**2nd International Conference on Engineering and Innovative Technology**

 **SU-ICEIT19**

**14-16 April 2019**

**Erbil-Kurdistan, Iraq**

**A Message from the General Chair**

On behalf of the SU-ICEIT19 organizing committee, I am honored and delighted to welcome you to the 2nd International Conference on Engineering and Innovative Technology, Erbil, Kurdistan-Iraq.

It was our great honor and pleasure to accept the responsibilities and challenges of Conference General Chairs. SU-ICEIT19 has brought together a tremendous and rich diversity of authors and speakers from universities around the globe to share ideas and new perspectives on a wide range of Engineering research and technologies. The conference received 123 research papers and 78 papers have been accepted.

Our program is rich and varied with invited talks and research papers split between 3-4 parallel oral sessions each day. The conference is organized as a set of tracks in all fields of Engineering. The conference provides a forum to exchange experiences and promote new trends in the field of computer and systems engineering.

Through this conference, we would like to engage with all of you in an open and constructive dialogue to advancing today’s engineering and technological environments. We hope that the conference will be stimulating, informative, enjoyable and fulfilling experience to all who attend it.

I would like to close this welcome with a round of thanks for everyone who has made SU-ICEIT19 possible. I would like to start by thanking my fellow members of the Organizing Committee, for their tremendous effort, dedication and time to overcome the challenges. I would particularly like to extend our gratitude to our many sponsors (Mass Group, Korek Tell.,Galala Company,Andazeary Rang Group, Swat Company, McGraw Hill and Elsevier) for supporting the conference and the associated events.

And I would like to thank our invited speakers for agreeing to take time out of their busy schedules to give us their perspectives on a broadranging set of topics. Finally, many thanks for yours Once again, welcome to Erbil.



Professor Dr. Safeen Yaseen Ezdeen

Conference General Chair

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#  SU-ICEIT19 Agenda

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|  | **Sunday 14 April 2019**  |
| 9:00 – 10:00am  | Registration and Reception  |
| 10:00 -11:00am  | Opening Ceremony (Main Conference Hall) Speaker: Dr. Habil Jurgen BastTopic: Mechanical Engineering: Innovations in Design, Materials and Manufacturing  |
| 11:00 -11-30am  |  Coffee Break  |
| 11:30 -12:30pm  | Special Session (Main Conference Hall) **Speaker: Dr. Barend Wind** Topic: The online classroom as a platform for international debates on spatial planning policies: Re-thinking the role of architects and engineers in Kurdistan’s social and spatial development **Speaker: Dr. Meisam Tabatabaei**  Topic: The 2018 report of the Lancet Countdown on health and climate change: shaping the health of nations for centuries to come  |
| 12:30 -1:30pm  | Lunch  |
| 1:30 - 3:00pm  | Session #1 ( SR1) Civil Engineering  | Session #2 ( SR2) Electrical Engineering  | Session #3 ( SR3) Mechanical Engineering  |
| 3:00 -3:30pm  | Coffee Break  |
| 3:30 - 5:00pm  | Session #4 ( SR1) Architectural Engineering  | Session #5 ( SR2) Civil Engineering  | Session #6 (SR3) Mechanical Engineering  |

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|  | **Monday 15 April 2019**  |
| 9:00 - 9:30am  | Special Session (Mechanical Conference Hall) **Speaker: Dr. Paolo Monesi** Topic: Multimedia technologies in Museum communications: Tradition/ Innovation  |
| 9: 30 - 11am  | Session #7 (SR1) Electrical Engineering  | Session #8 (SR2) Software Engineering  | Session #9 (SR3) Mechanical Engineering  | Session #10 ( SR4) Civil Engineering  |
| 11:00 - 11:30am  | Coffee Break  |
| 11:30am-1:00pm  | Session #11 ( SR1) Electrical Engineering  | Session #12 (SR2) Mechanical Engineering  | Session #13 (SR3) Geo & Dam Engineering  | Session #14(SR4) Chemical Engineering & Physics  |
| 1:00 - 2:00pm  | Lunch  |
| 2:00 - 2:30pm  | Special Session (Mechanical Conference Hall) **Speaker: Dr. Rodrigo Lozano** Topic: Assessing sustainability in higher education institutions  |

