

Prof Bhaskar Ramamurthi

Prof Bhaskar Ramamurthi is presently serving as the Hon. Director, Centre of Excellence in Wireless Technology, Chennai. Apart from this prestigious position, Prof Ramamurthi is concurrently managing the responsibilities at the Indian Institute of Technology, Madras as its Dean (Planning) and Professor, Department of Electrical Engineering. An alumnus of IIT, Madras, Prof Ramamurthi travelled overseas to complete his MS, and following that, his PhD in Electrical and Computer Engineering from the University of California, Santa Barbara. He flagged off his career in the US with AT&T Bell Laboratories, New Jersey, and gathering valuable experience in the process. Prof Ramamurthi returned to his alma mater in 1986, and joined the Department of Electrical Engineering as an Assistant Professor. His research interests have led to projects worth more than Rs 20 crores and earned royalty of more than Rs 5 crores to the Institute.

Prof Ramamurthi is the Principal Architect of corDECT Wireless Local Loop System and Broadband corDECT WirelessDSL System, widely deployed in India and 15 countries. He is also the inventor of the Multi-Level Adaptive Modulation Extension to the DECT standard that makes the Broadband corDECT system possible. Besides these, he has also made significant contributions as the inventor of Variable Bitrate Modified-GSM voice compression algorithm for digital storage applications, co-inventor of the Conjugate Data Repetition and associated Collision-Free Interlaced Pilots scheme in IEEE 802.16m standard, Designer of the Radio Modems for a TDM-TDMA Rural Digital Telephone System and so on. Through his work, Prof Ramamurthi currently holds 21 patents along with his collaborators for his pioneering research activities. Prof Ramamurthi received the Vasvik Award for Electronic Sciences and Technology in 2000 and was honoured with the Tamil Nadu

Scientist Award 2003 in Engineering and Technology, for his outstanding initiatives.

Apart from research, Prof Ramamurthi serves as a Member of several national committees such as the QoS Specifications Committee of TRAI for ILD VoIP Services, Spectrum Committees of the DoT, Govt. of India to recommend norms for additional spectrum allocation to service providers, Committee of the DoT to recommend annual license charges for 3G spectrum and assists TRAI on several occasions with regard to wireless technology issues. Till date, he has 87 papers to his credit that have been published in eminent journals and conferences.

Awards and Fellowships

- Awarded University of California, **Regents Fellowship** for 1980-81 and 1981-82.
- The paper titled "Perfect-Capture ALOHA for Local Radio Communications" selected for reprinting in IEEE Press book on **Key Papers** in Multiple Access Communications.
- Called to the **Fellowship** of Indian National Academy of Engineering, 2000
- Awarded **Vasvik Award** for Electronic Sciences and Technology for **2000**
- Awarded **Tamil Nadu Scientist Award 2003** for Engineering and Technology

Patents (all filed jointly with collaborators)

- Direct-In-Diallers for Decadic-Pulsing Telephone System Patent Nos.: 173914 and 173916
- A Long Range DECT System
- A Long Range Relay Base DECT System
- Patent Nos. : AN:333/MAS/97 dated 19.2.97, AN:332/MAS/97 dated 19.2.97
- A Broadband Wireless Communication System, patent application filed June 2006, Patent Application No.: 492/CHE/2006
- Multi-Antenna Cellular Broad Band Wireless Communication System With Interference Mitigation, Patent Appln. No. 298 Che 2007, 12.02.2007
- A method of spatial multiplexing for high data rate wireless communication, Patent Appln. 1720 Che 2007, 06.08.2007
- Mapping Turbo Encoder Outputs to Physical Resource Blocks, Patent filed in February 2008
- Inter-Cell Interference Mitigation Using Limited Feedback in Cellular Networks, patent application no.: 355/CHE/2008
- Interference Mitigation Enhancement Using Conjugate Symbol Repetition and Phase Randomization, patent filed in June 2008
- Slot-wise Antenna Grouping/Switching (2 DPOD), patent filed June 2008
- Methods to Time-Frequency Multiplex Pilot and Data in OFDMA Systems, patent filed in June 2008
- Quasi Orthogonal Pilot Design, patent filed June 2008
- Interference suppression in OFDMA and SC-FDMA Systems, filed in June 2008
- Digital Pre-coding for PAPR reduction in SC-FDMA Systems, filed in June 2008
- Symbol Duration Extended Interleaved Frequency Division Multiplexing Access (SE-IFDMA), filed in June 2008
- Digital Pre-coding for PAPR reduction in SC-FDMA Systems, filed in July 2008
- Receiver for Conjugate Data Repetition, filed in Nov. 2008
- Reducing Pilot Density in Emerging Broadband Wireless Standards, filed in Nov. 2008
- Frequency Domain Data Repetition amongst Co-channel Interferers in Cellular Networks for Effective Interference Management, filed in Dec 2008
- Open Loop Two Dimensional Precoding, filed in Jan 2009
- Data Collision Avoided Interlaced Pilots, filed in March 2009.

