

2019 International Conference on Applied and Engineering Mathematics (ICAEM 2019)

**Taxila, Pakistan
27 – 29 August 2019**



**IEEE Catalog Number: CFP19P24-POD
ISBN: 978-1-7281-2354-7**

**Copyright © 2019 by the Institute of Electrical and Electronics Engineers, Inc.
All Rights Reserved**

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

****** This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP19P24-POD
ISBN (Print-On-Demand):	978-1-7281-2354-7
ISBN (Online):	978-1-7281-2353-0

Additional Copies of This Publication Are Available From:

Curran Associates, Inc
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: (845) 758-0400
Fax: (845) 758-2633
E-mail: curran@proceedings.com
Web: www.proceedings.com

CURRAN ASSOCIATES INC.
proceedings
.com

Table of Contents

Title of Paper and Name (s) of Author(s)	Page No.
Design and Development of Muscle and Flex sensor Controlled Robotic Hand for Disabled Persons Shahid Latif, Jahanzaib Javed, Mustanser Ghafoor, Muhammad Moazzam, Aqsa Ameer Khan	1
Analysis on the Propulsion of Ionic Wind During Corona Discharge in Various Electrode Configuration with High Voltage Sources Aqib Mehmood, Hassan Jamal	7
Integral Representations of Solutions for the Bitsadze Equation with the Set of Supersingular Points in the Lower Coefficients Abdurauof B. Rasulov, Yurii S. Fedorov, Anna M.Sergeeva	13
CFD Analysis of Mixing and Buoyancy Effects of a Diffuser Jet in Stratified Region of a Solar Pond Rizwan Yousaf, Syed Irtiza Ali Shah	18
Formation and Maintenance of Salinity Gradient in a Solar Pond using Brine Injection Technique for Linear Stratification Rizwan Yousaf, Syed Irtiza Ali Shah	24
Influence of Joule Heating and Partial Slip on Casson Nanofluid Transport Past a Nonlinear Stretching Planar Sheet E.N. Maraj, Uzma Faizan, Shakil Shaiq	31
E-Compass Based Autonomous Qibla Rotation Platform for Moving Vehicle Waleed bin Malik, M Atique-ur-Rehman, Mansoor Ahmad, Muhammad Ihtisham Javed	37
Coding and velocity profile analysis of an elliptical exhaust nozzle Ammar Hussain Farooqi, Syed Irtiza Ali Shah	42
Steady & Transient State Analysis of Non-Newtonian Flow of Blood in Coronary Arteries Nabeel Bhatti, Syed Irtiza Ali Shah	52
Enhanced Lightweight Cloud-assisted Mutual Authentication Scheme for Wearable Devices Mehmood Hassan, Khwaja Mansoor, Shahzaib Tahir, Waseem Iqbal	62
Fractional Order Bergman's Minimal Model-A Better Representation of Blood Glucose-Insulin System Muhammad Waleed Khan, Muhammad Abid, Abdul Qayyum Khan	68
Implementation of Ball and Beam System using Classical and Advanced Control Techniques Shahid Latif, Ejaz Muhammad, Umair Naeem	74
Privacy-Preserving Authentication Protocol based on Hybrid Cryptography for VANETs Faiza Tahir, Samra Nasir, Zainab Khalid	80
A Robust Face Recognition Method for Occluded and Low-Resolution Images Hidayat Ullah, Mahmood UI Haq, Shadan Khattak, Gul Zameen Khan, Zahid Mahmood	86
A Robust Method to Locate License Plates under Diverse Conditions Sheryar Mehmood Awan, Shadan Khattak, Gul Zameen Khan, Zahid Mahmood	92

