

Curriculum Vitae

Name: Dr. Shibhan Kishen Kak

Date & Place of Birth: 18th April 1947, Srinagar, Kashmir (J&K).

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Institute of Technology, Banaras Hindu University,
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Academic Profile:

B.Sc. Electrical Engg.	BHU	1969	Ist Div	Electrical Engg.
M.Tech. Electronics Engg.	BHU	1971	Ist Div, 2 nd Rank.	Microwave Engg.
Ph.D. in Electronics Engg.	BHU	1985.		Digital Communication

Areas of Interest: Communication Systems Design
Digital & Data Communication
Optical Communication
Signal Processing

Experience:

a) Teaching: Lecturer in Electronics Engg. 1971. ITBHU.
Reader in Communication Engg. 1979. ITBHU.
Professor in Comm. Engg, 1988. ITBHU.

(See Appendix I for courses Taught)

- b) Research: More than 30 years of research in areas of Communication Engineering, Communication Systems, Optical and Fibre Optic communication, Data Networks, Signal processing and AI Engineering & Expert Systems.
(See Appendix II for list of B. Tech., M. Tech., & Ph.D. Guided)
- c) Industrial: Designed, Implemented and Commissioned Campus Wide Telecomm Network of BHU Telephone System from scratch. Actively helped and guided industrial organizations like ITI, CIL, UPTRON, AIR and other private and public sector industries in the areas of Electronics Circuits Design, Communication Systems Design and Testing.
(See Appendix III for list of activities)
- d) Administrative: Director JIIT (Deemed University) from 2003 Feb. till date. Starting with Administration of Hostels, Gymkhana, Department and Multi-discipline centers to coordinating and organizing Seminars, workshops, and Science Congress etc.
(See Appendix IV for list and duration of engagements)
- e) Consultancy: Advanced Communication Receivers,
Network Management Systems,
Simulation & Modeling of Comm. Systems and Networks, Electronic Warfare Systems,
Signal Design for Optimal Communication,
Fiber Optic Communication & Signal Processing Systems;
- f) Special Courses: “STEPExperiences Using ATS Satellite”, SAC, Ahemdabad, 1980.
“RADAR Signal Processing & Applications Course”, DOE & DRDO, Madras, 1983.
“Digital Communication & Signal Processing Course” IEEE Aerospace & Communication Society, IETE, & Air India, Bombay, 1985.
- Prizes & Awards: Best Model Prizes (1965, 1967, 1968) in Technical Models Exhibition during Undergraduate studentship in BENCO.

Best Paper Award of IE (India) 1969 and IETE 1976.

Vincent Benedict Award of IEEE to ITBHU student chapter for the Project on “Multilingual Audio Transmission with Satellite TV” Guided by me in 1985.

Fellowship of “SALZBERG SEMINAR”, Session 255 on “Telecommunication and its Implications” 1986, Austria.

Delivered 4th S. Ramanujam Memorial Lecture at 22nd National Systems Conference (NSC – 98) at Calicut 1998.

Invited Talks & Lectures: Delivered more than 60 invited talks, Lectures, Keynote Addresses, and Radio talks to ISRO, DRDO, ITI, CSIR, ASC and other organization scientists and Engineers.
(See Appendix V for list of Topics)

Seminars & Conferences: Participated in more than 36 Workshops, Refresher Courses, CEP, & National & International Seminars as Guest speaker, Invited speaker, Plenary speaker, Session Chair or Co- Chair and paper presentation.
(See Appendix V for list of Titles and other details)

Publications: 20 papers in National & International Journals, and more than 35 publications in National or International refereed Conference proceedings (Appendix VI)

Research Guidance: Four scholars have received their Ph.D. degree under my guidance, one has submitted and about 2 are currently working towards their degree.
(See Appendix II(C) for list of Topics)

Products developed: Six products have been developed by me or by my group under my supervision and guidance, which include:
Electronic Teleprinter,
PC - LAN Card Using Intel LAN Co-Processor,
Hand held Optical Power Meter,
Speech Transliteration software and Synthesizer,
Optical Fiber based Surface roughness tester.
CPPM Modem for Optical Fiber Transmission.

Patents One National and One US Patent for CPPM Technique in collaboration with Ms Shubhra Verma..

Re-Engineering: Over 350 Thyristor Controlled Drilling machines - imported from Russia by CIL, were failing regularly due to controller failure, modification suggested in 1995 by me and my group were incorporated and this made them operational and robust for Indian Open Cast Mine conditions. This is saving few Hundreds of Crores in terms of loss of production and repair costs, which was in lacs per fault. Each system costs a few Crores to the industry.

Development: Initiated, Planed and developed
Digital Communication Laboratory,
Optical Fiber Communication Laboratory,
Digital Signal Processing Laboratory,
Photonics Laboratory in EcE Department, IT, BHU
Started the M. Tech. Comm. Engg. in the Ec.E. Dept. IT
Devised the VLSI course framework and syllabus for M. Tech Program in BHU.
Besides EcE, BHU have been on the curriculum development committee of various institutions and departments like:
IIT Allahabad,
School of Bio-Technology BHU,
Dept. of Computer Science & Engg. IT BHU.
Dept. of Physics, IGNOU, New Delhi.
Dept. of Electronics Engg. HBTI, Kanpur, Optical Comm. Lab.
Center for Cognitive Sciences, Allahabad University.

Important Assignments: Member of the PDR & Apex Committee of “SAMYUKHTA” the Indigenous EW solution for the Army by DRDO, 1994 - 1997. The system is currently undergoing acceptance trials.

Member of Draft Certification Council (DCC) for the Telecommunication Engineering Center :-
“RFC’s in switching Systems”, and
“RFC’s in Network Device Interface” for Introducing National Standards for DOT Type approval, Since 1994.

Co-coordinator, Computer Center BHU. 1996 – 2001.

