CURRICULUM VITAE

NAME   **SHEIKH, Asrar Ul Haq**

DATE OF BIRTH   **23 September 1942**

CITIZENSHIP   **Canada**

CONTACT ADDRESSES

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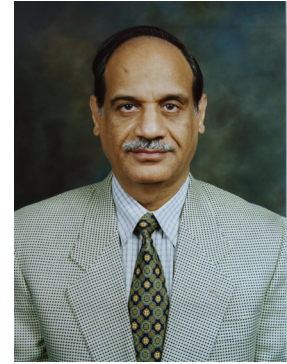EE Department, KFUPM Box 167, Dhahran 31261, Saudi Arabia
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EDUCATION

Ph.D.	Electrical and Electronics Engineering (June 1969)	University of Birmingham, UK
M.Sc.	Information Engineering (September 1966)	University of Birmingham, UK
B.Sc. (Eng.), Hons;	Electrical Engineering, (Comm) (July 1964)	University of Engineering & Technology, Lahore

PROFESSIONAL ENGINEERING REGISTRATION

Licensed Professional Engineer (P.Eng.), Association of Professional
Engineers of Ontario (Currently on a leave of absence)
Chartered Engineer (C.E.), Council of Engineers, U.K.

MEMBERSHIP IN PROFESSIONAL SOCIETIES

Fellow IEEE (USA) 2004
Fellow IEE (London)1992
Member IEE (Pakistan)

PROFESSIONAL HONOURS AND AWARDS

College of Engineering Sciences Research Award 2006

College of Engineering Sciences Research Award 2005
IEEE Fellow January 2004
Listed in Who is Who in the World, 2001-2007.
Listed in Who is Who in Science and Engineering, 2004-2007.
Awarded Recognition and honors for Outstanding Performance on the 48th
  Annual IEEE Vehicular Technology Conference, Ottawa, May 1999.
University Research Award, Carleton University, 1994.
IEE Fellow October 1992.
Academic Achievement Award, Carleton University, 1986.
Paul Adorian Premium for Outstanding Papers in published in 1983 on
  Communications and Broadcast Engineering (*IERE* (Now part of IEE)
  London, U.K.) 1984.
Academic Achievement Award, Carleton University, 1984.

EMPLOYMENT EXPERIENCE

2000-**08** Bugshan/Bell Labs Chair Professor, Department of Electrical
  Engineering, King Fahd University of Petroleum and Minerals
  (KFUPM), Dhahran, Saudi Arabia (On leave of absence).
2006 - 07 Rector, Foundation, University, Islamabad, Pakistan.
2001-**08** Director, Telecommunications Research Laboratory, Department
  of Electrical Engineering, King Fahd University of Petroleum and
  Minerals, Dhahran, Saudi Arabia.
1997-00 Professor and Associate Head, Department of Electronics and
  Information Engineering, the Hong Kong Polytechnic University,
  Hong Kong.
1998-00 Director, WISR Centre, Department of Electronics and Information
  Engineering, the Hong Kong Polytechnic University, Hong Kong.
1992-97 Director, PCS Research Laboratory, Carleton University, Ottawa,
  Canada.
1988-91 Associate Chairman for Graduate Studies, Department of Systems
  and Computer Engineering, Carleton University, Ottawa, Canada.
1985-**98** Professor Department of Systems and Computer Engineering,
  Carleton University, Ottawa (Tenured Appointment) Canada.
1981-85 Associate Professor, Department of Systems and Computer
  Engineering, Carleton University, Ottawa, Canada.
1978-81 Associate Professor, Department of Electrical Engineering,
  University of Garyounis, Benghazi, Libya.
1975-78 Post-doctoral Research Fellow, Department of Electronic and
  Electrical Engineering, the University of Birmingham, Birmingham,
  England.
1972-75 Lecturer, Department of Electrical Engineering, University of Tripoli
  Libya.
1970-72 Visiting Professor, Department of Electronics, University of Tabriz,
  Iran.
1970-70 Assistant Professor, Department of Electrical Engineering,

University of Engineering and Technology, Lahore, Pakistan (July 1970 to November 1970).

1965-69 Research Assistant, Department of Electronic and Electrical Engineering, University of Birmingham, England.

1964-70 Lecturer, Department of Electrical Engineering, University of Engineering and Technology, Lahore, Pakistan.

SABBATICAL LEAVES

1993-94 NSERC Senior Industrial Fellow at Bell-Northern Research (now Nortel), Ottawa.

1986-87 Consultant to Lapp-Hancock Associates Ltd., Ottawa, Member of System Engineering Team for Design of Advanced Train Control Systems.

PLENARY, KEYNOTE and INVITED TALKS

[PLKEYINV1] Wireless Communications: Evolution, Challenges and Solution, Invited Talk at Wireless Communication Forum, University of Bahrain, May 6, 2008.

[PLKEYINV2] Education and Research Keys to Prosperity, Invited Presentation at STEM 2008, KFUPM, April 29, 2008.

[PLKEYINV3] Code Division Multiplexing and Interference Mitigation, Presented at CITROD, KFUPM, March 30, 2008.

[PLKEYINV4] Prosperity Through Education and Research, Keynote Address, ICEE 2008, Lahore Pakistan, March 25, 2008

[PLKEYINV5] Promoting Research at Universities in Pakistan, Plenary Lecture, IECT 2007, Lahore, Pakistan, April 2007.

[PLKEYINV6] Anomalous radiowave propagation, Invited Talk, IBCAST, Islamabad, January 2007.

[PLKEYINV7] Communication Milestones, Plenary Lecture, IEEE-WCMC International conference 2006, Amman, Jordan, September 18, 2006.

[PLKEYINV8] Milestones in Communications, Invited talk at Texas A&M University at Qatar, Qatar, April 11, 2006.

[PLKEYINV9] Motivating the Engineering Students, Invited talk at University of Qatar, Qatar, April 12, 2006.

[PLKEYINV10] Milestones in Communications: From Electric Telegraphy to Optical Switching, Plenary Lecture, CCSP2005, Kuala Lumpur, Malaysia, November 16, 2005.

[PLKEYINV11] Advances in Communications, IBCAST2005 Plenary, June 12, 2005.

[PLKEYINV12] Design Considerations in Spread Spectrum Cellular Systems, (*Invited Talk*) Presented at INMIC 2004, December 2004.

[PLKEYINV13] Spread Spectrum Communications, *IBCAST*, Bhurban, Pakistan, June 2004 (*Invited Talk*).

[PLKEYINV14] Ultra Wideband Communications: Theory and Applications, *IBCAST*, Bhurban, Pakistan, June 2004 (*Invited Talk*).

[PLKEYINV15] Wireless Communications: A Revolution on the Horizon, *IEEE-INMIC*, Islamabad, Pakistan, December 2003 (*Invited Talk*).

[PLKEYINV16] Academic Perspectives in Wireless Communications and R&D Initiatives, Panel Discussion, ARAMCO 2003 (*Invited Talk*).

[PLKEYINV17] Opportunities and Challenges Wireless Communications, *IBCAST*, Bhurban, Pakistan, 2003 (*Invited Talk*).

[PLKEYINV18] Wideband Wireless Communications: Technology Options, *IBCAST*, Bhurban, Pakistan, 2003 (*Invited Talk*).

[PLKEYINV19] Asrar Sheikh, "Wireless Communications: A Revolution on the Horizon," *IEEE-INMIC*, Islamabad, (*Invited Talk*), December 2003.

[PLKEYINV20] Wireless Communications, *Invited talk* given at INMIC, Lahore Pakistan, December 2001.

Research Seminars Delivered

[RS1] Prosperity Through Education and Research, Seminar delivered at IEP, Eastern Province, Dhahran, May 7, 2008.

[RS2] Prosperity through Education and Research, Seminar delivered at University of Central Punjab, Lahore Pakistan, March 26, 2008

[RS3] The Use of Motivation in Teaching Engineering, IEEE-Education Society Invited Lecture, Al-Khobar, Saudi Arabia, November 2005.

[RS4] Application of Heuristic Algorithms in CDMA Multiuser Detection, Seminar delivered at Iqra University, Islamabad, June 2005.

[RS5] Spread Spectrum Communications, Seminar delivered at Iqra University, Islamabad, June 2005.

[RS6] Student Motivation and Good Teaching, Seminar deliver at HEC, Islamabad, June 2005.

[RS7] Application of Heuristic Algorithms in CDMA Multiuser Detection, Seminar delivered at GIKI, Topi, June 2005.

[RS8] Spread Spectrum Communications, Seminar delivered at GIKI, Topi, June 2005

[RS9] Asrar U. H. Sheikh, "Student Motivation and Good Teaching," in Proceedings of Discussion Forum on Faculty & Student Motivation, KFUPM, May 2004.

[RS10] The Role of Engineers in a Developing Society, EE Club, KFUPM, 2003.

[RS11] Modeling Options for a Complex Communication System, *Invited talk* Math Day, KFUPM, 2004.

[RS12] Reliable Communications over Mobile Radio Channels, KFUPM Seminar, 2003.

[RS13] Future Trends in Cellular Wireless Communications: Prognosis and

Challenges, *IEE* (Pak) Saudi Section, Riyadh, February 2002.

[RS14] Reliable Communications over Mobile Radio Channels, at Ettesalat College, Sharja, November 2001, UAE.

