

The International Conference for Students on Applied Engineering 2016 (ICSAE 2016)

Newcastle, United Kingdom

20-21 October 2016

Conference Program

International Conference for Students on Applied Engineering 2016 (ICSAE 2016) – Programme

Day 1 - Thursday, October 20

08:30 AM – 09:00 AM	Registration	
09:00 AM – 09:15 AM	Opening Remarks	Hall #2
09:15 AM – 09:45 AM	Keynote Speaker: Professor Masayoshi Esashi (Japan) "Microsystems by Heterogeneous Integration"	Hall #2
09:45 AM – 10:00 AM	Networking Break	Hall #3
10:00 AM – 11:00 AM	Period 1	Hall #1 and Hall #2
11:00 AM – 11:15 AM	Coffee Break	Hall #3
11:15 AM – 12:15 PM	Period 2	Hall #1 and Hall #2
12:15 PM - 01:00 PM	Lunch Break	Hall #3
01:00 PM - 02:00 PM	Period 3	Hall #1 and Hall #2
02:00 PM - 03:00 PM	Poster Break	Hall #3
03:00 PM - 03:45 PM	Period 4	Hall #1 and Hall #2
03:45 PM - 04:00 PM	Break	Hall #3
04:00 PM - 05:00 PM	Workshops (check the conference website for details)	Hall #1 and Hall #2

Hall #1	Hall #2
Special Session SS01a	Special Session SS02
Chair: Haider M. Abbas	Chair: Ali Baraka
Topics: Power, Energy and Power Electronics; Power Electronics and Control	Topics: Control Systems Engineering; Robotics, Automation and Mechatronics Engineering
Utilization of Harmonics Current in Single Phase System	Improved PID control for Tilting Trains
H. Al-Bayaty, M. Ambroze, M. Zaki Plymouth University	F. Hassan, A. Zolotas, R. Margetts University of Lincoln
Reduction of Emissions by Using Various Syngases with Different Injection Strategies Under Premixed Combustion Mode	Design, Fabrication and Testing of a Hybrid Micro-Motion XY Stage Driven By Voice Coil Actuators
H. Kurji O. Aniekan, A. Valera-Medina Cardiff University	X. Herpe, R. Walker, M. Dunnigan, X. Kong Heriot-Watt University
Effect of Hydrophobicity on Enhancement of Condensation Heat Transfer- CFD Simulation	3D Tire Inspection Using Microwave Open-Ended Waveguide Probe
A. Alammar, R. Al-Dadah, S. Mahmoud University of Birmingham	R. Sutthaweekul, M. Buhari, A. Sunny, G. Tian Newcastle University
Novel four Bed Adsorption System for Cooling and Power Generation	Test and Validation of Novel Lane-Departure Prevention System
F. Al-Mousawi, R. Al-Dadah, S. Mahmoud University of Birmingham	C. Ni, T. Gordon, D. Zhang, Y. Gao University of Lincoln

11:00 AM – 11:15 AM Coffee Break – Hall #3

	Special Session SS01a – Cont.	Special Session SS02 – Cont.	
	Chair: Haider M. Abbas	Chair: Ali Baraka	
	Topics: Power, Energy and Power Electronics; Power Electronics and Control	Topics: Control Systems Engineering; Robotics, Automation and Mechatronics Engineering	
	Development of Micro-Scale Radial Inflow Turbine for ORC Power System	A Flexible Control Allocation Method for Terminal Understeer Mitigation	
Period 2 11:15 AM – 12:15 PM	A. Al Jubori, A. Daabo, R. K. Al-Dadah, S. Mahmoud, A. S. Bahr Ennil University of Birmingham	Y. Gao University of Lincoln	
	Impact of Blade Configuration on Small Scale Cryogenic Axial Turbine Performance	Wrist Rehabilitation Exoskeleton Robot Based on Pneumatic Soft Actuators	
	K. M. Khalila, S. Mahmoud, R. K. Al-Dadah University of Birmingham	H. Al-Fahaam, Dr. S. Davis, Prof. S. Nefti-Meziani University of Salford	
	Modelling and Control of Non-Isolated High Voltage Gain Boost Converter Employing Coupled Inductor and Switched Capacitor	An Intelligent Approach for Classification of GPS Satellites based on Neural Networks and Evolutionary Algorithms	
	M. Muhammad, M. Armstrong, M.A. Elgendy Newcastle University	H. Azami, M. D. Soltani, I. Tavakkolnia University of Edinburgh	
	Development of Small-Scale Axial Turbine for Solared Power Brayton Cycle	Analyzing the 3D Printed Material Tango Plus FLX930 for Using in Self-Folding Structure	
	A. Daabo, A. Al Jubori, S. Mahmoud, R. K. Al-Dadah, A. Ahmad University of Birmingham	A. Abtan, B. Thomas, R. C. Richardson University of Leeds	