Product R&D

- Have led research projects worth more than Rs 20 cr and earned royalty to the Institute more than Rs 5 cr Significant Contributions -
- Principal Architect of *corDECT* Wireless Local Loop System and *Broadband corDECT* WirelessDSL System, widely deployed in India and 15 countries
- Inventor of Variable Bitrate Modified-GSM voice compression algorithm for digital storage applications
- Designer of *Digicom* Digital Communications Laboratory Trainer and *Benchmark* Software-Defined-Radio Trainer
- Designer of the Radio Modems for a TDM-TDMA Rural Digital Telephone System
- Consultant for 3G WCDMA and IEEE 802.11 Physical Layer Design Teams in Indian Industry
- Inventor of the Multi-Level Adaptive Modulation Extension to the DECT standard that makes the Broadband *corDECT* system possible
- Co-author of the WiFi Rural Extension (WiFiRe) standard developed by IISc, IITB, and CEWiT
- Co-inventor of the Conjugate Data Repetition and associated Collision-Free Interlaced Pilots scheme in IEEE 802.16m standard

List of Publications

A. Publications in Journals

1. M.A. Reddy, Bhaskar Ramamurthi, et.al., "An Active-Compensated Double-Integrator Filter without Matched Op-amps", Proc. IEEE, April, 1980.
2. K.R.K Rao, Bhaskar Ramamurthi, et.al., "A High-Quality Double-Integrator Building-Block for Active-Ladder Filters", IEEE Trans. On Circuits and Systems, December, 1981.
3. Bhaskar Ramamurthi and A. Gersho, "Non-Linear Space-Variant Post-Processing of Block Coded Images", IEEE Trans. on Acoustics, Speech & Signal Processing, Vol. ASSP-34, No. 5, pp 1258-1268, November, 1986.
4. Bhaskar Ramamurthi and A. Gersho, "Classified Vector Quantization of Images", IEEE Trans. on Communications, Vol. Com-34, No. 11, pp 1105-1115, November, 1986.
5. M. Kavehrad and Bhaskar Ramamurthi, "Direct-Sequence Spectrum with DPSK Modulation and Diversity for Indoor Wireless Communications", IEEE Trans. on Communications, Vol. Com-35, No. 2, pp 224-236, February, 1987.
6. Bhaskar Ramamurthi, A.A.M. Saleh, and D.J. Goodman, "Perfect-Capture ALOHA for Local Radio Communications", IEEE Trans. on Selected Areas in Communications, Vol. SAC-5, No. 5, pp 806-814, June, 1987.