[RS15] Mobile Communications - IEE (Pak) Saudi Eastern Region Section, Dhahran, October 2001.

[RS16] Wireless Communications Beyond 3G, at OPSTEC, Lahore Pakistan, January 2001.

[RS17] Wireless Communications: Past, Present, and Future, IEEE Lecture, IEEE Saudi Section, Dhahran, Saudi Arabia, October 2000.

[RS18] New Opportunities and challenges in wireless communications, Engineering Technical Exchange meeting (CETEM '2000), May 2000.

[RS19] Wireless Communications - Revolution in the Making, Seminar delivered, Department of Electrical Engineering, University of Western Sydney, Nepean, Australia, 1998.

[RS20] Application of Adaptive Filtering in Direct Sequence Spread Spectrum Code Synchronization, Nortel Technical Forum V, Ottawa, Canada, October 1996.

[RS21] Characterization of Soft-handoff in CDMA, Nortel Technical Forum V, Ottawa, Canada, October 1996.

[RS22] Application of Adaptive Filtering in Acquisition and Tracking of Spreading Codes in DS-CDMA, Seminar give at University of Science and Technology, Hong Kong, October 1996.

[RS23] Research at the PCS-RL, Carleton University, BNR Technical Forum IV, Richardson, Texas, 1995.

[RS24] Hybrid DS-FH Spread Spectrum System Performance in the presence of channel frequency selective fading, BNR Technical Forum III, 1994.

[RS25] Designing a Third Generation PCS System, Presented to BNR Technical staff, 1994.

[RS26] Equalization and Service Integration in PCS Systems, University of Calgary, 1995.

[RS27] Introduction to USETS, USETS Workshop, 1994.

[RS28] Multiple Access Strategies in Mobile Communications, USETS Workshop, 1994.

[RS29] Experience with Ray Tracing, Presented at URSI workshop on channels, Stockholm, 1994.

[RS30] Third Generation PCS systems, presented at BNR Forum II, 1993.

[RS31] Universal, Secure, and Efficient Telecommunications Systems, seminar presented at TRIO annual progress meeting, 1993.

[RS32] An Investigation into Co-channel Interference in Microcellular Mobile Radio Systems, Seminar presented at WIN Lab, Rutgers University, N.J. 1992.

[RS33] Advanced Train Control Systems: Communication Considerations, Paper presented at OCRI-Session on Mobile Radio Systems, 1987.

[RS34] Channel Characterization for Mobile Personal Communication Systems, Paper presented at OCRI - Session on Mobile Radio Systems, October 1985.

[RS35] Cellular Radio-Emerging Technology Seminar - Department of Systems and Computer Engineering, Carleton University, November 1983.

[RS36] Radio Wave Propagation and Antennas (Radio Talk), Radio Pakistan University Magazine, 1970.

[RS37] Participated in Discussion on Applications of Satellites, Pakistan Television, 1970.

[RS38] Seminar on Satellites, American Centre, Lahore, 1970.

[RS39] Radio Emissions From Heavenly Bodies and Measurement Techniques, Seminar held by IEEE (Lahore Branch), 1969.

[RS40] Electrical Communications (Radio Talk), Radio Pakistan University Magazine, 1969.

PROFESSIONAL CONSULTING

[CON1] Measurements of propagation loss over radio channels for validation of anomalous propagation model, Member of Consulting Team to GCC Telecom Bureaus, 2005-06.

[CON2] Modeling of Anomalous Propagation of Radiowaves, Member of Consulting Team to GCC Telecom Bureaus, 2002-04.

[CON3] Consultant to Cathay Pacific Airways on EMI, 1997.

[CON4] Consultant to GEC-Alsthom, Canada, 1995.

[CON5] Consultant to BNR, 1993-94.

[CON6] Consultant to Lapp-Hancock Associates, Ltd., Ottawa, 1986 - 1997

[CON7] Consultant to MNET, Ottawa, 1987-88.

[CON8] Consultant to Binary Communications of Vancouver, 1987-88.

[CON9] Consultant to Catcom Inc. and KVA, Toronto, 1988.

[CON10] Consultant to Revenue Canada on Scientific Research and Experimental Development, 1987-88.

[CON11] Consultant to American Association of Railroads/Canadian Association of Railways on Advanced Train Control Systems, 1985-88.

[CON12] Consultant to Radnet Communications Ltd., Ottawa, 1984-91.

[CON13] Consultant to Department of Communications on SYNCOMPEX Systems to VHF/UHF Mobile Communications, 1984-85.

[CON14] Consultant to Novatel, Calgary on "Mobile Communications Systems", February 1984.

[CON15] Consultant to Novatel, Calgary on "Personal Communications", July - December, 1984.

[CON16] Consultant to Department of Communications contract on "Digital Data Transmission Over Mobile Radio Channels", 1982-83.

[CON17] Consultant to Department of Communications contract on "Analysis and Design of Mobile/Fixed Radio Terminals for

Transmission of Voice and Data" 1982-83.

[CON18] Consultant to Communications Research Centre on, "Adaptive Equalization Techniques for Digital HF Communications", 1982-83.

SHORT COURSES

[SCT1] Broadband Access and Networks (4 participating Faculty), A short course given at KFUPM, April 2003.

[SCT2] Interference Modeling and its Mitigation in Wireless Communication Systems, A half day short course given at IEEE-PIMRC'02, Lisbon, Portugal, September 2002.

[SCT3] Wireless Systems and Networks (2 Participating Faculty), A short course given at KFUPM, April 2002.

[SCT4] Interference in Wireless Communications, A short course given at PIMRC'96, Taipei, Taiwan, 1996.

[SCT5] Mobile Digital Communications - A short course given to Technical Staff of SPARC (Space and upper Atmospheric Research Centre), Lahore, Pakistan, August 1995.

[SCT6] Mobile Radio Systems - 5-day short course given to technical staff of Bell Northern Research (Now Nortel), December 1994.

[SCT7] Mobile Communications - 1-week, short course given at Southeast University, Nanjing, China, 1988.

[SCT8] Mobile Radio Systems- 3-day, Short course in co-operation with Binary Communications, Ottawa, April 1988.

[SCT9] Advances in Mobile Radio Systems - Short course given to the technical staff of Pakistan Telecommunication Research Institute, Islamabad, Pakistan, 1987.

[SCT10] Full Course given to Technical Staff of RCMP, DND and Revenue Canada, 1987.

[SCT11] Mobile Radio Systems - One Week Short course given to Technical Staff of NovAtel Communication Systems, 1984.

TUTORIALS

[TUT1] Advances in Multiuser Detection in CDMA, University of Engineering & Technnology, Lahore Pakistan, March 24, 2008,

[TUT2] Spread Spectrum Systems: A Transition From Defense to Civilian Domain, A Tutorial given at Military College of Signals, (NUST), Rawalpindi, January 17, 2005.

[TUT3] Advances in Multiuser Detection in CDMA and Advances in Heuristic algorithms for multiuser detection in CDMA Systems, Tutorials at Iqra University, Islamabad, January 18, 2005.

[TUT4] Advances in Multiuser Detection in CDMA and Advances in Heuristic algorithms for multiuser detection in CDMA Systems, Tutorials at GIKI Topi, January 19, 2005.

[TUT5] Advances in Multiuser Detection in CDMA and Advances in

> Heuristic algorithms for multiuser detection in CDMA Systems, Tutorials at University of Engineering & Technology, Lahore, January 20, 2005.
>
> [TUT6] Design Considerations in Spread Spectrum Cellular Systems, Tutorial given at INMIC 2005, December 25, 2004.

PUBLICATIONS

Publication	Published/ accepted	Submitted/under preparation
Book	1	2
Chapter in a Book	2	-
Journal	75	5
Conferences International	157	0
Conferences Regional	43	0
Technical Reports	40	-

Number of Citations of my Research (July 2007) >500 (Google Scholar)

Published Book

[B1] ***Asrar U. H. Sheikh, Wireless Communications: Theory and Techniques***, Kluwer Academic Publishers (Now Springer), New York, 2004.

Chapter in a Book

[CB1] **Asrar U. H. Sheikh,** *Mobile Communication Systems: Liberation of Telephone **in Canadian Developments in Telecommunication**,* University of Calgary Press, December 1986**.**

[CB2] **Adnan Khan, Sajid Bashir, Muhammad Naeem, Syed Ismail Shah and Asrar Sheikh,** *Binary Ant Colony Algorithm for Symbol Detection in a Spatial Multiplexing System,* in Unconventional Computation, Lecture Notes in Computer Science, Springer Berlin/Heidelberg, pp. 115-126, ISBN 978-3-540-73553-3, 2007.

Book under Preparation

[BUP1] Asrar U. H. Sheikh, "Communication Systems: Principles, Techniques and Applications," 2008

[BUP2] Asrar U. H. Sheikh, "Live With Dignity and Respect," 2009

Refereed Journal Publications

[JP1] A. U. Sheikh and S. B. Rasool, "TUA analysis of finite user finite buffer S-ALOHA

System for a certain spatially distributed users in the presence of channel fading," accepted for publication in the *AEU Journal of Electronics and Communications*, Elsevier Publishers, March 2008.

[JP2] Adnan Rashdi, Noor M. Sheikh and Asrar Ul Haq Sheikh, "A centralized multiuser power control and cross talk cancellation algorithm for digital subscriber line systems," accepted for publication in the *AEU Journal of Electronics and Communications*, Elsevier Publishers, March 2008.