12:15 PM - 01:00 PM

Lunch Break – Hall #3

	Special Session SS01b	Special Session SS03
	Chair: Haider M. Abbas	Chair: TBC
	Topics: Power, Energy and Power Electronics; Power Electronics and Control	Topics: Antenna & Microwave Theory and Applications, Wireless Communication & Networks
	Effect of Fe3O4 Nanoparticle Size on Impulse Breakdown Strength of Mineral Oil-Based Nanofluids	Multiuser Orthogonal Signal Division Multiplexing for Doubly-Selective Fading Channel in Autonomous Vehicular Communications
Σ	M. Rafiq, C. Li, Y. Lv, K. Yi, M. Numan, U. Nasir North China Electric Power University	I. Tavakkolnia, M. D. Soltani, H. Azami, S. Mashhadi University of Edinburgh
Period 3 01:00 PM — 02:00 PM	An Integrated Building-to-Grid model for Evaluation of Energy Arbitrage Value of Thermal Storage M. B. Anwar, C. A. Cabrera, O. Neu, D. J. Burke, M. O'Malley University College Dublin	A 25um Spatial Resolution Broadband Microwave Voltage Probe. Ali M. L. Al-Ziayree, R. M. Perks and S. C. Cripps Cardiff University
	Liquid Nitrogen Air Conditioning System for Domestic Application A. Ahmada, R. Dadaha, S. Mahmouda University of Birmingham	Self-Organized Clustering Technique Based on Sink Mobility in Heterogeneous M2M Sensor Networks B. R. Al-Kaseem, A. O. Nyanteh, H. S. Al-Raweshidy Brunel University London
	Effects of Skin Friction, Tip Clearance and Trailing Edge thickness on Losses in Small Scale Cryogenic Axial Turbine	A Bacterial Foraging Algorithm Optimized Fuzzy Logic for Power Control of Code Division Multiple Access Cellular Systems
	K. M. Khalil, S. Mahmoud, R. K. Al-Dadah University of Birmingham	S. M. Yarima, J. D. Jiya, M. D. Buhari Abubakar Tafawa BAlewa University (ATBU) Bauchi

02:00 PM - 03:00 PM

Posters Break – Hall #3

	Special Session SS04 Chair: Konstantinos Goutsos
	Topics: Software & Database Systems, Computational Intelligence, Computer Architecture & Systems; Information and Communication Technology in Energy Systems; Software & Database Systems, Computational Intelligence, Computer Architecture & Systems.
Period 4 VM – 03:45 PM	Voice Conversion Algorithm Using Coefficient Mapping and Neural Network O. Agbolade, S. A Oyetunji Federal University of Akure, Nigeria
Peric 03:00PM –	Heuristic Scheduling of Smart Home Appliances with Uncertain Events in the Utility Planning C. Ogwumike, M. Short, F. Abugchem Teesside University
	Selecting the Appropriate Conditions for Steam Injection E O R: A Case Study of Block Shen84-An12, Liaohe Oilfield, Noth-East M. S.Danlami, T. Zhonghua, M. Habib, A. I Omeiza China University of Geosciences, Wuhan, China

04:00 PM – 05:00 PM	Workshop #1	Workshop #2
03.43 TW 04.00 TW	Dreak .	
03:45 PM – 04:00 PM	Break – Hall #3	

International Conference for Students on Applied Engineering 2016 (ICSAE 2016) – Programme