Chairman, Tele Services Committee of BHU, 1996 – 2000 Feb.
Designed, Commissioned & Supervised Telephone Network of the Campus (complete outdoor Plant)

Identified, Tested, & P&T Interfaced 1200 Line EPABX. The EPABX was installed in record time of 15 days, it is currently providing telephone service to around 700 users in BHU campus having DID and all other facilities.

Member of Critical Design Review (CDR) and Project Design Review (PDR) of:

“SAMYUKHTA”, Also Member Apex Committee, 1995 – 97.

“CNR for MBT Arjun”, Chairman PDR, 1996.

“FLIR for ALH version of NAG”, Chairman CDR, 1995 – 96.

“SIPRA” for Naval surveillance, Chairman CDR, 1998.

Member PDR for

“Advanced EW Receivers for COMMINT” 1999.

“MM- FPA’s for ALS” in poor visibility, 1999 - 2001 and

“VSAT – NMS for Secure defense Network” 1998 –2000.

Member “Control Lab. Workshop”, UOR, Roorkee, 1977.

Member Technical Committee “ MICRO – 79”. EcE IT BHU.

Member “Acoustical & Lighting Sub-committee”, Indian National Science Congress 1983. BHU.

Member Technical Program Committee “Smart Materials, Structures and MEMS”, IISc. Bangalore, Symp. SPIE’96; Dec. 1996.

Convener Seminar on “Mobile Communication” IT, BHU, Nov. 1998.

Coordinator, National Workshop on “Computerization of University Management”, BHU Comp. Center, April 1999.

Convener, 23rd National Systems Conference 1999 and Chairman Technical Committee of NSC-99.

Member Academic Committee of IIIT Allahabad 1999.

Member UGCNET committee for Networking of 250 Universities in the country by end 2000.

Member BOG of InflibNet, Ahamdabad, Since 1999.

Member Peer Review committee for “Scanning DF & Monitoring Receivers” 1999 – 2000.

Honorary Consultant to DEAL on Microwave Imaging and related Signal Processing since Jan. 2000.

Chairman, PDR for “High Scan Rate Receiver Design” DLRL Hyderabad, 2003.

Chairman, PDR for “mm Wave Imaging Array and its Applications” DEAL, Dehradun, 2003.

Chairman, CDR for “mm Wave 2D Array Signal Processing” DEAL,
Dehradun, 2004.

Chairman, PDR for “IRST for LCA” IRDE, Dehradun, 2005.

Appendix – I

Courses taught at Under Graduate Level (departmental):

1. Introduction to Electronic Devices & Circuits.
2. Analog Circuits & Systems.
3. Radio Communication.
4. Line Communication.
5. Digital Communication.
6. Television Engineering.
7. Communication Theory.
8. Signal Processing.
9. Information & Coding Theory.
10. Computer Communication & Networking.

Courses taught at Post Graduate Level (departmental):

1. Signal Processing Applications.
2. Laser Communication Systems.
3. Satellite Communication Systems.
4. Microwave Communication.
5. Microwave Devices & Circuits.
6. Decision & Estimation Theory.
7. Data Communication & Networking.
8. Optical Communication Systems.
9. Digital Communication Systems.
10. Microwave Measurements.

Courses taught at Under Graduate Level (Service courses)

1. Introduction to Electronics. (Electrical & Computer Engg.)
2. Computer Networking. (Computer Engg.)

Courses Taught at Post Graduate Level (Non departmental)

1. Electronic Instrumentation & Measurement. (M. Tech. Civil Engg.)
2. Computer Networks. (M. Sc. Computer Science)
3. Software Engineering. (M.C.A.)

Appendix II (A)

Abridged List of B. Tech. Projects Guided (1987 onwards):

1. Abhay Chawla and Rakesh Patnayak, "Open loop optical communication Link for RS-232C", 1987
2. G.K.Rajgopalan and Anupam Saurabh, "Prosodic Feature for Speech Synthesis", 1987.
3. Shirang Gadgil, Naresh Bhandare, Viswesh Ananthkrishnan and Piyush Maheshwari, "Transliteration of English Text", 1989
4. Biswas Guha and T. G. Jack, "Digitally Programmable Attenuator", 1989
5. Chatitanya Kumar, Chandrashekhar Kumar Agrawal and Ashish Gupta, "Four channel data acquisition system for IBM-PC", 1990
6. Chandresh Mehta and Pankaj Chopra, "Speech Recognition", 1990 (EE)
7. Sharad Kumar Agrawal and Siam Ramaswamy, "CAD of Optical Fiber Profile", 1990
8. Mohit Sharma, Amit Kumar, Ravi Shankar and J. Haider, "Design and implementation of a Protocol Analyzer", 1990
9. Niraj Gupta, Tripat Pal Singh Gill, Prakash Behrani and Yogendra Trehan, " Synchronous Modem Design using QAM", 1991
10. Sunondo Ghosh, Shantam Biswas and Ranjan Goel, "Development of Adaptive Routing Algorithm for Backbone Structure", 1991(CE)
11. J.P.S. Bali and Vivek Chabra, "Group Communication on INTERNET", 1991(CE)
12. Gaurav Johri, Jaideep Abhichandni, Vivek Jain and Amritansh Raghav, "Design and Simulation of Wide band amplifier for optical receiver for 155.2 Mb/s SDH STM-I signal", 1992
13. Buswaroop Mukherjee, Bhanu prakash, Sanjay Kumar Agrawal and Suddep Jain, "Design and implementation of Video & Audio optical communication link", 1992
14. Abhinav Sharma, Rohit Juneja and Sujit Kumar Roughoobur, "Design and implementation of a PCM Encoder for speech Processing", 1992
15. Sunil S. Ahluwalia, Bhagat and V. Nainani, "Multicast Support to Transaction Processing in Distributed Databases" (CE)
16. Gaurav Agrawal, Vinay Prakash Jain and Puneet Agrawal, " Storage Oscilloscope Emulation" 1993
17. J. Srinivas, Mohit Tondon and J. Satyanarayan, "Simulation and analysis of Single Segment Signet", 1994 (CE)
18. Roodradeo Mohum, Raman Muthukrishanan and Ja'far K.M. Arar, "Vector Quantization using ADM Encoder", 1994
19. Shekhar Kumar, Ashish Gupta, Milind V. Dixit, Himanshu Yadav and Amit Chaturvedi, " Phoneme Synthesis Simulator", 1995
20. Sushil Chauhan and Virendra Garg, "Stablization of Radar Display", 1996(CE)

