

Curriculum Vitae

Prasad N. Shastry

(S. N. Prasad)

Professor,

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Microwave and Wireless Engineering Program website: <http://cegt201.bradley.edu/rfpage>

Highlights

Multi-faceted track record of over three decades of experience that includes,

- **Applied research and engineering** in the areas of : Radio Frequency and Microwave Circuits and Systems, Monolithic Microwave and Millimeter-Wave Integrated Circuits, High-Speed Digital Circuits, Wireless Communication Circuits and Systems, and Microwave Planar Antennas,
- Full-time **industrial experience**, Industrial consulting, and Department of Defense and Industry-sponsored Research and Development Programs,
- **Authorship** of Journal and Conference papers, Research reports, Grant proposals, and Book chapters,
- **Teaching and Project advising/supervision** at Graduate and Undergraduate levels,
- **Curriculum and Laboratory** development,
- **Service** to University, Profession, and Community.

Education

PDF University of Wisconsin-Madison (1982);
Research: Monolithic Microwave and Millimeter-Wave Integrated Circuit
Distributed Amplifiers

Ph.D. (EE) Indian Institute of Technology, Bombay (1980)

Thesis: STUDIES ON SOME MIC TRANSMISSION LINES AND COMPONENTS;
The highlight of the thesis was the invention of a *Linearly Tapered Slot-Line Antenna (LTSA)*.

M. Tech (M.S.E.E) Indian Institute of Technology, Kharagpur (1974);
Major Area: *Microwave and Radar Engineering*.

Thesis: CONSTRAINED FEED FOR PHASED ARRAY; Short-Slot Waveguide Couplers and In-line Coaxial to Waveguide transitions were developed for corporate feed applications in Electronically Scanned Phased Array Antennas. Mutual coupling between radiators was investigated.

B. E (B.S.E.E) Bangalore University, India (1972)
Major Area: *Electronics*

Professional Experience

- (1997 – Present) Professor.** Department of Electrical and Computer Engineering, Bradley University, Peoria, Illinois.
- Area of specialization: Microwave and Wireless Engineering - *Microwave Circuits and Antennas*
- Applied engineering research in the areas of Wireless Circuits and Systems, Monolithic Microwave & MM-Wave Integrated Circuits, GaAs High-Speed Digital Integrated Circuits, and Planar Antennas.
- Teaching lecture and laboratory courses in the areas of Wireless Communication Systems, Electromagnetic theory, Antennas, and Microwave Circuits, at graduate and undergraduate levels. Guiding and supervising graduate and undergraduate research projects.
- (1999 - Present) Graduate Program Coordinator.** Department of Electrical and Computer Engineering, Bradley University, Peoria, Illinois.
- (1991 – 1997) Associate Professor.** Department of Electrical and Computer Engineering, Bradley University, Peoria, Illinois.
- (1982 – 1991) Postdoctoral Research Associate & Adjunct Faculty.** Department of Electrical and Computer Engineering, University of Wisconsin-Madison.
- Applied research and development projects in the areas of Wideband GaAs Monolithic Microwave and MM-Wave Integrated Circuit Distributed Amplifiers. Taught a wide range (Sophomore to Ph.D. level) of undergraduate and graduate lecture and laboratory courses in R.F. and Microwave Engineering.
- Consulted with graduate and undergraduate students on their research projects.
- (1980 – 1982) Scientist C.** Electronics and Radar Development Establishment, Airborne Radar Division, Bangalore, India.
- Initiated and directed the development of Low Phase Noise Exciter and 3-channel Microwave Integrated Circuit Mono-pulse receiver for X-band Radar.
- (1974 – 1975) Senior Scientific Officer II.** Defense Research and Development Laboratory, Missile Guidance Division, Hyderabad, India.
- Initiated and directed the development of dielectric – filled waveguide slot array antenna for missile radio-fuse application.
- (1973) Graduate Intern.** Defense Electronics Research Laboratory, Microwave Antenna Division, Hyderabad, India. Contributed to the development of S-band Waveguide to Strip-line multi-aperture directional coupler, and coaxial line impedance transformer for an L-band Helical Antenna.

Industrial Consulting

- (1999 - Present) **WIRELESTEK Consulting, Washington, IL.**
Wireless Technologies consultant.
- (2006 - Present) **Validus Technologies LLC, Peoria, IL.**
Director of RF Group/Consultant
- (2007 – Present) **Endotronix, Inc., Peoria, IL**
Member, Advisory Board
- (2006 – Present) **Mahanad Communications, Houston, TX**
Wireless Systems
- (2005 - 2006) **RFIC Solutions, Inc., Milpitas, CA.**
Member, Technical Advisory Board.
- (2005 - 2006) **Mini-Circuits, Inc., Brooklyn, NY**
New MMIC Product Development.
- (1999 – 2004) **Fujitsu Compound Semiconductor, Inc., San Jose, CA.**
Monolithic Microwave and MM-wave integrated circuits design.
- (1999 – 2002) **Tracking and Imaging Systems, Inc., Bloomington, Illinois.**
Global Positioning System receivers.
- (1996 – 1998) **Midwest PCS, Inc., and Budget Communications, Inc.**
Member, Board of Directors, and Vice President; Wire-line and
Wireless Internet Services.
- (1991 – 1999) **Northrop Grumman Corporation, Rolling Meadows, IL.**
Applied research/design/development of GaAs Monolithic Microwave & MM-
Wave Integrated Circuit Amplifiers, Wireless Communication Circuits and
Systems, and RFIC plastic package and LTCC buried circuit modeling.
- (1984 – 1989) **Honeywell Corporation, Minneapolis, MN**
Applied research/design/development of GaAs Hybrid and Monolithic
Microwave and MM-Wave Integrated Circuit Distributed Amplifiers.

Industry/Government Sponsored Projects

- (2007 – Present) **Endotronix, Inc., Peoria, IL**
Design and Characterization of Bio-MEMS Sensor for Wireless Blood Pressure
Monitoring
- (2005 - 2006) **RFIC Solutions, Inc., Milpitas, CA.**
Tests and Measurements of RFICs.
- (2005 - 2006) **Mini-Circuits, Inc., Brooklyn, NY**
Wideband Power Amplifier Design.