Day 2 - Thursday, October 21

08:30 AM - 09:00 AM	Registration	
09:00 AM – 09:30 AM	Keynote Speaker: Professor Kenneth Dalgarno (UK) "Printing Cells and Medical Devices"	Hall #2
09:30 AM – 09:45 AM	Networking Break	Hall #3
09:45 AM – 10:45 AM	Period 1	Hall #1 and Hall #2
10:45 AM – 11:00 AM	Coffee Break	Hall #3
11:00 AM – 11:45 AM	Period 2	Hall #1 and Hall #2
11:45 AM – 12:00 PM	Break	Hall #3
12:00 PM - 01:00 PM	Period 3	Hall #1 and Hall #2
01:00 PM - 01:45 PM	Lunch Break	Hall #3
01:45 PM – 02:30 PM	Period 4	Hall #1 and Hall #2
02:30 PM – 03:30 PM	Posters Break	Hall#3
03:30 PM – 04:30 PM	Awards and Prizes for "Best Papers" and "Best Posters"	Hall #2
04:30 PM – 05:00 PM	Closing Remarks	Hall#2

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Hall #1	Hall #2
Special Session SS05	Special Session SS07
Chair: Ross Harris	Chair: Atheer F. Hameed
Topics: Mechanical Systems Design; Material Engineering: Theory and Applications Nano/Micro Engineering or Nanotechnology	Topics: Structural Engineering and Projects Managements; Environment Engineering and Sustainable Development; Sound and Vibration
The Impact of Altitude, Latitude, and Endurance Duration on the Design of a High Altitude, Solar Powered Unmanned Aerial Vehicle	Progressive Collapse Resisting Mechanisms of Reinforced Concrete Structure
A. Alsahlani, T. Rahulan	K. Alogla, L. Weekes, L. Augusthus-Nelson
University of Salford	University of Salford
Ab Initio Calculations of Carbon Impurities in Lead Titanate	The Effects of Hydraulic Retention Time on the Sludge Characteristics and Effluent Quality in an ASSBR
M. Al-Hadidi, J.P. Goss, R. AL-Hamadany, P.R. Briddon, M. Ahmed,	
M. J. Rayson Newcastle University	A. W.N. Alattabi, C. B Harris, R. M. Alkhaddar, A. Alzeyadi Liverpool John Moores University
Preparation of Novel Nanocomposites Using the Ultra-Sonication Technique	Energy and Carbon Emission Savings Potential of Chemical Plant by Implementing Cogeneration Technologies
A. A. Mahuof, A. G. Gibson, G. Kotsikos, M. Konstantakopoulou	I. Shabbir, M. Mirzaeian
Newcastle University	University of the West of Scotland
Assessing the Applied Normal Load During Contact Mode AFM: an Issue with the Conventional Approach	
R. S.J. Al-Musawi, E. Brousseau, F. M. Borodich Cardiff University	

10:45 AM - 11:00 AM

Coffee Break – Hall #3

Period 2	11:00 AM - 11:45 AM
	11.

	Special Session SS05 – Cont.	Special Session SS07 – Cont.
	Chair: Ross Harris	Chair: Atheer F. Hameed
	Topics: Mechanical Systems Design; Material Engineering: Theory and Applications Nano/Micro Engineering or Nanotechnology	Topics: Structural Engineering and Projects Managements; Environment Engineering and Sustainable Development; Sound and Vibration
_	To What Extent are Fixed Roof Storage Tanks Shielded by Live and	Systems Engineering Approach to Design and Modelling of Smart
AZ	Snow Loads against Wind Loads?	Cities
Period 2 AM – 11:45 AM	N. Hsaine, F. Franklin Newcastle University	J. Muvuna Glasgow Caledonian University
Perio 11:00 AM –	The Difficulty on the Assess in Tool Life in CNC Milling	Analytical Simulation of Low Frequency Wave Radiation from a Buried Water Plastic Pipe
11	Z. J. Ahmed, P. Prickett, R. Grosvenor Cardiff University	M. Salimi, J. M. Muggleton, E.Rustighi University of Southampton
	Mechanical Characterization of Protective Coatings for Offshore Wind Turbine Towers and Transition Pieces	Comparison of PV Panel's Standard and Simplified Models
		M. R. Rashel, A. Albino, T. C. F. Goncalves, A. Veiga, M. T Ahmed, M.
	I. Lopez, P. S. Leung, F. Inam, C. Till, A. Paulsen	Tlemcani
	Northumbria University	University Of Evora, Portugal

