



**INTERNATIONAL SYMPOSIUM ON
RECENT ADVANCES
IN ELECTRICAL ENGINEERING AND
COMPUTER SCIENCES**

October 20-22, 2020

ORGANIZED BY

**Department of Electrical Engineering (DEE),
Department of Computer and Information Sciences (DCIS),**

Pakistan Institute of Engineering & Applied Sciences (PIEAS), Islamabad

RAEE&CS-2020 Technical Program

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	International Symposium on Recent Advances in Electrical Engineering & Computer Sciences 2020 (IEEE RAEECS-2020)
October 20, 2020 (Tuesday)	
09:30 – 10:20	Opening Ceremony Venue: Lyceum
10:30 – 11:00	Networking Tea
11:00 – 11:40	<i>Invited Talk-1</i> Dr. Irfan Ahmed Assistant Professor, Computer Science Virginia Commonwealth University, USA Title: <i>A Tale of a New PLC in Town: Exploitation and Mitigation of Modicon M221 Programmable Logic Controller</i> Venue: Lyceum Session Chairs: Dr. Muhammad Abid Mughal & Dr. Shehzad Qureshi
11:40 – 13:00	Technical Session 1 Venue: Lyceum Session Chairs: Dr. Muhammad Abid Mughal Dr. Shehzad Qureshi
13:00 – 14:00	Lunch & Prayer break
14:00 – 16:00	Technical Session 2 Venue: Lyceum Session Chairs: Dr Muhammad Tufail, Dr Shakeel Ahmed, Dr Waqas Ahmed
October 21, 2020 (Wednesday)	
08:50 – 09:30	<i>Invited Talk-2</i> Dr. M. Omair Shafiq Carleton University, Ottawa, ON, Canada Title: <i>User Intention Assessment in Online Reviews and Social Media</i> Venue: Lyceum Session Chairs: Dr. Asifullah khan, Dr. Umar Farooq, & Dr. Naeem Akhtar

09:40 – 12:00	<p style="text-align: center;">Technical Session 3</p> <p style="text-align: center;">Venue: Lyceum</p> <p style="text-align: center;">Session Chairs:</p> <p style="text-align: center;">Dr. Asifullah Khan</p> <p style="text-align: center;">Dr. Umar Farooq</p> <p style="text-align: center;">Dr. Naeem Akhtar</p>
13:00 – 14:00	Lunch & Prayer break
14:00 – 15:40	<p style="text-align: center;">Technical Session 4</p> <p style="text-align: center;">Venue: Lyceum</p> <p style="text-align: center;">Session Chairs: Dr Babar Hussain, Mr Tanveer Abbas</p>
October 22, 2020 (Thursday)	
08:40 – 09:20	<p style="text-align: center;"><i>Invited Talk-3</i></p> <p style="text-align: center;"><i>Dr. Qadeer Ahmed</i></p> <p style="text-align: center;">Associate Professor</p> <p style="text-align: center;">Mechanical and Aerospace Engineering Department</p> <p style="text-align: center;">The Ohio State University, Columbus, OH, USA</p> <p>Title: <i>Re-inventing the Wheels for safety and security</i></p> <p>Venue: Lyceum</p> <p>Session Chairs: Dr. Abdul Qayyum Khan, Dr. Ghulam Mustafa</p>
09:30 – 10:10	<p style="text-align: center;"><i>Invited Talk-6</i></p> <p style="text-align: center;"><i>Prof. Amir Iqbal Bhatti</i></p> <p style="text-align: center;">CUST, Islamabad</p> <p>Title: <i>Control Engineering in Pakistan: Recent trends and Future</i></p> <p>Venue: Lyceum</p> <p>Session Chairs: Dr. Abdul Qayyum Khan, Dr. Ghulam Mustafa</p>
10:20 – 11:00	<p style="text-align: center;"><i>Invited Talk-5</i></p> <p style="text-align: center;"><i>Prof. Hao Luo</i></p> <p style="text-align: center;">Assistant Professor,</p> <p style="text-align: center;">Harbin Institute of Technology</p> <p>Title: Data-driven Control Performance-Oriented Process monitoring and control systems</p> <p>Venue: Lyceum</p> <p>Session Chairs: Dr. Abdul Qayyum Khan, Dr. Ghulam Mustafa</p>
11:00 – 11:40	<p style="text-align: center;"><i>Invited Talk-4</i></p> <p style="text-align: center;"><i>Prof. Bing Xiao</i></p> <p style="text-align: center;"><i>School of Automation, Northwestern Polytechnical University, Xi'an China</i></p> <p>Title: Dynamic modeling and control of receiver aircraft for aerial refueling</p> <p>Venue: Lyceum</p> <p>Session Chairs: Dr Haroon ur Rashid, Dr. Muhammad Aqil</p>