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|  | **Tuesday 16 April 2019**  |
| 9:00 - 9:30am  | Special Session (Mechanical Conference Hall) **Speaker: Dr. Hassan Bevrani**  Topic: Future Power Grids Monitoring and Control: Challenges and Solutions  |
| 9:30 - 11:00am  | Session #15 (SR1) Civil Engineering  | Session #16 (SR2) Mechanical Engineering  | Session #17 (SR3) Architectural Engineering  |
| 11:00 - 11:30am  | Coffee break  |
| 11:30 - 12:00am  | Closing Ceremony  |

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|  |  | **Session #1**  |
| **Sunday** **14 April 2019**1:30 - 3:00 pm Seminar Room SR1 Civil Engineering Session Chair Dr. Dilshad Kakasor  | **Paper ID**  | **Paper Title**  |
| 21  | Some mechanical and physical properties of cement mortar reinforced by wires of scrap tires *Ahmed H. Ali, Sarmad I. Ibrahim, Mohammed R. Ghakan*  |
| 51  | Study on strength and corrosion performance of slurry infiltrated Fiber Concrete Exposed to Simulated Acid Rain *Mays F. Alrubaie, Shakir A. Salih, Waleed A. Abbas*  |
| 66  | The possibility of using fiber reinforced self-compacting lightweight concrete for the manufacture of floating structures  *Danar AltalabanI, Stefan Linsel, Dillshad. K.H. Bzeni* |
| 83  | Smart cement modified with nano fly ash and micro fiber for oil well applications  *Alaa A. Abdul-hamead, Farhad M. Othman, Doaa M. Abdullah*  |
| 112  | An experimental investigation into the factors affecting strength and flowability of geopolymer binder  *Ahmed S. Jamal, Dilshad K. Bzeni, Takafumi Noguchi*  |

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|  |  | **Session #2**  |
| **Sunday** **14 April 2019** 1:30 - 3:00 pm  Seminar Room SR2 Electrical Engineering  Session Chair Dr. Mohammed Ibrahim | **Paper ID**  | **Paper Title**  |
| 30  | Reducing the effect of total harmonics distortion of synchronous machines  *Haydar Ahmad , Aree Akram*  |
| 46  | Performance improvement of interconnected 400kV, 50Hz Kurdistan and Iraq power systems using proposed HVDC link  *Truska Kh.Muhammad, Aree Ak*ram |
| 62  | Permanent magnet synchronous motor drive based on maximum boost control Z-source SVPWM  *Laith A. Mohammed, Basil M. Saied*  |
| 76  | Fault zone identification in Kurdistan power system using artificial neural network  *Alaa M. Abdulrahman*  |
| 75 | Power allocation in index modulated trigonometric transform based multi-carrier system Samah Mustafa |

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|  |  | **Session # 3**  |
|  **Sunday** **14 April 2019** 1:00- 3:30 pam  Seminar Room SR3 Mechanical Engineering  Session Chair Dr.Riadh Habash | **Paper ID**  | **Paper Title**  |
| 13  | The behavior of Glauber's salt as a heat storage material for residential Iraqi buildings  *Marwa H. Wasmi, Hayder M. Jaffal, Tawfeeq W. Mohammed*  |
| 18  |  Effect of naco-cerium oxide and water additives on B5 combustion emissions  *Esmail Khalife, Taha R. Shojaei, Meisam Tabatabaei, Bahman* *Najafi, Mostafa Mirsalim, Mohamad A. Mohd Salleh*  |
| 35  | Methods of using water additive and its effect on performance and emissions of diesel engine  *Homa Hosseinzadeh-Bandbafha1, Esmail Khalife, Meisam* *Tabatabaei, Taha R. Shojaei, Mortaza Aghbashlo*  |
| 56  | Locally resonant acoustic metamaterial structures with stop band behavior for muffler applications  *Saman Ebrahimi-Nejad, Majid Kheybari* |

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|  |  | **Session # 4**  |
| **Sunday** **14 April 2019** 3:30 - 5:00 pm  Seminar Room SR1 Architecture Engineering  Session Chair Dr. Hussien Ali    | **Paper ID**  | **Paper Title**  |
| 8  | The metaphor of nature as a strategy for modern bathroom design  *Eman Al-Brefkani*  |
| 39  | The impact of employed solar systems in architectural projects facades  *Maysaa M. Alobaidi, Nasma Maan M. Thabit*  |
| 41  | A theoretical framework of design strategies that stimulate the process of self-healing for occupations  *Ghada M. Younis*  |
| 45  |  Form-finding in digital architecture: a case study of tower designs. *Dhuha A. Al-kazzaz* |
| 88  | Water as an element of architectural space design-study the psychological impact of water on the users of the space  *Khawola F. Mahmoud, Hiyam M. Al-Bary, Assda A. Altuhafi*  |