11:45 AM - 12:00 PM

Break - Hall #3

	Chair: Sgardelis Pavlos	Chair: Sinziana Popescu
	Topics: Electronics Circuit & Systems, Signal Processing, Image	Topics: Sensors and Instrumentations
	Processing	
	Accurate Heat Loss Evaluation of Water-Cooled Electric Motors Using	Validation of Partial Discharge Emulators Simulation Using Free-
	a Differential Ultrasonic Calorimeter	Space Radiometric Measurements
		A. Jaber, P. Lazaridis, B. Saeed, Y. Zhang, U. Khan, D. Upton, H.
Σ		Ahmed, P. Mather, M. F. Q. Vieira, R. Atkinson, M. Judd,
D PI	The University of Nottingham	University of Huddersfield
2	Quadruped Locomotion Analysis Using 3-Dimensional Video	An Evaluation of the Use of Low-Cost Accelerometers in Assessing Fishing Vessel Stability through Period of Motions
PN (K. Abduljabbar, M. F. Hansen, M. L. Smith, and L. N. Smith	N. O. Abankwa, G. Squicciarini, S. J. Johnston, M. Scott, S. J. Cox
5:00	Bristol Robotics Laboratory	University of Southampton
13	Partial Discharge Detection Using Software Defined Radio	Design and Experimental Evaluation of a Test Rig for Ultrasonic
		Monitoring of Accelerated Corrosion
	H. Mohamed, P. Lazaridis, D. Upton, U. Khan, B. Saeed, A. Jaber , Y.	
	Zhang, P. Mather, M. F. Q. Vieira, K. W. Barlee , D. S. W. Atkinson, I.	
	A. Glover	N. Suchato,
	University of Huddersfield	University of Nottingham
		Wireless Sensor Networks for In situ Energy Efficiency Monitoring
	12:00 PM – 01:00 PM	Topics: Electronics Circuit & Systems, Signal Processing, Image Processing Accurate Heat Loss Evaluation of Water-Cooled Electric Motors Using a Differential Ultrasonic Calorimeter A. Hashmi, A. N. Kalashnikov, R. A. Light, M. Malakoutikhah The University of Nottingham Quadruped Locomotion Analysis Using 3-Dimensional Video K. Abduljabbar, M. F. Hansen, M. L. Smith, and L. N. Smith Bristol Robotics Laboratory Partial Discharge Detection Using Software Defined Radio H. Mohamed, P. Lazaridis, D. Upton, U. Khan, B. Saeed, A. Jaber, Y. Zhang, P. Mather, M. F. Q. Vieira, K. W. Barlee, D. S. W. Atkinson, I. A. Glover

Special Session SS06

01:00 PM - 01:45 PM Lunch Break - Hall #3

J. Cowlyn,

Northumbria University

Special Session SS08

	Special Session SS06 – Cont.	Special Session SS09	
	Chair: Sgardelis Pavlos	Chair: Amir Dehsarvi	
	Topics: Electronics Circuit & Systems, Signal Processing, Image Processing	Topics: Biosensors, Biomedical Engineering and Medical Systems Engineering	
Period 4 PM – 02:30 PM	Adaptive OFDM Subcarrier Selection for SAR Target Reconstruction M.D. Buhari, G.Y. Tian, R.Tiwari Newcastle University	The Development and Evaluation of a Sensor-Fusion and Adaptive Algorithm for Detecting Real-Time Upper-Trunk Kinematics, Phases and Timing of the Sit-to-Stand Movements in Stroke Survivors S. F. Ho, A. Thomson, A. Kerr University of Strathclyde	
Peri 01:45 PM	Secure and Robust Watermarking Using Arnold Transform and Neyman-Pearson Decoder	Kinematic Analysis of the Shoulder Mechanism in Able-bodied Non- Experienced Manual Wheelchair Users (MWUs)	
	M. D. Soltani, I. Tavakkolnia, H. Azami University of Edinburgh	H. A. Lafta, R. Guppy, G. Whatling, C. Holt Cardiff University	
		Effect of Tool and Drilling Parameters on Surface Topography of Bone Drilled Holes: an Invitro Study	
		G. Singh, R. Jindal, V. Jain, D. Gupta Thapar University, Patiala, India	

