

Dr. Ghous Bakhsh Narejo

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ACADEMICS

Doctorate of Philosophy in Electrical Engineering (PhD) [2007-2010]
(Semiconductor Devices)

Research Work: Michigan Technological University, USA
(Best Graduate Medalist)

Master of Engineering in Electronic Engineering [2003-2006]
(Microelectronics System Design)

NED University of Engineering & Technology, Karachi, Pakistan

Bachelor of Electronic Engineering [1985-1990]
(Electronics)

Mehran University of Engineering & Technology, Pakistan
(Best Graduate Gold Medalist)

AREA OF EXPERTISE

Renewable Energy, IC Design, Image Processing

PROFESSIONAL EXPERIENCE

19 YEARS

NED University of Engineering & Technology [May 2001- To date]

- ✚ Working as Associate Professor & Researcher in NED University of Engineering & Technology,
 - ✚ Teaching subjects such as Electronic Devices and Circuits, Solid State Devices, Analog Integrated Circuits, Solar Cell Design, Imaging
 - ✚ Supervising Bachelor's Degree student projects.
 - ✚ Responsible to guide Masters Students in their research project area selection.
 - ✚ Member of curriculum designing and enhancing committee for Undergraduate and Master's degree programs at Electronic Engineering as per Washington accord guidelines
 - ✚ Lead member on research project "Design and Analysis of HCC imaging"
 - ✚ Supervising PhD and Masters Students research projects in Electronic Engineering
 - ✚ Member of research cluster, ETRG, Electronic Engineering, END University
 - ✚ CoChair International Conferences On Emerging Technologies, NED University, 2018
- NED University of Engineering & Technology, Karachi, Pakistan [Jan 2011-To Date]**
- ✚ Worked as Chairman, Electronic and Telecom Engineering in 2013
 - ✚ Leading a team of PhD, Masters and Undergraduate Students working in Electronic Engineering
 - ✚ Responsible for conducting research work on Renewable Energy, Analog Integrated Circuit Design, Image Processing
 - ✚ Responsible for smooth conducting of Masters programme in Electronic Engineering,

- ✚ Responsible for teaching subjects of BE, ME and PhD in Electronic Engineering
Electronic Devices and Circuits, Amplifiers and Oscillators, Analog Integrated Circuits, Solid State Devices, BioMEMS and micro device, Auto Instrumentation Micro fabrication , Solid State Materials and Devices, High Speed Semiconductor Devices and Circuits, Microelectromechanical Systems (MEMS), Advanced MEMS Analog integrated Circuits, Advanced Concepts In analog Circuits Synthesis and design , Selected topics in advanced analog ICs, Implementation of analog ICs on PSpice , Distributed PV Grid Systems, Modeling and Simulation of Renewable Power Systems, Distributed Generation, Solar Power and Integration
- ✚ Supervising PhD students research projects
- ✚ Member of Board of Studies in Electronic Engineering

