### Personal Details

Date & Place of Birth:	26 Dec 1961, Pakistan
Citizenship:	Pakistan
Current Address:	NUST Intitute of Information Technology
	166-A, Street 9, Chaklala Scheme-III
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#### **Education**

- PhD Computer Simulation of High Speed Communication Networks (December 1992). University of South Florida, Tampa, Florida 33620, USA
   Title: A Coherent Optical Fiber Communication System Characterized by Ultra-low Photons per bit.
- MS *Electrical Engineering* (December 1989) University of South Florida, Tampa, Florida 33620, USA.
   Title: Optimization of an Optical FSK Heterodyne Modulation System
- *Honours Graduate Senior Command and Staff Course* (November 1998) Air War College, Faisal – Karachi, Pakistan
- *BE Aeronautical Engineering* (January 1984) College of Aeronautical Engineering, Karachi, Pakistan

### Publications/Research Papers

- **Book Chapters :** Contributed Two Chapters in the book of "Fiber Optic Communications Systems, Analysis, and Enhancements", McGraw-Hill Telecommunications
- Research Papers Published in Journals/Conferences etc 87 (List attached)

### Honours & Awards

- Duke Energy Distinguished Visiting Research Scholar at Optics Center of Charlotte Research Institute at University of North Carolina at Charlotte, USA – (July-Sept 2006)
- 11<sup>th</sup> Pakistan Education Forum's National Education Award 2005 for meritorious services in the field of Computer Science and Information Technology.
- NCR Excellence Awards on IT Educationalist 2003
- Commendation Certificate by Chief of the Air Staff for devotion to duty and valuable services rendered to the Pakistan Air Force. (March 2002)
- NCR Excellence Awards on IT Research and development 2000-2001

•	• Letter of Appreciation from Commandant CAE, NUST for delivering 3 outstanding seminars "Laser Fundamentals and its Military Applications, Thermal Imaging Systems (FLIRS) and		
	Infra-Red Satellite Reconnaissance"	1994	
•	Graduate Teaching Fellowship (University of South .Florida USA)	1991 - 1993	
•	Graduate Research Fellowship (University of South. Florida USA)	1988 - 1991	
•	Ministry of Science and Technology Scholarship for MS/PhD studies	1998 - 1991	
•	Board of Intermediate Scholarship for outstanding performance in Intermediate en Pre-Engineering group.	xams for 1980	
Prof	essional Development Courses/Workshops		
•	Training Course/Workshop on Virtual Library and Network Information Systems (Beijing, China)	May 2001	
•	Faculty Refresher Course in Software Engineering (Pearl Continental, Rawalpindi)	May 2000	
•	Internetworking with TCP/IP Computer 2000, Microsoft CTECH Dubai	July 99	
•	Training Course/Workshop on Exploitation and Utilization of Scientific and Technical Information Resources (Beijing China)	May 98	
•	ISO 9000 Lead Auditor Course (thru IRCA Registered German Company)	Aug 97	
•	Computer Simulation of Communication Systems Bell Communications Research, Navesink Research and Engineering Center, Red Bank, New Jersey, USA	Aug 92	
•	Pattern Recognition and Analysis Computer Science and Engg Dept, University of South Florida, Tampa USA	July 91	
•	Fuzzy Logic Design Computer Science and Engg Dept, University of South Florida, Tampa USA	March 90	
•	Training with Perkins & Elmer - Connecticut, USA On spectrometric oil analysis and associated electronic instrumentation.	April 86	

## Prestigious Memberships

- Member working Group on IT Human Resource Development, National IT Policy- 2000
- Member Specialist Committee on IT Curriculum Development formulated by the Minister of Science and Technology 2000
- Co-Opted Member of Sub-Committee on "Telecom Infrastructure development for IT" (Committee on national IT Policy formulation) 1998

## Keynote/Lead Speaker/Chairperson/Chief Guest Addresses

- Presented the Research/IT Profile of NUST/NIIT in the following top world class universities: (Nov Dec 2006)
  - ✤ Massachusetts Institute of Technology (MIT), USA
  - University of California at Berkeley (UC Berkeley), USA
  - Caltech, USA
  - Stanford University, USA
  - Imperial College London, UK
  - ✤ The University of Manchester, UK
  - ✤ University of Warwick, UK
  - University of the West of England (UWE) Bristol, UK
- Keynote Presentation on "Broadband Access Technology Evolution Patterns: Strategy and Recommendations for the Asian Region" in One day International workshop on "Connection Oriented Networks, MPLS, GMPLS and Optical Networks" held on 26<sup>th</sup> Apr 2007 at NIIT, Pakistan.
- Presentation on "How to Effectively Read a Scientific Paper" in Two days International workshop on "Developing Research Culture" held on 12 -13 March 2007 at NIIT, Pakistan.
- Gave a presentation on Up-to-date Research/IT Profile of NUST/NIIT to the delegation of University of Leeds, UK at NIIT in Mar 2007.
- Gave a detailed presentation to the delegate of University of Glasgow at NIIT on "Design of High Speed Access Network at NUST new campus at Islamabad", in Feb 2007.
- Presented Up-to-date Research/IT Profile of NUST/NIIT to French Delegation during their visit to NIIT on 16<sup>th</sup> Feb 2007.
- R & D at NUST Institute of IT in the area of Photonics Networks Optics Center UNC Charlotte, 31<sup>st</sup> Aug 2006.
- Emerging Trends in Optical Networks at Pakistan Computer Society in Mar 2006-06
- Presentation on "Review of Research acitivities at NUST" at University of North Carolina at Charlotte (UNCC), USA in Dec 2005.
- Review of some core areas in Information Technology at Civil Services Academy in Oct 2005
- Role of IT in Medicine at Ayub Medical College Abottabad June 2000
- JAVA Seminar at Pakistan Academy of Sciences Auditorium Islamabad March 2000
- E Commerce Seminar at ICMA Islamabad March 2000
- E-Commerce Seminar at HQ NUST Jan 2000
- Microsoft Certification Courses Seminar organized at HQ NUST April 1999
- Post Graduate Diploma in Information Technology Seminar at HQ NUST Sept 1999
- ISO 9000 Seminar at Marriott Islamabad June 1998
- IT Education in NUST Pakistan at Beijing China May 1998
- Presented NUST R&D Projects to IDB Senior Management team at PCST Islamabad 1997