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|  |  | **Session # 5**  |
| **Sunday** **14 April 2019** 3:30 - 5:00 pm  Seminar Room SR2 Civil Engineering  Session Chair Dr. Dana Kh. Maulood  | **Paper ID**  | **Paper Title**  |
| 7  | Comparative analysis of disinfection techniques performances in drinking water treatment plant using a process simulation software  *Hayder M. Issa*  |
| 43  | Analyzing the Hypothetical Shock Wave during Mosul Dam Break by Using Geographic Information System and Gene Expression Programming  *Hindreen M. Nazif*  |
| 91  | Validation of the computational ansys-cfx code for free surface flow: skimming flow over non-uniform step size stepped spillways  *Shawnm M. Saleh, Sarhang M. Hussain*  |
| 100  | Essential Treatment Processes for Industrial wastewaters and Reusing for Irrigation*Shuokr Q. Aziz , Shawnm M. Saleh, Imad A. Omar*  |
| 123  | Comparison between neuman and dupuit for pumping test in water table aquifer  *Dana K. Mawlood , Srwa O. Ismail*  |

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|  |  | **Session # 6**  |
|  **Sunday** **14 April 2019** 3:30 - 5:00 pm Seminar Room SR3 Mechanical Engineering  Session Chair Dr. Shawnim Rashid  | **Paper ID**  | **Paper Title**  |
| 42  | Mechanical properties of poly methyl methacrylate filled with orange peels.  *Reem A. Mohammed, Ahmed Al-Ghabban*  |
| 52  | Development the fracture toughness for the heat cured acrylic by blending it with natural rubber or silicone rubber and reinforced by pomegranate peels powder  *Sihama I. Salih, Auda J. Braihi, Hussein M. Sadeq*  |
| 101  | Comparative study of the flexural strength and impact strength properties between two types of the ternary polymer blends.  *Sihama I. Salih, Wafaa M. Salih, Teeb A. Mohameed*  |
| 104  | Study on the Ti-C/nano-ceramic additives reaction due to sintering of elemental powders.  *Ahmed al-Ghaban, Niveen Jamal, Hadeel Ahmed*  |
| 113  | Effect of heat input condition on the microstructure and mechanical properties of the stir welded high-Ni TRIP steel joints *H.G. Tehrani-Moghhadam, H.R. Jafarian*  |

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|  |  | **Session #7**  |
|  **Monday** **15 April 2019** 9:30 -11:00am  Seminar Room SR1 Electrical Engineering  Session Chair Dr. Basil Said  | **Paper ID**  | **Paper Title**  |
| 11  | The complete switching circuit design for CPU joint body biasing and supply voltage scaling  *Diary R. Sulaiman, Ibrahim I. Hamarash, Muhammed A. Ibrahim*  |
| 106  | Analytical framework for the capacity and delay quantification wireless sensor network(WSN)  *Teba A. Ihad, Sara A.Alwash, Mahmood F. Mosleh*  |
| 118  | Continuous control set model predictive control (CCS-MPC) of a three-phase rectifier  *Mohammad shadnam, Masood Saeidi, Abolfazi Yahedi, Hossein Azizi*  |
| 122  | Transient stability assessment using energy function of the power system  *Hamid R. Shabani, Mohsen Kalantar*  |
|  | 120 | Irreversible demagnetization analysis of the line start permanent magnet motor using time stepping finite element method  *Farshid Mahmouditabar, Abolfal Vahedi* |

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|  |  | **Session #8**  |
|  **Monday** **15 April 2019** 9:30 -11:00 am  Seminar Room SR2 Software Engineering  Session Chair Dr. Moayad Potrus   | **Paper ID**  | **Paper Title**  |
| 34  | Steganography-based password management: a conceptual model *Omed S. Khalind*  |
| 70  | Benign and malignant breast cancer features based on region characteristics  *Gullanar M. Hadi*  |
| 61  | Visualizing and Comparing Performance of Heuristic Algorithms to Play Dots-and-Boxes Game. *Sanar Abduljabbar, Polla Fattah, Natasa Milic-Frayling*  |
| 111  | Using inertia sensors for orientation estimation of two links robot manipulator  *Dler S. Hasan, Carl Crane, Ibrahim I. Hamarash*  |

