

# The University of Texas at Austin

## Cockrell School of Engineering

**Full Name:** Ranjit Gharpurey

**Title:** Professor

**Department:** Electrical and Computer Engineering

### Education

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|--|--|---------|------|
| The University of California at Berkeley, Berkeley, CA | Electrical Engineering                     | Ph. D   | 1995 |
| The University of California at Berkeley, Berkeley, CA | Electrical Engineering                     | M. S    | 1992 |
| The Indian Institute of Technology, Kharagpur, India   | Electronics and Communications Engineering | B. Tech | 1990 |

### Current and Previous Academic Positions

|   |                     |                 |
|---|---------------------|-----------------|
| The University of Texas at Austin, Austin, TX | Professor           | Sep. 14-Current |
| The University of Texas at Austin, Austin, TX | Associate Professor | Sep. 08-Aug. 14 |
| The University of Texas at Austin, Austin, TX | Assistant Professor | Sep. 05-Aug. 08 |
| The University of Michigan, Ann Arbor, MI     | Assistant Professor | Sep. 03-Aug. 05 |

### Honors and Awards

- Academic awards
  - Berkeley Fellowship for Graduate Studies, 1990-1992, The University of California at Berkeley
  - President of India Gold Medal for the Best Academic Performance in the Undergraduate Class of 1990, Indian Institute of Technology, Kharagpur, India 1990
- Publication awards
  - Co-recipient of Best Student Paper Award, 2014 IEEE Dallas Circuits and Systems Conference
  - Co-recipient of Best Paper Award, IEEE Journal of Solid State Circuits for 2008, awarded in Feb. 2010
  - Co-recipient of Best Student Paper Award – 1<sup>st</sup> Place, at the 2008 IEEE Radio Frequency Integrated Circuits Symposium
  - Co-recipient of Best Student Paper Award – 2<sup>nd</sup> Place, at the 2005 IEEE Conference on Sensors