21. Rajat Bhandu, Ajay Gupta, Deepanshu Pandita and Rashmeet Singh, "Speech Recognition Using Lip Reading", 1996
22. Vivek Saxena, Jitendra Aswani, Vijay Singh and Pankaj Kumar Singh, "Design and implementation of CCITT V.32 Standard MODEM with data Compression Capability", 1997
23. Subhendu Sahu, Sailesh Sharma and Vikas Chandra Bansal, "Resource Sharing Between UNIX and DOS", 1997 (CE)
24. K. Sambasivarao, Tushar Harduley and Ashish Kumar, "Developing light wave protocols for Multimedia packet transmission on ATM Networks" 1997(CE)
25. Kalyan Krishnan V, "Computer Animation For Lip Jaw Movements and Extraction of Relevant Features For Visual Speech-Recognition" 1997 (EE)
26. Deepak Garg and Shobhit Saxena, "Simple Network Management Protocol (SNMP) Realization using Client –Server Model, 1998
27. Manish Gupta and Anuvrata Arora, "Partial Implementation of MPEG-4", 1998
28. Praveen Bhaniramka, "Flow Control in ATM Networks", 1998 (CE, EE)
29. Aditya Narain Srivastava, Runa Jain, Vinay Khanna and Vipin Kumar Tiwari, "a Cross Window Interface" 1998
30. Nishant Krishna, Akhilesh Kr. Mahato and Nitin Jain, "Generic Flow Control on ATM Networks", 1999
31. Sumit Sen, Nitu Singh and Rajeev Srivastava, "Adaptive Equalization: A Parallel Approach, 1999
32. Chintan kaushik, Vivek Agrawal, Dinesh Kumar Garg and Ravi Shankar Pandey, "Simulation of Dynamic Source Routing Algorithm for Mobile AD-HOC Networks", 2000
33. Ajit Sharma, Saurabh Agrwal and Rohit Tripathi, "Performance analysis of an ATM Multiplexer loaded with VBR Voice Traffic", 2000
34. Gundeep Singh, Guneet Singh and Vemula Mahesh, " Phonetic Semantics in IPv6", 2001
35. Jimmy Gupta, Abhishekh Dixit and Mohit Mehra, "Remote Network Management by SNMP WAP", 2001
36. Kumar Rahul, Anuj Pachoree and Gunjan Shukla, " An Adaptive Radio Link Protocol using Incremental Redundancy for increasing data rates on GSM", 2001.
37. Abhishek Singh, Rajendra Pratap Singh, Anurag Jain and Ramshankar Agrahari, "Multimedia Synchronization Model and the Transmission of Synchronized Multimedia Over Time Dispersive Fiber Optics Channel", 2001(Chitrakoot)

Appendix – II (B)

List Of M. Tech. Dissertations:

1. S. S. Rai. “A Normalized Parameter Set for Microwave Passive Components”, 1973.
2. A. K. Agrawal. “ Single Phase Cyclo - Converter with forced Commutation & Discrete Control”, 1974.
3. Omdutt Tyagi. “A Digital supervisory and Remote Control System”, 1974.
4. N. K. Das. “Simulation of Controllable Voltage Controlled Negative Resistance and its Application”, 1975.
5. Satish Kumar Mittal. “A Voltage tunable active band pass filter” 1976.
6. Brijendra K. Rastogi. “White Gaussian Noise generator design and Development”, 1977.
7. Mukesh K. Verma. “Design and Development of fringe Area TV Receiving Antenna”, 1977.
8. Pradeep K. Mukherjee. “Uncompanded DM/TDM System Design”, 1977.
9. Kishori Ram. “Design and Development of Electronics – Teleprinter”, 1978.
10. Abdalla Saeed Bin Ghouth. “Performance Comparison of communication system”, 1978.
11. Sant Sharan Pathak. “Delay-bandwidth optimization of IInd order All-pass filter”, 1978.
12. Ramesh Chandra Singh. “Performance Comparison of Speech Encoders”, 1979.
13. U. S. Singh. “ Design of an Automatic V.S.W.R. Plotter”, 1979.
14. T. Srinivas. “Design & Fabrication of Thick Film Distributed RC Filter”, 1980.
15. Gautam Das Gupta. “Development of Macros for linear programming package and associated report writer system”, 1981.
16. Ram Krishan Prasad. “Error Correction Codes”, 1982.
17. Deepak K. “A Four bit Memory ADM Scheme”, 1982.
18. S. K. Khanna. “Simulation of a Controllable Voltage Controlled Double Negative Resistance”, 1984.
19. T. Nagar. “Realization of a Tristatable Multivibrator and its Characteristics”, 1985.
20. C. R. Babu. “Development & testing of assembler for Z-80 micro-programming”, 1985.
21. Satya prasad L. “Threshold filter for Tonal applications”, 1987.
22. P.V.S.S.L Narsimha Murty. “Intel 82586 based STARLAN for PC/AT”, 1989.
23. R. S. Sheshadri. “Coherent MAFSK Modern Design”, 1989.
24. K.V. Raghava Rao. “Signal Processing for Bio-signal - A case study of EEG”, 1989.
25. Anmol Bhaskar Mahamuni. “STARLAN implementation for PC-AT’s using INTEL 82586”, 1989.
26. D. R. Vijay Kumar. “STARLAN Hub Design and implementation”, 1990.
27. Mahamunkar Nitin Y. “Micro-controller based patient monitoring system”, 1990.
28. Vinay Kumar Srivastava. “Simulation of Kalman Filter for optical fiber comm. System”, 1991.
29. Vinayak Dinkar Ankolkar. “GPIB (IEEE 488 bus) optical link extender”, 1991.
30. Nitin Mhamunkar. “Electronic Cardiogram analysis & diagnosis”, 1991.