## \* Work Experience

## Academic Contributions

- **Dean** NUST Institute of Information Technology (NIIT), Rawalpindi. **Feb 2005 To date** *Major Responsibilities:* To Plan, co-ordinate and supervise all academic activities including:
  - a. Curriculum Development
  - b. Teaching
  - c. International Linkages

#### d. University/Industry Linkages

#### a. <u>Curriculum Development</u>

- Designed a comprehensive course of "Research Methodologies" at Postgraduate level with the help of foreign experts namely Dr. Richard McClatchy and Dr. Tony Solomonides from University of West of England (UWE) and delivered this course at NIIT to postgraduate level students.
- Head of the NIIT Curriculum Review Committee (CRC). In this capacity, formulated the curriculum for the following degree programs:
  - a. PhD in Information Technology
  - b. Master in Information Technology (MS IT)
  - c. Bachelor in Information Technology (BIT)
  - d. Bachelor in Information and Communication Systems Engineering (BICSE)
  - e. Bachelor in Electronics Engineering (BEE)
- Played a key role in acquiring the Optisim Software worth \$15000, for the Photonics Research Lab at NIIT. On the basis of this software, number of Postgraduate students are doing research in their PhD & Master's thesis and Undergraduate students in their final year projects.

#### b. <u>Teaching</u>

• **Professor:** NUST Institute of Information Technology, National University of Sciences and Technology, Rawalpindi - Pakistan. 1999 – To date

#### **Courses Taught**:

- Data Communications and security
- ✤ E-commerce
- Photonics Networks
- Research Methods
- Fiber Optic Communication Systems
- ◆ Introduction to Information and Communication Technologies (ICT)
- Adjunct Faculty: Department of Electrical Engineering, College of Telecommunication Engineering, National University of Sciences and Technology, Rawalpindi Pakistan. July 1996 1999

#### **Courses Taught:**

- Digital and Analog Communication Systems
- Stochastic Processes
- Digital Signal Processing (Postgraduate level).
- Associate Professor: Avionics Engineering Department, College of Aeronautical Engineering, National University of Sciences and Technology, Pakistan. July 1993 July 1996.

#### **Courses Taught:**

- Digital and analog Communication Systems
- Microwave Devices for Communications and Radars

- Introduction to Radar Systems
- Laser Communications
- ✤ Digital Signal processing
- Introduction to Fiber-Optic Communications
- ♦ C / C++ Programming.
- Adjunct Faculty: Department of Electrical Engineering, University of South Florida, Tampa, USA Jan 1993 June 1993
- **Teaching Associate:** Department of Electrical Engineering, University of South Florida, Tampa, USA. August 1991 Jan 1993.

**Courses Assisted:** 

- Communication Systems
- Linear System Analysis
- Optoelectronics (with Professor Gerard Lachs)
- Adjunct Faculty F-16 Field Training Detachment, Pakistan. Jan 85 Dec 1987

#### c. <u>International Linkages</u>

- Played a key role in forging high-level international research collaborations of NUST Institute of IT (NIIT). For this purpose, visited some of the top US and British universities including Massachusetts Institute of Technology (MIT), University of California at Berkeley, Stanford University, Caltech, University of South Florida, Imperial College London, University of Manchester and University of Warwick, as a part of high level delegation of NUST led by Rector NUST. Made comprehensive presentations covering the entire spectrum of ongoing research programs with worldclass universities which had an increasingly positive effect on the deliberations held with host institutions. The understanding and rapport developed between the two sides also led to drawing up some key action plans with a view to paving the way for a range of joint research and collaborative activities. to establish university-university linkages and attract research projects. Specifically, established linkages with the following foreign faculty in order to attract collaborative research projects for NIIT:
  - a. Dr. Leonid G Kazovsky, Professor of Electrical Engineering from Stanford University in the area of Optical Networks.
  - b. Dr. Mirsad Hadzikadic, Dean of College of Computing and Informatics UNCC, USA in the area of Complex Adaptive Systems & Bio- informatics research
  - c. Dr. Arslan of the University of South Florida, USA in the area of Ultra wide band communication.
  - d. Dr. Chris Frekredis of the University of South Florida, USA in the area of Solar Cells research.
  - e. Dr. Michael Fiddy, Director, Center for Optoelectronics, Dr. Yasin Raja, Associate Professor and and Dr. Faramorz Frahi of University of North Carolina at Charlotte (UNCC), USA in the area of Optical Networks research.
  - f. Dr. Teresa of UNCC, USA in the area of Sensor Networks research.
  - g. Dr. Nasir Ghani, Professor in Department of Electrical and Computer Engineering of Tennessee Tech University in the area of Optical Networks.
  - h. Dr. Nasir Rajpoot, Assistant Professor from University of Warwick in the area of image processing.

- j. Dr. Nigel Baker from University of West of England (UWE) in the area of Mobile Computing and Wireless Networks.
- k. Dr. Richard from University of West of England (UWE) in the area of Grid Computing.
- International Co-Chair: Designated as International Co-Chair for US Pakistan International Symposium on "High Capacity Optical Networks and Enabling Technologies (HONET)". Being International Co-Chair, arranged HONET in 2004 and 2005 at Marriott Hotel Islamabad in Collaboration with University of North Carolina at Charlotte. In Sep 2006, the same event was arranged in University of North Carolina at Charlotte, USA and in the year 2007, it will be arranged in Dubai.

