

# **Dr. Engr. Syed Saeed Jaffer**

**PhD (Electrical Engineering), MS (Telecom), BS (Electronic)**

**Research Publications 10, Total Citations: 94, h-index: 4, i10-index:02**

## **Present Position:**

**Presently working as Assistant Professor/Principal Engineer in IIEE since Oct 2022.**

## **Education**

- PhD (High speed Photonic network) from HITEC University Taxila , Pakistan in March 2021, with an outstanding achievement of HEC Pakistan awarded (IRSIP) scholarship for the completion of PhD research work at University of Glasgow UK.
- MS (Telecom) form Institute of Communication Technologies (ICT) Ethisalat Academy Affiliated with UET Peshawar Pakistan in the year 2008.
- BS (Electronic Engineering) from Sir Syed University of Engineering & Technology Karachi, Pakistan in the year 1999.
- MBA (Marketing) from Federal University Pakistan in the year 2006.

## **Professional Experience ( More than 18 years)**

### **Teaching Experience (April 2018 to date)**

Currently working in IIEE as a Principal instructor. From April 2018 to Oct 2022 I served in the Indus University (Electrical engineering department) imparting electronic /telecommunication engineering education and practical exposure to under graduate students. Apart from that I also served as adjunct faculty member in Biztek university Karachi from (2008-2011) in the faculty of science and technology.

### **BE/BS Program**

I have taught many courses of electronics and communications engineering at BE & BS level. I have supervised numerous projects and dissertations in undergraduate level.

2018-2023	EMFT Opto Electronics Communication System Prob.& Random Variable Engineering Economics Entrepreneurship
2008-11	Wireless Communications Communication Satellite Switching & Transmission

### **Administrative Experience (Academic)**

- Member of OBE committee, Course review committee and in charge of office of innovation and entrepreneurship ( OIE) at IIEE.
- Member Board of Studies (BOS), Board of Faculty (BOF), class advisor and in charge of research and development committee at Indus University.  
Has been involved in training of fresh engineers and the students of visiting educational institutes at PTCL Paki-capital exchange Karachi.

### **Research Interest**

The main research interest in the design and development of high speed photonic network for 5G/6G fronthaul/backhaul network. I am also interested in the techno-economic analysis of optical , wireless network and the design /development of heterogeneous wireless networks i.e. Small /femto /atto and zepta cells using OWC , VLC (visible light communication) for urban and dense urban coverage.

### **Awards**

- Received 06-month HEC Pak-IRSIP Scholarship grant (worth Rs 1 Million) for PhD research work at University of Glasgow UK.
- Received 18 Months Fully Funded Scholarship For MS Program at PTCL Institute ICT Islamabad.

### **Industrial Experience (2000-2014)**

#### **Telecom Sector**

Hands on experience in Optical Fiber Communication network, wireless (3G/4G LTE network), PSTN/VOIP switches & Transmission systems (SDH/PDH/DWDM) with a through foundation on system engineering and development.

#### **From Jan 2014 TO DEC 2014**

Worked as a RF Optimization & Planning Engineer on 4G LTE TDD/FDD Network in Etisalat- PTCL. Major responsibilities include.

- Performed Single and Cluster sites optimization to meet target KPIs.
- Validate coverage foot print, identify coverage and Quality issues through S N R and BER.
- Monitoring & improving all accessibility, retainibility and mobility KPIs through M2000 (Huawei) and U31/ CNO2 (ZTE).

#### **From May 2008 TO DEC 2013**

Worked as a BSS Planning Engineer on 3G CDMA /EVDO Rev B Network in PTCL.

- Design and specify system parameter setting, related OMC-R statistics and RF optimization reports (PM) - focusing on call drops, handover issues & other service quality parameters.

- Designing new cell sites using ASSET (RF Cell planning tool) for providing better coverage.
- Capacity and coverage planning of existing Karachi WLL network with the addition of more than 160 sites in the network in roll out project.

### **From August 2000 TO JAN 2007**

Worked as an Operation in charge of Switch Room/Access Network system (OFAN).

Responsibilities include.

- Acceptance, Testing, Operation maintenance and rectification of faults of 42 Indoor and Outdoor Huawei Optical Network Units(ONU'S) of PECHS Intl-II Division.
- Technical Liaison with different PTCL wings like Transmission, OSP Development, ITI, NMS, OFS, and PECHS E-10B Switch Room for the rectification of faults of POTS, BRI, PRI, Transmission systems(SDH Box) and Optical Fiber connectors etc.
- O&M of Alcatel Local Exchange of 53000 subscriber lines and 2200 Trunks along with subscriber administration.
- Team member for Testing and commissioning of all OFAN/GPON system.
- Planning and laying optical fiber cables in exchange side during off-loading Metro-1000 SDH to OSN3500 system for different Fiber Optics Cabinets.
- Writing technical reports and defining method of Procedure for different operational procedures.