Research Publications

Publications in HEC Recognized Journals

- ✚ Ghous B Narejo, Dr. Warren F. Perger, First-principles computation of second-order elastic constants and equation of state for tetragonal BaTiO₃, Chemical Physics Letters, Volume 493, Issues 4–6, Pages 263–268, 25 June 2010.
- ✚ Dr Ghous B Narejo, Dr. Warren F. Perger, First-principles computation of second-order elastic constants and equation of state for Rutile TiO₂, Physics Research International Volume, 2011.
- ✚ Dr Ghous B Narejo, Dr. Warren F. Perger, Optimized crystalline structure and properties of the cubic and tetragonal BaFeO₃, NED University Research Journal, 2012
- ✚ Dr Ghous B Narejo, M. Ahmed Dawood, Power Supply Based On Thermocouples with Cryogen Contact Cold Junction, NED University Journal of Research, 2013.
- ✚ Dr Ghous B Narejo, A Novel Coupling between the Electron Structure and Properties of Perovskite Transition Metal oxides, Applied Mathematics 4 (09), 1320, 2013.
- ✚ M K Panjwani, Dr Ghous B Narejo, Effect of Altitude on the Efficiency of Solar Panel, International Journal of Engineering Research and General Science Volume 2, Issue 4, June-July, 2014 ISSN 2091-2730, 2014.
- ✚ M. K Panjwani, Dr Ghous B Narejo, Effect of Humidity on the Efficiency of Solar Panel , International Journal of Engineering Research and General Science Volume 2, Issue 4, June-July, 2014 ISSN 2091-2730, 2014.
- ✚ Dr. Ghous Bakhsh Narejo, Engr. FawadAzeem, An Energy Policy Analysis and Proposed Remedial Actions to Reduce Energy Crises in Pakistan, Mehran University of Engineering and Technology Research Journal, ISSN: 0254-7821, 2016.
- ✚ Dr. Ghous Bakhsh Narejo, Engr. FawadAzeem,” An Analysis of Islanded Hybrid Microgrid Implementation Using Canals as Micro hydro Power Source with Solar PV for Rural Areas of Pakistan”, Sindh University Research Journal, ISSN:1813-1743, 2016.
- ✚ Dr. Ghous Bakhsh Narejo, Engr. FawadAzeem, “Design, Development and Performance Evaluation of Solar Panel Cleaning Kit for Street Lights and Ground Mounted Systems”, Science International Journal Lahore, ISSN 1013-5316, 2016.

- ✚ Ayesha Amir Siddiqi, Ghous Baksh Narejo, Shehnaila Zardari, Mashal Tariq, and Shehla Andleeb. "Application of image processing algorithms for brain tumor analysis in 2D and 3D leading to tumor's positioning in skull: Overview." *Mehran University Research Journal Of Engineering & Technology*, [p-ISSN: 0254-7821, e-ISSN: 2413-7219], 2017.
- ✚ Ayesha Amir Siddiqi, Ghous Baksh Narejo, Areeba Mehmood Khan, and Mashal Tariq. "Early Skin Tumor Detection from Microscopic Images through Image Processing." *Mehran University Research Journal of Engineering and Technology*, [p-ISSN: 0254-7821, e-ISSN: 2413-7219], 2017.
- ✚ Mashal Tariq, Ayesha A. Siddiqi, Ghous Baksh Narejo and Shehla Andleeb, "A Cross Sectional Study of Tumors Using Bio-Medical Imaging Modalities", *Current Medical Imaging Reviews* (2017) 13: 1. <https://doi.org/10.2174/1573405613666170614081434>, Print ISSN:1573-4056, Online ISSN-1875-6603.
- ✚ Low Power Fully Differential Folded Cascode OTA with CMFB Circuit, SalehaBano, Ghous Bakhsh Narejo, S.M. Usman Ali Shah, *Journal of Multidisciplinary Engineering Science and Technology (JMEST)* ISSN: 2458-9403, 2017.
- ✚ S Bano, GB Narejo, SMU Ali Shah, Power Efficient Fully Differential Bulk Driven OTA for Portable Biomedical Application, , *Electronics* 7 (3), 41, March, 2018.
- ✚ SalehaBano, Ghous Bakhsh Narejo, S. M. Usman Ali Shah, Low Voltage Low Power Single Ended Operational Transconductance Amplifier for Low Frequency Applications, *Wireless Personal Communications*, April 2018.
- ✚ FawadAzeem, Ghous Bakhsh, Usman Ali Shah, Integration of renewable distributed generation with storage and demand side load management in rural islanded microgrid, *Energy Efficiency*, Springer, 2018.

Conference Publications in International and National Conferences:

- ✚ Y Rehman, Dr. Ghous B Narejo, S Zaidi, An experiment for testing efficiency of effective teaching model and comprehensive use of limited resources, *Teaching, Assessment and Learning for Engineering (TALE)*, Volume 2011 (2011), Article ID 536183, 7 pages.
- ✚ Dr Ghous B Narejo, S Bharucha, Real Time Finger Counting and Virtual Drawing Using Colour Detection and Shape Recognition, 2013, *Information & Communication Technologies (ICICT)*, Karachi, Page(s):1 – 6, Print ISBN: 978-1-4799-2621-3, INSPEC Accession Number: 14080060.
- ✚ Dr. Ghous Bux Narejo, Engr. Fawad Azeem, and Yasir Ammar, A survey of Control Strategies for Implementation of Optimized and Reliable operation of Microgrid in Islanded Mode”, *IEEE, Power Generation and Renewable Energy Technologies Conference* June 2015 Islamabad.
- ✚ Dr. Ghous Bukhsh Narejo, Engr. Fawad Azeem, Performance Evaluation of Solar Flat Plate Collector Under Climatic Conditions of Islamabad Pakistan, 6th International Conference on Energy Research and Development Kuwait, 15-16 March 2016.