7. D.J. Goodman, Bhaskar Ramamurthi, et.al., "Packet Reservation Multiple Access for Local Wireless Communications", IEEE Trans. on Communication, Vol. 37, pp 885-890, 1989.
8. S. Jegannathan and Bhaskar Ramamurthi, "An FFT-Based Algorithm for Reconstructing Inhomogeneous Circular Cylindrical Shells from Noisy Data", Sadhana, Vol. 15, pp 235-237, 1990.
9. T.S. Nagabhushana and Bhaskar Ramamurthi, "A Fully Digital DPSK Burst Modem", Journal of IETE, Vol. 36, pp 397-405, 1990.
10. S. Jegannathan and Bhaskar Ramamurthi, "Scattering from a Circular Dielectric Cylindrical Shell: A Fast Algorithm", Electronic Letters, Vol. 26, No. 7, pp 484-485, March, 1990.
11. C.P. Mammen and Bhaskar Ramamurthi, "Vector Quantization for Compression of Multichannel ECG", IEEE Trans. on Biomedical Engg., No. 37, pp 821-825, September, 1990.
12. S. Jegannathan and Bhaskar Ramamurthi, "Diffraction-Tomography of Strongly-Scattering Infinite Cylindrical Objects of Arbitrary Cross-Sectional Shape", Journal of the Acoustical Society of America, October, 1990.
13. Sumam David. S and Bhaskar Ramamurthi, "Multiband-Excited Linear Predictive Coder with a Two-sided Short Term Predictor", Signal Processing, Vol. 25, No. 1, October, 1991.
14. Mathew Thomas, Bhaskar Ramamurthi and Ashok Jhunjhunwala, "Design and Performance Evaluation of a Low Bit Ratio Packet Radio Network", Journal of IETE, Vol.39, No.5, pp 281-290, September - October, 1993.
15. M.Archana Rao, B.Murgesh, Timothy A.Gonsalves, Ashok Jhunjhunwala, Bhaskar Ramamurthi, "A Reliable Fibre Optic Ring Network for Process Control", International Journal of Opto Electronics, Vol.8, No.4, pp 477-491, 1993.
16. Atul B.Mahamuni, Timothy A.Gonsalves, Bhaskar Ramamurthi, "Efficient Load Information Management for Load Sharing in Distributed Systems, Computer Networks Architecture and Applications", (C-13), 1993.
17. Sumam David. S and Bhaskar Ramamurthi, "Two-Sided Filters for Frame-Based Prediction", IEEE Trans. on ASSP, Vol. 39, pp 789-794, April, 1994.
18. Ashok Jhunjhunwala and Bhaskar Ramamurthi, "Wireless in Local Loop: Some Key Issues", IETE Technical Review, Vol. 12, No. 5&6, pp 309-314, September - December, 1995.
19. Bhaskar Ramamurthi, K.Giridhar and M.A.Srinivas, "DSP-based Digital FM Demodulation for GMSK Signals", Sadhana, Vol.21, Part I, pp 101-112, February, 1996.
20. K.Vasudevan, K.Giridhar and Bhaskar Ramamurthi, "Efficient Viterbi Algorithm for Signals with ISI", pp 629, Electronics Letters, Vol.34, No.7, 2 April, 1998.
21. Ashok Jhunjhunwala, Bhaskar Ramamurthi, Timothy A.Gonsalves, "The Role of Technology in Telecom Expansion in India", IEEE Communication Magazine, Vol.36, No.11, pp 88-94, November, 1998.

22. K.Vasudevan, K.Giridhar and Bhaskar Ramamurthi, "Non-Coherent Detection of Multilevel Signals in Frequency Non-selective Fading Channels", Signal Processing Journal, Elsevier Science Publishers, Vol. 78, Issue 2, pp 159-176, October, 1999.
23. K.Vasudevan, K.Giridhar, and Bhaskar Ramamurthi, "Efficient Suboptimal Detectors Based on Linear Prediction for Rayleigh Flat Fading Channels," Signal Processing Journal, Elsevier Science Publishers, Vol. 81, Issue 4, pp 819-828, April 2001.
24. C. Vijayalakshmi, Devendra Jalihal, Bhaskar Ramamurthi, "Capacity of High Density Macro Cellular Wireless Local Loop System Based on Dynamic Channel Selection", IETE Journal of Research, Vol. 49, No. 6, pp 411-422, Nov-Dec 2003.
25. Rohit Budhiraja and Bhaskar Ramamurthi, "Efficient Low Bit-Rate Low Latency Channelisation in DECT", EURASIP Journal on Wireless Communications and Networking, vol. 2006 regular issue, <http://www.hindawi.com/GetRegularIssueArticles.aspx?journal=WCN&volume=2006&startIndex=11>
26. Krishna Paul, Anitha Varghese, Anurag Kumar, Sridhar Iyer, and Bhaskar Ramamurthi, "WIFIRE Rural Area Broadband Access Using the WiFi PHY and a Multisector TDD MAC", IEEE Communications, Vol.45, No.1, pp.111-119, Jan.2007
27. Bhaskar Ramamurthi, "Broadband Wireless Technology for Rural India", Indian Journal of Radio & Space Physics, Vol.36, June 2007, pp. 168-171
28. Ashok Jhunjunwala, David Koilpillai and Bhaskar Ramamurthi, "Broadband to Empower Rural India", IETE Technical Review, Vol.24, No.4, July-August 2007, pp 195-201.