31. T. Murgappan. "Digital Signal Processing in reflection seismography", 1991.
32. Debabrata Das. "IIR filter application for bio signals –a case study of EEG", 1992.
33. Bhupendra Singh Yadav. "Handheld fiber optic power meter", 1992.
34. Prabhudev N. "STARLAN Hub Design and implementation", 1992.
35. Anil Kumar C. "Validation of Multipath Channel Model", 1993.
36. G. Ramesh. "7-Level Partial Response Signaling System design", 1993.
37. Ashok M. Deshpandey. "Adaptive Equalizer filter – IInd order simulation", 1993.
38. G. S. Srinivas. "9.6 Kbp/s voice Coder realization based on MPLPC using DSP56001", 1993.
39. Anupam kumar Mittal. "Speech Recognition Paradigm (for vowels)", 1994.
40. Manoj Kumar Singh. "Microstrip Antenna Design (Broadband polarized array Application)", 1994.
41. S. Manivarnan. "Adaptive sensitivity time controller phase array random", 1995.
42. Ashish Nagar. "Simulation of Total flow control Mechanism for ATM networks", 1997.
43. A.R. Subramanyam. "Real time data processing of satellite positioning system", 1997.
44. Ashish srivastava. "Implementation & comparative study of some image data compression", 1997.
45. Akshay Kumar Agrawal. "Comparative study of Gold & KASMI sequence for CDMA Application", 1997.
46. V. Pradeep Kumar. "Design of a Print Server", 1998.
47. Tapas Kumar Nath. "DS-SSMA Trans-Receiver Design", 1998.
48. Rajesh Kumar Singh. "Design & Simulation of High Data Rate Modem", 1998.
49. B. Ravi Kumar. "Simulation & Modeling of an ATM switching system for VBR Service", 1999.
50. A. N. Baneerjee. "Simulation & Performance Analysis of DS – CDMA Communication System", 2000.
51. John. T. Lubia. "Intelligent Data Acquisition & Remote Monitoring System", 2000.
52. Kwesiega Chrstopher. "Universal Built-in Test Equipment for Communication Systems", 2000.
53. Upendra Pratap singh. "Time Varying Channel Modeling & Equalization for CDMA Transmission", 2001.
54. Pankaj Kumar Yadav. "Throughput Analysis of the Wireless LAN (IEEE 802.11) Distributed Coordination Function", 2001.

Appendix II (C)

List of Ph. D. Thesis Supervised:

1. Aquel J.M. “ Knowledge Representation for Frame based Expert Systems”, 1997.
2. Vivekanand Tiwari. “Study of some aspects of Dielectric Diagonal Horn Antenna”, 1999.
3. Sarit Pal. “Optical Fiber Array Based Surface Topography System”, 2000.
4. Masaud S. “Image Compression Using Wavelet Transform”, 2001.
5. Shubhra Verma “ CPPM Analysis, Simulation, and Application” 2005.

List of Research Reports generated:

1. “Electronic Tele-printer – Design” A report prepared for the UP S&T cell for Industrial Technology Transfer. 1978 – 79.
2. “Linking Studio and Transmitter: The Digital Access on a Leased Line”, Report for AIR, Varanasi, 1985.
3. “Distributed Fiber Optic Sensors – Techniques & Applications”, CMRS, Dhanbad. 1988.
4. “Focal Plane Array using MCT detector for IR Applications”, for IRDE, Dehradun. 1993.
5. “High Scan Rate Receivers – An Analysis of Technologies”, for DLRL, Hyderabad. 1995.
6. “Combat Net Radio - A Technological evaluation”, DEAL, Dehradun. 1994 – 95.
7. “Slow & Medium Hop Rate FH Detection & Interception”, For DLRL, Hyderabad. 1996.
8. “FH NET De – Interleaving Methods & Techniques”, Report generated for DLRL – DRDO, Hyderabad for SAMYUKHTA, 1997 (Vol. I & II.)
9. “Front – End Electronics & Signal Processing for FLIR”, Review report for IRDE, Dehradun. 1998.
10. “SIPRA for Naval Applications” Review report for NOPL, Cochin. 1999.
11. “VSAT Secure Network Management and Monitoring”, PDR Report for DEAL, Dehradun, 2000.
12. “Ka Band Seeker RADAR” a Project Review report for SAMEER, Mumbai. 2001.

Appendix – III

List of Industrial Consultancy and Interaction:

1. “Text – to – Speech Transliteration system using SP – 025 chip”, 1975 – 76.
2. Short haul RF switch for “Remote Electronic Alarms”, Local Industrial Cell, 1978 – 79.
3. “Electronic Tele-printer”, Local Industrial Cell, 1978 – 79.
4. “Automated V.S.W.R. measurement System & Plotter”, Local Industrial Cell, 1979 – 80.
5. Design, Testing & Technology Development of “High Gain TV Antenna” for Uptron India Ltd. Lucknow. Subsidiary, 1982 – 83.
6. “Low Noise Fringe Area TV signal Booster”, Local Industrial Cell. 1983 – 84.
7. “TV Distribution Amplifier & Multiplexer” within Building Application, Local Industrial Cell, 1983 –84.
8. “Electronic Ballast” for Fluorescent Tubes, Local Industrial Cell, 1984 – 85.
9. “Automotive Ignition System” for petrol Vehicles, Local Industrial Cell, 1985 – 86.
10. “Speech Synthesizer & Prosody Effects”, Local Industrial Cell. 1985.
11. “Fiber Optics Based GPIB Link Extender”, Local Industrial Cell. 1988.
12. “Intel 82586 based LAN Card for PC’s”, Local Industrial Cell. 1989.
13. “Ethernet Hub & Multiplexer”, Local Industrial Cell. 1990.
14. “Handheld Optical Power Meter”, Local Industrial Cell. 1992.
15. “Electronic Controller for Drilling Rigs”, modification and Re – engineering, Coal India Ltd. Subsidiary, Talcher Coalfields Ltd. Talcher, Orissa. 1995.
16. “In – situ Fiber Optic Micro Lens fabrication for NA control”, Local Industrial Cell. 1996 – 97.
17. “Surface Roughness Monitoring System using Planar Optical Fiber Array”, Local Industrial Cell. 2000.