- ✚ Saleha Bano, Ghous Bakhsh Narejo and S.M. Usman Ali Shah, ‘Single CDBA Based Bilinear Current Mode Canonic Universal Filter’, IEEE Computing, Electronic and Electrical Engineering (ICE Cube), 2016, 11-12 April, Quetta, Pakistan. DOI: 10.1109/ICECUBE.2016.7495250
- ✚ Renewable energy-based power systems: models, indigenous analyses, Ghous Narejo, Fawad Azeem , Waqas Azeem, ICIEECT, IEEE, Karachi, May 2017.

Supervision of Students:

✚ List Of Completed and Ongoing Research Projects

✚ Ph.D. Projects

- Design, Analysis and Characterization of Continuous Time Multifunction Filter using Current mode, Saleha Bano, Dr. Ghous [M.O.S.T. Research Grant 3.0 Million PKR]
- Design and implement the control techniques for the distributed grid, Fawad Azim, Dr. Ghous [In Progress]
- An Image Processing Algorithm to Pre-process, Segment, Classify and Grade the Liver Cancer, Hepatocellular Carcinoma(HCC)Type [M.O.S.T. Research Grant 3.0 Million PKR]
- Enhancing the efficiency of the state of the art solar PV by introducing the Nanostructured PV Solar Cells for smart Grid applications
- Networking Multiple hybrid and islanded microgrid for the smart grid

✚ Post graduate Projects

- LPG and Natural Gas leakage detector and auto supply blocker
- Performance analysis of non-linear Pre-coding in Multi user MIMO systems Improving the efficiency of vector controlled motor Drive using microcontroller
- Design implementation of the Speed and torque control of vector controlled motor Drive using microcontroller
- Design and simulation of 16-elements, 4*4 strips patch antenna array
- General Bi-Quadratic Active RC filter circuit using Negative Impedance Converter

✚ Undergraduate Projects

- Reducing the cost of implementing secured communication layer in outer

space

- Design and FPGA implementation of 32K point FFT for DVBT-2 Receiver
- Design and Development of Tensile Testing Machine clutch Hand brake Cable, **ICTR&D Funded**
- Electronic Control Unit for Series Hybrid Electric Vehicle
- Solar Laptop Charging system
- Economical unmanned weather monitoring and data acquisition system
- Reduction of Sulphur Content in Diesel Fuel upto 50 PPM using Burner Management system
- Coal dosing and Firing system-process implementation through PLC
- Hand Gesture Recognition using Artificial Neural Networks
- Hand gesture recognition through GPU
- 3-D ultra-sonic imaging by DSP designing on FPGA
- Implementation of Distributed Control System through multiple FPGAs
- PLC Based Electrical Load Management System
- FPGA based Hybrid Power CMI and Monitoring system
- I-STAND-A self-balancing obstacle avoiding robot on inverted pendulum concept
- CPU realization on FPGA
- Autonomous Roving system with ultrasonic sensors & image guidance
- Multiple Camera Interfacing on a single host using blue tooth
- FPGA based Smart robotic arm
- Design and Development of low cost PV electronic inverter that produces pure and modified sinusoidal results with a built-in charge controller
- Live streaming through autonomous aerial vehicle
- Hiding information within images using stenography
- Automatic ground station's antenna pointing system for Geo satellites
- Smart attendance recording system using Radio Frequency technology
- FPGA based home automation system

- Tele-operated ground vehicle with four controls and wireless video transmission
- Development of an autonomous unmanned aerial vehicle (UAV) platform