#### d. <u>University/Industry Linkages</u>

- Presentation on "How to Effectively Read a Scientific Paper" in Two days workshop on "Developing Research Culture" held on 12 -13 March 2007.
- Presented Up-to-date Research/IT Profile of NUST/NIIT to French Delegation during their visit to NIIT on 16th Feb 2007.
- Gave a detailed presentation to the delegate of University of Glasgow on "Design of High Speed Access Network at NUST new campus at Islamabad".
- Gave a presentation on Up-to-date Research/IT Profile of NUST/NIIT to the delegation of University of Leeds, UK.
- Given a comprehensive briefing about the academic and research activities and the facilities available/strength of NUST in the area of information technology at NUST in general and NIIT in particular to the CISCO experts in Jan 2007. The purpose of the briefing was to apprise CISCO experts for establishing a customer support Training Lab Facility in NUST/Pakistan.
- Prepared a detailed presentation/briefing about the various academic programs and research activities being carried out at NIIT/NUST for the Dr. Arden L. Bement, Director, National Science Foundation (NSF) for acquiring research grant.
- Presented the profile of NUST/NIIT before the representatives of IBM for establishing Industry and University Partnership.
- Senior member of Corporate Advisory Council (CAC) for IT & Communication/Engineering related programs. CAC comprises members from NUST and local industry (Tech Access, Netsol and Goldmine etc)
- Head of the organizing committee for organizing a One day international workshop on "Connection Oriented Networks, MPLS, GMPLS and Optical Networks" held at NIIT, Pakistan on 26<sup>th</sup> April 2007.
- Head of the organizing committee for the Undergraduate Convocation to be held in March 2007.
- Senior Member of the Organizing Committee of All Pakistan Software Competition N@stec 2006 held on 23<sup>rd</sup> – 24<sup>th</sup> Dec, 2006.
- Senior Member of the organizing committee of the International Workshop on Multi Agent Systems and Semantic Grid 2006 held on 16<sup>th</sup> Dec 2006.
- Senior Member of the Organizing Committee of the Workshop on PCB Design and Manufacturing held on 6<sup>th</sup> Nov 2006.
- Senior Member of the Organizing Committee of 4 days Workshop on Semantic Web & Web Engineering held on 31 Jan 2006 to 03 Feb 2006.
- Senior member of organizing committee of International workshop "Working with Industry" held at NIIT form 19 Feb 2006 to 20 Feb 2006.
- Head of Academics and Member Management Committee NUST Institute of Information Technology (NIIT), Rawalpindi. March 99 Feb 2005

*Major Responsibilities:* Principal contribution in establishing the institute, ranging from renting a suitable accommodation, furnishing the classrooms/Labs to designing of state of the art courses/curriculum for both Postgraduate and Undergraduate Degree Programmes in IT as well as for specialized short courses in IT and selection/hiring of suitable faculty/staff members to the smooth conduct of various UG/PG level examinations and projects. Planned and managed the following activities: IT Education Faculty Development Workshop on Web Technologies in Collaboration with Punjab IT Board conducted planned for July 2000 Launching of BIT programme in March 2000 Launching of MIT programme in March 2001 Launching of PhD programme in April 2001 Launching of MCSE programme in Oct 99 Launching of PG Diploma in IT programme in Sept 99 Launching of Diploma in IT, Diploma in NE, and shot courses April 99 Conducted series of professional seminars. Notable among them included : E-Commerce, CISCO Routers, Windows 2000, XML technology etc. **IT** Projects **Networking Projects** Establishment of LAN at NIIT (350 Computers) including wireless node- completed Establishment of LAN at HQ NUST (70 Computers) - completed Establishment of LAN at IESE (25 Computers) - completed Web Development Projects NIIT's Web page - completed NUST's Web page - completed

### \* Research Contributions

- Principal Investigator: NIIT Network Research Group. 1999 To date
- Submitted HEC Research Grant Application Proforma as Principal Investigator for Capacity Building by "Development of Optical Communication Technologies for Outreach and Research in Pakistan" (DOCTOR in Pakistan) to test high speed data. Mar 2007
- Prepared PC-1 as Principal Investigator for the Establishment of Research Centre for Nanophotonics Sep 2006
- Assistant Director Research and Development: National University of Sciences and Technology, Rawalpindi Pakistan. July 1996 March 1999
- Directed following Industrial R&D Projects as Principal Investigator
   ADPCM system (CTI Islamabad) 1996-1997
   Power supply for rural exchanges (CTI Islamabad) 1996-1997
   Command, Control, Communications, Computers and Intelligence system (AWC) 1997-1998
   WDM system for enhancing Information transfer capacity (PASCOM) 1997-1998
- Prepared PC-1 as Principal Investigator for the Research Centre in Modeling and Simulation 1996/1997
   Key contribution in preparing following PC 1s Revised NUST PC 1 1997
   IDB funded R&D Projects 1997

- **Research Associate:** Optical Fiber Communications laboratory, University of south Florida, Tampa, USA. August 1988 June 1993.
- **Summer Intern**: Bell Communications Research, Navesink Research and Engineering Center, Red Bank, New Jersey, USA, June 1992- September 1992.

