

Dr SYED AFTAB NAQVI

PhD NDSU USA

Associate Professor

Department of Electrical and Computer Engineering

Ex- Incharge Industrial Liaison Cell/Research Focal Person

COMSATS University Islamabad, Sahiwal Campus, Pakistan

YouTube Lectures: <https://www.youtube.com/@syedaftabnaqvi/playlists>

Google Scholar: <https://scholar.google.com/citations?user=u4kIsWMAAAAJ&hl=en>

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Executive Summary:

Publications:

- 28 impact factor journals and 8 international conferences
- 2 solo author impact factor in renowned journals

Awards and Honors:

- Research Productivity Award (RPA) 2012 by Pakistan Council for Science and Technology (PCST).
- Productive Scientists of Pakistan announced by PCST in the years 2017, 2016 and 2015
- RPA by COMSATS in the years 2016 and 2015.

Administrative Experience:

- Research Focal Person CUI Sahiwal (2021-2024)
- Incharge Industrial Liaison Cell CUI Sahiwal (2021-2024)
- Convened number of Academic and non-Academic Committees at CUI Sahiwal

Teaching:

- Nominated for Higher Education Commission Pakistan (HEC's) Best University Teacher Award-2022 by CUI Sahiwal
- Delivered seminars and workshops on quality teaching to faculty of different universities
- Teaching experience of more than 12 years

Supervision/Mentoring:

- 1 PhD and 6 Undergraduate
- Mentor and guided 6 colleagues and students regarding their PhD dissertations and research problems

Grants/Funding:

- HEC research grant of Rs. 1.9 M as CoPI
- COMSATS research grant of Rs. 165 K as PI
- Six (6) FYPs funded by IGNITE

Academic Details:

Ph.D Electrical and Computer Engineering

Aug. 2012 to Dec. 2014

North Dakota State University, United States

Dissertation "A Compact Cylindrical-Shape Microstrip Structure with Cloaking Properties for Mutual Coupling Reduction in Array Antennas."

M.Phil Electronics

Feb. 2009 to Feb. 2011

Quaid-I-Azam University, Islamabad, Pakistan

Dissertation "Waves and Energy in a Parallel Plate Waveguide Containing Chiral Nihilicity Metamaterial."

M.Sc. Electronics

Jan. 2006 to June 2008

Quaid-I-Azam University, Islamabad, Pakistan

Experience:

1. **Associate Professor**, Department of Electrical and Computer Engineering (COMSATS University Islamabad, Sahiwal Campus, May 2023- Cont.)

2. **Assistant Professor**, Department of Electrical and Computer Engineering
(COMSATS University Islamabad, Sahiwal Campus, Jan. 2015- May 2023)
3. **Lecturer**, Department of Computer Science
(COMSATS Institute of Information Technology, Sahiwal, Sep. 2011- Jan. 2015)
4. **Visiting faculty member**, Department of Electronics,
(Quaid-I-Azam University, Islamabad. Sep. 2010- Sep.2011)

Awards and Honours:

Teaching:

1. Nominated for the HEC Best University Teacher Award 2022 by the CUI Sahiwal Campus

Research:

1. Productive Scientists of Pakistan announced by Pakistan Council for Science and Technology in the years 2017, 2016 and 2015.
2. Research Productivity Award announced by COMSATS Institute of Information Technology in the years 2016 and 2015.
3. Research Productivity Award 2012 in category “G” announced by Pakistan Council for Science and Technology.

Academic:

1. PhD completed in comprehensive time of 28 months with 3.89/4 CGPA, 7 conference papers and 4 impact factor publications.
2. Secured 2nd position in M.Phil. Department of Electronics, Quaid-I-Azam University Islamabad, 2011.
3. Secured 1st position in B.Sc. Govt. College Sahiwal, 2004.