[JP3] M. Moinuddin, A. Zerguine, and A. U. H. Sheikh, "Multiple access interference plus noise constrained least mean square (MNCLMS) algorithm for CDMA systems," Paper accepted for publication in *IEEE Trans. on Circuits and Systems*, February 2008.

[JP4] Adnan Rashdi, Noor M. Sheikh and Asrar U. Sheikh, "A centrally managed dynamic spectrum management algorithm for digital subscriber line system", in *Communications in Compuer and Information Science*, Springer-Verlag, Germany.

[JP5] S. B. Rasool and A. U. Sheikh, "An Approximate Analysis of Buffered CSMA in Fading Channels Using Tagged User analysis," *Journal of Wireless Communications and Mobile Computing*, Special Issue: ISWCS'2006, vol. 8, no. 5, pp. 627 - 643, June 2008.

[JP6] Muhammad Arif, Noor Muhammad Sheikh, Asrar U.H. Sheikh, "Design of two step deterministic interleaver for turbo codes," Accepted for publication in *Computers and Electrical Engineering*, Elsevier, Accepted 22 October 2007, available on line 11 December 2007.

[JP7] Muhammad Moinuddin, Asrar Sheikh, Azzedine Zerguine and Mohammed Deriche, "A Unified Approach to BER Analysis of Synchronous Downlink CDMA Systems with Random Signature Sequences in Fading Channels with Known Channel Phase" *EURASIP Journal on Advances in Signal Processing*, volume 2008 (2008), Article ID 346465, 12 pages doi:10.1155/2008/346465.

[JP8] Asrar U. H. Sheikh and F. Hendessi, "FRESH-DFE - A new structure for interference cancellation," *Wireless Personal Communications*, vol. 44, No. 2, pp. 101-118, January 2008.

[JP9] Adnan Rashdi, Noor M. Sheikh and Asrar U. Sheikh, "A dynamic spectrum management algorithm for mitigating crosstalk in digital subscriber line system", accepted for publication in *MU Research Journal of Engineering & Technology*, vol. 27, no. 1, pp. 1-12, January 2008.

[JP10] M. Arif, Noor M. Sheikh and Asrar U. H. Sheikh, "On the design of two step determinstic interleaver for turbo codes," accepted for publication in *MU Research Journal of Engineering & Technology*, vol. 27, no. 1, pp. 13-24, January 2008.

[JP11] A. Bentrcia, A. Zerguine, and A. U. Sheikh, "Low-complexity Linear Group-SIC Detectors," *Journal of Wireless Communications and Mobile Computing*, Vol. 7, Issue 5, pp: 595–604, June 2007.

[JP12] Adnan Khan, Sajid Bashir, Muhammad Naeem, Syed Ismail Shah and Asrar Sheikh, "Binary Ant Colony Algorithm for Symbol Detection in a Spatial

Multiplexing System," *Lecture Notes in Computer Science Series*, vol. 4618, pp. 115-126, Springer Verlag/Heidelburg, Germany, August 2007.

[JP13] S. B. Rasool and A. U. Sheikh, "An Approximate Analysis of Buffered R-ALOHA in Fading Channels Using Tagged User analysis," *IEEE Trans on Wireless Communications, vol. 6, pp.1320-1326, April* 2007.

[JP14] Bentricia, A., Zerguine, A., Sheikh, A.U., and Benyousef, M., "A new linear group-wise SIC Multiuser Detector," *IEEE Communication Letters*, vol. 11, Issue 2, pp. 176-178, February 2007. (Number of citations - 1)

[JP15] S. Al-Qahtani, A. Mahmoud and Asrar Sheikh, "Adaptive Radio Resource Management for Multi-operators wireless networks with heterogeneous traffic," *Computer Communication Journal*, vol. 29, Issue 15, pp. 2945-2951, Elsevier, Netherlands, September 2006.

[JP16] A. Bentrcia, A. U. Sheikh, and A. Zerguine, "A New Ordering and Grouping Algorithm for the Linear Weighted Group Matched Filter Successive Interference Cancelling Detector," *IEEE-Transactions on Vehicular Technology*, vol. 55, no. 2, pp. 704-708, March 2006

[JP17] S. Faisal A. Shah and Asrar U. H. Sheikh, "Adaptive Chip-Level Channel Estimation for IMT-DS System: DL and UL," *Wireless Personal Communications*, Springer, Volume 35, Number 4, 383-405, December 2005.

[JP18] Armin Ghayoori, Faramarz Hendessi and Asrar U. H. Sheikh, "Application of Smooth Ergodic Hidden Markov Model in Text to Speech Systems," *International Journal of Signal Processing (IJSP)*, vol. 2, no. 2, pp. 151-157, October 2005.

[JP19] Asrar U.H. Sheikh, Tao Wan, Zaki Al-Akhdhar, Ioannis Lambadaris and Mike Devestikiotis, "Performance Analysis of Buffered R-ALOHA Using Tagged user Approach," the *Journal of Network & Computer Applications*, vol 27, no. 3, pp 131-150, Elsevier Publishers, August 2004.(Number of citations - 1)

[JP20] Asrar Sheikh, Tao Wan and Zaki Al-Akhdhar, "A Unified Approach to Analyze Multiple Access Protocols for Buffered Finite Users" in *Journal of Network and Computer Applications, vol. 27, no. 1, pp. 47-76,* Academic Publishers, January 2004.(Number of citations - 2)

[JP21] Asrar U. Sheikh, "Theme Issue on Wireless Systems and Networks," Lead Editorial, *Arabian Journal of Science and Engineering (AJSE)*, vol. 28, no. 2C, pp. (iii) - (iv), Saudi Arabia, December 2003.

[JP22] Maitham Al-Safwani and Asrar U. H. Sheikh, "Signal Strength Measurements and Modeling at VHF in the Eastern Region of Saudi Arabia," *Arabian Journal of Science and Engineering (AJSE),* vol. 28, no. 2C, pp. 3-18*,* Saudi Arabia, December 2003.

[JP23] Saad Muhammad Al-Ahmadi, Asrar U. H. Sheikh, "The effect of Spatial Correlation on the Performance of 2-D Rake receivers in Bad Urban Nakagami Channels," *Arabian Journal of Science and Engineering (AJSE),* vol. 28, no. 2C, *pp. 19-34,* Saudi Arabia, December 2003.

[JP24] A.U. H. Sheikh and S. F. Hau, "Channel Impulse Response Measurements and

Interpretations," *Wireless Personal Communications*, vol. 21, no. 2, pp. 219-228, May 2002.

[JP25] A.U.H. Sheikh, and Faisal Ali Shah, "A Robust μ–opt-LMS Algorithm for Tracking of Fading Channels," *Wireless Communications and Mobile Computing*, vol. 2, no.2, pp.215-223, March 2002.(Number of citations - 1)

[JP26] Raymond Yuen and Asrar U. H. Sheikh, "On the Sensitivity of IMT-DS Performance to System Parameters," *Wireless Personal Communications*, vol. 20, no. 2, pp. 163-178, February 2002, the Netherlands.

[JP27] S. Tantikovit, M. Z. Wang and A.U.H. Sheikh, "On Optimum Combining Schemes for Forward Link W-CDMA in the Presence of Interpath Interference," *Trans. IEICE* (Japan), vol.E84-B, no. 12, pp. 3286-3289, December 2001.(Number of citations - 1)

[JP28] A.U. H. Sheikh, "Wireless Communication Technologies: New Multimedia Systems (Book Review)," *IEEE Communications Magazine*, vol. 39, pp. 36-52, November 2001.

[JP29] Tao Wan, and Asrar U.H. Sheikh, "Performance Analysis of Buffered CSMA/CD Protocol," *Wireless Personal Communications*, vol. 18, no. 1, pp. 45-65, July 2001, Netherlands. (2 Citations)

[JP30] S. Tantikovit, A.U.H. Sheikh and M. Z. Wang, "A Commutating Decision Feedback Equalizer Digital Radio," *IEICE Trans on Communications (Japan)* vol. E84-B, no. 5, pp. 1443-1446, May 2001, Japan.

[JP31] S. Tantikovit, A.U.H. Sheikh and M. Z. Wang, "Combining Schemes in Rake receiver for low spreading factor long code W-CDMA systems," *IEE Electronics Letters*, vol. 36, no. 22, pp. 1872-1874, October *2000,* U.K. (10 Citations)

[JP32] Tao Wan, and Asrar U.H. Sheikh, "Stability and Performance Analysis of Finite Population Buffered Slotted ALOHA Protocols Using Tagged User Approach," *IEEE Trans. on Veh. Tech.*, *vol.49, no.2, pp. 582-593*, March 2000, U.S.A. (8 Citations)

[JP33] F. Hendessi, Asrar U. H. Sheikh and Roshady M. Hafez, "Co-channel and Adjacent Channel Interference in Wireless Cellular Communications," *Wireless Personal Communications*, *vol.12, no.3, pp. 239-253*, March 2000, Netherlands.(1 Citations)

[JP34] F. Qi, M.Z. Wang, A.U.H. Sheikh, and D.R. Shao, "Class of turbo code interleavers based on divisibility," *IEE-Electronics Letters*, *vol. 36, pp.46-48*, January 6, 2000, (2 citations).