- (2004 - 2005) **TLC Precision Wafer Technology, Inc., Minneapolis, MN**
Ka-band pHEMT MMIC Distributed Power Amplifier design
- (1999 - 2004) **Fujitsu Compound Semiconductor, Inc., San Jose, CA.**
Wideband monolithic millimeter-wave integrated circuit amplifier design.
- (1999 – 2002) **Tracking and Imaging Systems, Inc., Bloomington, IL.**
Global Positioning System Receivers.
- (1991 – 1999) **Northrop Grumman Corporation, Rolling Meadows, IL.**
Applied research and development of GaAs Wideband Microwave and Millimeter-wave integrated circuit amplifiers, GaAs high-speed digital circuits, Wireless communication circuits and systems, and RFIC plastic package and LTCC buried circuit modeling.
- (1982 – 1989) **Office of Naval Research, Dept. of Defense (DARPA)**
Applied research and development of GaAs microwave and millimeter-wave Integrated circuit distributed amplifiers.

Reviewer and Consulting Editor (1982-Present)

- **Member of the Technical Program Committee** of the IEEE MTT-S International Microwave Symposium (2006-2008)
- **Reviewed papers for the following journals:**
IEEE Transactions on Microwave Theory and Techniques; IEEE Transactions on Antennas and Propagation; IEEE Microwave and Wireless Components Letters; IEEE Transactions on Circuits and Systems; IEEE Electron Device Letters; International Journal of RF and Microwave Computer-Aided Engineering; Radio Science.
- **Reviewed papers for the following conferences:**
IEEE GaAs IC Symposium; IEEE International Microwave Symposium; IASTED International Conference on Antennas, Radar, and Wave Propagation.
- **Reviewed book manuscripts** for Richard D. Irwin Inc., MA, Allyn Bacon, M.A., Prentice Hall, N.J. and PWS Publishing Co., MA.
- **Editorial Consultant**, University Resources for Business and Industry, University of Wisconsin System.
- **NSF Proposal Reviewer**, NSF-CCLI (2003), and NSF-MRI (2004) grant proposal review panels, National Science Foundation, Washington D.C.
- **Proposal Reviewer**, US Civilian Research and Development Foundation, Washington D.C.

Curriculum and Laboratory Development (1991-Present)

- Made significant contributions to the development of the curriculum and laboratories in the Microwave and Wireless Engineering program at Bradley University.
- Established the Advanced Microwave Engineering laboratory by obtaining a \$ 265,500 *grant -Major Research Instrumentation grant - from National Science Foundation*. The laboratory houses state-of-the-art semi-automatic wafer probe station and performance network analyzer.

- Initiated and directed the design, construction and development of a microwave anechoic chamber and data acquisition system for antenna measurements.
- Developed the Microwave Integrated Circuit fabrication facility.
- Developed the Computer-Aided Design laboratory.
- Developed the Microwave and Wireless Engineering laboratory.
- Developed the following *new* graduate level courses: 1) RF Communication Laboratory, 2) Wireless Communications Systems, 3) Advanced Electromagnetic Theory, 4) Monolithic Microwave Integrated Circuits, and 5) Special topic independent study courses.

Honors and Awards

- **Faculty Award for Excellence in Service** (John Andrews Award), College of Engineering and Technology, Bradley University, 2009
 - **Faculty Award for Excellence in Research and Scholarship**, College of Engineering and Technology, Bradley University, 2007
- **Session Co-Chair**, IEEE MTT-S International Microwave Symposium, 2007 and 2008
- **Member, Technical Program Committee (TPC)**, IEEE MTT-S International Microwave Symposium (2006-2008)
- **Member, Editorial Board**, IEEE Transactions on: Microwave Theory and Techniques; Antennas and Propagation; Circuits and Systems; and IEEE Microwave and Wireless Components Letters; Journal of the Institution of Electronics and Telecommunications Engineers, India
- **Reviewer**, book manuscripts, journal and conference papers, and project proposals (1982-present)
- **National Science Foundation Grant Proposal Reviewer** (2003 and 2004)
- **National Science Foundation Major Research Instrumentation Grantee - \$265,500** (2003)
- **Endotronix, Inc. Research Grantee** (2007-2008)
- **Fujitsu Corporation Research Grantee** (1999-2004)
- **Sonnet software Grantee** (2004-present)
- **HP-EEsof/Agilent Technologies Corporation Grantee** (1991- present)
- **Northrop Grumman Corporation Research Grantee** (1991-1999)
- **Tracking and Imaging Systems, Inc. Research Grantee** (1999-2002)
- **Award** in recognition of dedication to student learning and significant contribution to an award winning student project, Bradley University, 1993, 1995, 1997, 2000, 2002 and 2003
- **Faculty Research Award**, College of Engineering & Technology, Bradley University, 1996
- **Invited Speaker**, Asia Pacific Microwave Conference, 1996
- **Invited Panelist, IEEE Radio and Wireless Symposium**, 2006
- **Invited Book Chapter Contributor:** Microwave Solid State Circuit Design, John Wiley, 2003; Handbook of Microwave Technology, Academic Press, 1994; Year Book of Science and Technology, (McGraw-Hill), 1992.
- **GRASP Award**, University Research Office and Graduate School, Bradley University, 1999
- **Caterpillar Research Fellowship**, 1993
- **Session Chair**, International Symposium on Recent Advances in Microwave Technology, 1991 and 1993
- **Postdoctoral Research Fellowship**, 1982
- **IEEE Senior Membership** (by nomination and election), 1988
- **Sigma Xi Membership** (by nomination and election), 1984
- **Government of India Research Fellowship**, 1975-1980
- **Government of India Graduate Scholarship**, 1972-1974