Workshops/Seminars Delivered on Teaching and Research:

1. Conducted a 1-day faculty training on “**Quality Teaching: Teaching Methodologies and Lecture Plan**” as a single guest speaker organized by **University of Sahiwal** on 19th January 2023.
2. Delivered a seminar on “**Antenna Design for Future Electronic Devices**” organized by **University of Sahiwal** for Graduate and Undergraduate students on 3rd February 2022.
3. Conducted a 1-day Faculty Training on “**Quality Teaching**” as a single guest speaker organized by **Govt. College University Faisalabad** Sahiwal Campus on 22nd September 2021.
4. Delivered a seminar on “**Teaching Methodologies and Lecture Plan**” delivered to faculty of Engineering **COMSATS University Islamabad**, Sahiwal Campus on 18 August 2021.
5. Conducted a 2-day workshop on “**Modern Antennas**” as a single guest speaker organized by SPIE at Department of Electronics **Quaid-I-Azam University Islamabad** on 21-22 May 2015.

Supervision

PhD:

1. Dissertation title: “Millimeter wave 5G Reconfigurable MIMO Antenna Array Design” Co-supervisor; status: enrolled

Undergraduate:

1. FYP title “Compact Implantable Antenna Design for Biotelemetry Applications”:2020-2021
2. FYP title “Smart Phone Operated Multipurpose Agriculture Robot”: 2019-2020 (**Funded by NGIRI**)
3. FYP title “Antenna array Design for 5G cellular Devices”: 2017-2018 (**Funded by NGIRI**)
4. FYP title “Rectenna Based Microwave Energy Harvester for Cellular Devices”: 2016-2017
5. FYP title “Design of a Compact Rectenna Operating at GSM Bands for the Microwave energy Harvesting”:2015-2016 (**Funded by NGIRI**)
6. FYP title “A Miniaturized Dual Band Antenna Operating at MICS and ISM Frequency Bands for the Telemetry Biosensors”: 2014-2015 (**Funded by NGIRI**)

Mentorship:

1. Mentor and guided 6 colleagues and students regarding their PhD dissertations and research problems on the topics (i) 5G antenna, (ii) Metamaterial Absorbers at THz (iii) Chiral Nihility Metamaterials in PEMC, (iv) Shielding Characteristics of Thermal and Electric Cloak (v) Maslove's Methods to solve Guided Waves in PEC waveguides (vi) Planar DB boundary in bounded and unbounded Metamaterial.

Research Projects:

1. "Theoretical Study of Invisibility Cloaking in Composite Metamaterials", (Co-PI) **Funding agency:** National Research Program for Universities (NRPU) HEC, **Rs. 1.9 M.**
2. "A Miniaturized Dual Band Antenna Operating at MICS and ISM Frequency Bands for the Telemetry Biosensors", **Funding agency:** CIIT research Grant Program for **Rs. 165 K.**
3. "A Compact MICS and ISM Frequency Band Antenna for CGM Biosensor", **Funding agency:** National Grassroots ICT Research Initiative – (2014-15), Final Year Project Grant as Supervisor for **Rs. 75K.**
4. "Design of a Compact Rectenna Operating at GSM Bands for the Microwave energy harvesting", **Funding agency:** National Grassroots ICT Research Initiative – (2015-16), Final Year Project Grant as Supervisor for **Rs. 58K.**
5. "Antenna array Design for 5G cellular Devices", **Funding agency:** National Grassroots ICT Research Initiative – (2017-18), Final Year Project Grant as Supervisor for **Rs. 60K.**
6. "Smart phone operated multipurpose agriculture robot", **Funding agency:** Ignite National Technology Fund NGIRI 2020, Final Year Project Grant (NGIRI-2020-6134) as Supervisor for **Rs. 40.9K.**

Work/Ideas in Pipeline:

5G

- Design of flexible antenna array the 5G wearables
- Design of Absntenna operating at 5G

Multifunctional RF Circuitry

- Design of an Absntenna

Biosensors

- Detection of AF-M1 in mammals' milk by using an antenna-based biosensor
- Detection of AF-B1 in grains and spices by using antenna-based biosensor
- Miniaturized antenna design for the implantable biosensors

Courses Taught (<https://www.youtube.com/@syedaftabnaqvi/playlists>):

- Antenna and Radio Wave Propagation
- Electric Circuit Analysis-I
- Applied Physics for Engineers
- Electromagnetic Theory
- Electric Circuit Analysis-II
- Electronics-I
- Digital Logic Design