Appendix – V

List of Invited Talks, Plenary & Guest Lectures (abridged):

1. Resource person for “Control Laboratory Workshop” under QIP for University teachers, organised by Electrical Engineering Dept. University of Roorkee, Roorkee. 1977.
2. “Electronic Components Industry – prospects & challenges”, Invited talk delivered at the National Seminar on “Science, Technology & Development in India” at IE, Bangalore, Oct., 1981.
3. Guest Lecture on “Noise Pollution & Control”, Environmental Scientists Group, New Delhi. Dec., 1981.
4. “Television Engineering - Current Advances”, Industrial Entrepreneurs, organized by Delhi Local Chapter of IE (India). 1982.
5. “Delta Modulation: A Robust Encoder for Speech & Video Applications”, IETE Lucknow Chapter, 1983.
6. “ADM Encoder: Adaptation Strategies and Results”, Seminar on Communication Advances, AMU, Aligarh, 1983.
7. “The Coming Telecomm Revolution” Radio Talk on AIR Varanasi, on World Telecom Day, Sept. 1983.
8. “Advances in Telecommunication”, Special Lecture to AIR Staff, Varanasi, 1983.
9. “Office Automation and Its Implications”, Corporate Office Staff BHEL, New Delhi, Sept. 1984.
10. “Information Super Highway: Optical Fiber Revolution”, Invited Talk to Railway Engineers, Jamalpur, Sept. 1984.
11. Nov. 1984.
12. “What is Personal Communication: The new Communication Paradigm”, IEEE & EE Local Colloquia, Aug. 1985.
13. Invited Talk on “Satellite Communication for Mobile Access”, Defense Science Center, New Delhi, Dec. 1985.
14. Guest Lecture on “Delta Modulation: Application for Robust Long Haul Links”, DUSC, New Delhi, Jan., 1986.
15. Invited Talk on “Electronics & Automation for Science Museums”, National Sc. Museums, Calcutta, July, 1986.
16. Invited Talk on “Intelligent Instrumentation Systems for Laboratory Automation: using IEEE – 488 Bus based Systems”, Ind Inst. Of Railway Engg. Jamalpur, Dec. 1987.
17. Invited Lecture Series on “Electronic Switching System: Recent Trends”, Lecture I “Traffic Adaptation ES Design” &, Lecture II, “Network Monitoring & Management”, Indian Telephone Industry, Manikapur, ESS Project Staff, May 1989.
18. Invited Talk on “Restoration Techniques in Recorded Speech” IETE Convention Pune, Nov. 1989.

19. Invited Lecture Series on “Signal Processing of Speech” Lecture I “Speech Analysis”, Lecture II “Speech Synthesis”, AMU, Aligarh, Dec. 1989.
20. Invited Talk on “Autonomy & Electronic Media”, Seminar on “Prasar Bharti Bill” at BHU, Feb. 1990.
21. Invited Talk on “Electronics Industry in Small Scale Sector”, Workshop on Entrepreneurship Development Program, Inst. Entrp. Dev. U.P. Lucknow, Feb. 1990.
22. Invited Talk on “Computer Graphics and Fractal Geometry” at Workshop on “Fractal Geometry” at Dept. of Mining Engg. IT, BHU, April 1990.
23. Invited Lecture Series on “Network Operating Systems & Computer Communication”, Lecture I, “Inter Process Communication & Networking”, Lecture II, “Resource Management & Net OS”, Refresher Course on “OS & Computer Networks” ASC, RDV, Jabalpur, Nov. 1990.
24. Invited Participation in “Technology Forecasting – Delphi Study: Electronics Group”, BHEL Bhopal, Dec. 1990.
25. “The Four Generations of Optical Fiber Communication”, Indian Physics Association, Varanasi Local Chapter, Faculty of Science, Jan. 1991.
26. Invited Lecture Series on “Fiber Optics & Optical Communication”, Lecture I: “Fiber Optics & Communication”, Lecture II: “ Applications & Advances in Optical Fibers”, 1st Refresher Course in Physics, Academic Staff Collage, BHU, Nov. 1991.
27. Invited Lecture on “Information Technology & Development Process”, Seminar on “IT & National Dev.”, Dept. of Journalism, BHU, Dec. 1991.
28. Invited Talk on “Electromagnetic Radiation & Health Hazards: Varanasi Survey Report”, at Seminar on “Health hazards Due to Electromagnetic Fields”, EE Dept. IT. BHU, April 1992.
29. Invited Lecture on “Fiber Optics & Communication Engg.”, 2nd Refresher Course for Physics & Plant Sciences, ASC, BHU, Feb 1993.
30. Invited Lecture Series on “Opto-electronic Devices & Systems”, Lecture I: “Optical Switching & its Applications”, Lecture II: “Erbium Doped Fiber Amplifier; Performance & Application”, Summer School on “Recent Trends in Opto-electronic Devices & Systems”, at BIT, Mesra, June 1993.
31. Invited Lecture on “Distributed Sensors; Fiber Optical Sensors & Application” at Special Course on “Advance Communication Techniques for Mining Industry”, CMRS, Dhanbad, Nov. 1993.
32. Invited Talk on “New Revolution in Information Technology: Evolution of Optical Fiber”, Purvanchal Academy of Sciences, Dec. 1993.
33. Invited Talk on “Electronics As Catalyst in Science & Inovation”, Academic Staff Collage, 14th Orientation Course in Science, ASC, BHU, July, 1994.
34. Invited Lecture on “Computer Communication & Networking: Client Server Architecture”, IPA Varanasi Chapter, Fac. of Sc. BHU, Aug. 1994.
35. Invited Lecture Series on “Millimeter Waves & Personal Communication Systems” Lecture I: “Personal Communication: Current Status & Problems”; Lecture II: “Personal Communication: Opportunities in Commercial & Strategic Fields”; S&T Forum of DEAL, Dehradun, Dec. 1994.