Invited Speaker in Seminars/Workshops/Panel Sessions

- "Wi-Max -The Good, The Bad, and The Ugly," Panel Session, IEEE Radio and Wireless Symposium, San Diego, California, January 2006 (with Dr.S.Moghe).
- "Industry - University partnership at Bradley University – An Overview of RF/Microwave Engineering Projects," IETE, IMAPS, and IEEE, Bangalore, India, August 2003
- "Wideband MM-wave Integrated Circuits – A Bradley-Fujitsu Collaboration," Department of Electrical and Computer Engineering, Oregon State University, Corvallis, Oregon, June 2002.
- "Wideband MM-wave Integrated Circuits – A Bradley-Fujitsu Collaboration," Department of Electrical and Computer Engineering, University of Illinois, Champaign, Illinois, April 2002.
- "Industry-University Partnership in Microwave and Wireless Engineering at Bradley University," College of Engineering and Technology Industrial Advisory Committee Meeting, Bradley University, Peoria, Illinois, October 2001
- "Microwave R and D at Bradley University," Society for Advanced Microwave Electronics Engineering Research (SAMEER), Bombay, India, January 2000.
- "GaAs Integrated Circuits and their Applications" at the IEEE Illinois Valley Section Meeting, March 1995.
- "Monolithic Microwave Integrated Circuits and Planar Antennas," College of Engineering, Bradley University, Peoria, Illinois, April 1993.
- "Wideband Monolithic Microwave Distributed Amplifiers," C-DOT, a Government of India R & D Laboratory, Bangalore, India
- "Wideband Monolithic Microwave Distributed Amplifiers," Society for Advanced Microwave Electronics Engineering Research (SAMEER), Bombay, India, January 1993.
- "On Theory and Design of GaAs MESFET Distributed Amplifiers," three seminars at the University of Wisconsin-Madison, 1985-1987.
- "Planar Transmission Lines for R.F. and Microwave Applications," Workshop on R.F. Techniques, Society of Electronics Engineers, Bangalore, India, Sept. 1981.
- "Finite Element Analysis of Striplines and Microstriplines," Workshops on Microwave Integrated Circuits, IIT, Bombay, India, December 1977 and May 1978.
- "Analysis of Strip Transmission Lines by the Finite Element Method," IIT, New Delhi, India, November 1978.

Professional Society Memberships

- **Senior Member**, IEEE.
- **Life Member**, IEEE Microwave Theory and Techniques Society.
- **Member**, Sigma Xi (The Scientific Research Society).

Book/Book Chapter Publications

- Prasad N. Shastri, "Distributed Architecture Active Circuits - Analysis and Design," a research monograph to be published by John Wiley & Sons (in preparation).
- Prasad N. Shastri, "Impedance Transformation Techniques," invited chapter in the book "Microwave Solid State Circuit Design," John Wiley & Sons, 2003, pp. 133-180.
- S.N. Prasad, "Microwave Impedance Matching Techniques," invited chapter in the book "Handbook of Microwave Technology," Vol. 1, Academic Press, 1995, pp. 617-669.
- S.N. Prasad, "Microwave Remote Sensing" invited chapter in the McGraw-Hill Yearbook of Science and Technology, McGraw-Hill, New York; 1992, pp. 393-396.

Patent

- Electronically Tunable Active Duplexer, US 20070247257A1

Journal Publications (refereed)

- S. Daoud and P. Shastry, "A Novel Wideband MMIC Voltage-Controlled Attenuator with a Bandpass Filter Topology," IEEE Transactions on Microwave Theory and Techniques, Vol. 54, No. 6, June 2006, pp. 2576-2583.
- B. Sundaram and P. Shastry, "A Novel Electronically Tunable Active Duplexer for Wireless Transceiver Applications," IEEE Transactions on Microwave Theory and Techniques, Vol. 54, No. 6, June 2006, pp. 2584-2592.
- M. Basraoui and P. Shastry, "Wideband Planar Log-Periodic Balun," International Journal of RF and Microwave Computer-Aided Engineering, Vol.11, Issue 6, November 2001, pp.343-353.
- S. Parker and P. Shastry, "Transimpedance Amplifiers for Optoelectronic Applications," IEEE Microwave Magazine, Vol.2, No.1, March 2001, pp.52-62 (invited paper).
- S.N. Prasad, S. Reddy and S. Moghe, "Cascaded-Transistor Cell Distributed Amplifiers," Microwave and Optical Technology Letters, Vol. 12, No. 3, June 1996, pp. 163-167.
- S.N. Prasad, A. Kajjam and Z.M. Li, "Band-Pass Distributed Amplifier Design Guidelines," Microwave and Optical Technology Letters, Vol. 10, No. 4, November 1995, pp. 215-218.
- S.N. Prasad and J.B. Beyer, "Band-Pass Distributed Amplifiers," Microwave and Optical Technology Letters, Vol. 2, No. 10, October 1989, pp. 349-355.
- S.N. Prasad, J.B. Beyer and I.S. Chang, "Power-Bandwidth Considerations in the Design of MESFET Distributed Amplifiers," IEEE Trans., Microwave Theory and Techniques, Vol. MTT-36, No. 7, July 1988, pp. 1117-1123.
- Y.W. Chen, J.B. Beyer and S.N. Prasad, "MESFET Wideband Distributed Paraphase Amplifier" International Journal of Electronics, U.K. Vol. 58, No. 4, 1984, pp. 535-569.
- J.B. Beyer, S.N. Prasad, J.E. Nordman, R.C. Becker and G. Hohenwarter, "MESFET Distributed Amplifier Design Guidelines," IEEE Trans., Microwave Theory and Techniques, Vol. MTT-32, No. 3, March 1984, pp. 268-275.
[This paper presents a pioneering work in the field of distributed amplifiers. This paper is often cited in publications in this area of research]
- S.N. Prasad and S. Mahapatra, "A New MIC Slot-Line Aerial," IEEE Trans., Antennas and Propagations, Vol. AP-31, No. 3, May 1983, pp. 525-527.
[The Slot-line antenna first proposed by us is being used widely throughout the world, including National Aeronautics and Space Administration, U.S.A. This paper is often cited in publications in this area of research]
- S. Mahapatra and S.N. Prasad, "A New Electroless Method for Low Loss MIC's," IEEE Trans. Components, Hybrids & Manufacturing Technology Vol. CHMT-1, No. 4, December 1978, pp. 428-431.