B. Publications in Conferences

29. Bhaskar Ramamurthi and A. Gersho, "Image Coding Using Vector Quantization", Proc. IEEE International Conference on Acoustics, Speech and Signal Processing, April, 1982.
30. Bhaskar Ramamurthi and A. Gersho, "Image Coding Using Segmented Codebooks", Picture Coding Symposium, March, 1983, Davis.
31. Bhaskar Ramamurthi and A. Gersho, "Low-Rate Image Coding Using Vector Quantization", IEEE Global Communications Conference Record, November, 1983.
32. A. Gersho and Bhaskar Ramamurthi, et.al., "Fast Searching Algorithms for Vector Quantization and Pattern Matching", Proc. IEEE International Conference on Acoustics, Speech and Signal Processing, March, 1984.
33. Bhaskar Ramamurthi and A. Gersho, "Edge-Oriented Spatial Filtering of Images with Application to the Post-Processing of Vector-Quantized Images", Proc. IEEE International Conference on Acoustics, Speech and Signal Processing, March, 1984.
34. Bhaskar Ramamurthi and A. Gersho, "Image Vector Quantization with a Perceptually-Based Cell Classifier", Proc. IEEE International Conference on Acoustics, Speech and Signal Processing, March, 1984.
35. Sumam David. S and Bhaskar Ramamurthi, "Two-Sided Filters for Frame-Based

Prediction”, Workshop on Speech & Signal Processing at TIFR, November, 1988.

36. G.A. Sudheer and Bhaskar Ramamurthi, “A Spread Spectrum Wireless LAN for Multipath Fading Environments”, Proc. of Indo-US Workshop on Systems and Signal Processing, 1988, Oxford and IBH, Pub.
37. D.J. Goodman, Bhaskar Ramamurthi, et.al., “Packet Reservation Multiple Access for Local Wireless Communications”, IEEE International Conference on Vehicular Technology, 1988, Philadelphia, USA.
38. C.P. Mammen and Bhaskar Ramamurthi, “Vector Quantization for Compression of Multichannel ECG”, Proc. of Workshop on Signal Processing, Communication & Networking, July, 1990, Bangalore.
39. Bhaskar Ramamurthi, “Wireless Networks; IETE Seminar on “Telematics in the Year 2000”, December, 1990, Madras.
40. Mathew Thomas, Ashok Jhunjhunwala and Bhaskar Ramamurthi, “A Low-Bit Rate Data Networks”, IETE Seminar on Telematics in the year 2000, December, 1990, Madras.
41. Dr. Bhaskar Ramamurthi, “Trends in Speech Coding”, IETE 34th Technical Convention, 7-8 September, 1991, Bangalore (*Invited paper*).
42. A. Jawahar and Bhaskar Ramamurthi, “High-Speed DSP-Based DQPSK Burst Modem for TDM/TDMA System”, Conference on Signal Processing and Communications, Indian Institute of Science, January, 1993, Bangalore.
43. Sumam David. S and Bhaskar Ramamurthi, “Multi-Band Excited Speech Coder”, Conference on Signal Processing and Communications, Indian Institute of Science, January, 1993, Bangalore.
44. C.P. Mammen and Bhaskar Ramamurthi, “Cellular CDMA System with Packet Voice”, Recent Advances in Signal Processing & Communication” 18-20 January, 1993, Indian Institute of Science, Bangalore.
45. A. Mahamuni, Timothy A. Gonsalves and Bhaskar Ramamurthi, “Efficient Load Information Management for Load Sharing in Distributed Systems”, in IFIP Transaction (C-13), 1993.
46. Bhaskar Ramamurthi, “Wireless in Indian Telecom Network”, Infocom'94, December, 1994, Bombay.
47. C. Mathiazhagan and Bhaskar Ramamurthi, “DECT-Based Wireless in Local Loop System”, International Conference on Personal Wireless Communications, Indian Institute of Science, December, 1994, Bangalore.
48. K. Giridhar, M.A. Srinivas and Bhaskar Ramamurthi, “DSP-Based Digital FM Demodulation for GMSK Signals”, SPCOM'95, Indian Institute of Science, 9-12 August, 1995, Bangalore.
49. K. Vasudevan and Bhaskar Ramamurthi, “DSP-based Algorithms for Voiceband Modems”, SPCOM'95, 9-12 August, 1995, Indian Institute of Science, Bangalore,.
50. Ashok Jhunjhunwala and Bhaskar Ramamurthi, “Wireless in Local Loop, “Some Key

Issues" IETE, Annual Technical Convention, October 1995, Pune.