## Publications

### Journal Publications

- T. Forbes and R. Gharpurey, "A 2 GS/s Frequency-Folded ADC-Based Broadband Sampling Receiver," IEEE J. Solid-State Circuits, Vol. 49, Issue 9, pp. 1971-1983, Sept. 2014
- J. Lu, H. Song, and R. Gharpurey, "A CMOS Class D Line Driver Employing a Phase-Locked Loop Based PWM Generator," IEEE J. Solid-State Circuits, Vol. 49, Issue 3, pp. 729-739, Mar. 2014
- T. Forbes, W-G. Ho and R. Gharpurey, "Design and Analysis of Harmonic Rejection Mixers with Programmable LO Frequency, IEEE J. Solid-State Circuits, Vol. 48, Issue 10, pp. 2363-2374, Oct. 2013
- C. Zhang, R. Gharpurey and J. A. Abraham, "Built-in Self Test of RF Subsystems with Integrated Detectors," Journal of Electronic Testing, Vol. 28, Issue 5, pp. 557 - 569, Oct. 2012
- M. A. Zeidan, G. Banerjee, R. Gharpurey and J. A. Abraham, "Phase-Aware Multitone Digital Signal Based Test for RF Receivers," IEEE Transactions on Circuits and Systems I, Vol. 59, Issue 9, pp. 2097 - 2110, Sept. 2012
- R. Gharpurey, "Linearity Enhancement Techniques in Radio Receiver Front-Ends," IEEE Transactions on Circuits and Systems I, Vol. 59, Issue 8, pp. 1667 - 1679, Aug. 2012
- D. Ghosh and R. Gharpurey, "A Power-Efficient Receiver Architecture Employing Bias-Current-Shared RF and Baseband with Merged Supply Voltage Domains and  $1/f$  Noise Reduction," IEEE Journal of Solid State Circuits, Vol. 47, Issue 2, pp. 381 - 391, Feb. 2012
- J. Lu and R. Gharpurey, "Design and Analysis of a Self-Oscillating Class D Audio Amplifier Employing a Hysteretic Comparator," IEEE Journal of Solid-State Circuits, Vol. 46, Issue 10, pp. 2336 - 2349, Oct. 2011
- C. K. Eun, R. Gharpurey and Y. B. Gianchandani, "Wireless Signaling of Beta Detection Using Microdischarges," Journal of Microelectromechanical Systems, Vol. 19, Issue 4, pp. 785 - 793, Aug. 2010
- A. Jha, F. Zhang, T-L. Hsieh, R. Gharpurey and P. R. Kinget, "A Discrete-Time Digital-IF Interference-Robust Ultrawideband Pulse Radio Transceiver Architecture," IEEE Transactions on Circuits and Systems I, Vol. 57, Issue 2, pp. 481 - 494, Feb. 2010
- F. Zhang, A. Jha, R. Gharpurey and P. Kinget, "An Agile, Ultra-Wideband Pulse Radio Transceiver With Discrete-Time Wideband-IF," IEEE Journal of Solid State Circuits, Vol. 44, Issue 5, pp. 1336 - 1351, May 2009
- X. Wang and R. Gharpurey, "Interference Cancellation in Broadband Wireless Systems Utilizing Phase-Aligned Injection-Locked Oscillators," IEEE Transactions on Circuits and Systems II, Vol. 55, Issue 9, pp. 872 - 876, Sept. 2008
- C. Xu, R. Gharpurey, T. S. Fiez and K. Mayaram, "Extraction of Parasitics in Inhomogeneous Substrates With a New Green Function-Based Method," IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, Vol. 27, Issue 9, pp. 1595-1606, Aug. 2008
- J. Han and R. Gharpurey, "Recursive Receiver Down-Converters With Multiband Feedback and Gain-Reuse," IEEE Journal of Solid State Circuits, Vol. 43, Issue 5, pp. 1119 - 1131, May 2008 (Recipient of the IEEE JSSC Best Paper Award)
- S. Ayazian and R. Gharpurey, "Feedforward Interference Cancellation in Radio Receiver Front-Ends," IEEE Transactions on Circuits and Systems II, Vol. 54, Issue 10, pp. 902 - 906, Oct. 2007
- R. Gharpurey and S. Naraghi, "Self-Induced Noise in Integrated Circuits," International Journal of High Speed Electronics and Systems, Vol. 15, Issue 2, pp. 277 - 295, Jun. 2005

- R. Gharpurey, "A Broadband Low-Noise Front-End Amplifier for Ultra Wideband in 0.13- $\mu$ m CMOS," IEEE Journal of Solid State Circuits, Vol. 40, Issue 9, pp. 1983 - 1986, Sept. 2005
- R. Gharpurey, N. Yanduru, F. Dantoni, P. Litmanen, G. Sirna, T. Mayhugh, C. Lin, I. Deng, P. Fontaine, and F. Lin, "A Direct-Conversion Receiver for the 3G WCDMA Standard," IEEE Journal of Solid State Circuits, Vol. 38, Issue 3, pp. 556 - 560, Mar. 2003
- E. Charbon, R. Gharpurey, R. G. Meyer and A. Sangiovanni-Vincentelli, "Substrate Optimization Based on Semi-Analytical Techniques," IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, Vol. 18, Issue 2, pp. 172 - 190, Feb. 1999
- A. M. Niknejad, R. Gharpurey and R. G. Meyer, "Numerically Stable Green Function for Modeling and Analysis of Substrate Coupling in Integrated Circuits," IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, Vol. 17, Issue 4, pp. 305 - 315, Apr. 1998
- R. Gharpurey and R. G. Meyer, "Modeling and Analysis of Substrate Coupling in Integrated Circuits," IEEE Journal of Solid State Circuits, Vol. 31, Issue 3, pp. 344 - 353, Mar. 1996
- R. Gharpurey and R. G. Meyer, "Analysis and Simulation of Substrate Coupling in Integrated Circuits," International Journal of Circuit Theory and Applications, Vol. 23, Issue 4, pp. 381 - 394, Jul.-Aug. 1995