Conference Publications (refereed)

- Divya S. Gamini and Prasad N. Shastry, "Design and Measurements of Implantable Chip Radiator and External Receptor for Wireless Blood Pressure Monitoring System," IEEE MTT-S International Microwave Symposium, Boston, June 2009.
- P.N. Shatsry, R.Kancharla, and R. Stange, "Planar UWB Conical Skirt Tapered Monopole Antenna," 10th Annual IEEE Wireless and Microwave Technology Conference, Clearwater, Florida, April 2009.

- A.Sankarasubramaniam, P.Shastry, K.Katragadda, "Design Guidelines for Tunable Coplanar and Microstrip Patch Antennas," proceedings of the 37th European Microwave Conference, Munich, Germany, October 2007, pp.1302-1305.
- P. Shastry and E. Cullerton, "A Novel Wideband GaAs FET Source Injected Distributed Mixer," proceedings of the the 36th European Microwave Conference, Manchester, U.K., September 2006, pp.1533-1536.
- P. Shastry and A. Ibrahim, "Design Guidelines for a Novel Tapered Drain line Distributed Power Amplifier," proceedings of the 36th European Microwave Conference, Manchester, U.K., September 2006, pp.1274-1277.
- Z. A. Shaik and P.N.Shastry, "A Novel Distributed Voltage-Controlled Oscillator for Wireless Systems," proceedings of the IEEE Radio and Wireless Symposium, San Diego, California, January 2006, pp.423-426.
- P. Shastry and A. Ibrahim, "Distributed Power Amplifiers-Output Power and Efficiency Considerations," proceedings of the IEEE Topical Workshop on Power Amplifiers for Wireless Communications, San Diego, California, January 2006.
- N.Mehta and P.Shastry, "Design Guidelines for a Novel Bandpass Distributed Amplifier," proceedings of the 35th European Microwave Conference, Paris, France, October 2005, pp.317-320.
- S.Daoud and P.Shastry, "A Novel Wideband MMIC Voltage-Controlled Attenuator with a Bandpass Filter Topology," proceedings of the 35th European Microwave Conference, Paris, France, October 2005, pp.1575-1578.
- 11. B.Sundaram and P.Shastry, "A Novel Electronically Tunable Active Duplexer for Wireless Transceiver Applications," proceedings of the 35th European Microwave Conference, Paris, France, October 2005, pp.1767-1770.
- 12. S.Vajha and P.Shastry, "A Proximity Coupled Active Integrated Antenna," Proceedings of the International Radar Symposium India 2001, December 2001. pp.390-396.
- S.Modur and P.Shastry, "ISM Band Distributed VCO," Proceedings of the International Radar Symposium India 2001, December 2001, pp.145-155.
- S.Vajha and P.Shastry, "A Novel Proximity Coupled Active Integrated Antenna," Proceedings of the 31st European Microwave Conference, London, England, September 2001, pp.251-254.
- S.Vajha and P.Shastry, "A Novel Proximity Coupled Patch antenna for Active Circuit integration," 2001 IEEE AP-S International Antennas and Propagation Symposium, Boston, MA, July 2001, Vol.4, pp.772-775.
- S. Vajha and S.N. Prasad, "Design and Modeling of Proximity Coupled Patch Antenna," 2000 Antennas and Propagation for Wireless Communications Conference, Boston, MA, November 2000, pp. 43-46.
- M.S. Navarro, S.N. Prasad, M. Anderson, and D. Gardner, "Non-Reflecting Electronically Variable Attenuator," IEEE MTT-S International Microwave and Optoelectronic Conference – IMOC '99, Rio de Janeiro, Brazil, August 1999, pp.541-544.
- M. Basraoui and S.N. Prasad, "Tapered Coplanar-Strip Antenna," 1998 IEEE-APS Conference on antennas and Propagation for Wireless Communications, Waltham, MA, November 1998, pp. 121-124.
- S.N. Prasad, Jalmi-Abdul Jalil, and Tuan Tu, "A 2.4 GHz T/R Module for Wireless Transceiver Applications," focussed session on U.S. Wireless Technology, MTT-S European Wireless '98, Amsterdam, October 1998, pp. 237-242 (*invited paper*).
- M. Basraoui and S.N. Prasad, "Wideband, Planar, Log-Periodic Balun," 1998 IEEE MTT-S International Microwave Symposium Digest, Baltimore, June 1998, pp. 785-788.
- S.N. Prasad, "Industry/University Partnership in Microwave Engineering Education," Proceedings of Illinois/Indiana ASEE Sectional Conference, Peoria, IL, March 1996, pp. 201-205.