Indoor Positioning and Tracking using Sensors of a Smart Device	99
Asad Farooq, Shaharyar Kamal	
Optimal Sizing and Allocation of SVC and TCSC for Reactive Power Planning in Meshed Network	105
Muhammad Nadeem, M. Zulqarnain zeb, Kashif Imran, Abdul kashif Janjua	
Optimal Sizing and Allocation of SVC and TCSC in Transmission Network by combined Sensitivity index and PSO	111
Muhammad Nadeem, M. Zulqarnain zeb, Kashif Imran, Abdul kashif Janjua	
Viscoelastic Properties of Rubber Material Modelling	117
Iqra Danish Fatima, Nadeem Shafi, Hazeema Anjum	
Acoustic and Electromagnetic Effective Medium Properties of Fano Resonant Metamaterials	122
Muhammad Amin	
An Optimal PMU Placement against N-1 Contingency of PMU using Integer Linear Programming Approach	127
Muhammad Musadiq Ahmed, Kashif Imran	
Projection-Based Model Order Reduction for Biochemical Systems	133
Anum Javed, Mian Ilyas Ahmad	
Optical and Thermal Analysis of a Flat Plate Solar Collector using Water and Alumina Nano Fluids	139
Muhammad Yasir Hussain, H.M Ali, Muhammad Aneeq, Kamran Afaq Sheikh, Shahroz Rehman	
Sensors Technologies for Human Activity Analysis Based on SVM Optimized by PSO Algorithm	145
Mouazma Batool, Ahmad Jalal, Kibum Kim	
Unsupervised Machine Learning for Malicious Network Activities	151
Aamina Hassan, Shahzaib Tahir, Ahmed Iftikhar Baig	
Crowd Counting with Respect to Age and Gender by using Faster R-CNN Based Detection	157
Junaid Hussain Muzamal, Zeeshan Tariq, Muhammad Usman Ghani Khan	
Multi-Person Tracking in Smart Surveillance System for Crowd Counting and Normal/Abnormal Events Detection	163
Ahsan Shehzad, Ahmad Jalal, Kibum Kim	
Hydromagnetic Steady Flow of a Micro-polar Nano-fluid Impinging Obliquely Over a Stretching surface with Newtonian Heating	169
S. Rana, R. Mehmood	
Performance of Internal Heat generation on Viscoelastic Nanofluidic Flow past a Heated Variable Riga-Plate	174
Bilal Ahmad, Zahid Iqbal, Khizar Mahmood Abbasi	
On the Implementation of SMIKF in LTI Systems in the Presence of Colored Noise	180
Fawad Ali, Naeem Khan, Muhammad Ali, Hamza Ahmad, Muhammad Haris Ikram	
Some new Exact Solutions to Fractional Potential Korteweg-de Vries Equation	186
Umer Farooq, Naveed Ahmed	
Design and Testing of Cooling Jacket using Peltier Plate	191
Muhammad Jahangir, M. Atiq Ur Rehman, Abdul Basit Awan, Raja Hamza Ali	

Video Summarization using CNN and Bidirectional LSTM by Utilizing Scene Boundary Detection	197
Muhammad Zeeshan Khan, Saira Jabeen, Saleet ul Hassan, M.A Hassan, Muhammad Usman Ghani Khan	
Salient Segmentation based Object Detection and Recognition using Hybrid Genetic Transform	203
Abrar Ahmed, Ahmad Jalal, Adnan Ahmad Rafique	
Blockchain Based Anonymous Voting System Using zkSNARKs	209
Malik Hamza Murtaza,Zahoor Ahmed Alizai, Zubair Iqbal	
Microsoft Word Forensic Artifacts in Windows 10 Registry	215
Amir Amin, Farrukh Shabbir, Shahzad Saleem, Mudassar Waheed, Zohaib Khan	
Artificial Intelligence/ Machine Learning in IoT for Authentication and Authorization of Edge Devices	220
Muhammad Sharjeel Zareen, Shahzaib Tahir, Monis Akhlaq, Baber Aslam	
Scene Understanding and Recognition: Statistical Segmented Model using Geometrical Features and Gaussian Naïve Bayes	225
Adnan Ahmed Rafique, Ahmad Jalal, Abrar Ahmed	
CFD Analysis of NACA-0012 Airfoil with Various Porous Gurney Flap Geometries	231
Muhammad Yousaf Iqbal, Syed Irtiza Ali Shah, Ali Hassan	
Classification of EMG Signals for Assessment of Neuromuscular Disorder using Empirical Mode Decomposition and Logistic Regression	237
Muhammad Umar Khan, Sumair Aziz, Muhammad Bilal, Muhammad Bilal Aamir	
Design and Analysis of Fuzzy Supervisory Control of an Induction Motor	244
Safee Ullah, Ishfaq Ahmad, Ejaz Muhammad	
Hate Speech Detection using Fusion Approach	251
Muhammad Sajjad, Fatima Zulifqar, Muhammad Usman Ghani Khan, Muhammad Azeem	
Generalization of Inequalities Analogous to Preinvex Functions via Extended Generalized Mittag-Leffler Functions	256
Saima Rashid, Ahmet Ocak Akdemir,, Muhammad Aslam Noor, Khalida Inayat Noor	
Improving algorithms for learning of radial basis functions networks for approximation problems and solving partial differential equations	264
Vladimir Gorbachenko, Mohie M. Algezweeni	
Author Index	269