[JP35] J. Cui and A.U. H. Sheikh, "Outage Probability of Cellular Radio Systems using maximal Ratio Combining in the Presence of Multiple Interference," *IEEE Trans. on Communications, vol. 47, no. 8, pp. 1121-1124,* August 1999, U.S.A. (46 Citations)

[JP36] Shahid Chaudry and Asrar U. Sheikh, "Performance of a Dual Rate DSCDMA-DFE in an Overlaid Microcellular System," *IEEE Trans on Veh. Tech.*, *vol. 48, no. 3, pp. 683-695*, May 1999, U.S.A. (3 Citations)

[JP37] M.G. El-Tarhuni and Asrar U. Sheikh, "Code Synchronization in CDMA using Adaptive Filters," *Wireless Personal Communication, Special Issue on Synchronization, vol. 8, no. 2, pp. 185-204*, September 1998, the Netherlands.(1 Citations)

[JP38] M.G. El-Tarhuni and Asrar U. Sheikh, "Performance Analysis for an Adaptive Filter Code Tracking Technique in Direct Sequence Spread Spectrum Systems," *IEEE Trans. on Communications, vol. 46, no. 8, pp. 1058-64*, August 1998, U.S.A.(9 Citations)

[JP39] S. Tantikovit, A.U.H. Sheikh and M. Z. Wang, "Code-Aided Adaptive Equalizer for Mobile Communication System," *IEE Electronics Letters*, *vol. 34, no. 17, pp. 1638-1640*, August, 1998, U.K.(Number of citations - 5)

[JP40] Mohamed G. El-Tarhuni and Asrar U. H. Sheikh, "A Robust DS/SS Code Acquisition Scheme in Frequency Selective and Frequency Non-Selective Slow Rayleigh Fading Channels," *IEEE Communications Letters, vol. 2, no. 4, pp. 85-88*, April 1998, U.S.A.(7 Citations)

[JP41] J. Cui, D.D. Falconer, and A.U. Sheikh, "Blind Adaptation of Antenna Arrays Using a Simple Algorithm Based on Small Frequency offsets," *IEEE Trans. on Communications, vol. 46, no. 1, pp. 61-70,* January 1998, U.S.A. (4 Citations)

[JP42] Jian Cui, David Falconer, and Asrar U. Sheikh, "Performance Evaluation of Optimum Combining and Maximal Ratio Combining in the Presence of Co-channel Interference in Wireless Communication Systems," ACM-MONET Special Issue of *Wireless Networks and Applications, vol. 2, no.4, pp. 315-324*, Baltzer Science Publishers, December 1997, the Netherlands. (15 Citations)

[JP43] Asrar U. Sheikh and Michael Honig, "Interference in Mobile Wireless Systems: An Editorial Introduction," *Wireless Personal Communications*, *vol. 5, no. 3, pp. 195-198*, November 1997.

[JP44] S.A. Abbas and Asrar U. Sheikh, "Outage Analysis due to Multipath Mobile Radio Reception with Poisson Multipath Arrival," *Wireless Personal Communications*, *vol.5, no.2, pp. 173-193*, September 1997(2 Citations).

[JP45] F. van Heeswyk, D.D. Falconer, and Asrar U. Sheikh, "A Delay Independent Decorrelating Detector for Quasi-Synchronous CDMA," *IEEE Journal on Selected Areas in Communications, Special Issue on CDMA Systems*, *vol. 14, no. 8, pp. 1619-1626*, October 1996. (7 citations)

[JP46] M.G. El-Tarhuni and Asrar U. Sheikh, "MSE Tracking Performance of a DS/SS Code Tracking Scheme Using an FIR Adaptive Filter," *IEE-Electronics Letters*, *vol. 32, No. 17, pp. 1543-1545*, August 1996.(Number of citations - 1)

[JP47] F. van Heeswyk, D.D. Falconer, A.U. Sheikh, "Decorrelating Detectors for Quasi-Synchronous CDMA," *Wireless Personal Communications*, *Special Issue on Interference Cancellation*, *vol. 3, no. 1/2, pp. 129-147*, June 1996.(Number of citations - 1)

[JP48] N.W.K. Lo, D.D. Falconer, and A.U.H. Sheikh, "Adaptive Equalization Techniques for Multipath Fading and Co-Channel Interference," *IEEE Trans on Comm.*, *vol. 43,*

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[TR5]   Asrar Sheikh and Azzedine Zerguine, "Adaptive Suppression of Multiuser Interference in a 3G W-CDMA System," Second Year Progress Report, Project KACST AT-21-58, February 2005.

[TR6]   P. Z. Khan, Asrar Sheikh, and A. Belghonaim, "Radiowave Propagation Measurements on a Microwave Link Between GCC Telecommunication Bureau Office and KFUPM," Progress Report, Project CCCR2209, August 2005.

[TR7]   Asrar U. H. Sheikh and Azzedine Zerguine, "Adaptive Suppression of Multiuser Interference in a 3G W-CDMA, Project AR-21-58," Phase I, report, KFUPM, Dhahran, March 2005.

[TR8]   Asrar U. H. Sheikh, Applications of Tagged User Analysis to Wireless Channels, Final Report KACST Project LG-6-8, 2004.

[TR9]   Saud Al-Semari, Pervez Khan, Asrar Sheikh, Adel Belganaim, "Anomalous Propagation in the GCC Countries, Final Report Contract No. CCCR2222, KFUPM, March 2004

[TR10] Saud Al-Semari, Parvez Khan, Abdulmalik Khan and Asrar Sheikh, "Second Progress Report on Anomalous Propagation in the GCC Countries, Contract No. CCCR2222, KFUPM, 2003.

[TR11] Saud Al-Semari, Parvez Khan, Abdulmalik Khan and Asrar Sheikh, "First Progress Report on Anomalous Propagation in the GCC Countries, Contract No. CCCR2222, KFUPM, 2002.

[TR12] A.U.H. Sheikh, "Measurement of EMI Levels at Cathay Pacific Airways Simulator

Complex," Report submitted to Cathay Pacific Airways, December 31, 1997.

[TR13] D.C. Coll, A.U. Sheikh, C. Haslem, B. Kirk and K.E. Hancock, "A study into the Likely Radio Spectrum Environment in the Year 2000 and Beyond" Report #005/96, Lapp-Hancock Associates, Ottawa, Canada, March 1996

[TR14] R.M. Bennet, A.U. Sheikh, K.E. Hancock and R. Bowen, "Development of the Spectrum Management Strategy for Emergency Services in Ontario," Report #01/95, Lapp-Hancock Associates, Ottawa, Canada, January 1995.

[TR15] D.C. Coll, A.U. Sheikh, A.E. Golding and K.E. Hancock, "An Analysis of Canadian Telecommunication R&D Activities: An Assessment of its Strengths, Weaknesses and Foci," Contract Number 36100-2-7930, Lapp-Hancock Associates, Ottawa, Canada, March 1993.

[TR16] A.U.H. Sheikh, "Survey and Evaluation of Digital Technologies for PLMR Service," Report Prepared for CP Rail, Contact Number 3026, Vanguard Communications Corp. Ottawa, December 1991.

[TR17] A.U.H. Sheikh, "Compatibility Analysis of CT2 Plus and CT2 CAIS," Lapp-Hancock Report to Telezone, Toronto, Lapp-Hancock Associates, Ottawa, Canada, November 1991.

[TR18] R.M. Dohoo, A.U. Sheikh, and K.E. Hancock, "A strategic Overview of the Use, in a Non-mobile Mode, of Digital Cellular Systems in Rural Areas of Developing Countries, Final Report to CIDA, Report #001/91, Lapp-Hancock Associates, Ottawa, Canada, March 1991.

[TR19] A.U. Sheikh, D.C. Coll, and B. Donaldson, "An Assessment of CDMA Technology for Personal and Cellular Telecommunications Systems," Final Report to DOC, Report #011/91, Lapp-Hancock Associates, Ottawa, Canada, April 1991.

[TR20] R. Bennet, A.U. Sheikh, and Minh Thien Le, "Frequency Allocation Strategies for ATCS in Canada," Final Report to Canadian Association of Railways, Report # 03/91, Lapp-Hancock Associates, Ottawa, Canada,1991.

[TR21] A.U. Sheikh, H.M. Hafez and R.A. Goubran, "Development of 4.8 kbits/sec GFFSK Modem for ATCS," Technical Report to Ericsson-GE, Toronto, Radnet Communications, Ottawa, Canada 1990.

[TR22] Y.-D.Yao, D.D. Falconer, and A.U.H. Sheikh "PAM and QAM for High Rate Digital Subscriber Loop Transmission," Report to BNR, 1990.

[TR23] A.U.H. Sheikh, "Testing of Cellular Telephone and Antennae - Part II," Lapp-Hancock Associate Report to Cantel, 1990.

[TR24] A.U.H. Sheikh B. Donaldson, "Report on the Assessment of Means to Increase the Efficiency of the Existing Spectrum Assigned for Land Mobile Radio Service Use," Report No. 124/89, Lapp-Hancock Associates, Ottawa, Canada, 1990.

[TR25] A. Vandenham, A.U.H. Sheikh, "Report on Assessment of New Technologies for Private Land Mobile Radio Systems," Report to DOC No.120/89, Lapp-Hancock Associates, Ottawa, Canada, 1990.