#### • Publicatons: 87

[1]	"Multichannel Image-Rejection Coherent Detection System", IEEE Journal of Light Wave
	Technology Vol. 8, No. 12, December, 1990.
[2]	"Integration of a Coherent Optical Receiver with Adaptive Image Rejection Capability",
	presented in SPIE'91 Conference, Orlando, USA.
[3]	"Fiber Amplifiers in Closed-Ring WDM Networks", IEE Electronic Letters, Vol. 28, pp. 2340-
	2341, 1992.
[4]	"Multi-Wavelength Fiber-Amplifier Cascades in Unidirectional Inter-Office Ring Networks",
	presented in OFC'93, San Hose, USA.
[5]	"Fiber-amplifier cascades with gain equalization in multiwavelength unidirectional inter-office
	ring networks", IEEE Photonics Technology Letters, Vol 5, pp. 1026-1028, 1993.
[6]	"Sensitivity Enhancement Using Coherent Detection", IEEE Journal of Light Wave Technology,
	Vol 12, No. 6, June 1994.
[7]	"Erbium-Doped Fiber amplifier Simulation Model for Multiwavelength and Cascaded Amplifiers
	Operation", presented in 19 <sup>th</sup> international Summer College on Physics and Contemporary needs
	in Laser Physics and Applications Session, July, 1994.
[8]	"Experimental Study of GaAs/AIGaAs quantum well structures under an applied Electric Field",
	presented in 19 <sup>th</sup> International Summer College on Physics and Contemporary needs in Laser
	Physics and Applications Session, July, 1994 by Hafeez, D.W. Langar, Zaidi.
[9]	"Semiconductor Laser Communication Link", Journal of Science Technology and Development
	of the Pakistan Council for Science and Technology, Vol. 13, No. 4, pp. 28-33, December, 1994.
[10]	"Multi-channel PCM Optical Transceiver", Journal of Science Technology and Development of
	the Pakistan Council for Science and Technology, accepted for publication February, 1995.
[11]	"Thermal Imaging Systems/FLIRS for Aerial Warfare", presented in Seventh National
54.03	Aeronautical Conference 26 <sup>th</sup> – 27 <sup>th</sup> March, 1995.
[12]	"Command Control Communications and Intelligence (C <sup>-1</sup> ) Using Fiber-Optic Information
54.07	Superhighways", presented in Seventh National Aeronautical Conference 26-27 March, 1995.
[13]	"Electro-optic Modulators", presented in PAK Telecom 95, April, 1995.
[14]	"Computer Simulation of analog and Digital Communication Systems", presented in PAK
54 77	Telecom 95, April 1995.
[15]	"Environmental Study Using LIDAR: Light Detection and Ranging", presented in 20 <sup>th</sup>
	International Summer College on Physics and Contemporary needs in Laser Physics and
51.61	Applications Session, July, 1995.
[16]	"Enhancement of Inter-Repeater Distance in Fiberoptic Communication Links Using Coherent
	Detection", presented in IEEE (Pakistan Section) 1" National Multi-Topic Conference,
F 1 77	November, 1995.
[[/]	"Antenna Design for Millimeterwave Radiometers", presented in IEEE (Pakistan Section) 1"
51.01	National Multi-Topic Conference, November, 1995.
[18]	"A Computer Controlled Optical Set-up for Experimental Study of Quantum Well Waveguide
	Structures, Conference Proceedings, IEEE (Pakistan Section) 1 <sup>st</sup> National Multi-Topic
[10]	Conference, pp. 249, November, 1995.
[19]	Gerard Lacks, Syed Mohammad Zaidi Receiver Sensitivity Enhancement of Optical
	Heterodyne Detection Using Signal processing Techniques", International Conference on
	Communications and Signal Processing held in October 96 at China.

[20]	'Syed Mohammad Zaidi'"EDFA for Telecommunication Systems." PAK Telecom 97 Seminar, 20 May 1997
[01]	20 May 1997. "Send Mahammad Zaidi" "IT Education in NUIST Delviston" at Delling China May 1009
$\begin{bmatrix} 21 \end{bmatrix}$	Syed Mohammad Zaidi 11 Education in NUS1 Pakistan at Beijing China - May 1998
[22]	Syed Monammad Zaidi "Development Trends in Information Technology" MCS, NUST – July
[23]	'Sved Mohammad Zaidi' "Internetworking using TCP/IP" NIIT_NUST – October 1999
[23]	'Sved Mohammad Zaidi' "E-Commerce Technologies" E-Commerce Workshop at HO NUST –
[27]	Jan 2000
[25]	'Syed Mohammad Zaidi, Mr. Ali Hammad' "Pakistan Academic Intranet: Technology Solution", ITU Telecom Asia 2000 Hong Kong – December,2000
[26]	'Syed Mohammad Zaidi' "Benefits of Intranet for the Armed Forces of Pakistan ", School of Army Air Defence, Malir Cantt – 06 February 2001.
[27]	'Syed Mohammad Zaidi' "IT Education and Training in Pakistan: Suggested Improvements", International Workshop on Virtual Library and Network Information Systems - Beijing, China, May 10-24, 2001.
[28]	'Syed Mohammad Zaidi' "IP-over-DWDM technology overview" One day International Workshop on Broadband Networks – 9 May 2002
[29]	'Syed Mohammad Zaidi' "ICT Empowering people to cross the Digital Divide", PTA conference 2002.
[30]	"Impact of DoS attack on E-commerce and its countermeasures", E-commerce and Development in Pakistan, Islamabad. Sept 18-19 2002.
[31]	"Photonic Networks using IP-over-DWDM technology" ISCON 2002 (August 16-17)
[32]	'Syed Mohammad Hassan Zaidi, Ramla Ahmad' "Routing and Wavelength Assignment
	Algorithms in IP over DWDM Networks" publish at IEEE Student Conference (ISCON) 16-17 Aug, 2002.
[33]	"Ramla Ahmad, Syed M.H. Zaidi, Mr. Ali Hammad Akbar' "Performance Analysis of
	Wavelength Assignment Algorithms in IP over DWDM Networks" pusblished at International
	Association for Development of information Society (LADIS)WWW/Internet Conf held in Portugal in 13 15 Nov 2002
3/1	"Pakistan Education and Research Network An overview" APAN 2003 Conference - Eukuoka
5-1	Japan (21-24 January)
[35]	"Securing Internet Servers from SYN Flooding", 5th International Conference on Enterprise
50.61	Information Systems, Angers, France 2003 (23-26 April 2003)
[36]	"Syed Mohammad Zaidi, Amjad Mehmood" "Dynamic Routing through Spontaneous Resource Reservation" Presentation in INMIC 2003
[37]	"Performance Evaluation of Transmission Control Protocol in Mobile Ad hoc Networks". Ameer
- 1	Ahmed, Dr.S.M.H.Zaidi, Nadeem Ahmed, INCC2004, pp.13-18, June2004".
[38]	"Mitigating the effects of Denial of Service Attacks on E-commerce sites and Networks",
	Mohammad Ali Awan, Dr M. H. Zaidi, 18th APAN (Asia Pacific Advanced Network) Research
	Meeting, Cairns, Australia, July 2004.
[39]	"Analysis of Different Strategies for the Mitigation of Imprecise Network State Information",
	Shahid Nawaz, S. M. H. Zaidi, Jawwad Ahmad, 18 <sup>th</sup> APAN (Asia Pacific Advanced Network)
	Research Meeting, Cairns, Australia, July 2004.
[40]	"A Comparative Study of Distributed Wavelength Reservation Schemes in WDM Networks"
	Jawwad Ahmad, S. M. H. Zaidi, Shahid Nawaz, 18 <sup>th</sup> APAN (Asia Pacific Advanced Network)
	Research Meeting, Cairns, Australia, July 2004.
[41]	"TCP Flood sensor for Internet Backbone" Madiha Zafar and S.M. H. Zaidi SAM, 04 conference
	the 2004 International Conference on Security and Management Monte Carlo Resort, Las Vegas,
	Nevada, June 21 – 24, 2004