## Conference Proceedings

- H. Song and R. Gharpurey, "Digitally Intensive Wireless Transmitter Architecture Employing RF Pulse Width Modulation," IEEE Dallas Circuits and Systems Conference, Oct. 2014, Richardson, Texas
- W. G. Ho and R. Gharpurey, "A Bias-Shared Direct Downconversion Receiver Front-End with Flicker Noise Minimization," IEEE Dallas Circuits and Systems Conference, Oct. 2014, Richardson, Texas (Winner of the Best Student Paper Award)
- W. G. Ho, V. Singh, T. Forbes and R. Gharpurey, "Techniques for Dynamic Range Enhancement in a Frequency-Folded Broadband Channelizer," IEEE Dallas Circuits and Systems Conference, Oct. 2014, Richardson, Texas
- V. Singh, T. Forbes, W. G. Ho, J. Ko and R. Gharpurey, "A 16 - band Channelizer Employing Harmonic Rejection Mixers with Enhanced Image Rejection," IEEE Custom Integrated Circuits Conference, Sep. 2014, San Jose, California
- R. Srinivasan, W. G. Ho, T. Forbes and R. Gharpurey, "A 2-stage recursive receiver optimized for low flicker noise corner," IEEE Radio Frequency Integrated Circuits Symposium, pp. 47-50, June 2014, Tampa, Florida
- C.-H. Hung and R. Gharpurey, "A 57-to-75 GHz dual-mode wide-band reconfigurable oscillator in 65nm CMOS," IEEE Radio Frequency Integrated Circuits Symposium, pp. 261 - 264, June 2014, Tampa, Florida
- W. G. Ho, T. Forbes, V. Singh and R. Gharpurey, "An active interference cancellation technique with harmonic rejection for a broadband channelizer," IEEE Midwest Symposium on Circuits and Systems, pp. 586-589, Aug. 2013, Columbus, Ohio
- J. Lu and R. Gharpurey, "Phase-Locked Loop Based PWM Wireless Transmitter," IEEE International Symposium on Circuits and Systems, pp. 177 - 180, May 2013, Beijing, China
- T. Forbes, W-G. Ho, N. Sun and R. Gharpurey, "A Frequency-Folded ADC Architecture with Digital LO Synthesis," IEEE International Symposium on Circuits and Systems, pp. 149 - 152, May 2013, Beijing, China
- T. Forbes and R. Gharpurey, "Embedded LO Synthesis Method in Harmonic Rejection Mixers," IEEE International Midwest Symposium on Circuits and Systems, pp. 750 - 753, Aug. 2012, Boise, Idaho