Research Interests:

- 5G mmWave Antennas and Absorbers
- Frequency Reconfigurable Antenna Design
- MIMO Antenna Array
- Flexible Antenna Design
- Multifunctional RF Circuitry (Antenna-Absorber)
- Bio-Sensor Antennas

- Electromagnetic and Thermal Cloaking
- RF Energy Harvesting (Rectenna)
- Microwave and Terahertz Absorbers

Reviewer of International Journals (selected):

- IEEE Antennas and Wave Propagation Letters
- IEEE Access
- IEEE Trans. on Dielectrics and Electrical Insulation
- Progress in Electromagnetic Research
- Microwave and Optical Technology Letters
- Int. J. of RF and Microwave Computer-Aided Engineering

International Collaboration:

- North Dakota State University USA
- Herriot Watt University UK
- Chungbuk National University, Korea
- Zhejiang University Hangzhou, China
- Padova University, Italy
- King Saud University, Riyadh, Saudi Arabia

Departmental/Campus Additional Duties:

1. Campus Research Focal Person, CUI Sahiwal (**March 2021-March 2024**)
2. Incharge of Industrial Liaison Cell, CUI Sahiwal (**March 2021-March 2024**)
3. Convener Departmental Research Committee (**August 2015-October 2022**)
4. Convener Departmental Collaboration and Outreach Committee (**May 2019- October 2022**)
5. Member Campus Purchase Committee (**August 2016-Continue**)
6. Member Campus Academic Review Committee (**March 2021-March 2024**)
7. Member Campus Disciplinary Committee (**May 2018-March 2022**)
8. Member Departmental Industry Advisory Board (**April 2019-October 2022**)
9. Member Departmental Academic Regulatory Committee (**February 2015- October 2022**)
10. Team head, evaluation of training institute financed by NAVTTC, third party (CIIT) evaluation of Prime Minister Youth Skill Development Program phase III (**Fall 2016- Spring 2017**)

Research Publications (<https://scholar.google.com/citations?user=u4kIsWMAAAAJ&hl=en>):

Journal/Transaction

2023

1. M. Raza, A.Rauf, **S. A. Naqvi**, B. D. Braaten, W. D. Alonazi, Design and Analysis of Arbitrary Shaped Bifunctional Cloaks for Multifunctional Material Composites, Accepted for publication in *Physics Scripta* (**IF: 3.08**)

2022

2. **S.A.Naqvi**, M.A.Baqir, G.Gourley, A. Iftikhar, M. S.Khan, D.E. Anagnostou, A Novel Meander Line Metamaterial Absorber Operating at 24 GHz and 28 GHz for the 5G Applications, *Sensors*, Vol. 22, 3764-3776, May 2022. Web Link: <https://doi.org/10.3390/s22103764> (**IF: 3.57**)
3. R.M.H. Bilal, M.A.Baqir, A.Iftikhar, **S.A.Naqvi**, M.J. Mughal, M.M. Ali, Polarization-controllable and angle-insensitive tunable multiband Yagi-Uda-shaped metamaterial absorber in the microwave regime, *Optical Materials Express*, Vol. 12, 798-810, January 2022. Web Link: <https://doi.org/10.1364/OME.451073> (**IF:3.44**)
4. R.M.H. Bilal, M. Hameed, **S.A. Naqvi** and M.A. Baqir, Triangular metallic ring-shaped broadband polarization-insensitive and wide-angle metamaterial absorber for visible regime, *Journal of the Optical Society of America A (JOSA A)*, Vol. 39, 136-142, January 2022. Web Link: <https://doi.org/10.1364/JOSAA.444523> (**IF:2.12**)