36. Invited Talk on “Low level Signal Processing for Detector Arrays”, S&T Forum of IRDE Dehradun, Dec. 1994.
37. Invited Talk on “Curriculum Design & Use of Modern Aids in Tech. Education”, at Seminar on “Engineering Education in 21st Century”; at IT, BHU, Jan. 1995.
38. Invited Lecture on “Fast & High Speed Signal Processing Trends”, at IETE’s 26th Mid Term Symposium on “Microwave & MM Wave – Recent Trends”, DEAL, Dehradun, April 1995.
39. Invited Lecture Series on “Training of Technical Teachers”; Lecture I; “Computer Aided Engineering Education”; Lecture II; “Simulators as Laboratory Tools”: at ASC – BHU, May, 1995.
40. Group Discussion on “Will Introduction of Technology Innovation in Under Graduate teaching do Harm”; at ASC, BHU, May 1995.
41. Guest Lecture on “Architecture & Hardware Trends in ATR”, at Special Course on “Automatic Target Recognition Systems” IRDE, Dehradun, Nov. 1995.
42. Invited Lecture Series on “Digital Communication & Fiber Optics”; Lecture I: “Basic Line Encoding Techniques”; Lecture II: “Optical Fiber Communication Techniques”; Lecture III: “Photonics & Optical Switching in Communication” at Refresher Course in Physics, ASC BHU, Dec. 1995.
43. Keynote Address at “Cadence Probe ‘96” on “Importance of EDA in Zero Defect Design of Systems”, Feb. 1996.
44. Invited Talk and Guest Lecture on “Optic Communication for Inter Satellite Links in Deep Space”, at ISAC – ISRO, Bangalore, Aug. 1996
45. Guest Lecture at “Library Automation & Information Technology”, Workshop on “Electronic Library and its Impact on Information Dissemination”; Oct. 1996.
46. Invited Talk on “3G of Mobile Communication & WILL”, IETE Hyderabad Chapter, 1997.
47. Invited Lecture on “TH/DS Vs FH/DS in Spread Spectrum Communication”; at CEP Course on “Spread Spectrum Techniques in Secure Communication”, SAG – DRDO, New Delhi, Oct. 1999.
48. CEP Course on “Signal Processing for MMW Sensors”, DEAL, Dehradun, May 2000.
49. Special Lecture on “Radio Management Unit: Design & Development”, DRDL & IMARAT – DRDO, Hyderabad, July 2000.
50. Invited Talk on “Mobile Communication: Current Trends”, Workshop on “Mobile Communication” at TIET, Patiala, April, 2001.

Appendix – VI

List of Publications: (National & International Refereed Journals)

1. Sarit Pal, & S. K. Kak, “ Optical Fiber Array Surface Roughness Sensor” SPIE, Vol. 3666, pp 520 – 525.
2. P. N. Mishra & S. K. Kak, “ Expert System for LD Steel Process”, IETE Jour of Research Vol. 47, No. 1, Jan – Feb. 2001.
3. S. Pal & S. K. Kak, “Surface Image Generation using Local Slope Based Mapping Algorithm”, Microwave & Optical Technology Letters, MOTL Vol. 26, No. 2. Pp 127 – 132. July 2000.
4. M. J. Aqel, S. K. Kak, “ Multi Perspective ECG Expert System”, Int. Jour. Of Cybernetics, Vol. 28, No. 6, pp 26 – 33. Mar. 1995.
5. P. N. Mishra, S. C. Srivastava & S. K. Kak, “ Expert System In Iron & Steel Industries: An Overview”, Jour. Of National Software Institute, pp 12 – 18, Mar. 1992.
6. P. N. Mishra, S. C. Srivastava & S. K. Kak, “ Expert System : A Case Study of LD Steel Making”, CSI Communication, pp 4 – 7 , Dec 1991.
7. S. K. Kak, Shantam Biswas, Sunil Singh, “ Network File Server in Dual Tasking Mode Using X – Modem Protocol”, Vol. 7, No. 3, IETE Tech. Review 1991.
8. D. Pandey, R. Mahesh, A. K. Singh, V. S. Tiwari & S. K. Kak, “Preparation of Nearly Single Phase 2223 in $\text{Bi}_{1.6}\text{Pb}_{0.4}\text{Sr}_2\text{Ca}_2\text{Cu}_3\text{O}_y$ composition by a Semi-Wet Route using $\text{Pb}_{0.2}\text{SrCa}(\text{CO}_3)_{2.2}$ Precursor”, Physica C Vol. 184 (1991) pp 135 – 143.
9. D. Pandey, R. Mahesh, A. K. Singh, V. S. Tiwari & S. K. Kak, “ The Effect of semi-wet synthesis on the formation of the 2223 phase in $\text{Bi}_{1.6}\text{Pb}_{0.4}\text{Sr}_2\text{Ca}_2\text{Cu}_3\text{O}_y$ composition”, Physica C Vol. 173 (1991) pp 476 – 486.
10. S. K. Kak, Anand Mohan & A. B. Mahamuni, “ STARLAN Card Implementation for PC/AT”, Proc. Of CSI – 90 pp 106 – 112, Oct. Nov 1990.
11. D. Pandey, R. Mahesh, A. K. Singh, V. S. Tiwari & S. K. Kak, “Zero Resistivity at 122K in BI-Pb-Sr-Ca-Cu-O System”, Solid State Communications, Vol. 75, No. 6, pp 499 – 502, 1990.
12. A. K. Tripathy, S. K. Kak, “Controller for Vertical Transportation”, Monograph on Recent Trends in Applied Systems Research, CSI India, pp 416 – 421, 1988.
13. S. K. Kak & Anand mohan, “A New Adaptive Delta Modulation Scheme”, Jour. Of IE(India) Vol. 66, Pt ET – 4, pp 67 – 70, May 1986.
14. S. K. Kak, Anand Mohan & H. K. Gupta, “ Novel Threshold Sensing Switched Filter”, Jour. Of IE(India), Vol. 66, Pt ET – 4, pp 80 – 82, May 1986.
15. Anand mohan, S. K. Kak & Raghunath, “Digital Phase & Frequency Programmable Sine Wave Synthesiser”, IETE Tech. Rev., Vol. 3, No. 11, pp 576 – 577, Nov. 1986.
16. S. L. Jaikhanwal, S. K. Kak, “P-Wave & S-Wave Measurement of Soil Samples”, Jour. Of CSIO, Chandigarh, pp 25 – 29, Jan. 1983.
17. S. L. Jaikhanwal, S. K. Kak, “ An Ultrasonic Soil Consolidometer”, Jour. Of CSIO Chandigarh, pp 182 – 195, July 1982.