- K. Ragab, R. Gharpurey and M. Orshansky, "Embracing Local Variability to Enable a Robust High-Gain Positive-Feedback Amplifier: Design Methodology and Implementation," International Symposium on Quality Electronic Design, pp. 143 - 150, Mar. 2012, Santa Clara, California
- R. Gharpurey, "Managing Linearity in Radio Front-Ends," IEEE Custom Integrated Circuits Conference, pp. 1 - 8, Sept. 2011, Invited Paper, San Jose, California
- W. -G. Ho and R. Gharpurey, "A Cross-Correlation Based Signal Detector With Two-Step Down-Converter Robust to Finite Image Rejection," IEEE International Symposium on Circuits and Systems, pp. 2197 - 2200, May 2011, Rio de Janeiro, Brazil
- S. Ock, J. Ko and R. Gharpurey, "A Cartesian Feedback Feedforward Transmitter," IEEE International Symposium on Circuits and Systems, pp. 209 - 212, May 2011, Rio de Janeiro, Brazil
- D. Ghosh and R. Gharpurey, "Evolution of Oscillation in a Quadrature Oscillator," International Conference on VLSI Design, pp. 36 - 40, Jan. 2011, Chennai, India
- J. Lu and R. Gharpurey, "A Self Oscillating Class D Audio Amplifier with 0.0012% THD+N and 116.5 dB Dynamic Range," IEEE Custom Integrated Circuits Conference, pp. 1 - 4, Sept. 2010, San Jose, California
- D. Ghosh, S. S. Taylor, Y. Tan and R. Gharpurey, "A 10 GHz Low Phase Noise VCO Employing Current Reuse and Capacitive Power Combining," IEEE Custom Integrated Circuits Conference, pp. 1 - 4, Sept. 2010, San Jose, California
- D. Ghosh and R. Gharpurey, "A Low-power Receiver Down-converter with High Dynamic Range Performance," IEEE Radio Frequency Integrated Circuits Symposium, pp. 35 - 38, May 2010, Anaheim, California
- M. A. Zeidan, G. Bannerjee, R. Gharpurey and J. A. Abraham, "Multitone Digital Signal Based Test for RF Receivers," IEEE VLSI Test Symposium, pp. 343 - 348, Apr. 2010, Santa Cruz, California
- R. Gharpurey and P. Kinget, "Channelized Front Ends for Broadband Analog & RF Signal Processing with Merged LO Synthesis," IEEE Dallas Circuits and Systems Workshop, pp. 1 - 4, Oct. 2009, Richardson, Texas
- S. Agarwal and R. Gharpurey, "A Dual-Mode Wide-Band CMOS Oscillator," IEEE Dallas Circuits and Systems Workshop, pp. 1 - 3, Oct. 2009, Richardson, Texas
- C. Zhang, R. Gharpurey and J. A. Abraham, "On-Line Calibration and Power Optimization of RF Systems Using a Built-In Detector," IEEE VLSI Test Symposium, pp. 285 - 290, May 2009, Santa Cruz, California
- C. -H. Sun, S. Ayazian, X. Wang and R. Gharpurey, "Interference Cancellation in Receivers with Interference Frequency Estimation," IEEE Dallas Circuits and Systems Workshop, pp. 1 - 4, Oct. 2008, Dallas, Texas
- T. -L. Hsieh, P. Kinget and R. Gharpurey, "A Rapid Interference Detector for Ultra-Wideband Radio Systems in 0.13- $\mu$ m CMOS," IEEE Radio Frequency Integrated Circuits Symposium, pp. 347 - 350, Jun. 2008, Atlanta, Georgia
- A. Jha, R. Gharpurey and P. Kinget, "A 3 to 5-GHz UWB Pulse Radio Transmitter in 90nm CMOS," IEEE Radio Frequency Integrated Circuits Symposium, pp. 35 - 38, Jun. 2008, Atlanta, Georgia
- F. Zhang, R. Gharpurey and P. Kinget, "A 3.1–9.5 GHz Agile UWB Pulse Radio Receiver with Discrete-Time Wideband-IF Correlation in 90nm CMOS," IEEE Radio Frequency Integrated Circuits Symposium, pp. 31 - 34, Jun. 2008, Atlanta, Georgia (Recipient of Best Student Paper Award - 1<sup>st</sup> place)
- C. Zhang, R. Gharpurey and J. A. Abraham, "Low Cost RF Receiver Parameter Measurement with On-Chip Amplitude Detectors," IEEE VLSI Test Symposium, pp. 203 - 208, Apr. 2008, San Diego, California