11:40 – 13:00	<p style="text-align: center;">Technical Session 5</p> <p style="text-align: center;">Venue: Lyceum</p> <p style="text-align: center;">Session Chairs: Dr Haroon ur Rashid, Dr. Muhammad Aqil</p>
13:00 – 13:30	<p style="text-align: center;">Lunch & Prayer break</p>
13:30 – 14:30	<p style="text-align: center;">Technical Session 6</p> <p style="text-align: center;">Venue: Lyceum</p> <p style="text-align: center;">Session Chairs: Dr. Muhammad Abid, Dr. Muhammad Rehan</p>
14:30 – 15:00	<p style="text-align: center;">Closing Ceremony</p>

Presentation Schedule

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Presentation Schedule (October 20, 2020)

Technical Session 1			
Paper ID	Title & Authors	Time Slot	Venue
28	Identification of Malware Families for Creating Generic Signatures Using Dynamic Analysis and Clustering Methods <i>Authors: Umm-E-Hani Tayyab, Ali Muhammad, Maliha Ismail, Dr. Asifullah Khan and Dr. Hanif Durad</i>	11:40 – 11:55	Lyceum
8	High-Throughput Optimizations for AES Algorithm on FPGA for Satellites <i>Authors: Syed Jahanzeb Hussain Pirzada, Muhammad Noman Hasan, Muhammad Haris, Zohaib Wahab Memon, Tongge Xu and Liu Jianwei</i>	12:00 – 12:15	Lyceum
30	Prevention of Beacons Collision in IEEE 802.15.6 under Coexistence <i>Authors: Hamza Iqbal, Ehtasham Azhar, Samira Kanwal, Junaid Rashid and Tahira Nazir</i>	12:20 – 12:35	Lyceum
1	Development of a Low-Cost Sensor-Based Adaptive Gripper <i>Authors: Muhammad Waleed Khan, Asifullah Khan, Akhtar Khurshid and Muzamil Ali</i>	12:40 – 12:55	Lyceum
Technical Session 2			
65	Brain Tumor Detection From MRI Images Using Bag Of Features And Deep Neural Network <i>Authors: Saqlain Razzaq, Nimra Mubeen, Urwah Kiran, Adeel Asghar and Fawad Fawad</i>	14:00 – 14:15	Lyceum
64	A Novel Flexible Compact Microstrip Antenna for Biomedical Applications <i>Authors: Muhammad Tahir Hameed, Muhammad Yousaf, Muhammad Zahid, Adeel Akram and Yasar Amin</i>	14:20 – 14:35	Lyceum
11	Implementation of Modified Tangent Bug Navigation Algorithm for Front Wheel Steered and Differential-Drive Robots <i>Authors: Sofia Yousuf and Muhammad Bilal Kadri</i>	14:40 – 14:55	Lyceum
16	Design and Analysis of a 3D Printed Compliant Modified Jansen's Linkage by using Cartwheel Flexures <i>Authors: Faizan Javed, Arslan Khalid and Atique Ahmad</i>	15:00 – 15:15	Lyceum

43	A Novel Rectifier Topology with a Chopper Operating at the Line Frequency <i>Authors: Tanveer Abbas, Noman Khan, Muhammad Waqas Ayub, Muhammad Bilal Aslam, Abdullah, Riaz Khan and Zia Ur Rehman</i>	15:20 – 15:35	Lyceum
6	Space Air Ground Integrated Network: Communication Network for Air Traffic Control <i>Authors: Syed Jahanzeb Hussain Pirzada, Muhammad Noman Hasan, Muhammad Haris, Zohaib Wahab Memon, Tongge Xu and Liu Jianwei</i>	15:40 – 15:55	Lyceum

Presentation Schedule (October 21, 2020)