[TR26] T. Munford, D.C. Coll, A.U.H. Sheikh, J. Knight, K. Hancock, "CP Rail

Procurement and Inspection for the Communications Subsystem of an Advanced Train Control System," Report No. 006A/89, Lapp-Hancock Associates, Ottawa, Canada, April 1989.

[TR27] A.U.H. Sheikh, "Testing of Cellular Telephones and Antennae - Part I," Lapp-Hancock Associates Report to Cantel No. 189, 1989.

[TR28] A.U.H. Sheikh, B. Donaldson, "Report on Assessment of Future Land Mobile Telecommunication Systems," Report to DOC #027/88, Lapp-Hancock Associates, Ottawa, Canada, 1989.

[TR29] V. K. Bhargava, T. Le-Ngoc, Y. R. Shayan and A.U. H. Sheikh, Control coding systems for mobile communications with applications to advanced train control systems and other UHF/VHF mobile systems, Report TP-95956E, Transport Canada, vol. I and II, January 1989.

[TR30] D.C. Coll, Sheikh, A.U.H. and Bennet, R., "Feasibility Studies on the Application of Spread Spectrum Systems for Mobile Radio Communications, Report to DOC, Lapp-Hancock Associates, Ottawa, Canada, 1988.

[TR31] A.U.H. Sheikh, and K.Hancock, "CP-Locomotive Data Link Field Trials," Report to CP-Rail, Lapp-Hancock Associates, Ottawa, Canada, 1988.

[TR32] A.U.H. Sheikh, K. Hancock, and M. Le Thien, "Studies on the Spectral Requirements for ATCS Mobile Data Links," Report to ARINC Research, Lapp-Hancock Associates, Ottawa, Canada, 1988.

[TR33] A.U.H. Sheikh, and H.M. Hafez, "Equipment Standards for Mobile Data Radio," Final Report to Department of Communications, Contract, 1987.

[TR34] A.U.H. Sheikh, and D.C. Coll, "System Architecture and Access Strategies for Advanced Train Control System," Report to ATCS Consortium, Lapp-Hancock Associates, Ottawa, Canada, 1985.

[TR35] A.U.H. Sheikh, and H.M. Hafez, "RF Study for Personal Radio Communication Systems," Final Report to NovAtel Communications, Calgary, 1984.

[TR36] A.U.H. Sheikh, H.M. Hafez, W. Burchill, and W. Sullivan, "Experimental Study of digital Mobile Communication Systems," Final Report to DOC, Contract, 1983.

[TR37] A.U.H. Sheikh, D.D. Falconer, H.M. Hafez, E. Eleftheriou, and M.Tobis, "A Comparative Study of Maximum Likelihood and Adaptive Equalization for High Rate High Frequency Data Communications," Final Report, DSS Contract (03SU.36001-2- 1192), April 1983.

[TR38] A.U.H. Sheikh, J.S. Riordon, H.M. Hafez, and M. Tobis, "Analysis and Design of Mobile/Fixed Radio Terminals for Transmission of Voice and Data," Final Report, DOC Contract, 1983.

[TR39] J.D. Parsons, A.U.H. Sheikh, "Mobile Impulsive Interference: The Frequency Dependence of Man-made Noise in Urban and Sub-urban Areas," Final Report on Home Office, Directorate of Telecommunications, Contract DT 74/69/29, November 1980.

[TR40] A.U.H. Sheikh, J.D. Parsons, "Mobile Impulsive Interference: A Study of VHF

Man-made Noise in Urban and Sub-urban Areas," Final Report on Home Office, Directorate of Telecommunications, Contract DT 74/96/12, 1978.

ACADEMIC AND PROFESSIONAL RESPONSIBILITIES

Teaching (Courses Taught and Year)

2005-2006 Communication Theory I, Wireless Communications

2004-2005 Simulation of Communication Systems, Digital Communications II

2000-2004 Digital Communications I, Digital Communications II

1999-2000 Communications Theory, Wireless Communication Systems and Networks

1999-2000 Mobile Communications

1998-1999 Mobile Communications, Advanced Mobile Communications

1997-1998 Mobile Radio Communications, Communication Fundamentals

1996-1997 Numerical Methods in Engineering, Digital Communications, Communications Theory

1995-1996 Communication Theory, Principles of Digital Communications, Digital Communications)

1994-1995[1] Communication Theory, Digital Communications)

1992-1993[2] Communications Theory, Mobile Communication Systems, Advanced Linear Systems, Stochastic Processes)

1991-1992 Digital Communications, Mobile Communication Systems, Advanced Linear Systems, Theory of Communication Channels

1990-1991 Digital Communications, Mobile Communication Systems

1988-1989 Communication Systems, Mobile Communication Systems)

1987-1988 Automatic Control Systems, Communication Systems, Mobile Communication Systems, Advanced Linear Systems

1986-1987 Sabbatical Year

1982-1986 Automatic Control Systems, Communication Systems, 94.552 Advanced Linear Systems, Mobile Communication Systems)

1981-1982 Automatic Control Systems, Dynamics of Linear Systems (Laboratory), Communication Systems

1978-1981 Telecommunications, Information Theory and Statistical Communications, Electromagnetic Propagation, Radio and Radar Engineering, Undergraduate Projects

1975-1978 Communication Systems Laboratory, Tutorials in communication networks and linear integrated circuits

1972-1975 Communication Systems, Electrical Measurement, Communications and Electronics Laboratories

1970-1972 Electronics Lines, Networks and Filters, Logic Circuits, Pulse, Digital and Switching Circuits, Electronics Communication Laboratories, Communication Systems (Under & Postgraduate)

1. Half-load due to Research Achievement Award
2. Half-load due to Research Achievement Award

1969-1970 Microwave Engineering, Communication Systems (Under & Postgraduate, Electronics Circuits, Electromagnetic I, Communication Laboratory

1964-1965 Electronic Circuits, Electronics & Communications Laboratories, Projects Assistance

POST-DOCTORAL SUPERVISION

Shouxing Qu, "Capacity bounds of Fading Channels with Memory" (1989-91).

Jiandong Zhuang, "Development of Interactive Communications System Simulation Software" (1991-93).

Haitong Hong, "A Novel Low Processing Gain CDMA System Development for Mobile Radio Channels"(1992-94).

Akihiro Kajiwara," Study on access codes for multi-user spread spectrum sand their impact on the system capacity"(1990-92).

RESEARCH ENGINEER

Songlie Hu," Development of Interactive Communications System Simulation Software"(1991-92).

GRADUATE STUDENT SUPERVISION

Summary

year	Master's Supervision and Committee Memberships	Ph.D.
1981-2007	Completed 43 In Progress 1 Committee Membership 5	Completed 15 In Progress 0

Doctoral Thesis Research Completed

[T1]   Mohammad Arif Wahla, "Performance Analysis and Enhancement of Turbo Codes," (with Dr. N.M. Sheikh) University of engineering and Technology, Lahore, Pakistan, Ph.D. Thesis, March 2008

[T2]   Adnan Rashidi, "Improving Throughput in Multiuser Communications Environment," (with Dr. N.M. Sheikh) University of engineering and Technology, Lahore, Pakistan, Ph.D. Thesis, March 2008

[T3]   Salman Al Qahtani, Radio Resource Management In 3GWcdma Multimedia Wireless Networks, (with A. S. Mahmoud), KFUPM Ph. D. Thesis 2007.

[T4]   M. Moinuddin, *MAI Constrained Adaptive Algorithms for Multi-user Detection In CDMA Wireless Systems*, (with A. Zerguine), Ph.D. Thesis 2006.

[T5]   Tao Wan, *Unified Analysis of Multiple Access Protocols using TUA Approach*,

Ph.D. Thesis1999.

[T6] S.A. Abbas, *Impact of Channel Delay Spread on the performance of Digital Communications in Cellular Environment*, Ph.D. Thesis 1997.

[T7] M. El-Tarhuni, *Application of Adaptive Filtering to Direct-Sequence Spread Spectrum Code Synchronization*, Ph.D. Thesis 1997.

[T8] F. R. Van-Heeswyk, *Linear Memoryless Detection of Quasi-Synchronous CDMA*, Ph.D. Thesis 1996, (with D.D. Falconer).

[T9] J. Cui, *The Application of Blind Adaptive Antenna Arrays to Digital Wireless Communications Systems*, Ph.D. Thesis 1996, (with D.D. Falconer).

[T10] F. Hendessi, *On the Theory of FRESH filtering and its Applications in Digital Cellular Radio Systems*, Ph.D. Thesis 1994, (with R.M. Hafez).

[T11] N.W.K. Lo, *Adaptive Equalization for a Multipath Fading Channel in the Presence of Interference*, Ph.D. Thesis 1994, (with D.D. Falconer).

[T12] D. Laurenson, *Application of Ray Tracing Approach to Mobile Radio Characterization*, Ph.D. Thesis 1994, (Carleton University/University of Edinburgh, Scotland).

[T13] M. Abdulrahman, *DFE for Interference and Multipath Suppression in a CDMA Systems*, Ph.D. Thesis 1993, (with D.D. Falconer).

[T14] B. Kozminchuk, *Kalman Filter-Based Architectures for Interference Excision*, Ph.D. Thesis 1992.

[T15] Y.-D. Yao, *Spread Spectrum Multiple Access Communication Systems: Overlaid Direct Sequence and Frequency-Hop Signals*, Ph.D. Thesis 1988, (Carleton University/Southeast Nanjing University, China).

