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Scientific Program

3rd International Conference and Exhibition on
MECHANICAL & AEROSPACE ENGINEERING

OCTOBER 05-07, 2015 SAN FRANCISCO, USA



OMICS International Conferences
2360 Corporate Circle., Suite 400 Henderson, NV 89074-7722, USA
Phone: +1-888-843-8169, Fax: +1-650-618-1417, Toll free: +1-800-216-6499
Email: mechaero@omicsgroup.com

Scientific Program

Day 1 **October 05, 2015**

08:00-08:50 **Registrations**

Redwood Sequoa

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08:30-08:50 **Opening Ceremony**

Keynote Forum

08:50-09:00 **Introduction**

09:00-09:30 **Advanced technology historical development and technology advancements in electric aircraft and spacecraft propulsion**

James M. Free, NASA Glenn Research Center, USA

09:30-10:00 **The James Webb Space Telescope mission**

Matthew Greenhouse, NASA Goddard Space Flight Center, USA

Coffee Break @ Foyer 10:00-10:15

10:15-10:45 **Robustification of repetitive control systems for high accuracy and high speed operation**

Richard W. Longman, Columbia University, USA

10:45-11:15 **Efficient patterned vertical axis wind turbine farms**

Shaaban Abdallah, University of Cincinnati, USA

Group Photo: 11:15-11:20

Track 1: Fluid Mechanics

Session Chair: Igor Zolotarev, Institute of Thermomechanics, Czech Republic

Session Introduction 11:20-11:25

11:25-11:45	**Theory and commercial software finding the balance in finite element instruction at the undergraduate level**
	Gregory K. Watkins, California State University, Chico, USA
11:45-12:05	**Theoretical optimization of a cylindrical body of rotation using magnus effect lift**
	Mark N. Callender, Middle Tennessee State University, USA
12:05-12:25	**Analytical solution for welded joints of perpendicular plates subjected to torsional moment**
	Alexander M. Wahrhaftig, Federal University of Bahia, Brazil
12:25-12:45	**Nonlinear waves and transfer processes in liquid film flow**
	Sergey Alekseenko, Institute of Thermophysics, Russia
12:45-13:05	**Use of lattice Boltzmann method to simulate interaction between fluid flow and particle motion in small scales**
	Yong Kweon Suh, Dong-A University, Korea

Lunch Break @ Tiburon Sausalito : 13:05-13:35

Workshop

13:35- 14:35	**Integral Coordination and Management of Advanced Distributed Aerospace Missions**
	Peter S. Sapaty, National Academy of Sciences , Ukraine

Track 2: Aerodynamics	
Session Chair: Gregory K. Watkins, California State University, Chico, USA	
	Session Introduction 14:35-14:40
14:40-15:00	**Advanced propulsion in the era of wormhole physics: is it space-drive time yet?**
	James F. Woodward, California State University, USA
15:00-15:20	**A numerical comparison study between co-rotating and counter-rotating savonius wind turbine clusters**
	Shaaban Abdallah, University of Cincinnati, USA
15:20-15:40	**An integrative research program of bio-fuel combustion performance and emissions**
	S. R. Gollahalli, University of Oklahoma, USA
15:40-16:00	**Measuring of the profile vibrations on the flutter critic flow velocity**
	Igor Zolotarev, Institute of Thermomechanics, Czech Republic
	Coffee Break @ Foyer 16:00-16:15
16:15-16:35	**Shape optimization of a wind turbine airfoil by using genetic algorithm**
	Erkan Orman, Anadolu University, Turkey
16:35-16:55	**The potential of origami-based sheet metal folding for vehicle design**
	Ala Qattawi, University of California, USA
Young Researcher Forum	
16:55-17:05	**Trial CO_2 extraction ceramic membrane with an integration of a CO_2 laser gas detector**
	Ngozi Claribelle Nwogu, Robert Gordon University, U.K
17:05-17:15	**Volatile organic compounds (VOCS) destruction over noble metal catalyst nano structured composite membranes**
	Mohammed Nasir Kajama, Robert Gordon University, U.K
17:15-17:25	**Evaluation and characterisation of composite mesoporous membrane for lactic acid and ethanol esterification**
	Edidiong Okon, Robert Gordon University, U.K
17:25-17:35	**Study of the selectivity of methane over carbon dioxide and inert gases using composite inorganic membranes**
	Habiba Shehu, Robert Gordon University, U.K
17:35- 17:45	**Effect of temperature on gas transfer through alumina membrane**
	Ifeyinwa Orakwe, Robert Gordon University, U.K
17:45-17:55	**A study on the impact of soil erosion in construction industry: Major problems and control measures**
	Umunnah U.P, Vanpas Agency Services, Nigeria
17:55-18:05	**Design of biomass digester and performance analysis, using local raw materials**
	Godson Ogubuike Osueke, Federal University of Technology, Nigeria
18:05-18:15	**A novel application of NFC smart phones for mobile data collection and storage; a case study**
	Ume Nnamdi , Nadel Bitmaps Technology Services , Nigeria
18:15-18:25	**A study on economic assessment of simultaneous use of depleted oil reservoirs for underground natural gas storage and enhanced oil recovery**
	Anyadiegwu C.I.C, Federal University of Technology , Nigeria
18:25-18:35	**A numerical study on prediction of the aerodynamic performance and design of a centrifugal compressor**
	Won-Seok Heo, Seoul National University, Republic of Korea

