural Urban Walk Around Modern and Ancient Athens (Details during registration)

14:00-15:00 Lunch

15:00-16:30 Session XIII (ROOM B- Mezzanine Floor): Engineering the Future II

Chair: : *Ingo Ehrlich, Professor, OTH Regensburg, Germany.

1. Ralf Breede, Professor, Technische Hochschule Köln, Germany & Daniel Liefertz, Scientific Assistant, Technische Hochschule Köln, Germany. Human-Robot-Collaboration: Flexibility in Production Environments.
2. Andrea Margini, Ph.D. Student, University of Modena and Reggio Emilia, Italy, Gaetano Cutrona, Ph.D. Student, University of Modena and Reggio Emilia, Italy & Cesare Fantuzzi, Professor, University of Modena and Reggio Emilia, Italy. Product Service System Design: How to Design Humans.

16:30-18:00 Session XIV (ROOM B- Mezzanine Floor): Special Issues

Chair: Lampros A. Pyrgiotis, Scholar & President, Greek Society of Regional Scientists, Greece.

1. *Maria Cristina Ramos de Carvalho, Professor, CEFET-MG, Brazil. University Campus Architectural / Urban Quality: Research Projects at CEFET-MG – Brazil.
2. Philippe Saey, Lecturer – Researcher, KU Leuven - FIIW - ESAT-ETC, Belgium, Frederic Depuydt, Researcher, KU Leuven - FIIW - ESAT-ETC, Belgium, Stijn Noppe, Researcher, KU Leuven - FIIW - ESAT-ETC, Belgium, Patrick Deconinck, ArcelorMittal Ghent, Belgium & Jos Knockaert, Ghent University, Belgium. Performance Evaluation of Fast Media Redundancy Protocols for Industrial Data Communication.
3. Albana Leti Tota, Lecturer, Polytechnic University of Tirana, Albania, Esmira Shehi, Polytechnic University of Tirana, Albania & Blerina Kolgjini, Polytechnic University of Tirana, Albania. 3D Konica Minolta Scans for Cataloguing Albanian Costume Collections.
4. Noubel Guermat, Université Mohamed Boudiaf de M'sila, Algeria. Elaboration and Characterization of Thin Water Molecule Sensitive Layers Deposited from Hexamethyldisiloxane.

21:00-22:30 Dinner (Details during registration)

Wednesday 22 June 2016
Cruise: (Details during registration)

Thursday 23 June 2016
Delphi Visit: (Details during registration)