2021

5. A. A. Khan, M. S. Khan, **S.A.Naqvi**, B. Ijaz, M. Asif, E. M. Ali, S. Khan, A. Lalbakhsh, M. Alibakhshikenari, E. Limiti, Printed Closely Spaced Antennas Loaded by Linear-Stubs in Form of a MIMO System for Portable Wireless Electronic Devices, *Electronics*, Vol. 10, 2848-2861, November 2021. Web Link: <https://doi.org/10.3390/electronics10222848> (IF: 2.397)
6. R.M.H. Bilal, M.A. Baqir, A. Iftikhar, M.M. Ali, A.A. Rahim, M.N. Akhtar, M. J. Mughal and **S.A. Naqvi**, A Novel Omega Shaped Microwave Absorber with Wideband Negative Refractive Index for C-Band Applications, *Optik*. Vol.242, 167278-167284, September 2021. Web Link: <https://doi.org/10.1016/j.ijleo.2021.167278> (IF: 2.18)
7. D. Singh, A. A. Khan, **S. A. Naqvi***, M. S Khan, A-D. Capobianco, S Boscolo, M. Midrio, R. M. Shubair, Inverted-C Ground MIMO Antenna for Compact UWB Applications, *Journal of Electromagnetic waves and Applications*, Vol.35, 2078-2091, May 2021. Web Link: <https://www.tandfonline.com/doi/full/10.1080/09205071.2021.1934566> (IF: 1.37)
8. M. Iqbal. S. Khan, **S.A. Naqvi***, B. Ijaz, Quad Port Miniaturized MIMO Antenna for UWB 11 GHz and 13 GHz Frequency Bands, *AEU - International Journal of Electronics and Communications*, Vol. 131, 153618-153625 January 2021. Web. Link: <https://www.sciencedirect.com/science/article/abs/pii/S1434841121000157> (IF: 2.924)

2020

9. W. A. Awan, N. Hussain, A. Ghaffar, **S. A. Naqvi***, S. I. Naqvi, A. Iftikhar, A. Zaidi, X. J. Li, A Compact Flexible Frequency Reconfigurable Antenna for Heterogeneous Applications, *IEEE Access*, Vol. 8, 173298-173307, Oct. 2020. Web Link: <https://ieeexplore.ieee.org/abstract/document/9200596> (IF: 3.745)
10. M. A. Baqir and **A. Naqvi**, Electrically Tunable Terahertz Metamaterial Absorber Comprised Cu/Graphene Strips, *Plasmonics*, Vol. 15, 2205–2211, Aug. 2020. Web link: <https://link.springer.com/article/10.1007/s11468-020-01252-1> (IF:2.335)
11. M S Khan, **S A Naqvi***, A Iftikhar, S Asif, A Fida, R M Shubair, A WLAN Band-notched compact four element UWB MIMO Antenna, *Int. J. RF and Microwave Comp. Aided Engineering*, Vol. 30, Sep. 2020. Web Link <https://onlinelibrary.wiley.com/doi/10.1002/mmce.22282> (IF:1.472)
12. W.A. Awan, N. Hussain, **S.A. Naqvi***, A. Iqbal, R. Striker, D. Mitra, B. D. Braaten, A miniaturized wideband and multi-band on-demand reconfigurable antenna for compact and portable devices, *AEU - International Journal of Electronics and Communications*, Vol.122, July 2020. Web Link: <https://www.sciencedirect.com/science/article/pii/S1434841120305628> (IF: 2.853)
13. M.S. Khan, A. Iftikhar, **S.A.Naqvi**, A. Fida, R.M.Shubir and S.A.Khan, Circularly polarized 4×8 stacked patch antenna phased array with enhanced bandwidth for commercial drones, *Int. J. RF and Microwave Comp. Aided Engineering*, Vol. 30, March 2020. Web Link: <https://doi.org/10.1002/mmce.22081> (IF:1.472)

2018

14. **A. Naqvi** and M. A. Baqir, Ultra-wideband Symmetric G-shape Metamaterial-based Microwave Absorber, *Journal of Electromagnetic waves and Applications*, Vol. 32, No. 16, 2078-2085, August 2018. Web Link: <https://www.tandfonline.com/doi/full/10.1080/09205071.2018.1492976> (IF:1.351)
15. **A. Naqvi*** and M. S. Khan, Design of a Miniaturized Frequency Reconfigurable Antenna for Rectenna in WiMAX and ISM Frequency Bands, *Microwave and Optical Technology Letters*, Vol. 60, No. 2, 325-330, February 2018. Web Link: <http://onlinelibrary.wiley.com/doi/10.1002/mop.30962/abstract> (IF:0.933)

