

Khirad

Newsletter

Civil Awards for PIEAS Faculty



Dr. Nasir Majid Mirza (Rector PIEAS) has been associated with PIEAS since 1983. He served PIEAS as Head (Department of Physics and Applied Mathematics) from 2000 to 2010. He was then appointed as Dean Research from 2003 to 2006, Dean Applied Sciences from 2013 to 2014. Later on, he was entrusted with the responsibilities of Pro-Rector from 2014 to 2016. Dr. Nasir Majid Mirza has an exceptional research profile and distinguished academic career with MS in Nuclear Engineering (QAU, Islamabad) and PhD in Nuclear Engineering (Purdue University, USA). His distinctions include Performance Gold Medal for Excellence in 1999, Research Productivity Awards by PCST from 2001 to 2008 and Best University Teacher Award by HEC in 2002. On November 21, 2016 Dr. Nasir Majid Mirza was appointed as Rector PIEAS and since then he is continuing with his office. In recognition of his extraordinary research achievements in academics and research, he has been awarded with national civil award "Tamgha-i-Imtiaz" in 2020 by the Government of Pakistan.



Dr. Faisal Shahzad received his Ph.D in Nanomaterials Science and Engineering from the Korea Institute of Science and Technology (KIST) in August 2017. Currently, he is working as an Associate Professor in the Department of Metallurgy and Materials Engineering at the Pakistan Institute of Engineering and Applied Sciences (PIEAS), Islamabad, Pakistan. His research focuses on developing 2D nanomaterials for EMI shielding, water-purification, water-splitting and biosensing. He was awarded with International R&D Academy Award of Excellence and Academic Excellence Award from KIST, South Korea. He has published over 30 research articles in top journals including 02 research papers in Science journal (IF of 41) and one in Advanced Materials (IF of 27). He is also a co-author of 04 book chapters and a US patent. Currently, Dr. Faisal has been involved in various projects funded by the local and international organizations. In recognition of his extraordinary research achievements, he was awarded with "Tamgha-i-Imtiaz" in 2020 by the Government of Pakistan.



Dr. Asif Raza, Dept. of Chemical Engineering, successfully defended his PhD studies entitled "Design and development of nanohybrid polymer composites for EMI shielding applications" on November 10, 2020 at TeleConferencing Hall, PIEAS. In his research study, a novel strategy to develop single unit clay/polymer nanohybrids was explored. Conducting monomers were grafted on sepiolite clay through in-situ emulsion graft polymerization. Nanohybrids developed by this approach exhibit unique thermo-mechanical and electrical properties. Maximum electrical conductivity of 0.427 Scm^{-1} was achieved in sepiolite-grafted-polyaniline nanohybrid. These results open up a new arena for applications for these conducting nanohybrids. The developed conducting nanohybrid of polyaniline was used as nanofiller in different polymer matrices to extend its application range. Multifunctional nanohybrid polymer composite exhibited remarkable EMI shielding effectiveness of 37.4 db. Dr. Asif's work has been published in different international journals with an impact factor of 12.9.



Mr. Waqar Riaz, has recently joined the Department of Mechanical Engineering as a Junior-Engineer/Lecturer. He completed his MS in Mechanical Engineering from PIEAS in 2020 with a gold medal and BS in Mechanical Engineering in 2018 from PIEAS. He has worked as an internee in Mari Petroleum Limited in 2017. He has also participated in DBFC 11 as a member of Team Charizard and won the Best Team Effort award for designing detachable compartment aeroplane. He has also won the Runner Up award in Airex for designing the cost effective and well-balanced frame of Quadcopter. His research interests include CFD, FSI, FEA, Applied Mechatronics, Design of Machinery and Thermal Hydraulics.

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Chairman NEPRV Visits PIEAS

Chairman National Electric Power Regulatory Authority (NEPRV), Mr. Tauseef H. Farooqi visited PIEAS and delivered a lecture entitled 'NEPRV Journey' and was attended by a large number of faculty and students. Mr. Muhammad Saeed Ur Rehman, Member (Power) also accompanied him on the occasion. Mr. Farooqi did his Electrical Engineering from University of Engineering & Technology Lahore, MBA from Lahore University of Management Sciences and is a graduate in Executive Program in Management from world's renowned Columbia Business School, USA. In his brief address, Dr. Nasir Majid Mirza, Rector PIEAS, welcomed the guests and highlighted the academic and research activities taking place at PIEAS. Mr. Farooqi then delivered a lecture on 'NEPRV Journey' Mr. Farooqi, in his keynote address, highlighted the role and responsibilities of NEPRV in Pakistan and briefly introduced the functioning

of NEPRV. He elaborated upon NEPRV's role as a balancing act between investors and consumers for affordability, reliability and sustainability. He mentioned the challenges faced by NEPRV that include lack of planning, infrastructural issues, generation mix, regulatory oversight and circular debt. He discussed NEPRV's role in electricity tariff control, power sector structure and the achievements made by NEPRV. He expressed a keen desire to gear up efforts for developing power institutes for energy related programs, attracting and retaining top talent in power industry, initiating international collaborations with world-renowned institutions and closer cooperation with top technology organizations. He was then shown around various facilities at PIEAS. He appreciated PIEAS for its consistent efforts to maintain and promote highest standards of academics and research.