18. S. K. kak, Vimal Singh, “ Speed and Voltage Regulation of D.C. Shunt Machines Using Power Transistor in Field Circuit”, Int. Jour. Of Electronics (U.K.) Vol. 37, No. 4, pp 465 – 468, April 1974.
19. V. Singh, S. K. Kak, S. Rangarajan, “Automatic Voltage Regulation of D.C. Shunt Generators”, IEEE Trans. On Industrial Electronics & Control Instrumentation, Vol. IECI – 20, No. 2 pp 58 – 59, May 1973.
20. S.K.Kak “ Microwave Communication Systems” Jour. Of IE(India) pp 45 – 49, July 1970.

List of Publications in Conference Proceedings: (Refereed)

1. Sarit Pal, S. K. Kak, “ Fiber Optic Sensors in Surface Metrology”, Proc. Of Electro – 2001, pp 274 – 281, Jan. 2001.
2. Shubhra Verma, S. K. Kak, “Discrete Pulse Width Modulation for Fiber Optic Communication”, Proc. Of Electro – 2001, pp 289 – 292, Jan. 2001.
3. Shubhra Verma, S. K. Kak, “Noise Performance of Discrete Pulse Width Modulation”, Proc. Photonics – 2000, Vol. 2, pp 720 – 722, Pub. Allied New Delhi.
4. Sarit Pal, Shubhra Verma, S. K. Kak, “Fiber Optic Sensor for Angular Displacement and Surface Slope Measurement”, Proc. Photonics – 2000, Vol. 2, pp 857 – 862, Pub. Allied New Delhi.
5. Aushutosh Kr. Singh, Anand Mohan & S.K.Kak, “Fault Detection Using Spectral Techniques- A review”, ICSC-2000 April 2000
6. Shubhra Verma, S. K. Kak, “ Air gap Monitoring Techniques for LIM propelled Systems” pp B71 – 75, Jan. 1999.
7. Ashutosh K. Singh, Anand Mohan, S. K. kak, “Determination of R-M Coefficients using OBDD”, Proc. Of NSC – 99, pp 306 – 312, Pub. Allied New Delhi.
8. Sarit Pal, Shubhra Verma, S. K. Kak, “Fiber Optic Profilo-Meter for Surface Slope Measurement” Proc. NSC –99 pp 309 – 314, Pub. Allied New Delhi.
9. Aushutosh Kr. Singh, Anand Mohan & S.K.Kak, “Computation of R-M Spectral Signature using Ordered Binary Decision Diagram(OBDD) for Fault Detection”, IWTS-99, Malaysia, May 1999
10. Aushutosh Kr. Singh, Anand Mohan & S.K.Kak, “Determination of Optimal Polarity Reed-Muller Expansion & Compact Testing Of Boolean Function”, DIGIVISION-99, Allahabad March 1999
11. Aushutosh Kr. Singh, Anand Mohan & S.K.Kak, “Compact Testing of Combinational Networks using Reed-Muller Transform”, Proc. NCEMDS-99, Gulbarga, pp306-312 Jan.1999
12. Aushutosh Kr. Singh, Naveen Gupta, Anand Mohan & S.K.Kak, “Fault Detection using Dominant Ordering of Walsh Function, IWTS-98, May198
13. Sarit Pal, S. K. Kak, “Surface Reconstruction Using Reflection based Mapping Algorithm”, Proc. ICOL – 98, pp 1202 - 1205, Vol. II Pub. Narosa New Delhi.