Day 2 October 06, 2015	
Redwood Sequoa	
Keynote Forum	
08:00-08:30	**Shape optimization of axisymmetric bodies in hypersonic reactive flow for minimizing drag and heat transfer** **Ramesh K. Agarwal**, Washington University, USA
08:30-09:00	**Insoluble discharge formation in the air cathode of Li-Air batteries** **Yun Wang**, University of California, Irvine, USA
Track 8: Design and Development of Rockets Track 9: Space Engineering Track 15: Applications of Aerospace Technology	
Session Chair: Elżbieta Jarzębowska, Warsaw University of Technology, Poland	
	Session Introduction 09:00-09:05
09:05-09:25	**Orbital debris: What are the best near-term actions to take? a view from the field** **Mark A. Skinner**, The Boeing Company, USA
09:25-09:45	**Asteroid redirection using synchronized femtosecond pulse trains** **Richard Fork**, University of Alabama Huntsville, USA
09:45-10:05	**Aerospace & Engineering the World's Future?** **Shawn Paul Boike**, America Industrial Consultants, USA
	Coffee Break @ Foyer 10:05-10:20
10:20-10:40	**Systems engineering approach and space technology transfer: The role of international relations and public policy** **Veronica La Regina**, Italian Space Agency (ASI), Italy
10:40-11:00	**The particle Universe** **Edwin Zong**, Oasis Medical Group Inc, USA
11:00-11:20	**Single event effects induced by high energy protons in gumstix computer on module technology** **Kathleen Morse**, Yosemite Space Groveland, USA
11:20-11:40	**Integral spatial intelligence for advanced terrestrial and celestial missions** **Peter Simon Sapaty**, National Academy of Sciences, Ukraine
Track 3: Airship Design and Development Track 4: Flight Vehicle Navigation Track 5: Vehicle Systems and Technologies Track 6: Design and Modelling of Aircraft and Helicopter Engines	
Session Chair: Mark A. Skinner, The Boeing Company, USA	
	Session Introduction 11:40-11:45
11:45-12:05	**Fluid-Structure interaction (FSI) analysis of a solar powered UAV** **Kevin R. Anderson**, California State Polytechnic University, USA
12:05-12:25	**Radar screening using weakly ionized plasmas** **Jonathan Blackledge**, University of KwaZulu-Natal, South Africa
12:25-12:45	**Allocation-based fault tolerant control with actuator dynamics for X-by-wire electric vehicles** **Weiwen Deng**, Jilin University,China
	Lunch Break @ Tiburon Sausalito 12:45-13:15
13:15-13:35	**Electromechanical vehicle direction sensor** **Khaled Asfar**, Jordan University of Science and Technology, Jordan
13:35-13:55	**One versus two: A different philosophy in simulated combat training** **Antonio O. Dourado**, Federal University of Santa Catarina, Brazil

Workshop	
13:55-14:55	**Space , Energy & Engineering the Future** **Shawn Paul Boike,** America Industrial Consultants, USA **David Hyland,** Texas A&M University, USA
Track 7: Robotics and Mechatronics Track 13: Mechanics, Dynamics and Controls	
Session Chair: Kevin R. Anderson, California State Polytechnic University, USA	
	Session Introduction 14:55-15:00
15:00-15:20	**Foundation of graduate study in mechanical engineering** **Shuh Jing Ying,** University of South Florida, USA
15:20-15:40	**A model-based debris tracking controller design for a free-floating space vehicle** **Elżbieta Jarzębowska,** Warsaw University of Technology, Poland
	Coffee Break @ Foyer 15:40-15:55
15:55-16:20	**Poster Sessions**
MA-001	**Blockage corrections in wind tunnel tests of small vertical axis wind turbines** **Soon-Duck Kwon,** Chonbuk National University, South Korea
MA-002	**Phase-field modeling of fracture in linear thin shells** **Fatemeh Amiri,** Bauhaus university of Weimar, Germany
MA-003	**MET-NET precursor units high level shock testing** **Joaquin Azcue,** Spanish National Institute of Aerospace Technology, Spain
MA-004	**INTA Thermal control design to MXGS Instrument for the ASIM payload** **Valvanera Eiriz Martinez,** Spanish National Institute of Aerospace Technology, Spain
MA-005	**Gaseous imperfections effect on the supersonic flow parameters for air in nozzles** **Merouane Salhi,** Institute of Aeronautics and Space Studies, Algeria
Speaker Sessions	
16:20-16:40	**Dynamic stability of visco-elastically supported plates** **Beatrice Pomaro,** University of Padova, Italy
16:40-17:00	**Design, simulation and optimization of a supersonic shot peening nozzle** **Zhi-Qian Zhang,** Institute of High Performance Computing A*STAR, Singapore
Young Researcher Forum	
17:00-17:10	**Dynamical performance analysis of hybrid vehicle based on turbocharger derivative micro gas turbine engine** **Moin U Ahmed,** Queen Mary University of London, U.K
17:10-17:20	**An integrated model for dendrite growth simulation in selective laser melting** **Chen Wenhao ,** Hong Kong University of Science and Technology, Hong Kong SAR, China
17:20-17:30	**The effect of individual input parameters on the development of imperfections during selective laser melting** **Tilita George Alexandru,** Hong Kong University of Science and Technology, Hong Kong SAR, China
17:30-17:40	**Aero spike Engine-The design of a LOX/Methane multi-chamber Aero spike Engine** **Wesley C. Young,** California State University , USA
17:40-17:50	**Supplier selection and order allocation using modified fuzzy AHP-based approach in manufacturing networks** **Nan Li,** Hong Kong Polytechnic University, Hong Kong
17:50-18:00	**Consecutive vortex ring formation from a pulsed jet** **Zachary Garcia,** University of Alaska Anchorage, USA
18:00-18:10	**R.A.W. car (Road, Air, Water Car)** **Arjun Jamedar,** Vignana Bharathi Institute of Technology, India
18:10-18:20	**Adaptive Feedforward Cancellation (AFC) for low frequency noise reduction in laboratory settings** **Suparoek Junsupasen,** King Mongkut's University of Technology, Thailand