Visit of Rector UMT, Lahore

Rector, University of Management and Technology (UMT), Lahore, visited PIEAS to enhance collaboration between the two institutes. He was briefed about the ongoing developmental activities and on-going projects at campus. He also visited different laboratories and facilities at campus. He was briefed about enhancement in the computational facilities. He also unveiled the plaque for 'Smart University Project'. The project was initiated in his tenure as Rector PIEAS.



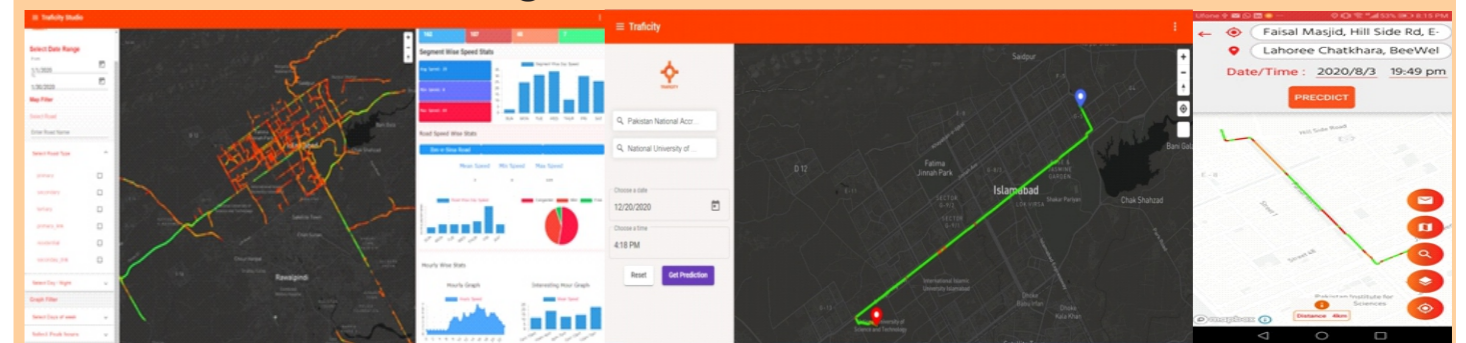
DUNAMIS - 40TFlops High-Performance Computing Cluster

Computational and Internet Services Division at PIEAS has successfully commissioned 40TFLOPS high-performance computing cluster named as Dunamis. High-performance computing refers to the practice of aggregating computing power in a way that delivers much higher performance than one could get out of a typical desktop computer or workstation in order to solve large problems in science, engineering, or business hybrid architecture consists of 11 CPU nodes and 1 GPU node. Dunamis consists of 560 CPU cores and 1280 Tensor codes. The facility has been establishment under funding from Higher Education Commission (HEC). Dunamis shall provide an avenue of opportunity to the research community at PIEAS to utilize the facility to meet the high-end computing requirements of resource-hungry applications.



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Traffic Congestion Prediction and Visualization



Trafficity is the trademark of the product-line developed as a result of the research project "Traffic Congestion Prediction and Visualization Platform (TCPVP)" carried out in the Digital Transformation Lab (DTL), Department of Computer and Information Sciences (DCIS), PIEAS. Trafficity Studio is a Business Intelligence (BI) tool that provides insight into the historical traffic behavior on intra-city road network with the help of various kinds of visualizations. Trafficity Mobile Application and Trafficity web-application provide on-demand traffic forecasting on selected routes within the city. The traffic prediction is powered by AI technology based on Deep Learning algorithms. The development work was carried out under the supervision of Dr. Irfan Ul Haq, the Principal Investigator of the project TCPVP, which received a funding of Rs. 9.5M from the Technology Development Fund (TDF), Higher Education Commission. The project had two industrial partners; Tracking World (TW) Pakistan and The Interactive Group Pvt. Ltd., who funded the project. Interactive Group is a CMMI5 level company which is the world's highest level in software processes maturity. Tracking Word Pakistan, official partner of Honda, one of the largest tracking and navigation companies in Pakistan, provided anonymized Floating Car Data (FCD) for Islamabad. In addition to FCD, traffic related data was collected from Google, Open Street Maps, Weather APIs and Calendar APIs. The potential clients of the product include urban traffic planning companies and logistic companies. A license agreement with the industrial partners for the product up-scaling and commercialization is underway. The project has culminated in 3 publications and 2 patents that are under the registration process.

Workshop on 'Malware Analysis and Memory Forensics'



Critical Infrastructure Protection & Malware Analysis (CIPMA) Lab, led by Dr. Muhammad Hanif Durad, and under the umbrella of National Center for Cyber Security (NCCS), organized a "3-Day workshop on Malware Analysis and Memory Forensics" from November 24-26, 2020. The workshop aimed at providing a strong foundation to participants in the domain of cyber security to sensitize them with existing tools for malware analysis and memory forensics. This workshop was part of the national initiative for awareness and capacity building to build a national cyber-security ecosystem from grass root level envisioned by Government of Pakistan. Dr. Umar Farooq and Dr. Anila Usman played a key role for the arrangements and organization of the workshop. Around 70 participants attended the workshop on-campus and through online mode using Microsoft Teams. This workshop assumed no prior experience of participants in the field of malware analysis and hence it covered all fundamental concepts. On first two days, Dr. Muhammad Abid and Ms. Faiza Babar presented static and dynamic analysis of Malware. Ms. Umm-e-Hani Asif walked participants through Memory Forensics of Malware. Dr. Mureed Hussain, Deputy Director General CENTECH, honored the workshop as chief guest. He delivered informed review of the subject matter on the last day of the workshop and distributed the certificates amongst the participants.

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