- S.N. Prasad and Z.M. Li, "Optimal Design of Low Crosstalk, Wideband, Bidirectional Distributed Amplifiers," IEEE MTT-S International Microwave Symposium Digest, San Francisco, June 1996, pp. 847-850.
- S. Reddy and S.N. Prasad, "A New Distributed Amplifier Configuration Having Enhanced Gain Bandwidth Product and Efficiency," Proceedings of the 4th International Symposium on Recent Advances in Microwave Technology, New Delhi, December 15-18, 1993.
- Ashok Kajjam, S.N. Prasad and Srinivas Reddy, "Band-Pass Distributed Amplifier Design Guidelines," Proceedings of the 4th International Symposium on Recent Advances in Microwave Technology, New Delhi, December 15-18, 1993.
- Srinivas Reddy, Ashok Kajjam and S.N. Prasad, "The Use of Tuner vs. Optimizer in the Design of 20-55 GHz. MMIC Band-Pass Distributed Amplifier," Proceedings of the EEs of User's Group Meeting at the Military Microwaves Conference, Brighton, U.K., October 1992.
- S.N. Prasad and J.B. Beyer, "A 2-10GHz GaAs MESFET Distributed Amplifier," Proceedings of the 3rd International Symposium on Recent Advances in Microwave Technology, Reno, Nevada, U.S.A., August 18-21, 1991.
- S.N. Prasad and S. Mahapatra, "Microwave Integrated Circuit Antennas," Proceedings of IREE 17th International Convention and Exhibition, Sydney, Australia, August 27-31, 1979, pp. 9-12.
- S.N. Prasad and S. Mahapatra, "A Novel MIC Slot-line Antenna," Proceedings of the 9th European Microwave Conference, Brighton, U.K. Sept. 17-21, 1979, pp. 424-429.
[The Slot-line antenna first proposed by us is being used widely throughout the world, including National Aeronautics and Space Administration, U.S.A. This paper is often cited in publications in this area of research]
- S.N. Prasad, and S. Mahapatra, "Waveguide to Microstrip Multi-Aperture Directional Coupler," Proceedings of the 9th European Microwave Conference, Brighton, England, September 17-21, 1979, pp. 425-429.
- S. Mahapatra and S.N. Prasad, "A Novel Economic Technique to Make High Q MICs," 66th Indian Science Congress, Hyderabad, India, January 1979 (invited paper).
- S.N. Prasad and S. Mahapatra, "Analysis of Strip Transmission Line by the Finite Element Method," Proceedings of the 22nd IETE Annual Technical Convention, New Delhi, India, November 1-4, 1978.
- S. Mahapatra and S.N. Prasad, "A Novel Superior Technique to Make MICs for Communication and Weather Electronics," IETE Symposium of Telecommunications and Meteorology, Poona, India, February 26, 1977.

Caterpillar Fellowship Report

- "GaAs MMIC Distributed Amplifiers," 1993-94.

Sabbatical Leave Activities report

- "Development of a new graduate level course on Monolithic Microwave Integrated Circuits," Fall semester, 2005.
- "Distributed Architecture Active Circuits- Analysis and Design," Fall semester, 1998.

Industry and Government Sponsored Research Project Reports

***At Bradley University, 1991 to Present:
Principal Investigator: Prasad N. Shastry***

- D. Gamini, "Wireless Blood Pressure Monitoring," submitted to Endotronix, Inc., May 2009.

- D. Gamini, "Wireless Blood Pressure Monitoring – Phase I: Transmission and Reflection Measurements," submitted to Endotronix, Inc., August 2008.
- D. Gamini and S. Sundaram, "Development of Implantable Spiral Chip Radiator for a Bio-Sensor and an External Receptor for the Hand-Held Device," submitted to Endotronix, Inc., January 2008.
- S. Sundaram, "Wideband Power Amplifier," Part I, submitted to Mini-Circuits, Inc., September 2006.
- N. Sreeram, "Wideband Power Amplifier," Part II, submitted to Mini-Circuits, Inc., September 2006.
- A. Sankarasubramaniam, "EM Simulations of Microstrip Discontinuities and Spiral Inductors," submitted to Mini-Circuits, Inc., September 2006.
- B. Sundaram, "Tests and Measurements of MMICs," submitted to Northrop Grumman Corp., January 2006.
- P.N.Shastry and B.D. Huggins, "Microwave Research Instrumentation Acquisition," National Science Foundation Major Research Instrumentation grant (ECS-0319899) final project report, August 2004.
- S.Daoud, "Active Bias, Power Detector, and Voltage Controlled Attenuator MMICs," submitted to Fujitsu Compound Semiconductor, Inc., August 2004
- S. Parker, "Wideband Impedance Transformation Techniques," submitted to Fujitsu Compound Semiconductor, Inc., January 2001.
- S. Parker, "Transimpedance Amplifiers for Optoelectronic Applications," submitted to Fujitsu Compound Semiconductor, Inc., December 2000.
- S.Halabi, "Introduction to MMIC Design: MMIC Technology: Processing, Modeling and Component Design," submitted to Fujitsu Compound Semiconductor, Inc., December 2000.
- S.Halabi, "Microwave FET Modeling," submitted to Fujitsu Compound Semiconductor, Inc., June 2002
- S. Vajha, "Tests and Measurements of GPS Receivers," submitted to Tracking and Imaging Systems, Inc., April 2000.
- S.Halabi, "Tests and Measurements of GPS receivers," submitted to Tracking and Imaging Systems, Inc., December 2001.
- S. Parker, "MMIC Band-Pass Cascode Cell Distributed Amplifiers," submitted to Fujitsu Compound Semiconductor, Inc., January 2001.
- S.Halabi, "Active Bias, Power detector, and Voltage Controlled Attenuator MMICs," in preparation for submission to Fujitsu Compound Semiconductor Inc.
- S. Modur, "A PCB Element Model for 8-pin SOIC Plastic Package," submitted to Northrop Grumman Corp., April 2000.
- S. Modur, "A Software for de-embedding 2-port S-parameters," submitted to Northrop Grumman Corp., April 2000.
- T. Rayamajhi, "A Lumped Element Model for 8-pin SOIC Plastic Package," submitted to Northrop Grumman Corp., September 1999.
- E. Cullerton, "A Lumped Element Model for LTCC Buried Spiral Inductor," submitted to Northrop Grumman Corp., December 1998.
- E. Cullerton, S. Modur & T. Rayamajhi, "LTCC and Plastic Package Modeling," submitted to Northrop Grumman Corp., February 1998.
- S. Reddy, "A 2.5 GHz Programmable Frequency Divider," submitted to Northrop Grumman Corp., May 1995.
- S. Dalal, Z.M. Li, and G. Brubaker, "A 972-998 MHz PLL Synthesizer," submitted to Northrop Grumman Corp., June 1995.
- E. Haakenson, "A 2.4 GHz Transceiver for Wireless Communication," submitted to Northrop Grumman Corp., May 1994.