51. K.Giridhar, K.Vasudevan and Bhaskar Ramamurthi, "Split-Trellis Viterbi Decoder; A Computationally Efficient Technique for MLSE", National Conference on Communications (NCC-96), pp 59-62, February, 1996, Bombay.
52. M. Kavehrad and Bhaskar Ramamurthi, "Direct-Sequence Spread Spectrum with DPSK Modulation and Diversity for Indoor Wireless Communications", IEEE International Conference on Communications, June, 1996, Toronto, Canada.
53. C.P.Mammen and Bhaskar Ramamurthi, "VPE-LPC:A Variable Bit-Rate Speech Coder", National Conference on Communications (NCC-97), pp.51, 31 January - 2 February, 1997, Indian Institute of Technology, Madras.
54. K.Vasudevan, K.Giridhar and Bhaskar Ramamurthi, "Nyquist-Rate Detection of CPM Signals Using the Viterbi Algorithm", National Conference on Communications (NCC-97), pp.85, 31 January - 2 February, 1997, Indian Institute of Technology, Madras.
55. Abhay Joshi and Bhaskar Ramamurthi, "Adaptive Data Detection of ISI Channels", National Conference on Communications (NCC-97), pp 191, 31 January - 2 February, 1997, Indian Institute of Technology, Madras.
56. Vasudev Nambakkam, Devendra Jalihal and Bhaskar Ramamurthi, "Statistical Multiplexing with Variable Rate Embedded Coding for Voice Circuit Multiplication", National Conference on Communications (NCC-97), pp 208, 31 January - 2 February, 1997, Indian Institute of Technology, Madras.
57. K.Vasudevan, K.Giridhar and Bhaskar Ramamurthi, "Non-Coherent Sequence Estimation of Multilevel Signals in Slowly Fading Channels", National Conference on Communications (NCC-98), 29-31 Jan. 1998, Indian Instt. of Science, Bangalore.
58. K.Vasudevan, K.Giridhar and Bhaskar Ramamurthi, "DSP-based Non-Coherent Detectors for Multilevel Signals in Flat Fading Channels", Proc. Of the IEEE, International Conference on Universal Personal Communication, October, 1998, Florence, Italy.
59. K.Rama Sudha Mohan and Bhaskar Ramamurthi, "A DSP-based DTMF Detector for Universal Application", National Conference on Communications (NCC-99), 29-31 January, 1999, Indian Institute of Technology, Kharagpur.
60. R.Ravikumar, G.V.Rangaraj, and Bhaskar Ramamurthi, "Internet Access on corDECT WLL", National Conference on Communications (NCC-99), 29-31 January, 1999, Indian Institute of Technology, Kharagpur.
61. Vijayalakshmi Chetlapalli, Devendra Jalihal and Bhaskar Ramamurthi, "Capacity of High Density Macro Cellular Wireless Local Loop System based on Dynamic Channel Selection", National Conference on Communications (NCC-99), 29-31 January, 1999, Indian Institute of Technology, Kharagpur.
62. R.Sivan, Ashok Jhunjhunwala, Bhaskar Ramamurthi, "Relay Base Station for DECT Based Wireless in Local Loop to Serve Sparse Rural Areas". International Conference on Personal Wireless Communications (ICPWC'99), 17-19th February 1999, Jaipur, India
63. K. Vasudevan, K. Giridhar, and Bhaskar Ramamurthi, "Differential Detection of Multi-

Level Signals in Frequency Non-Selective Rayleigh Fading Channels with Diversity,” IEEE International Conference on Personal Wireless Communications (ICPWC'99), 17-19th February 1999, Jaipur, India