[42]	"Wavelength Assignment using Closest Wavelength Tuning Algorithm" Ramla Ahmad, Syed
	M.H. Zaidi, Ali Hammad 4 Day US-Pakistan Workshop on High Capacity Optical Networks and
	Enabling Technologies 28-31 Dec 2004 Islamabad Pakistan.
[43]	"Minimizing the Effect of Imprecise Network state Information through Reduced Overheads in
[]	WDM Networks" Shahid Nawaz Sved M H Zaidi Jawwad Ahmed 4 Day US-Pakistan
	Workshop on High Canacity Ontical Networks and Enabling Technologies 28-31 Dec 2004
	Islamahad Dakistan
[44]	"Lightnath Douting in Wayalangth Convertible WDM Natworks" Jaywad Ahmad Syad M H
[44]	Zoidi Shahid Nawaz 4 Day US Dakistan Workshon on High Canasity Ontical Natworks and
	Enchling Technologies 28, 21 Dec 2004 Islamshad Delviston
F 4 5 1	Enabling Technologies 28-31 Dec 2004 Islamadad Pakistan.
[45]	Ennancing ICP Performance in Mobile Ad noc Network, Ameer Anmed, M.H.Zaidi, Kasnif
[46]	Sharif, NCE1 2004, SZABIST Karachi, Pakistan.
[46]	"Factors Affecting the Performance of TCP in Mobile Ad hoc Networks", Ameer Ahmed,
	M.H.Zaidi, Kashif Sharif, 4th International Conference on Networking ICN'05, April 17-21,
	2005 – Reunion Island, France.
[47]	"Lightpath Routing in Wavelength Convertible WDM Networks", Jawwad Ahmed, M.H.Zaidi,
	Shahid Nawaz, 4th International Conference on Networking ICN'05, April 17-21, 2005 –
	Reunion Island, France.
[48]	"Modular Approach for Unified Enterprise Application Security" Riaz A. Shaikh, Dr. S. M. H.
	Zaidi. Kashif Sharif NIIT NNRG NUST Pakistan 4 Day US-Pakistan Workshop on High
	Capacity Optical Networks and Enabling Technologies 28-31 Dec 2004 Islamabad Pakistan.
[49]	Ameer Ahmed, Dr. S. M. H. Zaidi, Nadeem Ahmed. (2004). "Performance Evaluation of
	Transmission Control Protocol in Mobile Ad hoc Networks", INCC2004, pp.13-18, June 2004
[50]	Ameer Ahmed, M. H. Zaidi, Kashif Sharif. (2004). "Enhancing TCP Performance in Mobile Ad
	hoc Networks", NCET 2004, December 2004.
[51]	"Enterprise Wide Centralized Application level Access Control using XACML", Riaz A. Shaikh,
	S.M.H.Zaidi, Saeed Rajput and Kashif sharif, proceeding of 8th international e-Biz conference,
	Seoul, Korea,
[52]	Ameer Ahmed, S. M. H. Zaidi, Nadeem Ahmad. (2005). "Factors Affecting the Performance of
	TCP in Mobile Ad hoc Networks", ITA05, September 7-9, 2005.
[53]	"Review of Routing and Wavelength Assignment Algorithms and Some Research Challenges for
	Optical WDM Networks" Dr. S. M. H. Zaidi. 4 Day US-Pakistan Workshop on High Capacity
	Optical Networks and Enabling Technologies 28-31Dec 2004 Islamabad Pakistan.
[54]	"TCP SYN Flood sensor" Madiha Zafar and S.M. H. Zaidi 4 Day US-Pakistan Workshop on
	High Capacity Optical Networks and Enabling Technologies 28-31 Dec 2004 Islamabad Pakistan.
[55]	"Enterprise wide Centralized Logging Mechanism for Application Level Intrusion Detection" The
	2005 International Conference on Security and Management (SAM'05), USA, 20-23 June 2005
[56]	"Monitored Responsive Flexibility in Packet Forwarding for Congestion Control" S.M. H. Zaidi
	and Omer Fayyaz International Conference on Internet Technologies and Applications 7-9 Sep
	2005 Wrexham, UK.
[57]	"Performance Analysis of Unified Enterprise Application Security Framework" Riaz Shiekh,S.
	Rajput, Dr. S. M. Hassan Zaidi, Kashif Sharif, Ejaz on July 5, 6, and 7, 2005 in Lisbon,
	Portugal
[58	"Comparative Analysis of Difference Failure Recovery Schemes in MPLS Networks" Dr. S. M.
	H. Zaidi and M. Aamir Bashir International Conference on Autonomic and Autonomous Systems
	International Conference on Networking and Services Joint ICAS'05 and ICNS'05 October 23-28,
	2005 Papeete, Tahiti,
[59]	"Simplified Static Image Face Detection Algorithm" Syed Ali Raza Zaidi, S.M.H. Zaidi, Kashan
	Samad, Ahmad Ali Iqbal at IBA International Conference on Information Communication
	Technology 2005