- A. Kajjam, “A 6-18 GHz GaAs Monolithic Power Amplifier,” submitted to Northrop Grumman Corp., June 1994.
- S. Reddy, “A 2-13 GHz GaAs MESFET Distributed Amplifier,” submitted to Northrop Grumman corp., June 1994.
- G. Brubaker, “A Push-Pull Distributed Amplifier,” submitted to Northrop Grumman Corp., June 1992.
- S. Reddy and A. Kajjam, “A 2-40 GHz HEMT Distributed Amplifier,” submitted to Northrop Grumman Corp., May 1992.
- S. Reddy, “A 2-26 GHz Distributed Power Amplifier,” submitted to Northrop Grumman corp., August 1992.
- S.N. Prasad, A. Kajjam, S. Makam & S. Reddy, “Wireless LANs – A Technology Status Report” submitted to Northrop Grumman Corp., December 1992.

At University of Wisconsin - Madison, 1982-1991:

- J.B. Beyer, S.N. Prasad, et al. “High Efficiency Octave Bandwidth Millimeter Wave Power Amplifiers,” Office of Naval Research Report, August 1989.
- S.N. Prasad and J.B. Beyer, “Experimental Investigation on the Monolithic Distributed Paraphase Amplifier,” Dept. of ECE Report, University of Wisconsin-Madison 1987.
- S.N. Prasad and J.B. Beyer, “A 2-10 GHz Distributed Amplifier Using Honeywell 300 μ m GaAs FETs – A report on design and performance,” Department of Electrical and Computer Engineering, University of Wisconsin-Madison, 1985.
- T. McKay, S.N. Prasad and Y.W. Chen, “Monolithic Distributed Amplifiers A brief report on the design and layout using Honeywell 300 μ m PI Gate FETs,” Dept. of Electrical & Computer Engineering, University of Wisconsin-Madison, February 1984.
- I.S. Chang, S.N. Prasad and J.B. Beyer, “A Method for Increasing the Bandwidth of GaAs MESFET Distributed Amplifiers,” Dept. of Electrical & Computer Engineering, University of Wisconsin-Madison ECE 84-2, February 1984.
- J.B. Beyer, S.N. Prasad, J.E. Nordman, R.C. Becker, G. Hohenwarter and Y. Chen, “A Wideband Distributed Monolithic Amplifier Study,” Office of Naval Research Report NR243-033, September 1983.
- J.B. Beyer, S.N. Prasad, J.E. Nordman, R.C. Becker, G. Hohenwarter, “A Wideband Distributed Monolithic Amplifier Study,” Office of Naval Research Rep NR243-033-02, July 1982.

At Defense Electronics Research Laboratory, India

- S.N. Prasad, “S-Band Waveguide to Stripline Directional Coupler for the Phased Array Feed Application,” Defense Electronics Research Laboratory, Hyderabad, India, July 1973.
- S.N. Prasad, “Impedance Transformer for the Helical Antenna Feed of a Parabolic Reflector Operating in the L-band,” Defense Electronics Research Laboratory, Hyderabad, India, July 1973.

Grant Proposals

At Bradley University, 1991 to Present:

- “Wireless Blood Pressure Monitoring,” submitted to Endotronix, Inc., 2007 (funded)
- “Development of New MMIC Products,” submitted to Mini-Circuits, Inc., 2006 (funded)
- “Tests and Measurements of MMICs,” submitted to RFIC Solutions, Inc., 2006 (funded)
- “RF Measurements for wireless Devices and Systems,” submitted to Validus Technologies, Inc., 2006 (funded)
- “Tests and Measurements of Antennas,” submitted to Mahanad Communications, 2006 (funded)

- "Microwave Integrated Circuit Fabrication Facility Upgrade," submitted to Motorola Foundation, 2004 (not funded)
- "Microwave Research Instrumentation Acquisition," Major Research Instrumentation (MRI) grant, National Science Foundation, 2003 (awarded)
- "Intelligent Component Architectures for Next Generation RF Front-Ends," National Science Foundation, 2003 , *in collaboration with Oregon State University, Corvallis, Oregon* (not funded)
- "pHEMT Modeling and Amplifier Circuit Applications," submitted to Fujitsu Compound Semiconductor, Inc., 2000 (funded).
- "Theory, Design and Development of 24-42GHz MM Wave Integrated Circuit Amplifier," submitted to Fujitsu Compound Semiconductor, Inc., 1999 (funded).
- "Tests and Measurements of GPS Receiver," submitted to Tracking and Imaging Systems, Inc., 1999 (funded).
- "Anechoic Chamber and Antenna Measurement System," submitted to University Research Office and Graduate School, GRASP Award 1999, (funded).
- "A 24 GHz Transceiver Front-End for Broadband Wireless Access," National Science Foundation, 1999, *in partnership with University of Illinois, Urbana-Champaign, and Northrop Grumman Corporation* (not funded).
- "Center for Wireless Telecommunication Electronics Research," submitted in response to Bradley New Initiatives RFP, 1999 (not funded).
- "A 2-40 GHz MMIC Frequency Synthesizer," submitted to Northrop Grumman Corp., 1996 (not funded).
- "Millimeter Wave Blind Spot Sensor Characterization," submitted to Northrop Grumman Corp., 1996 (funded).
- "Low-cost Package and LTCC Modeling," submitted to Northrop Grumman Corp., 1996 (funded).
- "Design & Development of Anechoic Chamber and Printed Antennas," submitted to College of Engineering and Technology Faculty Research Award Committee, 1996 (funded).
- "A 972-998 MHz PLL Frequency Synthesizer," submitted to Northrop Grumman Corp., 1994 (funded).
- "A 2.4 GHz. Transceiver for Wireless Communications," submitted to Northrop Grumman Corp., 1993 (funded).
- "Development of GaAs MMICs and High-Speed Digital Ics," Northrop Grumman Corp., 1991-1994 (funded).
- "CAE Software packages – Libra, Academy, Transient Test Bench and Omnisys for Microwave Education," HP-EEsof, 1991-1993 (received).
- "A Laboratory Course in Radio Frequency and Microwave Electronics," submitted to Technology Reinvestment Project, ARPA, 1993 (not funded).
- "GaAs Wideband Distributed Active Circuits – A Research Monograph," submitted for Caterpillar Fellowship, 1992 (funded).
- "Wireless LANs – A Technology Status Study," submitted to Northrop Grumman Corp., 1992 (funded).
- "A 2-26 GHz HEMT Distributed Power Amplifier," submitted to Northrop Grumman Corp., 1992 (funded).