Technical Session 3			
Paper ID	Title & Authors	Time Slot	Venue
21	TOC generation in PDF Document for Smart Automated Compliance Engine <i>Authors: Muzammil Hussain Shahid and Muhammad Arshad Islam</i>	09:40 – 09:55	Lyceum
60	Bayesian Optimized Long-Short Term Memory Recurrent Neural Network for Prognostics of Thermally Aged Power Mosfets <i>Authors: Muhammad Haris, Muhamamd Noman Hasan, Syed Jahanzeb Pirzada and Prof. Qin Shiyin</i>	10:00 – 10:15	Lyceum
55	Prediction of User’s Interest Based on Urdu Tweets <i>Authors: Faizan Ul Mustafa, Imran Ashraf, Anees Baqir, Usman Ahmad, Sayyam Malik and Sadaf Mehmood</i>	10:20 – 10:35	Lyceum
54	Electroencephalography-based Neural Network Approach for Epileptic Seizure Detection using Spatial Features <i>Authors: Tayyiba Bibi, Aimen Rehman, Ghulam Ayesha Syed, Adeel Asghar and Fawad Fawad</i>	10:40 – 10:55	Lyceum
53	Autonomous Navigation of Swarms in 3D Environments Using Deep Reinforcement Learning <i>Authors: Muhammad Shahbaz and Asifullah Khan</i>	11:00 – 11:15	Lyceum
50	Lymphocyte Annotator: CD3+ and CD8+ IHC Stained Patch Image Annotation Tool <i>Authors: Muhammad Mohsin Zafar, Zunaira Rauf, Anabia Sohail and Asifullah Khan</i>	11:20 – 11:35	Lyceum
44	Intelligent predictor using cancer-related biologically information extraction from cancer transcriptomes <i>Authors: Tahira Shehzadi, Abdul Majid, Aqeel Farooq, Aqsa Yousaf and Madiha Hameed</i>	11:40 – 11:55	Lyceum

Technical Session 4			
Paper ID	Title & Authors	Time Slot	Venue
33	Impact of Shading, Dust Accumulation and Temperature rise on the Performance of Solar PV: The Case of Pakistan <i>Authors: Mariam Mughees, Munazza Sadaf, Sidra Khan, Amber Rasheed, Kamran Daniel and Dr. Hassan Erteza Gelani</i>	14:00 – 14:15	Lyceum
34	Wavelet-Hybridized NeuroFuzzy Feedback Linearization based Control Strategy for PHEVs Charging Station in a Smart Microgrid <i>Authors: Laiq Khan, Muhammad Awais, Rabiah Badar, Sidra Mumtaz, Saghir Ahmad and Shafaat Ullah</i>	14:20 – 14:35	Lyceum
39	Design of Fuzzy Controller for Non Isolated High Gain DC-DC Converter <i>Authors: Saad Ahmad, Abasin Ulasyar, Haris Sheh Zad, Abraiz Khattak and Kashif Imran</i>	14:40 – 14:55	Lyceum
26	An online fractional open-circuit voltage maximum power point tracking (MPPT) algorithm based on sliding mode control <i>Authors: Ahsan Nadeem, Hadeed Sher, Ali Murtaza and Nisar Ahmed</i>	15:00 – 15:15	Lyceum
56	A Stacked Resonant High Voltage DC Modulator for Industrial Magnetron <i>Authors: Noman Khan, Tanveer Abbas, Zia Ur Rehman, Abdullah and Riaz Khan</i>	15:20 – 15:35	Lyceum

Presentation Schedule (October 22, 2020)

Technical Session 5			
Paper ID	Title & Authors	Time Slot	Venue
46	Separation Principle with Secure State Estimation and Lyapunov Stability of Cyber-Physical System under Sensor Attack <i>Authors: Maryam Khan, Naeem Iqbal and Abdul Qayyum Khan</i>	11:40 – 11:55	Lyceum
37	Gimbal Based Robotic Eye for Dynamic Social Environment <i>Authors: Atif Mahmood, Abdul Qayyum Khan, Ghulam Mustafa, Muhammad Abid, Adil Sarwar Khan and Haroon Ur Rasheed</i>	12:00 – 12:15	Lyceum
48	Nonlinear Control Design for an Anthropomorphic Artificial Hand <i>Authors: Arifa Khatib Ahmad Qazi and Attaullah Y. Memon</i>	12:20 – 12:35	Lyceum

36	Simple Robust Fixed-Time Fault-Tolerant Attitude Control for a class of Rigid Spacecrafts <i>Authors: Muhammad Noman Hasan, Muhammad Haris, Syed Jahanzeb Hussain Pirzada and Shiyin Qin</i>	12:40 – 12:55	Lyceum
Technical Session 6			
Paper ID	Title & Authors	Time Slot	Venue
47	Output-Feedback Robust MPC for a class of Nonlinear system <i>Authors: Muhammad Noman Hasan, Muhammad Haris, Syed Jahanzeb Hussain Pirzada and Shiyin Qin</i>	13:30 – 13:45	Lyceum
24	Fractional Order Sliding Mode Control for Voltage Source Voltage Converters Under Reconfiguration <i>Authors: Toqeer Ahmed, Asad Waqar, Tanveer Hussain, Essam A. Al-Ammar, Muhammad Zahid and Habib Ur Rahman Habib</i>	13:50 – 14:05	Lyceum
57	Active Prosthesis of Human Hand <i>Authors: Arshad Ali, Muhammad Ehsan Ul Haq Zaheer, Mian Muhammad Sharjeel Safdar, Usama Azhar, Ahmed Huzaiifa and Tanveer Abbas</i>	14:10 – 14:25	Lyceum