14. Sarit Pal, S. K. Kak, "Optical Fiber Array Surface Roughness Sensor" Proc. Photonics – 98, pp 720 - 723 Vol. II, Pub. Viva , New Delhi.
15. Anand Mohan, Yasoda Nandan, S. K. Kak, " Sine Wave Synthesis Using Dominant Ordering of Walsh Functions", Proc. IWTS – 98, Kuala Lumpur, Malaysia.
16. Anand Mohan, A. Basakaran & S.K.Kak, "ATE Controller and Bus Monitor for IEEE-4888", Proc. DPN-97, pp 37-41, Dec. 1997
17. Anand Mohan, S.K.Kak & Raghunath, "A Novel Technique for Transducer Linearization", conference on Impact of Electronics on Automation, the Indian Scenario, abstract pp57, Organised by IEEE U.P. Section & Dept. of Electronics & Computer Engg. University of Roorkee, Jan. 1997
18. Sarit Pal and S.K.Kak, "Numerical Aperture and Intensity Control by Fiber End Face Shaping", Proc. Photonics-96, pp203-208 TMH New Delhi, Dec. 1996
19. M. J. Auel and S.K.Kak, " Multi Perspective ECG expert System", Proc.-IP-94, New Orleans, USA Nov. 1994
20. M. J. Auel and S.K.Kak, "Expert System For the Management of Children's Emergencies", Proc. SDS-94, Hyderabad India, Dec.1994.
21. Anand Mohan, S.K.Kak & Raghunath, "Enhancement of Measurement Accuracy & Precision Through Smart Instruments", Presented at the 5th annual Conference of Purvanchal Academy of Science, Varanasi, Dec. 1993
22. Anand Mohan, S.K.Kak R. Parthshastry & Raghunath, "Neural Net Applications for Devnagari Character Identification", Proc. COMPHIL-93, IETE, Allahabad, April 1993
23. P.N. Mishra, S.C.Srivastava & S.K.Kak, "Expert System Design for Steel Making Process Control : Problems And Perspective", Proc. All India Conference on Applied Instrumentation, pp203-207. Feb 1992
24. S.K.Kak, Anand Mohan & R.S.Sheshadri, "Coherent MAFSK MODEM Using Digital PLL", National Symp. On Emerging Trends In Communication Technology Jodhpur, March 1990
25. S.K.Kak, Anand Mohan & A. B. Mahamuni, "STARLAN Card Implementation on PC/AT", Proc. CSI – 90, Calcutta, pp106-112 Nov.1990
26. S.K.Kak & Anand Mohan, "Integrated Optical Sensors", Second IPA/DST Symp. On Lasers and Applications, BHU, Varanasi Dec1989
27. S.K.Kak & P.K.Mukherjee, "Stepped Programmable Attenuator", Proc. COMMEX-2000, ppA-5, NAFEN, Nov. 1998
28. Anand Mohan, S.K.Kak & Raghunath, "Synthesized Programmable Function Generator", Proc. ISELDEC-87, Vol-II pp.581-583, IIT Kharagpur, Dec. 1987.
29. G.K.Rajgopalan, Anupam Saurabh, & S. K. Kak, "Prosodic Feature for Speech Synthesis", Proc. ISELDEC-87, Vol-I pp.231-234, IIT Kharagpur, Dec. 1987.
30. S.K.Kak, Anand Mohan & A.K. Tripathi, "Photonics and Optical processing", Conf. On the technologies in the 21st century, Pantnagar, Sept. 1987.

31. S.K.Kak, Anand Mohan & A.K. Tripathi, "A Programmable Waveform Generator for ATE Applications", Symp. On Digital Techniques in System & Industrial Processes, IETE Pune Centre, Nov. 1986
32. S.K.Kak & Anand Mohan, "Restoration Technique For Recorded speech", Symp. On Digital Technique in System & Industrial Processes, IETE Pune Center, Nov.1986
33. S.K.Kak & S.S.Patnayak, "Delay Bandwidth Optimization of Passive Filters", Proc. MICRO – 79 Jan. 1979
34. S.K.Kak & D.P.Das, " Simulation of Voltage Controlled N-Type Negative Resistance", Proc. MICRO –79 Jan. 1979
35. S.K.Kak & Y.Singh, " Automatic VSWR Plotter for X-band", Proc. MICRO –79 Jan. 1979
36. S.K.Kak & Kishore Ram, "An Electronic Tele-printer", Proc. MICRO –79 Jan. 1979

Appendix IV

List of Important Administrative Assignments held:

1. Student Convener of National Models Exhibition of IT at IT, BHU 1970.
2. Administrative Warden, Prof. S. C. Dey Hostel, BHU, Varanasi: 1977 – 78 and 1980 – 1987.
3. Student Advisor, Institute of Technology, BHU, 1987 – 1993.
4. Member Technical Committee & Chairman Audio & Lighting Committee of “ Indian National Science Congress”, 1986. Held at BHU.
5. Chairman Co – Curricular Activities Wing, IT Gymkhana, BHU, 1989 – 91.
6. Chairman “Stage, Audio & Lighting Committee” for “East Zone Inter University Youth Festival”, Nov. 1989.
7. Member Swatantrta Bhawan “Audio, Lighting & Air Conditioning Committee” for System Identification and Acceptance; 1987 – 90.
8. Chairman “Stage, Audio & Lighting Committee” for North & West Zone Youth Festival, held at BHU Jan. 1991.
9. Chairman/Member of all the Convocation, Institute Day, Foundation Day Committees’ of BHU & IT since 1971 onwards.
10. Chairman of Welcome Committee of “H.E. Nelson Mandela Visit to BHU for Receiving Doctor of Letters, Honouris Causa” Nov. 1990.
11. Chairman of Welcome Committee of “H.E. Prime Minister of Nepal: Mr. Girija Prasad Koirala to BHU” 1991.
12. Member of The “Central Purchase Sub committee on Electrical, Electronic, & Computer Items” since 1987 onwards till date.
13. Member “Chatra Kalyan Samiti”, BHU 1993 – 94.
14. Co-ordinator(Director) Computer Center BHU, 1996 – 2000.
15. Head, Dept. of Electronics Engineering, It, BHU, 1996 – 1999.
16. Co-ordinator, Telecommunication services Committee of BHU 1996 – 2001.
17. Member of various “Visiting Committees/ Monitoring Committees” of UGC & AICTE for Evaluation & Accreditation of Technical Institutes & Engineering Colleges. 1998 – 2001.
18. Member of various Selection Committees of DRDO, ISRO, UPSC & some Universities, since 1988 onwards.
19. Member of various Enquiry, Fact finding & Technical Committees for BHU; 1977 onwards.
20. Member Acoustical Treatment Committee for MMV Auditorium, BHU, 1988.