2017

16. **A. Naqvi***, Miniaturized Triple-Band and UWB Fractal Antennas for UWB Applications, *Microwave and Optical Technology Letters*, Vol. 59, No. 7, 1542-1546, July 2017. Web Link: <http://onlinelibrary.wiley.com/doi/10.1002/mop.30582/full> (IF:0.948)

2016

17. **A. Naqvi***, M. S. Khan and B.D. Braaten, A Frequency Reconfigurable Cylindrically-Shaped Surface with Cloaking-Like Properties, *Microwave and Optical Technology Letters*, Vol. 58, No. 6, 1323-1329, June 2016. Web Link: <http://onlinelibrary.wiley.com/doi/10.1002/mop.29793/abstract> (IF: 0.731)

18. **A. Naqvi***, M. S. Khan and B.D. Braaten, A 1x2 Microstrip Array with Reduced Mutual Coupling Achieved with a Cylindrically Shaped Cloaking-Based Surface, *Microwave and Optical Technology Letters*, Vol. 58, No. 2, 296-301, Feb. 2016. Web Link: <http://onlinelibrary.wiley.com/doi/10.1002/mop.29560/abstract> (IF: 0.731)

2015

19. M. S. Khan, A. D. Capobianco, **A. Naqvi**, B. Ijaz, S. Asif and B.D. Braaten, Planar, Compact Ultra-Wideband Polarization Diversity Antenna Array, *IET Microwaves, Antennas and Propagation*, Vol. 9, No. 15, 1761-1768, Dec. 2015. Web Link: <http://ieeexplore.ieee.org/document/7355441/> (IF: 0.8169)
20. M. S. Khan, A. D. Capobianco, **A. Naqvi**, M. shafique, B. Ijaz, B.D. Braaten, Compact Planar UWB MIMO Antenna with On-Demand WLAN Rejection, *Electronics Letters*, Vol.51, No.13, 963-964, 2015. Web Link: <http://ieeexplore.ieee.org/document/7130842/> (IF: 0.854)
21. M. S. Khan, M. F. Shafique, **A. Naqvi**, A. D. Capobianco, B. Ijaz and B. D. Braaten, A Miniaturized Dual-Band Diversity Antenna for WLAN Applications, *IEEE Antennas and Wireless Propagation Letters*, Vol. 14, 958-961, 2015. Web Link: <http://ieeexplore.ieee.org/document/7001223/> (IF: 1.751)
22. M. S. Khan, A.-D. Capobianco, M. F. Shafique, B. Ijaz, **A. Naqvi**, B. D. Braaten, Isolation Enhancement of a Wideband MIMO Antenna using Floating Parasitic Elements, *Microwave and Optical Technology Letters*, Vol. 57, No.7, 1677-1682, 2015. Web Link: <http://onlinelibrary.wiley.com/doi/10.1002/mop.29162/abstract> (IF: 0.545)

2011

23. **A. Naqvi***, Comments on “Waves in planar waveguide containing chiral nihility metamaterial”, *Optics Communications*, Vol. 284, 215–216, 2011. WebLink:<http://www.sciencedirect.com/science/article/pii/S0030401810008539?via%3Dihub> (IF: 1.486)
24. S. R. Qamar, **A. Naqvi**, A. A. Syed, and Q. A. Naqvi, Radiation characteristics of elementary sources located in unbounded chiral nihility metamaterial, *Journal of Electromagnetic waves and Applications*, Vol. 25, 713-722, 2011. Web Link: <http://www.tandfonline.com/doi/abs/10.1163/156939311794827294> (IF: 2.965)
25. **A. Naqvi**, F. Majeed, and Q. A. Naqvi, Planar DB boundary placed in a chiral and chiral nihility metamaterial, *Progress in Electromagnetic Research Letters*, Vol. 21, 41-48, 2011. Web Link: <http://www.jpier.org/pierl/pier.php?paper=11012005>
26. M. Taj, **A. Naqvi**, A. A. Syed, and Q. A. Naqvi, Study of focusing of cylindrical interface of chiral nihility-chiral nihility media using Maslov’s method, *Progress in Electromagnetic Research Letters*, Vol. 22, 181-190, 2011. Web Link: <http://www.jpier.org/PIERL/pier.php?paper=11010601>