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|  |  | **Session #9**  |
|  **Monday** **15 April 2019** 9:30 – 11:00 am  Seminar Room SR3 Mechanical Engineering  Session Chair Dr. Habil. J. Bast   | **Paper ID**  | **Paper Title**  |
| 5  | Voice controlled wheelchair using DSK TMS320C6713  *Ganesh Babul*  |
| 19  | Simulation the effect of impact on the mobile cover using solid works analysis  *Serwan S. Mohammed, Ahmad T. Azeez*  |
| 54  | Design for energy and electromagnetic friendly buildings  *Riadh Habash, Kristina Djuki, Gandhim Habash, Jonathan Chiasson*  |
| 114  | A new hybrid differential evolution with gradient search for level set topology optimization  *Javad Marzbanard, Pooya R. Varnousfaderani*  |
| 115  | Analytical and numerical acoustic behavior of an automotive passenger compartment in order to reduce interior noise level with viscoelastic material  *Javad Marzbanrad, Mehdi Mozaffarikhah, Mohammad Hafezian*  |

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|  |  | **Session #10**  |
|  Monday 15 April 2019 11:30am-1:00pm  Seminar Room SR4 Civil Engineering  Session Chair Mr. Qubad Zaki  | **Paper ID**  | **Paper Title**  |
| 9  | The ellipse of position Error  *Mohammed Anwer Jassim*  |
| 55  | Integration of terrestrial laser scanning and digital close-range photogrammetry for heritage documentation  *Bakhtyar A. Mala , Dleen M. Salih, Haval A. Sadeq*  |
| 90  | Implementation of unmanned aerial vehicle for cadastral mapping  *Rojgar Q. Ismael, Qubad Z. Henari, Azad A. Abdulwahab*  |
| 84  | Reducing waste of construction materials in civil engineering project in Iraq  *Mahmood M. Mahdi, Noori S. Ali*  |
| 102  | Comparison and assessment of using primavera and Microsoft project in construction projects in Erbil city. *Khalil I.. Wali, Shamal A. Othman*  |

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|  | **Session #11**  |
| **Monday****15 April 2019** 11:30 am -1:00 pm   Seminar Room SR1 Electrical Engineering Session Chair Dr. Abolfazl Vahedi | **Paper ID**  | **Paper Title**  |
| 2  | Adaptive frequency domain equalizer for MIMO SCFDMA System  *Maha George*  |
| 38  | Effect of Number of Base Station Antennas on the Performance of Massive MIMO System  *Bzhar R. Othman, Thuraya M Qaradaghi*  |
| 40  | Improved data rate 5G c-node-b design with 64x64 MIMO  *Ibtihal H. Yousif, Jalal J. Hamad Ameen*  |
| 49  | Broadband Diamond-Patch-Shape Monopole Microstrip Antenna for X-band Applications  *Halgurd N. Awi, Bzhar R. Othman, Aven R. Hamza*  |
| 50  | Study of fault detection techniques for optical fibers  *Tariq A. Ali, Jalal J. Hamad Ameen*  |

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|  |  | **Session #12**  |
| **Monday** **15 April 2019** 11:30 am- 1:00pm  Seminar Room SR2 Mechanical Engineering  Session Chair Dr. Meisam Tabatabaei    | **Paper ID**  | **Paper Title**  |
| 77  | Geometrical and thermodynamical design of a micro-radial turbine for different organic fluids  *Masood Ebrahimi, Davood Ghasemi, Ali Keshavars*  |
| 89  | Permance evaluation of a variable refrigerant flow airconditioning  *Kawa A. Abdullah*  |
| 109  | An investigation into the effect of regular polygonal crosssections on the thermal performance of microchannel heat sinks  *Salman Soltanian, Fatemeh Almasi, Mohammad Reza Shetab*  |
| 116  | Optimization of spacer-filled channel hydrodynamics and mass transfer using CFD simulations coupled with RSM  *Mahdi Moghimi, Nematollah Mansoure*  |
| 117  | Energy analysis of a novel continuous solar-driven hydrogen production system assisted by absorption refrigeration system  *Mahdi Moghimi, Hossein Pourrahmani*  |