Master's Thesis Research Completed

[T1] Muhammad Tasir Haroon Awan, QoS Considerations in Multihop Radio Networks, MS Thesis KFUPM, April 2007.

[T2] Salah Hussain Khalifa, "Playout Scheduling Technique Based on Normalized Least Mean Square (NLMS) Algorithm, MS Thesis KFUPM, June, 2006.

[T3] Muhammad Imran Azam, Impact of Variability of Nakagami-m Parameter on the Performance of Digital Communication Systems, MS Thesis KFUPM, April, 2006.

[T4] Musa Otaru Usman, Adaptive Equalization Using a Non-mean-square error algorithm, MS Thesis, KFUPM, May 2005.

[T5] Shahzada Basharat, Analysis of Random Access Methods Over Fading Channels for Finite-User Finite Buffer Systems, MS Thesis, KFUPM, December 2004

[T6] Hassan El-Morra, "Algorithms for adaptive interference cancellation in Multiuser detections," MS Thesis, KFUPM, November 2004.

[T7] Waleed Abdulwahed Saif, *Adaptive Multiuser Detection with Decision Feedback Equalizer for Interference Cancellation*, MS Thesis, KFUPM, June, 2003.

[T8] Kamran Arshad, *Channel Estimation in OFDM System,* MS Thesis, KFUPM, June, 2003.

[T9] Sajid Anwar Khan, *An Investigation into the Error Performance Of Vertical-Bell Labs Layered Space-time Architecture (V-blast)* MS Thesis, KFUPM, June, 2003

[T10] Abdelouahab Bentrcia, *SIC Multiuser Detectors for Mobile Channels*, MS Thesis, KFUPM, June, 2003

[T11] Saad Muhammad Al-Ahamdi, *Channel Modeling and Performance Analysis of Directive Wideband Nakagami Fading Channels*, MS Thesis, KFUPM, April, 2002

[T12] Maitham Muhsen Al-Safawani, *Signal Strength Prediction in the Eastern Region of Saudi Arabia*, MS Thesis, KFUPM, November 2001.

[T13] Muhammad Hamid, *Code Acquisition Technique using Adaptive Filters in Wireless Communications*, MS Thesis, KFUPM, October 2001.

[T14] S. Faisal Ali Shah, *Performance Evaluation of Rake Receiver with Adaptive Channel Estimation for IMT-DS*, MS Thesis, KFUPM, July 2001.

[T15] R. Yuen, *Parametric Sensitivities of IMT-DS System*, M.Phil. Thesis, Polytechnic University of Hong Kong, 2000.

[T16] R. Bector, *Soft-Handover in Microcellular CDMA Systems*, M.Eng. Thesis, Carleton University, 1999.

[T17] Soukant Tantikovit, *Performance of Interleaving, coding and Adaptive Equalizer*, M.Phil. Thesis, Polytechnic University of Hong Kong, 1998.

[T18] M. Alam, *Interference Characterization and Modeling in Wireless Microcellular Environment*, M. Eng. Thesis, Carleton University, 1998

[T19] H. Lee, *Power Control algorithms for CDMA PCS*, M. Eng. Thesis, Carleton University, 1997.

[T20] C. Mlonja, *Performance Evaluation of Handover Process in Personal Communizing System Using Fuzzy Algorithm*, M.Eng. Thesis, Carleton University, 1996.

[T21] S. R. Chaudary, *Equalization for Multi-rate Transmission in CDMA Overlaid Cellular System*, M.Eng. Thesis, Carleton University, 1994.

[T22] T. McDermott, *Personal Communications Systems and Call Interception for Law Enforcing Agencies,* M.Eng. Thesis, Carleton University, 1994.

[T23] S. A. Abbas, *Microcellular Mobile Radio Channel Simulation: A Geometric Optics Approach*, M.Eng. Thesis, Carleton University, 1993.

[T24] D. D. Ashitey, *An Intelligent Personal Communications System*, M.Eng. Thesis, Carleton University, 1993.

[T25] P. Kwala, *Adaptive Multi-beam Antenna Arrays for Indoor Mobile communication Systems*, M.Eng. Thesis, Carleton University, 1992.

[T26] M. Thien Le, *Performance of p/4-QDPSK Over Fading and Shadowed Mobile Radio Channels,* M.Eng. Thesis, Carleton University, 1990.

[T27] N.W.K. Lo, *Adaptive Equalization and Diversity Combining for a Mobile Radio Channel*, (co-supervision with D.D. Falconer), M.Eng. Thesis, Carleton University, 1990.

[T28] R. Addison, *Simulation of a NC-FSK Maximum Likelihood Receiver for Fast Rayleigh Fading*, (co-supervision with D. Lodge) M.Eng. Thesis, Carleton University, 1990.

[T29] V. Kapil, *Measurement and Characterization of Impulsive Noise on DSL for ISDN Application*, (co-supervision with D.D. Falconer) M.Eng. Thesis, Carleton University, 1989.

[T30] E. Hum, *Burst Trapping Codes for the Land Mobile Data Channel*, (co-supervision with H.M. Hafez) M.Eng. Thesis, Carleton University, 1988.

[T31] P. Laurich, *Segmented Wave Generation Systems*, M.Eng. Thesis, Carleton University, 1988.

[T32] R. Myers, *Frequency Hopping in the Presence of Partial Band Jamming with or without Rayleigh Fading*, M.Eng. Thesis, Carleton University, 1987.

[T33] K.W. Moreland, *Ocean Scatter Propagation Model for Aeronautical and Maritime Satellite Communication Applications*, (co-supervision with D.D. Falconer), M.Eng. Thesis, Carleton University, 1987.

[T34] G. Davidson, *An Investigation of Block By Block Adaptive Equalization on a Fading HF Channel*, (co-supervision with D.D. Falconer), M.Eng. Thesis, Carleton University, 1986.

[T35] P. Melancon, *A Characterization of the Frequency Fading of the Mobile Radio Channel*, (co- supervision with P. Galko) M.A.Sc. Thesis, Carleton University, 1986.

[T36] B.K. Chu, *A Study of Pre-detection Diversity*, M.Eng. Thesis, Carleton University, 1986.

[T37] N. Nguyen, *Channel Access Schemes for Packetized Mobile Radio Systems*, M.Eng. Thesis, Carleton University, 1985.

[T38] V. Gupta, *Performance and Analysis of FH-MFSK System Over Mobile Channels*, M.Eng. Thesis, Carleton University, 1984.

M.Sc. Theses and Masters' Projects Completed

[P1] Chung Siu Mo Douglas, *Performance Evaluation of Wideband Mobile Radio Systems*, MSc.Thesis, Hong Kong Polytechnic University, 1998.

[P2] Lam, Sui Kam, *Dynamic Channel Assignment and Handoff Analysis in an Indoor Wireless Environment*, MSc.Thesis, Hong Kong Polytechnic University, 1999.

[P3] Liu Wai Man, *Adaptive Interference Cancellation Schemes for Wideband CDMA System*, MSc.Thesis, Hong Kong Polytechnic University, 1999.

[P4] Wong Sze Pong, *Distributed Power Balancing in a CDMA Network*, MSc.Thesis, Hong Kong Polytechnic University, 1998.

[P5] C. Bond, *Performance of Trellis Coding Over Mobile Fading Channels*, M.Sc. Project, 1990.

Master's Thesis Research In Progress

[TP1] Mordhi, S. Anazi, "*Modified Iterative MAP Decoder for Turbo Coded Signals*," MS Thesis in progress

Member of Thesis Committees

[TC1] Mayows Kassim Aregbesola, *Code Acquisition in DS-CDMA Systems - Optimization and DSP Implementation*, M.S. Thesis, KFUPM 2004.

[TC2] Imran Naseem, *Combining classifiers using the Dempster-Shafer Theory of Evidence*, MS Thesis, KFUPM 2005

[TC3] Aleemuddin Mohammed, *A Pose invariant face recognition system using subspace techniques*, MS Thesis, KFUPM2005

[TC4] Saad Saeed Al-Abeedi, *Adaptive Forward Error Correction Coding for Diversity Communication Systems*, MS Thesis, KFUPM 2003.

[TC5] Muhammad Moinuddin, MS Thesis, KFUPM 2001

Design Project

[DP-1]Real-time Implementation of the Matched Filter and the Decorrelator Detectors (17 Pages), Design project completed under KACST Project AT-21-58, December 2005.

Completed Projects

[CP-1]Asrar Sheikh and Azzedine Zerguine, "KACST AT-21-58 -
[CP-2]Azzedine Zerguine and Asrar Sheikh, "Convergence and Steady-State Analysis of the Normalized Least Mean Fourth Algorithm: Application to Mobile Communications," EE Department, 2005.
[CP-3]Asrar U. H. Sheikh, Applications of Tagged User Analysis to Wireless Channels, Final Report KACST Project LG-6-8, October 2004.
[CP-4]Saud Al-Semari, Pervez Khan, Asrar Sheikh, Adel Belganaim, "Anomalous Propagation in the GCC Countries, Final Report Contract No. CCCC2222, KFUPM, March 2004

OTHER ACADEMIC ACTIVITIES

Editorial Responsibilities (Journals)

Editor, IEEE Trans. on Wireless Communications (2002- to 2005)
Lead Editor, Arabian Journal of Science and Technology Special Issue on Wireless Systems and Networks, 2004.
Associate Technical Editor, IEEE Communication Magazine (2000 to 2002)
Member Editorial Board, Wireless Communications and Mobile Computing (2001-to date)

Member, Editorial Board, International Journal on Personal and Wireless Communications, 1988- to date.
Guest Editor, Arabian Journal of Science and Technology Special Issue on Wireless Communications, 2000.
Guest Editor, Special Issue of Wireless Personal Communications, on Interference in Mobile Wireless Systems, 1996.
Member, Editorial Board, PIE J of Research, Islamabad, Pakistan, 1986-91.