[60]	"A Comparative Analysis of Routing Protocols in GMPLS" Muhammad Adeel, Saqib Javed,		
	M.H. Zaidi, Ahsan Chaudhry, Waqar Mahmood, A.A. Iqbal at FIP ICI 2005 conference.		
[61]	"Comparative Analysis and Design Philosophy of next Generation Unified Application Security"		
	Riaz A. Shaikh, Saeed Rajput, S. M. H. Zaidi and Kashif Sharif. IEEE International Conference		
	on Emerging Technologies (IEEE ICET), Islamabad Pakistan, 17-18 Sep 05		
[62]	Dr. Yasin A. Raja, Dr. Naasir Ghani, and Dr. S. M. Hassan Zaidi "Passive Optical Networks		
	(PON): Propellers of FTTH, US-Pakistan International Symposium on High Capacity Optical		
	Networks & Enabling Technologies 19-21 December 2005 Islamabad Pakistan.		
[63]	Dr. Nasir Ghani, Dr. Yasin A. Raia, Dr. S. M. Hassan Zaidi and Dr. Arshad Ali "Optical Internet		
L J	Technologies and Emergent Cyber Infrastructures" US-Pakistan International Symposium on		
	High		
	Capacity Optical Networks & Enabling Technologies 19-21 December 2005 Islamabad Pakistan.		
[64]	Dr. S. M. Hassan Zaidi, Dr. Yasin Raja "GLIF NIIT Research: Gateway to Information		
[]	Superhighway in Pakistan, US-Pakistan International symposium on High Capacity Optical		
	Networks & Enabling Technologies 19-21 December 2005 Islamabad Pakistan.`		
[65]	Raheeb Muzaffar, Dr. S.M. Hassan Zaidi "EPON Technology Survey – Proposal for NUST		
L ]	Access Network, US-Pakistan International Symposium on High Capacity Optical Networks &		
	Enabling Technologies 19-21 December 2005 Islamabad Pakistan.		
[66]	Mr. Umer Wasim, Dr. S. M. Hassan Zaidi, Next Generation Optical Access, US-Pakistan		
	International symposium on High Capacity Optical Networks & Enabling Technologies 19-21		
	December 2005 Islamabad Pakistan.		
[67]	Syed Wagar Hussain, Dr. S. M. Hassan Zaidi, Ms. Gigi Karmous-Edwards, Rizwan Ahmad "A		
	Review on GMPLS Protocols: Issues and Challenges" US-Pakistan International symposium		
	on High Capacity Optical Networks & Enabling Technologies 19-21 December 2005 Islamabad		
	Pakistan.		
[68]	Syed Waqar Hussain, Tashfeen Khan, Dr. S. M. Hassan Zaidi "MAC Protcols for Wireless		
	Sensor		
	Networks: A Review" US-Pakistan International symposium on High Capacity Optical Networks		
	& Enabling Technologies 19-21 December 2005 Islamabad Pakistan.		
[69]	Raheeb Muzaffar, Usman Younis, S.M Hassan Zaidi, "NH-PON (NUST Hybrid PON): Dual		
	Ring Hybrid WDM/TDM Passive Optical Network", Submitted for HONET 2006.		
[70]	Raheeb Muzaffar, Usman Younis, S.M. Hassan Zaidi, M. Y. A Raja, "Priority Swapping Intra		
	ONU Bandwith Allocation Algorithm Supporting Differentiated Services", Submitted for ICCCN		
	2006.		
[71]	Usman Younis, Raheeb Muzaffar, S.M. Hassan Zaidi, M. Y. A Raja, "Dynamic Bandwith		
	Allocation Algorithm using Sequential Channel Selection for Hybrid WDM/TDM EPON"		
	Submitted for ICCCN 2006.		
[72]	Fawad Khan, S M Hassan Zaidi "WDM Protection Schemes – A Review" High capacity Optical		
	Networks and Enabling Technologies September 6 – 8 2006 Hilton Charlotte University Place		
	Hotel & The University of North Carolina at Charlotte, USA		
[73]	Usman Younis, Raheeb Muzaffar, S M Hassan Zaidi "QoS Support for Hybrid WDM/TDM		
	EPON Access Networks" High capacity Optical Networks and Enabling Technologies		
	September 6 – 8 2006 Hilton Charlotte University Place Hotel & The University of North		
	Carolina at Charlotte, USA		
[74]	Raqeema Akhtar, S M Hassan Zaidi "NH-PON (NUST Hybrid PON): Centralized and		
	Distributed Bandwidth Allocation" High capacity Optical Networks and Enabling Technologies		
	September 6 – 8 2006 Hilton Charlotte University Place Hotel & The University of North		
	Carolina at Charlotte, USA		