	02:30 PM – 03:30 PM	Posters Break – Hall #3
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	03:30 PM – 04:30 PM	Awards and Prizes for "Best Papers" and "Best Posters" – Hall #2
	04:30 PM – 05:00 PM	Closing Remarks— Hall #2

International Conference for Students on Applied Engineering 2016 (ICSAE 2016) – Programme Posters

Poster No.	Paper ID	Posters
1	120	A Novel Flowrate Control Method for Single Flow Zinc Nickel Battery Xiang LI, C.K Wong, Zhile Yang The University of Macau, Queen's University Belfast
2	132	Optimum Specific Volume of Fresh Water in Evaporator for Single Bed Adsorption Ice Making-Freeze Desalination System H.J. Dakkama, P.G. Youssef, R.K. AL-Dadah, Saad Mahmoud, Wisam A.M. Al-Shohani University of Birmingham
3	143	Heat Release Rate and Pressure Fluctuation of Lean Premixed Flame at Different Forcing Levels Aniekan Okon, Hayder Kurji, Agustin Medina, Yiqin Xue Cardiff University
4	146	Evaluation of the Convection Heat Transfer Coefficient of a Thermoelectric Distillation System Hayder Al-Madhhachi, Martin Prest and Gao Min Cardiff University
5	151	A Study on the Two Stage Wankel Expander Performance Ghada A. Sadiq, Gavin M. Tozer, Saad M. Mahmoud, Raya K. Al-Dadah University of Birmingham
6	162	Impact of Inertia Emulation Control of Grid-Scale BESS on Power System Frequency Response Samir M. Alhejaj, Francisco M. Gonzalez-Longatt Loughbrough University
7	218	Optimal Switching Performance of IGBT Using Active Gate Drive for PWM Converters K. Tan, Z. Wang, B. Ji, P. Lefley University of Leicester

Poster No.	Paper ID	Posters
8	257	High Efficiency Fault Tolerant Single Stage Dual Output Smart Battery Charger: Marine Application
8	257	M. Salehifar, G. Putrus, D. Gao, V. Dargahi, P. Barras Northumbria University
9	124	Photovoltaic Fault Detection Algorithm Using Virtual Instrumentation LabVIEW Software Mahmoud Dhimish, Violeta Holmes, Mark Dales University Of Huddersfield
10	149	Control System Design for Fuel to Air Ratio in an Internal Combustion Engine with Unknown Time-Delay and Fuel Fraction Impinging Manifold's Wall Ali I. H. Al-zughaibi, Najah F. Jasim Cardiff University
11	180	3D Position Mapping of Continuum Arm Alaa Al-Ibadi, Samia Nefti-meziani, Steve Davis University of Salford
12	240	Online Estimation of Engine Driveline Dynamic Response M. Madamedon, F. Gu and A.D Ball University Of Huddersfield
13	243	A New Metric to Assess the Tip Condition of AFM Probes Based on Three-Dimensional Data Zaynab N. Alraziqi, Emmanuel Brousseau Cardiff University
14	109	Convolutional Codes Defined In GF(q) Combine With PNC Over Impulsive Noise Channel yuanyi zhao, Martin Johnston, Charalampos Tsimenidis Newcastle University
15	111	Dual-Band Bandpass Filter Using Coaxial Stepped Impedance Resonators Yahui Wu, Ruwan Gajaweera, Jeremy Everard University of York

