

# Dr. TAHIR MALIK

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## Work Address:

Department of Telecommunications Engineering,  
NED University of Engineering & Technology,  
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Pakistan.

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## EDUCATION

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1. **PhD. Electrical & Electronic Engineering** July 2011 – Feb. 2016  
Dept. of Electrical and Computer Engineering,  
University of Canterbury,  
New Zealand.

***PhD. Area of Specialization: Ultra-Wideband (UWB) Communication.***

A time domain based two-dimensional phase incoherent Impulse Radio UWB communication scheme along with Synchronization is explored and developed in this dissertation.

2. **MSc. Telecommunication & Information Systems** Sept. 2006 – Oct. 2007  
*Distinction in studies,*  
University of Essex, UK.
3. **Bachelor (B.E) Electrical Engineering** Dec. 1999 – July 2003  
National University of Science & Technology,  
Pakistan.

## PROFESSIONAL WORK EXPERIENCE

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- **Assistant Professor** July 2021 - Current  
Department of Telecommunications Engineering  
NED University of Engineering & Technology  
Pakistan
- **Assistant Professor** Dec. 2009 - July 2021  
Department of Electronics Engineering  
NED University of Engineering & Technology  
Pakistan
- **Lecturer** Jan. 2008 - Dec. 2009  
Department of Electronics Engineering  
NED University of Engineering & Technology  
Pakistan

## **PROFESSIONAL ACCOMPLISHMENTS**

- Reviewer for INTERACT 2023, March 2023, NEDUET.
- Session Judge for INTERACT 2023, March 2023, NEDUET.
- Member Conference Committee, INTERACT 2023, March 2023, NEDUET.
- Reviewer for Research Proposal, Technology Transfer Support Fund (TTSF) February 2022.
- Reviewer for Research Proposal, Sindh HEC January 2022.
- Event Judge, 37<sup>th</sup> All Pakistan IEEE Student Seminar (IEPSS34), 24 February 2022, Bahria Auditorium, Karachi, Pakistan.
- Member, 10<sup>th</sup> Corporate Advisory Committee (CAC), Department of Computer Engineering, Bahria University, Islamabad, July 2021.
- Paper reviewer for “Pakistan Journal of Engineering and Applied Sciences” UET Lahore, July 2021.
- Member, Technical Advisory Committee, 5<sup>th</sup> International Electrical Engineering Conference (IEEC-2020), 21<sup>st</sup> to 22<sup>nd</sup> February 2020, NEDUET, Karachi, Pakistan.
- Member Organizing Committee, 34<sup>th</sup> All Pakistan IEEE Student Seminar (IEPSS34), 15 January 2019, NEDUET, Karachi Pakistan.
- Member Organizing Committee International Conference of Electronic & Telecommunication Engineering (ICETE2-2018) Conference 27<sup>th</sup> to 28<sup>th</sup> February 2018, NEDUET, Karachi, Pakistan.
- Member Organizing Committee, International Conference of Computing, Electrical & Electronics Engineering (ICCEEE-2017), 2<sup>nd</sup> to 3<sup>rd</sup> August 2017, Karachi Expo Centre, Pakistan.

## **RESEARCH PUBLICATIONS**

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### **Journal Publications**