[75]	M Umer Wasim, S M H Zaidi, M Yasin Akhtar Raja, Nasir Ghani, Rizwan Ahmad "Extended
	Survivable Passive Access Network (e-SPAN)" High capacity Optical Networks and Enabling
	Technologies September 6 – 8 2006 Hilton Charlotte University Place Hotel & The University of
	North Carolina at Charlotte, USA
[76]	Raheeb Muzaffar, Usman Younis, S M Hassan Zaidi "NH-PON (NUST Hybrid WDM/TDM
	Passive Optical Access Network" High capacity Optical Networks and Enabling Technologies
	September 6 – 8 2006 Hilton Charlotte University Place Hotel & The University of North
	Carolina at Charlotte, USA
[77]	M Haider Raza, S M Hassan Zaidi "A Review on Protection in WDM PON – Enhancements for
	NUST Access Network" High capacity Optical Networks and Enabling Technologies
	September 6 – 8 2006 Hilton Charlotte University Place Hotel & The University of North
	Carolina at Charlotte, USA
[78]	Qasim Bilal Lone, S M Hassan Zaidi, Imran Haider "Efficient Priority Scheduling in UMTS
	Networks" High capacity Optical Networks and Enabling Technologies September 6 – 8 2006
	Hilton Charlotte University Place Hotel & The University of North Carolina at Charlotte, USA
[79]	Fawad Khan, S. M. H. Zaidi, "Ethernet Passive Optical Network (EPON) System with Triple
	Tray Support for NUST Access Network" December 16, 2006, 4 <sup>th</sup> International Workshop on
	Multi Agent Systems and Semantic Grid (MASSG 2006)
[80]	Raheeb Muzaffar, Usman Younis, S.M. H Zaidi, M Yasin Raja "Priority Swapping Intra ONU
L J	Bandwidth Allocation Algorithm" December 16, 2006, 4 <sup>th</sup> International Workshop on Multi
	Agent Systems and Semantic Grid (MASSG 2006)
[81]	Ammar Rafiq, Dr. S. M. H Zaidi, Muhammad Ramzan, "Comparative Analysis of Scheduling
	Frameworks for Efficient wavelength utilization in WDM EPONs, 11 -12 April 2007,
	International Conference on Electrical Engineering (ICEE) at UET Lahore.
[82]	Usman Younis, Raheeb Muzaffar, S. M. H Zaidi, "Dynamic Bandwidth Allocation Algorithm
	using Sequencial Channel Selection for Hybrid WDM/TDM EPON" Glasgow UK 2007.
[83]	Raqeema Akhtar, Dr. S. M. H. Zaidi, Muhammad Ramzan, "A review on Dynamic bandwidth
	Allocation Schemes for Ethernet Passive Optical Networks (EPONS)" April 26 2007, One day
	International Workshop on Connection Oriented Networks, MPLS, GMPLS and Optical
	Networks.
[84]	Ayesha Binte Ashfaq, Dr. S. M. H Zaidi, "Lessons Learnt from the US Model for the Deployment
	of Broadband in Asia" April 26 2007, One day International Workshop on Connection Oriented
	Networks, MPLS, GMPLS and Optical Networks.
[85]	Qasim Ali, Dr. S. M. H Zaidi, "Overview of Optical Switching Paradigms" April 26 2007, One
	day International Workshop on Connection Oriented Networks, MPLS, GMPLS and Optical
	Networks.
[86]	Fawad Khan, S. M. H Zaidi, Kamran Hussain Zaidi, "Triple Play Over FTTX – Challenges and
	Resolutions (A Review), April 26 2007, One day International Workshop on Connection Oriented
	Networks, MPLS, GMPLS and Optical Networks.
[87]	Dr. S. M. H Zaidi, "Broadband Access Technology Evolution Patterns: Strategy and
	Recommendations for the Asian Region", April 26 2007, One day International Workshop on
	Connection Oriented Networks, MPLS, GMPLS and Optical Networks.

## \* Engineering Contributions

- **Quality Control Officer**: in Precision Measurement Equipment Laboratory, Pakistan, January 1986 December 1987.
- Officer Incharge Calibration & Maintenance in Precision Measurement Equipment Laboratory, Pakistan, January 1985 December 1987

### • Electronics Maintenance Officer: in MPDR90 Radar Unit, May 1984 – October 1984.

### \* Community Contributions

- Senior Member of the Organizing Committee for arranging Blood Donation camps on as and when required basis.
- Tree Plantation activities at the institutional level on quarterly basis.
- Collection of relief funds at the institutional level, for the earthquake afftectees of 8<sup>th</sup> Oct 2005.

## **Research Grants Won**

## \* Organization

#### Grant

•	National Science Foundation, USA	US\$ 64000.00
•	Charlotte Research Institute, USA	US\$ 20000.00
•	Higher Education Commission, Pakistan	1 Million
•	Pakistan Telecommunication Corporation Limited	1.7 Million
•	National Telecommunication Corporation	0.2 Million

## Students Supervised

### \* PhD

<b>S</b> #	Name	Research Area
1	Lt Col Maroof	Optical Burst Switching: Challenges and Solutions
2	Madiha Zafar	Multicast-broadcast multimedia services in mobile communication networks
3	Ali Hammad	A new paradigm of Network management for Mobile Adhoc Networks
4	Sarmad Sadiq (Committee Member)	Novel paradigms for building autonomous distributed systems like Multi-agent platforms

## > Post Graduate

<b>S</b> #	Name	Thesis Title	
	MIT – 1 (PGD)		
1	Riaz Mahmood	Mitigating denial of service attacks using dynamic ingress filtering mechanism	
2	Ramla Ahmed	Wavelength assignment using closest wavelength tuning Algorithm	
	MIT – 1		
	(17 ½ Years Program equivalent to M.Phil)		
3	Amjad Mehmood	Dynamic Routing through spontaneous resource reservation	
4	Muhammad Aamir	Comparative analysis of Different Filure Recovery Schemes in MPLS	
4	Bashir	Networks	

S#	Name	Thesis Title	
		MIT – 2	
		(17 <sup>1</sup> / <sub>2</sub> Years Program equivalent to M.Phil)	
5	Mohammad Ali Awan	Mitigating the effects of Denial of Service Attacks on E-commerce sites and networks	
6	Omer Fayyaz	Monitored responsive flexibility in Packet forwarding for congestion control	
		MIT – 3	
		(17 <sup>1</sup> / <sub>2</sub> Years Program equivalent to M.Phil)	
7	Shahid Nawaz	Mitigatting the Effect of Imprecise Netwirk State Information	
8	Jawwad Ahmad	EWLCR: A Novel Routig Algorithm for sparse and full wavelength conversion WDM networks	
9	Madiha Zafar	TCP SYN Flood Sensor for Internet Backbone	
		MIT – 4	
		(17 <sup>1</sup> / <sub>2</sub> Years Program equivalent to M.Phil)	
10	Riaz Ahmed Sheikh	Comparative analysis and design Philosophy of Next Generation unified Enterprise application security	
		MSIT-5	
		(17 <sup>1</sup> / <sub>2</sub> Years Program equivalent to M.Phil)	
11	Muhammad Umer Wasim	Survivable Passive Optical Network (SPAN)	
12	Usman Younis	RSB: MAC Algorithm for Hybrid WD-TDM EPON Access Network	
13	Raheeb Muzaffar	Priority Swapping Intra-ONU Bandwith Allication Algorithm	
14	Syed Waqar Hussain	Latency and Energy Efficient - MAC (LEEMAC) Protocol for Wireless Sensor Networks	
		MS (EE) – 2	
		(17 <sup>1</sup> / <sub>2</sub> Years Program equivalent to M.Phil)	
15	Muhammad	Performance Optimization of EDA Based Bi-directional Networks using	
15	Mahroof	WDM Technology	
16	Muhammad Ayub	Design and Development of na ADPCM Interface Module	
17	Maj Muhamad Arif	Design and Performance analysis of Mobile optical fiber based field communication system for C I Applications	
	7 11 11	MS (EE) – 3	
	(17 ½ Vears Program equivalent to M Phil)		
		Design and Simulation of Advanced Multimedia EDM-Based Photonic	
18	Said Khalfan	Networks	
19	Ali Hammad Akbar	Fiber Fabry - Perot e'talon: The Marvel Unveiled	
		MCS	
20	Khudija Begum/ Nuzhat Fatima	Study of various kinds of ICMP Attacks & Design of Sensor for Smurf Attacks at Internet	
21	Saira Naz⁄ Monaza Talha	Exotic Drive Online Storage of Files URLS nad Web Pages	

