Dr. Anwar Ali

Assistant Professor
Department of Electrical Technology
anwar.safi@uotnowshera.edu.pk

EDUCATION

Doctor of Philosophy (Ph.D) in Electronics and Communication Engineering, March 2014
Politecnico di Torino, Torino, Italy

M.S. in Electronic Engineering Sep 2010
Politecnico di Torino, Torino, Italy

B.S. Electronic Engineering, Dec 2003
NED University of Engineering and Technology, Karachi, Pakistan

AWARDS AND ACHIEVEMENTS

- **Full MS Scholarship**, Funded by Higher Education Commission (HEC) of Pakistan, 2008–2010.
- **Full PhD Scholarship**, Funded by Higher Education Commission (HEC) of Pakistan, 2011–2014.

TEACHING INTERESTS

BS Level: Circuit Theory*, Basic Electronics, Electronic Circuit Design*, Control System, Power Electronics*, Industrial Electronics, Industrial Process Control*.
MS/PhD Level: Power Electronics & Applications*, Advanced Converter Control Techniques, Analog & Discrete Electronics*, Advanced Control System*, Renewable Energy Systems*, Magnetic for Power Electronic Converters, RF Devices & RF Design, Communication Electronics

*Courses already taught to BS/MS/PhD students

RESEARCH INTERESTS

Power Electronics Converters (DC/DC, AC/DC & DC/AC), Small Satellite Subsystems Design & Development (Power Management, Attitude Determination & Control Subsystems), Thermal Modeling & Thermal Analysis of Electronic Systems, Renewable Energy Systems.

EXPERIENCE

- **Assistant Professor, Department of Electrical Technology**, Aug 2017 – Present
  University of Technology Nowshera, KPK, Pakistan

- **Assistant Professor, Electrical Engineering Department** , Aug 2014 – Aug 2017
  FAST National University of Computer & Emerging Sciences (NUCES), Pakistan

- **Assistant Professor, Electrical Engineering Department** , March 2014 – Aug 2014
  Abasyn University Peshawar, Pakistan

- **Maintenance Engineer, Sindbad Wonderland Lahore/Sialkot,** June 2004 – Sep 2008

SOFTWARE SKILLS

- DxDesigner MentorGraphics, Electronic Systems PCB design Software
- Altium Designer, Electronic PCB design software
- LTSpice/PSpice
- PLCs (S7-1200)
- LogixPro (Ladder Logic Simulator)
- Matlab/Simulink
- UML (Unified Modeling Language),
- IAR Embedded WorkBench,
- Microwave Office
- C/C++,
- Verilog/VHDL
- Assembly Language

RESEARCH PROJETS

- Design & Development of CubePMT which is a Power Management, Attitude Determination & Attitude Control Tile of AraMiS-C1 Satellite: AraMiS is a joint project between Politecnico di Torino, MIT, Spin Electronics, Sky Electrnics & NeOhm
- Analysis & Development of Automated System for On Wafer Channel Thermal Measurements of RF Power Devices
- Design & Development of PNSS-1* Solar Panel Unit (SPU)
- Design & Development of PNSS-1* Power Conditioning Unit (PCU)
- Design & Development of PNSS-1* Power Distribution Unit (PDU)
- Design & Development of PNSS-1* Magnetorquer Unit (MGT)
- Design & Development of PNSS-1* Magnetometer Unit (MGM)
- Design and Implementation of Microcontroller based SCADA (Supervisory Control and Data Acquisition) System.

  *PNSS-1 stands for Pakistan National Student Satellite-1 funded by Pakistan Space & Upper Atmosphere Research Commission (SUPARCO)

RESEARCH PUBLICATIONS

1. **A. Ali,** M. R. Mughal, H. Ali, L. M. Reyneri and M. N. Aman, "Design, implementation, and thermal modeling of embedded reconfigurable magnetorquer system for nanosatellites," in IEEE Transactions on Aerospace and Electronic Systems, vol. 51, no. 4, pp. 2669-2679, Oct. 2015. *doi: 10.1109/TAES.2015.130621*

2. **Anwar Ali**, M. Rizwan Mughal, Haider Ali, Leonardo M. Reyneri, Innovative power management, attitude determination and control tile for CubeSat standard NanoSatellites,Acta Astronautica,Volume 96, March–April 2014, Pages 116–127. *http://dx.doi.org/10.1016/j.actaastro.2013.11.013*

3. M. Rizwan Mughal, **Anwar Ali**, Leonardo M. Reyneri, Plug-and-play design approach to smart harness for modular small satellites, Acta Astronautica, Volume 94, Issue 2, February 2014, Pages 754-764, ISSN 0094-5765 *http://dx.doi.org/10.1016/j.actaastro.2013.09.015.*

4. **Anwar Ali,** M. Rizwan Mughal, Hafeez Ur Rehman, Inam Bari, Leonardo M. Reyneri, Thermal Characterization and Modeling Techniques for CubeSat Sized Spacecraft, The Aeronautical Journal (Accepted for publication)

5. **Ali A.**, Reyneri L., De los Rios J., Ali H., Mughal R., Reconfigurable Magnetorquer for the CubePMT Module of CubeSat Satellites, IEEE 15th International Multi Topic Conference 2012 (INMIC-2012), Islamabad, Pakistan, Dec 2012.
http://dx.doi.org/10.1109/INMIC.2012.6511478