64. Bhaskar Ramamurthi, "Telcom Expansion in India: Low Cost Access is the Key", Symposium on Advanced Technologies, Central Research Laboratory, 16-19th November 1999, Bangalore.
65. Hema A.Murthy. Timothy A.Gonsalves, Bindu Madhavi, Kamini Gupta, Ashok Jhunjunwala, and Bhaskar Ramamurthi, "CygPlan: An Installation Planner for Telecom Access Networks", National Conference on Communications (NCC-2000), 28-30 January 2000, Indian Institute of Technology, Delhi.
66. P.R.Goundan, Ashok Jhunjunwala, and Bhaskar Ramamurthi, "Use of Existing Copper Cable and Optical Fibre in the Railway Network to Provide Telecom Services in Small Towns", National Conference on Communications (NCC-2000), 28-30 January 2000, Indian Institute of Technology, Delhi
67. K.Ramasudha Mohan and Bhaskar Ramamurthi, "A DSP-based Reed Solomon Coder for DECT Applications", National Conference on Communications (NCC-2000), 28-30 January 2000, Indian Institute of Technology, Delhi
68. V.Suresh and Bhaskar Ramamurthi, "A Fast-locking Frequency Synthesizer for Multi-carrier TDMA Applications", National Conference on Communications (NCC-2000), 28-30 January 2000, Indian Institute of Technology, Delhi
69. Mathew P.Joseph, Devendra Jalihal, and Bhaskar Ramamurthi, "DSP Algorithms for a 15-Channel On-board Satellite Transmultiplexer and Receiver", National Conference on Communications (NCC-2000), 28-30 January 2000, Indian Institute of Technology, Delhi.
70. K.Vasudevan, K..Giridhar, and B.Ramamurthi, "Efficient suboptimum detectors based on linear prediction in Rayleigh flat-fading channels", International Conference. on Communications, Control, and Signal Processing in the Next Millennium, Bangalore, India, July. 2000.
71. S. Mohammed Rabeek, Ashok Jhunjunwala, and Bhaskar Ramamurthi, "Internet Access in corDECT Multiwallset," Proc. of the National Conference on Communications, 2001, pp. 13-17.
72. Valli Madhavi, Devendra Jalihal, K. Giridhar, and Bhaskar Ramamurthi, "High-Speed DECT-Based Internet Download System," Proc. of the National Conference on Communications, 2001, pp. 47-51.
73. C. Kotilingaiah Setty, Bhaskar Ramamurthi, and Devendra Jalihal, "IP-PX: a Wireless Local Loop System for Small Communities", Proc. of the National Conference on Communications, 2001, pp. 370-374.
74. Vasudha Raman, Bhaskar Ramamurthi, and K. Giridhar, "Lossless Data Compression for the Internet Connection in corDECT", Proc. of the National Conference on Communications, 2001, pp. 375-379.
75. N. Hitesh, G. Ramesh Kumar, Bhaskar Ramamurthi and K. Giridhar, "Receiver for 3G DECT Physical Layer," Proc. of the Nat. Conf. On Communications, Mumbai, 2002.

76. N. Hitesh, Rohit Budhiraja, and Bhaskar Ramamurthi, "Backward Compatible Software FM Demodulator for 3G DECT Receiver," Proc. of the Nat. Conf. On Communications, Mumbai, 2002.
77. Hema A. Murthy, T.A. Gonsalves, Bhaskar Ramamurthi, K. Balamurugan, Shubha Augustine, and Ch. Vijayalakshmi, "Cygplan - An Installation Planning Tool," Proc. of the Nat. Conf. On Communications, Mumbai, 2002.
78. Sundar Krishnaraj and Bhaskar Ramamurthi, "Efficient Channel Utilisation for Internet Calls in Wireless Access Systems," Proc. of the Nat. Conf. On Communications, Mumbai, 2002.
79. Rohit Budhiraja and Bhaskar Ramamurthi, "Modified DECT 3G Physical Layer with Improved Multi-Rate Capability" NCC-2003, IIT Madras, Jan 31-Feb 2, 2003
80. A Two-Antenna Two-Tone Space-Frequency Code Using Reduced Channel Feedback, Proceedings of IEEE SPAWC-2k7, Helsinki, Finland, June 2007.
81. Vinosh Babu James, Bhaskar Ramamurthi and K. Giridhar, Controlling array gain using partial channel feedback in linearly decodable codes, Proc. of WWRF-15, France, Dec 2005
82. Vinosh Babu James and Bhaskar Ramamurthi, A Two-Antenna Two-Tone Space-Frequency Code Using Reduced Channel Feedback, Proc. of IEEE-SPAWC'07, Finland, Jun 2007
83. Vinosh Babu James and Bhaskar Ramamurthi, Performance Evaluation of Two 2×1 MIMO OFDMA Schemes in a Multi-cellular Environment, Proc. of WWRF-18, Finland, June 2007
84. Vinosh Babu James, Bhaskar Ramamurthi, et. al., Array-Gain Enhancement in 4×2 Coordinate Interleaved Spatial Multiplexing Proc. of WWRF-19, Chennai, Nov 2007
85. Bhaskar Ramamurthi, Next-Generation Wireless System Architectures with Optical-Fiber Backhaul, (invited) First International Workshop on Software Radio Technology, Beijing, 2008
86. Bhaskar Ramamurthi, Cutting Edge at the Cell Edge: Mitigating Co-Channel Interference in Emerging Broadband Wireless Systems (invited), First International Conference on Communications Systems and Networks, Bangalore, 2009
87. Kiran Kuchi, R Vinod, M K Dileep, M S Padmanabhan, Dhivagar, J Klutto Milleth, Bhaskar Ramamurthi, K Giridhar: Interference Mitigation using Conjugate Data Repetition, Proc. International Conference on Communications, June 2009