Poster No.	Paper ID	Posters
		An Optimisation of a Freeform Lens Design for LED Street Lighting
16	161	Sina Babadi, Roberto Ramirez-Iniguez, Tuleen Boutaleb, Tapas Mallick. Glasgow Caledonian University
17	174	Multi-Layer Perceptron as Equalizers for Multilevel Pulse Amplitude Modulation Scheme in Short Range SI-POF Isaac Osahon Institute of Digital Communication, UK
18	190	Analyzing Coupling Effect of Adjacent Resonating Metamaterial Slabs Musa Bute and Ugur C. Hasar GAZIANTEP UNIVERSITY, Turkey
19	207	Rank Deficient Decoding for Arithmetic Subspace Network Coding Pourya Karimian, Masoud Ardakani University of Alberta, Canada
20	225	An Intelligent Intrusion Detection Scheme for Self-driving Vehicles Based On Magnetometer Sensors Khattab M. Ali Alheeti, Klaus McDonald-Maier University of Essex
21	242	Particle Filter for Mobile Station Positioning in a Cellular Network N. Mezhoud, N. Bouzera, M. Oussalah, A. Zaatri, Z. Hammoudi Electrical Engineering Laboratory of Bejaia (LGEB), Algeria
22	131	Open Public e-Procurement Solution Tackle Corruption in Iraq Mahdi Al-Ajwad University of Southampton
23	140	New Rules for Deriving Formal Models from Text Muss Omer and David Wilson University of Huddersfield

Poster No.	Paper ID	Posters
		Topology Optimization of Wireless Networks by Means of Brute Force Algorithm and Intel Xeon Phi Coprocessor
24	227	Aye Min Thike, Sergey Lupin and Yuriy Vagapov National Research University of Electronic Technology, Russia
25	153	Assessment of the Effects of Residual Stresses on Fatigue Life of Real Rough Surfaces in Lubricated Contact Maasi F AL-Mayali, H. P. EVANS and K. J. SHARIF Cardiff University
26	184	The Aerodynamics of Vehicle Platooning Using CFD Hesham Ebrahim, Robert Dominy, Pak Sing Leung Northumbria University
27	233	Nucleation Regions Observation and Coercivity Determination of Sintered Permanent Magnets Using MFM Muhsien M. Yazid, Sarah H. Olsen, Glynn Atkinson Newcastle University
28	246	Influence of Various Titanium Oxide Blocking Layers on Performance of Dye-Sensitized Solar Cells Mateusz Augustyniak, Gao Min Cardiff University
29	208	Optimal Beam Radius for LED-Based Indoor Positioning Algorithm Manisha Ajmani, Sinan Sinanovic, Tuleen Boutaleb Glasgow Caledonian University
30	211	Impact of Timing Jitter on the Performance of Carrier Amplitude and Phase Modulation Kabiru O. Akande, Wasiu O. Popoola The University of Edinburgh
31	222	Optimization of Duty Cycle for LED Based Indoor Positioning System Popoola O. R, Popoola W. O, Ramirez-Iniguez R, and Sinanovic S. Glasgow Caledonian University

Poster No.	Paper ID	Posters
32	249	Bio-Inspired Object Recognition System for Recognizing Nature Scene Dataset Ali Alameer Newcastle University
33	121	Finite Element Prediction of Brittle Failure in RC Beams Strengthened with Externally Bonded FRP Material Akram Jawdhari, Ali Semendary, and Nawfal Hsaine University of Kentucky, US
34	238	MD TOFAEL AHMED University of Evora, Portugal
35	105	Determination and Optimization of the Mathematic Model Using the Non-Linear Least Square and Iteration Methods M. Abdalla, J. Zhang and R. Cheng Teesside University
36	221	An Investigation Into the Effects of Pattern Geometries on Laser Trimmed Film Resistors Maria Alafogianni, Martin Birkett, Roger Penlington Northumbria University
37	254	Modal Sensitivity Enhancement of Few-Mode Fiber Bragg Gratings for Refractive Index Measurement M. Mahmood Ali, Sanober F. Memon, Kok-Sing Lim, Harith Ahmad, and Elfed Lewis Optical Fibre Sensors Research Centre, University of Limerick, Ireland
38	141	Use of Graph Metrics to Classify Motor Imagery Based BCI Lorena Santamaria, Christopher James University of Warwick
39	157	Drawing Higher SSVEP Response from LED Visual Stimulus with Varying Luminosity Levels Surej Mouli, Ramaswamy Palaniappan University of Kent
40	259	Refined Composite Multiscale Entropy for Analysis of Resting-state Magnetoencephalograms in Alzheimer's Disease Hamed Azami, Alberto Fernandez, and Javier Escudero The University of Edinburgh