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|  |  | **Session #13**  |
| **Monday** **15 April 2019** 11:30am - 1:00 pm  Seminar Room SR3 Geo & Dam Engineering  Session Chair Dr. Omar Qarani  | **Paper ID**  | **Paper Title**  |
| 32  | Seismic behavior analysis considering soil structure interaction of RC multistory buildings in halabja city.  *Hunar Farid Hama, Rabar Faraj, Kamaran Mohammed Kareem*  |
| 69  | Formation of the topology of a complex constructive structure in a multi criteria problem.  *V.S.shmukler , Feirusha S. H., O.I. Lugchenko, A.H. Nazhem*  |
| 79  | About the possibility for control of nature of seismic effect of bulky material on lateral surface  *V.S.Shmuler, Feirusha S.H., O.Kalmykov, R. Khalife*  |

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|  |  | **Session #14**  |
| **Monday** **15 April 2019** 11:30am - 1:00pm  Seminar Room SR4 Chemical Engineering   Session ChairMr. Zyad Talabani    | **Paper ID**  | **Paper Title**  |
| 1  | Technical and environmental study of acid gas Reinjection into SEEPAGE bed in an oil & gas field of Erbil governorate  *Farhad A. Khoshnaw, Sarhad A. Farkha, Pshtiwan T. Jaf*  |
| 78  | Crisp set tuning of membership functions in fuzzy logic inference systems by probability density functions  *Farshid Yari, Kaveh Mollazade, Jalal Khodaei*  |
| 110  | Ethanol production from municipal solid waste  *Peyman Mahmoodi, Keikhosro Karimi*  |
| 119  | Fabrication of superhydrophobic CuO-ZnO nanostructural films on the stainless steel meshes for oil-water separation  *Elmira Velayi, Reza Norouzbeigi*  |

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|  |  | **Session #15**  |
|  **Tuesday** **16 April 2019** 9:30 - 11:00 am  Seminar Room SR1 Civil Engineering  Session Chair Dr. Ali Ramazan  | **Paper ID**  | **Paper Title**  |
| 36  | Assessment the stones compatibility based on salt weathering tests *Assad Al-omari*  |
| 44  |  Determining casagrande liquid limit by cone penetration method  *Hawkar Hashim Ibrahim,, Krikar Gharrib Noori*  |
| 58  |  Freeze-thaw behavior of gypseous soil *Abdulrahman Aldaood, Marwen Bouasker, Amina Khalil, Ibrahim Alkiki, Muzahim Al-mukhtar*  |

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|  |  | **Session #16**  |
|  **Tuesday** **16 April 2019** 9:30 am - 11:00 am  Seminar Room SR2 Mechanical Engineering  Session Chair Dr. Sherko Baban   | **Paper ID**  | **Paper Title**  |
| 10  | Experimental study of the Impact of added packing on performance characteristics of closed wet cooling tower based on energy analysis  *Qasim Saleh , Hayder Mohammed Jaffal*  |
| 48  | Fabrication, design and analysis of waste chicken feathers fibers composites for automotive doors. *Ahmed Mudhafar, Aseel Mahmood, Amar Jabbar*  |
| 65  | Influence of the dividing surface notion on the formulation of Tolman's law.  *M. T. Horsch*  |
| 121   | Efficient implementation of multi-polar multi control quantum gates  *Saeed Kohzadi*  |
|  | 82 | A novel route for synthesis of ultra-high temperature diboride nanoceramics: magnesiothermic combustion method*Maisam Jalaly* |

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|  | **Session #17**  |
| **Tuesday** **16 April 2019** 9:30 - 11:00am  Seminar Room SR3 Architecture Engineering  Session Chair Dr. Mahmood Xayat   | **Paper ID**  | **Paper Title**  |
| 63  | The Iraqi practice in urban conservation an assessment of some projects in Baghdad after 1950.  *Mazin J. Alnemaa, Emad H. Ismaeel, Mumtaz H. Dawood*  |
| 64  | Effect of changed family size and composition on determining the optimum size of neighborhoods in Erbil and Kurdistan  *M I Dizayee*  |
| 72  | Adaptive reuse of heritage buildings: old buildings in Mosul as a case study  *Mafaz T., Anwar M.*  |
| 74  | Classification of traditional residential buildings in the old city of Mosul using a computer program  *Assda A. Al-Tuhafi , Khawola F. Mahmoud*  |
| 107  | Decision-making tool for energy and thermal comfort optimization using passive strategies  *Istvan Kistelegdi, Chro Hama Radha, Baranyai Balint*  |