6. M.Rizwan Mughal, J.C. De Los Rios, Leonardo M. Reyneri, **Anwar Ali**; "Scalable Plug and Play Tiles for Modular Nano-satellites" 63rd International Astronautical Congress (IAC), IAC-12-B4.7.A, Naples, Italy , 1-5 OCT 2012 .
http://www.iafastro.net/iac/paper/id/13360/ext/summary/

7. **Anwar Ali**, Leonardo M. Reyneri, Haider Ali, M. Rizwan Mughal, "Components selection for a simple boost converter on the basis of power loss analysis", 63rdInternational Astronautical Congress (IAC), IAC-12-C3.4.3, Naples, Italy, 1-5 OCT 2012.
http://www.iafastro.net/iac/archive/browse/IAC-12/C3/4/16040/

8. M. Rizwan Mughal, **Anwar Ali**, Haider Ali, Leonardo M. Reyneri; "UML for Space Systems: From Specification to Design and Implementation" 64th International Astronautical Congress , IAC-13,D1.3,7x18418, Beijing , China , 23-27 SEP 2013.
http://www.iafastro.net/iac/paper/id/18418/ext/summary/

9. **Anwar Ali,**Leonardo M. Reyneri, Juan Carlos de los Rios, Haider Ali, Innovative Power Management Tile for NanoSatellites , 63rd International Autronautical Congress, Naples Italy, 1-5 Oct. 2012.
http://www.iafastro.net/iac/archive/browse/IAC-12/C3/4/13998/

10. M. Rizwan Mughal, **Anwar Ali**, Leonardo M. Reyneri,; "Smart Data Communication Solutions for Small Satellites" 64th International Astronautical Congress, IAC-13,B4.6A,7x19005, Beijing , China , 23-27 SEP 2013.
http://www.iafastro.net/iac/paper/id/19005/ext/summary/

11. **Anwar Ali,**M. Rizwan Mughal, Haider Ali, Leonardo M. Reyneri,; "Innovative Power Supply System for Nano Satellites" 64th International Astronautical Congress, IAC-13,C3,4,5,x19111, Beijing , China , 23-27 SEP 2013.
http://www.iafastro.net/iac/author/anwar.ali/paper/19111/

12. **Anwar Ali**, M. Rizwan Mughal, Haider Ali, Leonardo M. Reyneri, "Thermal Modeling of CubeSat standard NanoSatellite", 27th annual European Space Thermal Analysis Workshop, 3-4 December 2013 at ESTEC, Noordwijk, the Netherlands.
https://exchange.esa.int/thermal-workshop/attachments/workshop2013/parts/CubeSat.pdf

13. Mughal M.R, **Ali A.**, Ali H., Reyneri L.M.; "Smart Honeycomb Tile for Small Satellites" 35th IEEE aerospace conference, Big Sky, Montana , USA, 1-8 MAR 2014.
http://ieeexplore.ieee.org/document/6836187/

14. M. Usman Khan, **Anwar Ali,** Haider Ali, M. Sadiq Khattak, Designing Efficient Power Supply System for Micro-Satellite, ICE Cube, BUITEM, Quetta, 11-12 April 2016
http://ieeexplore.ieee.org/document/7495225/?reload=true

15. Mughal M.R, **Ali A.**, Ali H., ReyneriL.M, Del Corso D.;" Free space and glass fiber based infrared communication system on board AraMiS satellite" 12th International Workshop on Advanced Infrared Technology and Applications,11-13 SEP 2013, Torino Italy.

16. Haider Ali, Antonio Aru, Claudio Sansoe, **Anwar Ali**, M. Rizwan Mughal; "Reconfigurable Antenna Design for NanoSatellites", IEEE conference on Space and Satellite Telecommunication in Europe (ESTEL), ROME, Italy, 2-5 OCT 2012.
http://dx.doi.org/10.1109/ESTEL.2012.6400166

17. M.Rizwan Mughal, Leonardo M. Reyneri, **Anwar Ali**; "UML Based Design Methodology for Onboard Data Handling Subsystem of Nano-satellites" IEEE conference on Space and Satellite Telecommunication in Europe (ESTEL), ROME, Italy , 2-5 OCT 2012.
http://ieeexplore.ieee.org/xpl/articleDetails.jsp?arnumber=6400194

18. Muhammad Musiab Aleem Dildar, **Anwar Ali,** Haider Ali, Muhammad Sadiq Khattak, Farhan Pervez, Embedded Magnetorquer Coil Design for Microsatellites, ICEET, Superior University Lahore, 7-8 April 2016
http://superior.edu.pk/Images/ICEET/pdf/research2016/ICEET-2016_paper_116.pdf

19. Zeeshan Mukhtar, **Anwar Ali,** M. Rizwan Mughal, Leonardo M. ReyneriDesign, Comparison of Different Shapes Magnetorquers for CubeSat Standard Nanosatellites, ICE Cube, BUITEM, Quetta, 11-12 April 2016
http://ieeexplore.ieee.org/document/7495218/

20. M. Noman, S. M. Zulqarnain, M. R. Mughal, **A. Ali,** L.M Reyneri, Component selection for magnetic attitude subsystem of PNSS-1 small satellite, 8th IEEE RAST conference , Istanbul, Turkey, 19 − 21 June 2017
http://ieeexplore.ieee.org/abstract/document/8002959/