Editorial Responsibilities (Conferences)

Member, Technical Program Committee, WCONC, 2007
Member Technical Program Committee, MCSC 2007.
Member, Technical Program Committee, IEEE-WCNC, 2007
Member, Technical Program Committee, WCONC, 2006
Member, Technical Program Committee, WCONC, 2004
Member, Technical Program Committee, WEMIC, 2006
Vice-Chair Technical Program, IEEE-GCC 2006.
Chair Technical Program, ISWSN'05.
Chair Technical Program, CCSP2005.
Member Program Committee, IEEE-Asia Pacific Conference 2005.
Member Program Committee, First IFIP International Conference in Central Asia on Internet, The next generation of Wireless and Optical Communication Networks, WCOCN, 2005
Member Technical Program Committee, CCSP2005.
IEEE-Asia Pacific Conference 2005.
Member, Technical Program Committee, WCONC, 2004.
Member Technical Program Committee, IEEE-PIMRC 2004.
Member, Technical Program Committee, WCONC, 2004
Member, Technical Program Committee, WCONC, 2003
Member Technical Program Committee, IEEE-PIMRC 2003.
Chair, Technical Program Committee, International Symposium on Wireless Systems and Networks (ISWSN'03), 2003.
Member Technical Program Committee, IEEE-Globecom 2003
Member Technical Program Committee, 5th International Symposium on Wireless Personal Multimedia Communications, WPWC'2002, Hawaii, 2002
Chair, Technical Program Committee, IEEE-VTC'98, Ottawa, Canada
Member Technical Program Committee, IEEE-PIMRC 2002.
Member, Technical Program Committee, IEEE-VTC'02, Vancouver, Canada.
Member Technical Program, IEEE-PIMRC 2001.
Member, Technical Program Committee, IEEE-VTC'00, Tokyo, Japan.
Member Technical Program, IEEE-PIMRC 2000.
Member Paper Review Panel, ICC'2000.
Member, Technical Program Committee, IEEE-VTC'99, Houston, U.S.A.
Member, Technical Program Committee, IEEE-VTC'99 Fall, Amsterdam,

The Netherlands.
Member Technical Program, IEEE-PIMRC 1999.
Member Technical Program, IEEE-PIMRC 1998
Member Technical Program, IEEE-Globecom 1998.
Member, Technical Program Committee, IEEE -PIMRC'97, Helsinki, Finland
Member, Technical Program Committee, IEEE-VTC'97, Phoenix, U.S.A.
Organized and Chaired technical sessions at PIMRC'96, Taipei, Taiwan, 1966.
Organized sessions on multiuser detection at ISSSTA'96, Mainz, Germany 1996.
Member, Technical Program Committee, IEEE -PIMRC'96, Taipei, China
Chaired and organized sessions at IEEE-VTC'96, Atlanta, U.S.A.
Member, Technical Program Committee, IEEE -VTC'96, Atlanta, U.S.A.
Reviewed papers for IEEE Transactions on EMC, IEEE Transactions on Communications, IEEE Transactions on Vehicular Technology, IEEE Trans. on Wireless Communications, IEEE-JSAC, IEE Proceedings, IEE Electronic Letters, Wireless and Personal Communications, Wireless Communications and Mobile Computing, International Journal of Science and Technology and many international refereed conferences.

Technical Workshop Arranged

Universal, Secure, and Efficient Telecommunications Systems (USETS) workshop, OCRI-Carleton University, October 1994.

Short Courses Arranged

Arranged a course given by Professor J.D. Parsons on "Mobile Communications" in collaboration with Department of Communications, Ottawa, May 1982.

INTERNATIONAL ACTIVITIES

[IA1] Member International Advisory Board, OPSTEC, Lahore, Pakistan.
[IA2] External Examiner, Hong Kong Open University, 1998-2001.
[IA3] External Examiner, Ph. D. Thesis, University of Auckland, New Zealand.
[IA4] UNDP Assignment to National University of Science &Technology, Rawalpindi, Pakistan, 1997.
[IA5] UNDP Assignment to University of Engineering & Technology, Lahore, Pakistan, 1997.
[IA6] Faculty Appraiser, International Islamic University, Selangor, Malaysia, 1997.
[IA7] Faculty Appraiser, Sultan Qaboos University, Muscat, Oman, 1996.
[IA8] Consultant to Science City Project in Faisalabad, Pakistan, 1995.
[IA9] UNDP Assignment to SPARC, 1995.

[IA10] Campaigned for and shipped 275 Kg of technical books as a gift to the University of Engineering and Technology, Lahore, Pakistan. (1991); another consignment weighing approximately 1 ton was sent in 1998 to UET, Lahore.

[IA11] Invited by Southeast University, Nanjing, China for a short course on Mobile Communications, 1988.

[IA12] Invited by the Pakistan Government to advise on the Institute of Electronics, Islamabad, 1987.

OTHER ACTIVITIES

Participated in Ottawa Board of Education, Co-op educational program 1995-96.

Acted as a liaison between Carleton University and Lisgar Collegiate, 19988-94.

Donated personal software to Lisgar Collegiate, 1990

ADMINISTRATIVE DUTIES

[Admin1] Rector, Foundation University Islamabad, June 2006-2007.

[Admin2] Member, Departmental Curriculum Committee, 2002-2005

[Admin3] Member, Strategic Planning Committee, 2004-2005

[Admin4] Member, University Research Council, 2004-2005.

[Admin5] Member, University Image Committee, 2005.

[Admin6] Member of University Adhoc Committee on Improvement of Academic Standards at KFUPM, 2002.

[Admin7] Member University Standing Committee on Technology Incubator, KFUPM, 2002.

[Admin8] Founder Director, Telecommunications Research Laboratory, KFUPM.

[Admin9] Coordinator, Communications Group, KFUPM.

[Admin10] Member, Complaints and Grievance Committee, Hong Kong Polytechnic University, 1998-1999.

[Admin11] Founder Director, WISR Centre, Hong Kong Polytechnic University, 1997-2000.

[Admin12] Associate Head of Department, Department of Electronic and Information Engineering, Hong Kong Polytechnic University, 1998-2000.

[Admin13] Member, Curriculum Control Committee, 1996-1998

[Admin14] Member, University Internationalization Committee, 1994-95.

[Admin15] Director PCS Research Laboratory, 1993-97.

[Admin16] Member, University's Graduate Student Recruitment Committee, 1991.

[Admin17] Member, Dean of Engineering Search Committee, 1990.

[Admin18] Associate Chairman for Graduate Studies 1988-91.

[Admin19] Panel Member for OGS Selection Committee 1987-88.

[Admin20] Member, University's Selection Committee for International

Student Exchanges, 1987-89.

[Admin21]　Member, Core Committee 1987-88.

[Admin22]　Member to Carleton University Academic Staff Association (CUASA) Council, 1985-1989.

[Admin23]　Member of several departmental committees, 1981-84.

[Admin24]　Seminar Coordinator, 1982-1985.

[Admin25]　Open House Committee, Spring 1982, Spring 1984.

[Admin26]　Departmental Coordinator, High Technology Conference, 1982.

[Admin27]　Departmental Coordinator, High Tech Exhibition (Nepean Sportsplex), 1982.

[Admin28]　Chairman, Curriculum Committee, 1980-1981 (Benghazi, Libya).

[Admin29]　Secretary, Faculty Board, 1979-1981 (Benghazi, Libya).

[Admin30]　Staff Advisor, Engineering Society, 1974-1975 (Tripoli, Libya).

[Admin31]　Chairman, Curriculum Committee, UE&T, 1970.

[Admin32]　Chairman, Laboratories Development Committee, EE Dept., UE&T, 1970.

CONTRIBUTIONS TO ENGINEERING OR OTHER PROFESSIONS

I have over forty years of experience in teaching, research and administration. I gained this experience while working six countries and four continents.

My career began after I graduated with B.Sc. (Eng) Hons from UET, Lahore in 1964. Up on graduation I was appointed as lecturer in the EE department and was awarded a scholarship to study for higher degrees at the University of Birmingham, UK in 1965. I finished M.Sc. (Information Engineering) in 1966 and Ph.D. in Radio Engineering in 1969 after which I returned to UET in June 1969. I stayed at UET for nearly 18 months before going on deputation to Tabriz and Tripoli, During these months, I revised the curriculum for communication engineering. Some of the courses that I introduced at that time are still part of the curriculum. After serving for a year and a half, I was sent on deputation first to Iran and later to Libya. I spent five years in the Middle East before taking a position of Post-doctoral Fellow at University of Birmingham in 1975, when I got an opportunity to do research in the area of mobile communications at the University of Birmingham.