At University of Wisconsin – Madison, 1982 to 1991:

Contributed to the development of the following proposals:

- "Wideband Millimeter Wave Band-Pass Distributed Power Amplifier," submitted jointly by Honeywell Corp. and the University of Wisconsin-Madison to the Office of Naval Research, December 1988 (funded).

- “High-Efficiency Octave Bandwidth Millimeter-Wave Power Amplifiers,” submitted jointly by Honeywell Corp. and the University of Wisconsin-Madison to the Office of Naval Research, September 1986 (funded).
- “Broadband Microwave Mixer,” submitted jointly by Honeywell Corp. and the University of Wisconsin-Madison to the Office of Naval Research, September 1984 (not funded).
- “Wideband GaAs MESFET Distributed Power Amplifiers,” submitted by the University of Wisconsin-Madison to the Office of Naval Research, September 1983 (not funded)

Thesis and Capstone Research Project Supervision

At Bradley University, 1991 to Present

Master's Theses (Six Credit Hours):

- “Active Bias, Power detector, and Voltage Controlled Attenuator MMICs,” 2004
- “Microwave Anechoic Chamber Data Acquisition and Characterization,” 2003
- “MMIC Band-Pass Cascode Cell Distributed Amplifiers,” 2001
- “Distributed Power Amplifiers,” 2001
- “A Distributed MESFET Source Injected Mixer,” 2001
- “Distributed Voltage Controlled Oscillator,” 2001
- “An Active Antenna for Full-Duplex Operation,” 1999
- “Tapered Coplanar-strip Antenna and Log Periodic Balun,” 1998
- “A 2.4 GHz Phase Shifting Network,” 1997
- “A Class-B Microwave Distributed Push-Pull Amplifier,” 1997.
- “A 2.5 GHz Programmable Frequency Divider,” 1993

Master's Capstone Research Projects (Three Credit Hours):

- “Wireless Blood Pressure Monitoring,” 2008
- “A Planar Ultra Wideband Antenna,” 2008
- "Distributed Power Amplifiers," 2007
- "Tunable Coplanar Patch Antenna," 2007
- “Varying Gate-Periphery and Tapered Drain-Line Distributed Amplifiers,” 2006
- "Wideband Distributed Differential Amplifier," 2006

- "Cascode Transistor-Cell Distributed Amplifier," 2006
- "Reconfigurable Active Duplexer for Wireless Systems," 2006
- "pHEMT: Model Extraction and Validation for Band-Pass Cascode-Cell Distributed Amplifier Design," 2005
- "Frequency Reconfigurable Aperture Coupled Patch Antenna," 2005
- "Distributed Architecture Based Voltage -Controlled Oscillator," 2004
- "Band Pass Distributed Amplifier and Tunable Filter," 2004
- "An Active Duplexer for PCS," 2003
- "EMC Characterizations of Electronic Devices," 2000
- "A Proximity Coupled Active Integrated Antenna," 2000
- "A CDMA Wireless Receiver Front-End," 1999
- "A GaAs FET Tunable Distributed Active Filter," 1998
- "A 2.4 GHz CDMA Wireless Communication System," 1998
- "A Chebyshev Bidirectional Distributed Amplifier," 1996
- "MMIC Technology – Processing, Layout Design and Packaging," 1993
- "A GaAs FET Class – B Power Amplifier Study," 1993
- "A GaAs FET Non-Linear Model Study," 1992
- "Wideband Microwave Distributed Circuits," 1992
- "Band-Pass Distributed Amplifier Design Guidelines," 1991
- "Design Considerations For Achieving Optimum Gate Voltages in Distributed Amplifiers," 1991
- "Development of Implantable Spiral Chip Radiator for a Bio-Sensor and an External Receptor for the Hand-Held Device" (in progress)
- "Gaussian Pulse Generator for UWB" (in progress)
- "A 2.4 GHz GaAs FET Oscillator" (in progress)

Senior Capstone Research Projects:

- "Ultra Wideband (UWB) Amplifier," 2008

- "Ultra Wideband (UWB) Antenna," 2008
- "Reconfigurable Low Profile Patch Antenna," 2005
- "Wireless Surveillance System," 2004
- "Fast Tuning Synthesizer," 2004
- "SDARS Integrated Receiver Front-End," 2003
- "Distributed Voltage Controlled Oscillator," 2002
- "Patch Antenna Array for Collision Avoidance Radar," 2002
- "DARS Antenna and Receiver," 2001
- "An Active Duplexer for PCS," 2000
- "Detection and Synchronization in CDMA Receiver," 2000
- "900 MHz Wireless Link for Audio Applications," 2000
- "An Active Microstrip Antenna for GPS," 1998
- "A GaAs FET Mixer," 1998.
- "A Wireless Communication Link for Audio Applications," 1998
- "A 2.4 GHz Proximity Sensor," 1997
- "A Compact 2.4 GHz Matched Variable Attenuator," 1997.
- "A 2.4 GHz Matched Variable Attenuator," 1996.
- "Linearizing a Microwave Amplifier," 1996
- "A 2.4 GHz Transmit/Receive Module for Wireless Communications," 1995.
- "A 2.4 GHz Wireless Communication Link," 1995
- "A 2.4 GHz Transceiver for Wireless Communications," 1994.
- "A 2.4 GHz Electronic Tether," 1994
- "A 4 GHz GaAs FET Power Amplifier," 1993
- "A 4 GHz GaAs FET Low Noise Amplifier," 1993
- "A Push-Pull Distributed Microwave Amplifier," 1992

At University of Wisconsin-Madison, 1982 to 1991

Consulted with Graduate and Senior Undergraduate Students on their Research Projects.