- **“Induced Turbulence in the Quantum Channel of High Dimensional QKD System Using Structured Light”** Muhammad Kamran, , Muhammad Mubashir Khan, **Tahir Malik**, Volume 130, Article Number 56, 2024, Journal of Applied Physics B, DOI: <https://doi.org/10.1007/s00340-024-08195-z>
- **“Evaluation of eavesdropping error-rates in higher-dimensional QKD system implemented using dynamic spatial modes”**, Muhammad Kamran, **Tahir Malik**, Muhammad Mubashir Khan, Volume No. 19, Issue No. 06, Article No. 2150030, 2021, International Journal of Quantum Information (IJQI), DOI: <https://doi.org/10.1142/S0219749921500301>. [Journal].
- **“Quantum key distribution over free space optic (FSO) channel using higher order Gaussian beam spatial modes”**, Muhammad Kamran, Muhammad Mubashir Khan, **Tahir Malik**, Asad Arfeen, *Turkish Journal of Electrical Engineering Computer Sciences (2020) 28: 3335 – 3351*. DOI:10.3906/elk-2005-49, E-ISSN:1303-6203, ISSN: 1300-0632. [Journal]
- **“Direction of Arrival Estimation in the Presence of Scatterer in Noisy Environment”**, Tahniyat Aslam, Irfan Ahmed, Muhammad Imran Aslam, Syed M. Usman Ali, **Tahir Malik**, *Advanced Electromagnetics*, 6(3), 33-40. DOI: <https://doi.org/10.7716/aem.v6i3.525>. [Journal].

## Conference Publications

- “**Decoy state HD QKD system for secure optical communication**”, Muhammad Kamran, Muhammad Mubashir Khan, **Tahir Malik**, submission to ICCWS-2021 (2021 International Conference on Cyber Warfare and Security (ICCWS)), 23rd - 24th November 2021, Islamabad, Pakistan. **[Conference]**.
- “**A Comparison of Polar and Quadrature RF-PWM**”, Muhammad Fahim UI Haque, Muhammad Touqir Pasha, **Tahir Malik**, Ted Johansson, 30-31 Oct 2018 *IEEE Nordic Circuits and Systems Conference (NORCAS): NORCHIP and International Symposium of System-on-Chip (SoC)*, Tallinn, 2018, pp. 1-4. DOI: [10.1109/NORCHIP.2018.8573456](https://doi.org/10.1109/NORCHIP.2018.8573456) **[Conference]**
- “**Efficient and Accurate Object Tracking Combining TSS and 2DLog Search Technique with SIFT**”, International Conference on Image Processing, Computer Vision, and Pattern Recognition, USA, July 18-20, 2011. **[Conference]**.
- “**Adaptive Algorithm For Fast And Accurate Video Object Tracking Using SIFT And BMA For Slow And Rapid Movements**”, International Conference on Computer Applications and Network Security, Maldives, May 27-29, 2011. **[Conference]**
- “**Accurate and Fast Video Object Tracking Technique Using SIFT and 2D Log Search**”, International Conference on Machine Learning and Computing, Singapore, Feb 26-28, 2011. **[Conference]**

## RESEARCH ACHIEVEMENTS / GRANTS

S. No.	Research Grant	Brief Details
1	Co-Principal Investigator	Center for Quantum Technologies (NED University)
2	Co-Principal Investigator	Center for Nano Technologies (NED University)
3	IGNITE National Grassroots Research Initiative (NGIRI Undergraduate FYP Funding 2023) NGIRI-2023-18852	“Heads up Display Helmet for Navigation”. (Both Hardware and Software design)
4	Sindh Higher Education Commission (SHEC) SRSP April 2022	Prototype Development of High Dimensional Quantum Key Distribution System for a Highly Secure Free-Space Communication System.
8	Ministry of Science and Technology (MoST) Endowment Fund 2020	Grant of Rs. 3 Million was obtained through MoST in 2020. Research is ongoing.

## HONOURS & ACTIVITIES

- Awarded University of Essex **Merit Award** for Achieving **Distinction** in Master’s degree Program 2006.
- Awarded **National University of Sciences & Technology** (Karachi) **Merit scholarship** for obtaining **2<sup>nd</sup> position** in Undergraduate (BE Electrical) Engineering Program. 2000-2003.

## **Committee Member**

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- Undergraduate Telecommunications Curriculum Committee 2022.
- FYDP Evaluation and Review Committee 2022 till date.
- Industrial Advisory Board (IAB), Telecommunications Department NEDUET 2022 till date.

## **KEY SKILLS**

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### **Technical Skills**

- Proficient in using electronic test and measurement.
- Proficient in Optical Communication.
- Proficient in Wireless Communication.
- Proficient in IoT Wireless Communication.