S#	Name	Thesis Title	
22	Saima Ghafoor	A Study of IPSEC Enabled Transition to IPV6	
23	Riffat Zahra/ Shumaila Shahzad	Parallel Resource Computer	
		PGD (IT) - 1	
24	Muhammad Ali Saeed	Distance Learning Through Video Conferencing and Chat	
25	Faisal Bilal	Online Family Planning Guide	
26	Ramla Ahmed	Web Oriented Content Development	
27	Taimoor Ali Khattak	Distance Learning System	
	PGD (IT) - 2		
28	Zahid Hussain	Web Based Databases for NIIT Program Coordination Branch	
29	Sana Nafees	Digital Library NIIT	

# > Under Graduate

S#	Name	Project Title
BIT-1		
1	Nazia Afzal	PKI based Security system
BIT-2		
2	Qasim Tariq	Computer Based Testing system
3	Faheem Qureshi	Electronic Learning Module with test case of Data Communication
4	Adeel Ahmed Hashmi	Design/Development of Lab Excercises for Enterprise Network Technology
BIT-3		
5	Mehreen Tariq	Statistical Anomaly Detection for mitigatingTCP Syn flood Attacks through internet backbone
6	M Usman Farooq	Establishment of VPN between NUST campuses
7	Umer Farid	Computer Based Testing System for Job applicants
BIT-4		
8	Qasim Bilal Lone	Earliest Deadline First & Best Efforts Scheduling Algorithm (E-BES)

### Selected Research Projects

- Devised a novel architecture for NH-PON (NUST Hybrid PON): Dual Ring Hybrid WDM/TDM Passive Optical Access Network with enhanced QoS support. This high tech research and development project will enable designing and implementation of a high speed access network at NUST new Technology Smart Campus at H-12, Islamabad. The project is geared to help develop an advanced networking infrastructure for Pakistani Scientists, engineers, and health care professionals to communicate and collaborate with international partners.
- Designed and implemented a software model for fully characterizing the gain and noise characteristics of an Erbium-Doped Fiber Amplifier (EDFA).
- Demonstrated through Computer Simulation a wavelength-routed unidirectional inter-office ring network employing fourteen wavelength multiplexed systems with 2-nm spacing. This permits a network containing fifteen central offices with proper assignment of signal wavelengths.
- Devised a self-consistent solution for an interoffice ring network consisting of a cascade of 11 EDFAs that closes on itself and amplifies 15 wavelength-multiplexed signals. The accumulated signal-to-noise ratio is sufficient for 10 Gb/s operation at each wavelength, allowing a network capacity of 550 Gb/s for a full mesh traffic pattern.
- Sensitivity Enhancement of Coherent Optical Fiber Communication System, Using Analog Frequency Modulation of Optical Carrier by Digitally Modulated Subcarriers: Demonstrated a novel subcarrier modulated coherent optical fiber communication system capable of 11.1 photons/bit reception. A major application of this research would be extension of inter-repeater distance for long-haul fiber-optic communication.
- Optoelectronic Interconnect System for Next Generation Supercomputers (Funded by DARPA): Constructed a "hybrid" breadboard circuit to demonstrate functioning of overall interconnect system.
- Design of Pakistan Academic Intranet
- \* Routing and Wavelength Assignment algorithms in IP over DWDM Networks
- Wavelength Assignment Using Closest Wavelength Tuning
- Dynamic Routing through Spontaneous Resource Reservation
- Mitigating Denial-of-Service Attacks using Dynamic Ingress Filtering Mechanism
- Mitigating effects of Denial of Service (DoS) Attacks on E-Commerce Sites and Networks
- TCP SYN Flood Sensor for Internet Backbone
- Design and Development of High Speed Network at NIIT
- Center for Optoelectronics and Optical Communications Research at NUST (CORN)
- Minimizing the Effect of imprecise network state information through reduced Overhead in the WDM Networks
- EWLCR: A Novel Routing Algorithm for Sparse and Full Wavelength Conversion WDM Networks
- ✤ Comparative Analysis of Different Failure Recovery Schemas in MPLS Networks
- Monitored Responsive Flexibility in Packet Forwarding for Congestion Control
- Measurement and Analysis for the Global Grid and Internet End-to-end Performance" (MAGGIE)
- Selection, Training and Assessment of Future Faculty (STAFF)
- Capacity-Building in Pakistan by Research and Development of Test beds for Global Lambda Integrated Facility (GLIF) Nodes, under Pak-US Science and Technology Cooperative Program (USAID)
- Enterprise Network Security project

### References

- 1. Professor Dr. Mirsad Hadzikadic Dean, College of Information Technology University of North Carolina at Charlotte USA
- Professor Dr Gerard Lachs Electrical Engg Dept University of South Florida, Tampa Florida USA
- 3. Dr Ali Elrefaie Hewlett Packard Research Laboratories Palo Alto California 94304 USA