My work on the impulsive noise at the University of Birmingham England, produced a significant advancement in understanding the nature of impulsive noise, its origin, statistical characterization, and frequency dependence. My work on impulsive noise is well cited in the literature. This work was recognized when two of my papers published in Radio and Electronic Engineer, an international journal published by IERE London, England, were awarded (jointly with Professor Parsons) *the Paul Adorian Premium* for being the best papers published in 1983 in the area of communication engineering. After working for nearly three and a half years at the University of Birmingham and returned to Libya as an Associate

Professor at Gar Younis University in Ben Ghazi. I did some research but was not satisfied with the non-existent research potentials. I decided to emigrate to Canada and I was offered a position of an Associate Professor at Carleton University, Ottawa. While in Ottawa I produced the two award winning papers mentioned above.

Our work on the performance measurements of data transmission over mobile channels during 1981-82 using the existing analog communication equipment was used by the Department of Communications to write regulatory directives on spectrum management. The work was also used in making recommendations on data rates over mobile wireless channels.

In 1983, I initiated a research program on Personal Communications with emphasis in indoor communications systems. Currently, this forms a major part of TRIO and CITR activities. The timely start of this program has put Carleton University at the forefront on mobile and portable communication research. At the beginning of 1984, I carried out a study for Novatel Communications on personal aspect of wireless communications. Urgency for Novatel to move into Personal communications was one of the main recommendation.

In 1984, I was invited to give a week long course on Mobile Communications to the technical staff of Novatel Communications of Calgary. I have also given special courses on Mobile and Portable Communications to engineers and managers in 1987 and 1988. Other courses were given to DND, Revenue Canada, and RCMP staff. In December 1994, a course on mobile communications was given to the technical staff of Bell Northern Research, Ottawa, Canada.

In 1995, I was promoted to the rank of Professor. My leadership qualities and the many contributions I made to the department, I was asked to take over the position of Associate Chairman in 1990. During the three year tenure, I was able to double the number of graduate students. My efforts were recognized when the department received an award of $30,000 for attracting high quality students and expansion in the graduate program.

At Carleton, I founded the PCS Laboratory. In this laboratory, research on several topics related to Personal Communications was the main focus. The topics included: propagation modeling, evaluation of CDMA for microcellular systems, development of generic software for communication system simulation, ray tracing techniques to develop automated cell location system, intelligent network, fuzzy logic in handover process, and synchronization and power control in CDMA. Other topics included signal processing to combat interference and optimum/suboptimal receiver structures.

I have contributed to many conferences as a member of their technical program committees. I chaired the technical program of IEEE-VTC'98, a major international conference in the field of wireless communications. A

record number of delegates attended the conference. I have been a regular reviewer of papers submitted to many IEEE and non-IEEE publications for over twenty five years. I gave a tutorial on interference in wireless communications at PIMRC'96. This tutorial was attended to its full capacity. An other tutorial on interference modeling and mitigation was given at PIMRC in Lisbon in 2002.

During my tenure at Carleton University, Ottawa, I was received outstanding performance award in teaching twice, first in 1984 and later in 1986, and the excellence in research award in 1994. During 1991-1994, I led a powerful team of researchers to the work on an NSERC strategic research grant Universal Secure and Efficient Telecommunication Systems (USETS) to a successful completion. This was a three years grant to study mobile radio channels and transmission schemes particularly CDMA and to propose system architectures and to implement the resulting system. In particular, emphasis was given to achievable capacity of developed transmission schemes in the presence of fading and interference. A low processing gain CDMA system using chip rate adaptive equalization was proposed and investigated. This innovative work triggered a major research effort by other researchers. Some of the papers produced during this project are cited even in 2007.

I took leave of absence from Carleton University in 1997 and joined the Hong Kong Polytechnic University as a Professor. While at Hong Kong Polytechnic University, a year later in 1998, I was appointed as Associate Head of the Department. I founded the Wireless Information and Systems Research (WISR) Center. This center was equipped with the latest research equipment included a fast computer network with DEC Alpha Stations. This center research is still operational. Within a year and a half the center was moved to a new bigger location because of several new research students joined the WISR Center. I was a very active member of the departmental Advisory Committee, which was responsible for setting the future directions of the department. I also made presentations on the future strategy of the department. I was also member of the Engineering Faculty Advisory Committee.

I was invited to take up the newly created position of Bugshan/Bell Labs Chair Professor in Telecommunications - the first chair professorship in the Kingdom, at the King Fahd University of Petroleum & Minerals in 2000. I established Telecommunications Research Laboratory (TRL) in 2001. This laboratory was partly funded by Ericsson of Sweden to study Machine to Machine Communications. I was the director of the lab and also I led the departmental communications group consisting of 13 faculty members and researchers. At TRL, several projects including WCDMA, Interference cancellation, Ad-hoc Networks, channel estimation and radio propagation & channel modeling are in progress. I have served and continue to serve on several university, college, and departmental committees. The work in these committees have enriched my administrative experience. At KFUPM, I won

college of Engineering Sciences' research awards in 2005 and 2006. I have travelled to several countries on international assignments including presentation of invited papers and research seminars. I have offered two short courses since taking over Bugshan/Bell Lab Chair at KFUPM in 2000.

I have worked in mobile radio channel characterization research for several years and still it is a major area of my research activities. I have collaborated with a number of telecommunication companies on research. Research is continuing in measurements and modelling of wideband channel for use in MIMO Systems. A study on the influence of chosen channel model on cellular/portable telecommunication system was completed. A Rician/ Rayleigh model for microcellular system proposed by me has became a basis for analysis of co-channel interference in several recently published papers. Our work in this area has served as a main reference in microcell system design.

The significance of my research can be measured from the number of citations of the work published by me with other authors. One of our paper, published in 1994, has over 100 citations in journals. Another paper has 76. The total number of citations of our work in IEEE journals and conferences exceeds 500. Some of my papers are also cited in textbooks on communication systems.

I was an appointed member of Board of Governors, IEEE Vehicular Technology Society during 1993-99. Since then I am a member of VTS volunteers group. I have organized and chaired many technical sessions at many conferences. I am very active in IEEE and other professional activities. Currently I am the vice-chair of the IEEE Engineering Education Society (Saudi Chapter). I am also the chairman of the publication Committee of Saudi Scientific Society for Electrical Engineers (SSSEE). I have started an international symposium on wireless systems and networks. The second symposium was held in December 2005. I also was the lead editor of two special issues - one published by Kluwer (now Springer) on interference and the other by AJSE on wireless systems and networks.

In 2006, I took leave of absence from KFUPM and joined Foundation University as the Rector. During my tenure of one year, I streamlined the operations of the university and also wrote a very comprehensive vision document consisting of future development of the university with financial and academic projections for the next fifteen years. A number of new programs were suggested. The BOG accepted the document as the basis of future development of the university. I also established criteria for faculty and teaching assessment for quality assurance. I also worked on behalf of HEC and PEC for standardization of engineering education in Pakistan. The produced document has been accepted by HEC and PEC and will be used by the universities in Pakistan to design their undergraduate curriculum. I decided to leave FUI due to the attitude of the upper management on the

future strategy of building the university campus.

During my career, I have led consulting assignments with a number of government agencies and private companies. Some of these are: DOC, CRC, CSA, Revenue Canada (R&D audit), CP Rail, CN, Radnet Communications, Ericsson-GE, Data Radio, Novatel, BNR, CAE and GEC Alsthom. In Hong Kong I had a major consulting assignment on impulsive interference with Cathay Pacific Airlines. In Dhahran, I am currently participating in a contract Gulf Cooperative Council on Anomalous Propagation modelling for hot and humid regions. This work has generated a new contract on the measurement of propagation over Gulf in order to justify the model developed in the earlier project.

I have provided professional services to several rail road operators on the aspects of data transmission over radio channel through Lapp-Hancock Associates a local consulting company. My major contribution has been in proposing an overall communication architecture and establishment of hierarchy of the network nodes in the Advanced Train Control System (ATCS). In proposing the architecture, impact of fail safety on the data transmission scheme and protocol design were the major considerations. The research on statistical characterization of the channel and its impact on the data rate, required coding power and packet lengths proved to be of significant findings to the railroad industry. This work is now a part of ATCS data link specifications. My contribution to ATCS was cited when I was elevated to the grade of IEEE Fellow.

At the international stage, I am well known and enjoy a very high standing in the field of mobile communications. My international standing was recognized when I was elected a Fellow of IEEE in 2004 with a citation "*On the contribution to railroad Control systems*". The railroad control systems work using wireless data transmission was designed and my contributions were in enhancing the reliability of wireless data transmission systems and design of error detection and correction codes.

I was invited to write a chapter, "*Mobile Communication Systems: Liberation of Telephone*," in a book entitled *in Canadian Developments in Telecommunication*, published by University of Calgary Press, December 1986. I have published a major text book entitled, *Mobile Communications Systems: Theory and Techniques*. This book has been published by Springer (previously Kluwer Academic Publishers) in January 2004. Currently I am writing a book on communication systems entitled, *Communications Systems - Principles, Techniques, and Applications*.

I am particular interested in working for transfer of telecommunication technology to the developing countries. I feel this technology is vital in uplifting the current unacceptable living conditions. I was invited by the Government of Pakistan for advise towards establishment of research and development facilities. I visited Pakistan in 1995 under UNDP (sustainable development program) to give lectures and initiate research projects in

satellite communications. I have given tutorials and short courses in Pakistan. I am regularly invited to speak at IBCAST, which is held annually in Pakistan.

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