### **Journal Publications (Impact Factor)**

1. **Jaffer, S.S.,** Hussain, A., Qureshi, M.A, Yousuf Khalil, Qureshi, K.K. M.Mehmood, "Reliable and Cost efficient protection scheme for 5G Fronthaul/Backhaul network" heliyon (2023) [IF: 3.7]
2. **Jaffer, S.S.,** Hussain, A., Qureshi, M.A. J.Mirza and Qureshi, K.K., " A low cost PON-FSO based fronthaul solution for 5G CRAN Architecture", Optical fiber technology(2021)[IF:2.3].
3. **Jaffer, S.S.,** Hussain, A., Qureshi, M.A. and Khawaja, W.S., "Towards the shifting of 5G front haul traffic on passive optical network", Wireless Personal Communications, 112,pp. 1549–1568 (2020) [IF: 1.61].
4. **Jaffer, S.S.,** Hussain, A., Klaine, P.V., Shakir, M.Z. and Qureshi, M.A., "Hybrid PON-FSO based fronthaul architecture for ultra-dense small cell network", , Optical Engineering, 59(7),pp. 075104 (2020) [IF: 1.23].
5. Kamrn, **Jaffer, S.S,** Qureshi, Qureshi, K.K. "Dynamic Bandwidth Allocation in Time Division Multiplexed PON : A dual standard analysis of ITU-T and IEEE standard algorithm" Peer J computer science (2025) [IF: 3.5]

## Conference paper

- Arshad, M.Zahid, A. Yasar, **Jaffer,S.S**, “ MIMO Antenna for C-band Applications “ 2023 International multi-disciplinary Conference in emerging research trends (IMCERT), 2023, indus university Karachi.
- R. R. A. Khan, F. u. Rehman, **Jaffer,S.S**, H. Zaidi and S. Ahmed, "IoT Based Tap-Water Supply Alert System – An Application of Machine-to-Machine (M2M) Communication," 2021 International Conference on Computing, Electronic and Electrical Engineering (ICE Cube), 2021, pp. 1-7, doi: 10.1109/ICECube53880.2021.9628284.
- G.Shabbir,Jaffer,S.S,Zaidi,S,Ahmed Sajid, “IoT enabled generator for power monitoring and load management with power factor improvement”conference,ICEPE-2021.Eng.Proc.2021,12(1),33;https://doi.org/10.3390/engproc2021012033 published: 24 December 2021.
- G.Shabbir,S.S, Zaidi,**Jaffer,S.S**, M.Shaheer,“ IoT based smart garbage monitoring and waste collection system with garbage sorting future for recycling” conference,6 th international conference on energy environment and sustainable development ( EESD 2022) at Mehran university of engineering technology Jamshoro Sindh Pakistan.
- Areez Khalil Memon, Ahmed MuddassirKhan, Zahid Ali,**Jaffer,S,S**,Faizan-ur- Rehman, “ Transmission Performance of 40Gbps Wavelength Division Multiplexing Next Generation Passive Optical Network 2 (WDM NG- PON Accepted in IT4D conference and proceeding will bepublished in Indian Journal of Science & Technology, ISSN: 0974-6846.

## Selected Professional Certification & Training

Skill / Training Name:	Certified <b>CDMA 2000 1X and EVDO REV (A &amp; B)</b>
Institute:	Karachi Telecom College (PTCL), Karachi
Training Duration	01 Month
Skill / Training Name:	Certified <b>HONET V6 &amp; I-Manager N2000 product OFAN.</b>
Training Duration	Institute of Communication Technologies (ICT), Islamabad 45 Days
Skill / Training Name:	<b>RF Planning of CDMA Network</b>
Institute:	ZTE Training Center Islamabad
Training Duration	5 Days
Skill / Training Name:	<b>Transmission Technologies</b>
Institute:	Institute of Communication Technologies (ICT), Islamabad
Training Duration	12 Days
Skill / Training Name:	<b>Digital Switching System</b>
Institute:	Institute of Communication Technologies (ICT), Islamabad
Training Duration	18 Days

Skill / Training Name: **A+ Certification Program (CompTIA USA)**  
Institute: Pakistan Navy Institute (PNS Karachi)  
Training Duration: 03 Months

Skill / Training Name: **CCNA Module**  
Institute: PTCL Regional Training Center, Malir Karachi  
Training Duration: 07 Days

Skill / Training Name: **PMP Certificate (Project Management Professional)**  
Institute: PTCL Regional Training Center, Malir Karachi  
Training Duration: 01 Month

### **Professional Memberships**

- Pakistan Engineering Counsel (PEC No- Electro 5067).
- IEEE-98368780& IEEE Communication society
- Aligarh association Pakistan, Karachi

### **Personal Information:**

Name: Syed Saeed Jaffer  
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