Ph.D. Theses:

- “Negative Resistance Loss Compensation in Distributed Amplifier Design,” November 1988
- “Constraints in the Design of GaAs MESFET Distributed Amplifiers,” April 1985

Master's Theses:

- “The Equalizing of Individual MESFET’S Power Contributions to Improve Efficiency in a Wideband Distributed Amplifiers by the Use of An Optimization Technique,” 1991
- “A Hybrid Distributed Amplifier Utilizing Negative Resistance to Compensate for Gate-Line Attenuation,” 1990.
- “A Distributed Amplifier Transmit/Receive Switch,” 1989.
- “A Study of Basic Concepts Involved in the Design of a Highly Directive, Broadband, Bidirectional Distributed Amplifier,” 1988.
- “Study and Development of a Broadband Microwave Oscillator,” 1988.
- “Push-Pull Distributed Power Amplifiers,” 1987.
- “GaAs FET MIC Mixers,” 1986.
- “On Microstrip Lumped Elements and Microwave Amplifiers,” 1985.

Senior Capstone Research Projects:

- “A 3.7 – 4.2 GHz Low Noise Amplifier for use in a Commercial Satellite TVRO System,” 1986.
- “Low Noise Amplifier Design,” 1986.
- “On S-Parameter Design of Low Noise Microwave Amplifier,” 1985.
- “The Phase Locked Loop and an Application in Phase Modulation,” 1984.
- “Development of Satellite Receiver Only (TVRO) System,” 1984.

At ITT, Bombay, 1976 to 1980

Consulted with Graduate Students on their Research Projects

Master's Theses:

- “X-Band MIC Gunn Oscillator”

- “On Injection Locked IMPATT Oscillator”
- “Loaded-Line PIN Diode Phase Shifters”

Service to University, Profession, and Community

Bradley University

- *Member*, CEGT Dean Evaluation Committee, 2009
- *Member*, OTEFD Advisory Board: BUCCS Standing Committee, 2009 - present
- *Member*, University Task Force on Tenure and Promotion, 2001.
- *Member*, Panel on “Tenure and Promotion,” University Conference, 2000.
- *Member*, Manager of Research and Sponsored Programs, Search Committee, 1999
- *Member*, Associate Provost & Graduate School Dean Search Committee, 1997-1998
- *Member*, University Research Excellence Committee and Sub-Committees, 1996-1997
- *Member*, Academic Review Board, Bradley University, 1993-2000.
- *Member*, Bradley University Senate, 1993-1995.
- *Advisor*, Bradley Amateur Radio Club, 1991-present.
- *Co-Advisor*, India Student Association, 1999-present
- *Co-Advisor*, Hindu Youth Society, Bradley University, 2002-present
- *Member*, Committee to develop Personnel Guidelines for Graduate Assistants, 2005
- *Chair*, Committee to develop Graduate Student Academic and Non-Academic Issues Policies and Grievance Procedures, 2001-2005
- *Member*, Executive Committee and Sub-Committees of the Graduate School, 1995-1998; 2001-present

College of Engineering and Technology (CEGT), Bradley University

- *Member*, CEGT Research Awards Committee, 2000-2003; 2004-present
- *Member*, CEGT Interdisciplinary Research Awards Committee, 2000-2003; 2004-present
- *Recording Secretary*, Dept.of Electrical and Computer Engineering Chairman Election, 1998
- *Chair*, Ad-Hoc Committee to develop guidelines for Tenure and Promotion, College of Engineering and Technology, 1992-1993.
- *Member*, CEGT Promotion Advisory Committee, 2001-2003

Department of Electrical and Computer Engineering (ECE), Bradley University

- *Graduate Program Coordinator*, 1999-present
- *Coordinator*, ECE Colloquium, 1999-present
- *Advisor*, ECE Graduate Research Forum, 2008-present
- *Member*, Tenure and Promotion Committee, 1996-present
- *Chair*, Ad-Hoc T-Line Committee, 1993-1994.
- *Member*, Graduate Program Committee, 1992-present.

Profession

- *Member*, Technical Program Committee (TPC), IEEE MTT-S International Microwave Symposium, 2006-2008
- *Secretary*, American Association of University Professors (AAUP), Bradley Chapter, 1993-94

- *Member*, Editorial Board, IEEE Transactions on Microwave Theory and Techniques, 1995-present.
- *Member*, Editorial Board, IEEE Transactions on Antennas and Propagation, 2000-present
- *Member*, Editorial Board, IEEE Microwave and Wireless Components Letters, 2000-present
- *Member*, Technical Program Committee, IASTED International Conference on Antennas, Radar, and Wave Propagation, 2003-2004
- *Coordinator*, University Research Exhibition Booth, IEEE International Microwave Symposium, 1995, 1997, 1999, 2000, and 2001
- *Chair*, Program Committee, IEEE Illinois Valley Section, 1991-1992 and 1993-1994.
- *Member*, National Science Foundation Proposal Review Panel, 2003(NSF-CCLI); 2004(NSF-MRI)

Community

- *Member*, Executive Board, Peoria Area Friends of International Students, 2001- 2005
- *Member*, Membership and Friendship Partner committees, Peoria Area Friends of International Students, 2001-2002
- *Member*, Publicity and Scholarship committees, Peoria Area Friends of International Students, 2002-2003
- *Member*, Nominating and Scholarship committees, Peoria Area Friends of International Students, 2003-2004
- *Member*, New Directions and Scholarship committees, Peoria Area Friends of International Students, 2004-2005
- *President (Founder)*, Mysore Mallige Kannada Association of the Midwest, 2001- 2003
- *Member, Board of Trustees*, Mysore Mallige Kannada Association of the Midwest, 2004 –present
- *Member*, India Independence Day Celebration Executive Committee, Peoria, Illinois, 2001-2002
- *Secretary/Treasurer*, Chaitanya Educational Foundation, 1995-present
- *Member*, Executive Board, North South Foundation, Peoria Chapter, 2003-present
- *Member*, India Festival organizing committee, 2003
- *Member, Board of Directors*, Indo-American Society of Peoria, 2001-2004
- *Coordinator*, Gita Home Study Course, 2001-present

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