2010

27. **A. Naqvi**, A. Hussain, and Q. A. Naqvi, Waves in fractional dual planar waveguide containing chiral nihility metamaterial, *Journal of Electromagnetic waves and Applications*, Vol. 24, 1575–1586, 2010. Web Link: <http://www.tandfonline.com/doi/abs/10.1163/156939310792149614> (IF: 1.378)
28. **A. Naqvi**, S. Ahmed, and Q. A. Naqvi, Perfect electromagnetic conductor and fractional dual interface placed in a chiral nihility medium, *J Journal of Electromagnetic waves and Applications*, Vol. 24, 1991-1999, 2010. Web Link: <http://www.tandfonline.com/doi/abs/10.1163/156939310793675943> (IF: 1.378)

Symposium/Conferences

2021

1. **A. Naqvi**, W. Awan, M. Alibakhshikenari, F. Falcone, E Limiti, “Design and Characterization of a Simple and Wideband Antenna for 5G mm-wave Applications,” *IEEE MTTs Latin America Microwave Conference LAMC 2021*

2014

2. **A. Naqvi** and B. D. Braaten, “A Two-Port Frequency Reconfigurable Microstrip Element for Conformal Cloaking,” *2014 IEEE International Symposium on Antennas and Propagation*, Jul. 6 - 12, 2014, Memphis, TN.

2013

3. **A. Naqvi**, S. Usman, S. Sajal and B. D. Braaten, "Zero Reflection Boundary using Tensor Transmission Line," *IMAPS NDSU Microelectronics Summit*, Fargo, ND, Oct. 18, 2013.
4. S. Nariyal, I. Ullah, **A. Naqvi**, B. Ijaz, M. M. Masud, B. Booth, K. Asirvatham and B.D. Braaten, "On the Use of Amplitude Tapering for Pattern Correction of Conformal (Curved) Antennas," *IEEE International Conference on Wireless for Space and Extreme Environments (WiSEE)*, Baltimore, MD, Nov. 7-9, 2013.
5. B. D. Braaten, I. Ullah, S. Nariyal, **A. Naqvi**, M. Iskander and D. Anagnostou, "Scanning Characteristics of a Self-Adapting Phased-Array Antenna on a Wedge-Shaped Conformal Surface," *Proceedings of the 2013 IEEE International Symposium on Antennas and Propagation*, Orlando FL, pp. 1220-1221. Jul. 7 - 13, 2013.
6. B. D. Braaten, A. Iftikhar, M. Rafiq, **A. Naqvi**, S. Nariyal, A. Taylor, S. Sajal, M. Iskander and D. E. Anagnostou, "An Initial Investigation on the use of Carbon Microfibers for Conformal Transmission Lines," *2013 IEEE International Conference on Electro/Information Technology*, Rapid City, SD, US, May 9 - 11, 2013.

2012

7. I. Ullah, S. Nariyal, S. Roy, M. M. Masud, B. Ijaz, A. Aftikhar, **A. Naqvi** and B. D. Braaten, "A Note on the Fundamental Maximum Gain Limit of the Projection Method for Conformal Phased Array Antennas," *Proceedings of the IEEE International Conference on Wireless Information Technology and Systems*, Maui, Hawaii, November 11th - 16th, 2012.
8. B. D. Braaten, S. Roy, I. Ullah, S. Nariyal, B. Ijaz, M. M. Masud, **A. Naqvi** and A. Iftikhar, "A Cascaded Reconfigurable RH/CRLH-Zero-Phase Microstrip Transmission Line Unit Cell," *Proceedings of the IEEE International Conference on Wireless Information Technology and Systems*, Maui, Hawaii, November 11th - 16th, 2012.