Day 3 October 07, 2015	
Redwood Sequoa	
Track 10: Bioengineering and Bio-Mechanics Track 11: Material Processing Track 12: Energy Processing Track 14: Heat Transfer Systems Track 16: Mechanical Engineering and Management	
Session Chair: Sunwoo Kim, University of Alaska Fairbanks, USA	
	Session Introduction 10:00-10:05
10:05-10:25	**Investigation of the effect of tio2 on the thermal, mechanical and erosive properties of aviation thermoplastic composites**
	Fuat OKUMUŞ, Gediz University, Turkey
10:25-10:45	**A comparative study on optimization of machining parameters by turning nickel based super alloys according to taguchi method**
	Abdullah Altin, Van Yuzuncu Yıl University, Turkey
10:45-11:05	**Optimum configuration for roadway embankment stabilization on permafrost using constructal law**
	Sunwoo Kim, University of Alaska Fairbanks, USA
	Coffee Break @ Foyer 11:05-11:20
11:20-11:40	**Nano/Micro fluidic systems for circulating Tumor Cells (CTCs) rapid detection and diagnosis**
	Fan-Gang Tseng, National Tsing-Hua University, Taiwan
11:40-12:00	**Simulation research of driving schemes for a dynamic calibration system of fuel turbine flow meters**
	Wang Bin, Nanjing University of Aeronautics and Astronautics, China
12:00-12:20	**Study on the penny platform of variable stator vane in compressor**
	Yang Rongfei, Nanjing University of Aeronautics and Astronautics, China
12:20-12:40	**Flight control of a UAV using fuzzy gain-scheduled PID**
	Ahmet Ermeydan, Anadolu University, Turkey
12:40-13:00	**The research on technological parameters of short forming process of ring parts**
	Lu Jia, Taiyuan University of Science and Technology, China
13:00-13:20	**Effect of different building direction on fracture toughness of ultra-high strength aerospace components made by additive manufacturing**
	Hamza Alsalla, Exeter University, UK
13:20-13:40	**Heat transfer in cistern**
	Mohammadreza khani, Islamic Azad University, Iran
	Lunch Break @ Tiburon Sausalito 13:40-14:20
14:20-14:40	**Portable wheelchair scale**
	Shuh Jing Ying, University of South Florida, USA
14:40-15:00	**Design for reliability of mechatronic systems supported by knowledge-based systems in design process early phases**
	Jonny Carlos da Silva, Federal University of Santa Catarina (UFSC), Brazil
15:00-15:20	**Unmanned Aerial System (UAS) engine research at US Army research laboratory**
	Chol-Bum 'Mike' Kweon, US Army Research Laboratory, USA
Panel Discussion	
Best Poster Award	
Closing Ceremony	

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2360 Corporate Circle, Suite 400
Henderson, NV 89074-7722, USA
Ph: +1-888-843-8169
Fax: +1-650-618-1417
contact@omicsgroup.com

OMICS Publishing Group
5716 Corsa Ave., Suite 110, Westlake
Los Angeles, CA 91362-7354, USA
Ph: +1-650-268-9744
Fax: +1-650-618-1414
contact.americas@omicsonline.org

OMICS International
SEZ Unit, Building No. 20, 9th Floor
APIIC Layout, HITEC City
Hyderabad-500081, Telangana, INDIA
Ph: 040-40131823, 040-47482222
contact.asiapacific@omicsonline.org

Toll free
USA & Canada: +1-800-216-6499
Australia: +1-800-651-097
Europe: 0805-080048