- D. Ghosh and R. Gharpurey, "A CMOS Wideband LNA Using Multiple Phase Matched Frequency Staggered Resonators," IEEE Dallas Circuits and Systems Workshop, pp. 1 - 4, Nov. 2007, Dallas, Texas
- D. Ghosh and R. Gharpurey, "A Technique to Extend Tuning Range of High Frequency Quadrature VCO," IEEE Dallas Circuits and Systems Workshop, pp. 1 - 4, Nov. 2007, Dallas, Texas
- J. Han and R. Gharpurey, "Analysis of Third-order Intermodulation in Receiver Down-Converter Employing Multiband Feedback," IEEE Dallas Circuits and Systems Workshop, pp. 1 - 4, Nov. 2007, Dallas, Texas
- J. Han and R. Gharpurey, "A 3.5mW 900MHz Down-converter with Multiband Feedback and Device Transconductance Reuse," IEEE Custom Integrated Circuits Conference, pp. 527 - 530, Sept. 2007, San Jose, California
- J. Han and R. Gharpurey, "A 2.5mW 900MHz Receiver Employing Multiband Feedback with Bias Current Reuse," IEEE Radio Frequency Integrated Circuits Symposium, pp. 329 - 332, Jun. 2007, Honolulu, Hawaii
- C. Zhang, R. Gharpurey and J. A. Abraham, "Built-In Test of RF Mixers Using RF Amplitude Detectors," International Symposium on Quality Electronic Design, pp. 404 - 409, Mar. 2007, San Jose, California
- R. Gharpurey and S. Ayazian, "Feedforward Interference Cancellation in Narrow-Band Receivers," IEEE Dallas Circuits and Systems Workshop, pp. 67 - 70, Oct. 2006, Richardson, Texas
- T. -L. Hsieh, P. Kinget, and R. Gharpurey, "An Approach to Interference Detection for Ultra Wideband Radio Systems," IEEE Dallas Circuits and Systems Workshop, pp. 91 - 94, Oct. 2006, Richardson, Texas
- X. Wang, C. -K. Kang, and R. Gharpurey, "A Technique for Device Stress Relief in CMOS Class-E RF Power Amplifiers," IEEE Dallas Circuits and Systems Workshop, pp. 111 - 114, Oct. 2006, Richardson, Texas
- R. Gharpurey, T. -L. Hsieh, and S. Venkataraman, "A Single-Tank Dual-Band Reconfigurable Oscillator," IEEE Symposium on VLSI Circuits, pp. 176 - 177, Jun. 2006, Honolulu, Hawaii
- C. K. Eun, R. Gharpurey, and Y. B. Gianchandani, "A Magnetically Enhanced Wireless Micro-Geiger Counter," Solid-State Sensors and Actuators Workshop, pp. 236 - 239, Jun. 2006, Hilton Head, South Carolina
- M. T. Richardson, R. Gharpurey and Y. B. Gianchandani, "Wireless Sensing of Discharge Characteristics for Quality Control in Batch Mode Micro-Electro-Discharge Machining," Solid-State Sensors and Actuators Workshop, pp. 404 - 407, Jun. 2006, Hilton Head, South Carolina
- R. Gharpurey, J. Han and S. Venkataraman, "A Low-Power Signal-Recycling Mixer and Baseband Amplifier with Current Reuse," Digest of Technical Papers, IEEE International Symposium on Circuits and Systems, pp. 4975 - 4978, May 2006, Kos, Greece
- A. Jha, R. Gharpurey and P. Kinget, "Quadrature-DAC Based Pulse Generation for UWB Pulse Radio Transceivers," Digest of Technical Papers, IEEE International Symposium on Circuits and Systems, pp. 666 - 669, May 2006, Kos, Greece
- C. K. Eun, R. Gharpurey and Y. B. Gianchandani, "Controlling Ultra Wide Band Transmissions from a Wireless Micromachined Geiger Counter," IEEE Conference on Micro Electro Mechanical Systems, pp. 570 - 573, Jan. 2006, Istanbul, Turkey
- C. K. Eun, R. Gharpurey and Y. B. Gianchandani, "Broadband Wireless Sensing of Radioactive Chemicals Utilizing Inherent RF Transmissions from Pulse Discharges," IEEE Sensors Conference, pp. 273 - 276, Oct.-Nov. 2005, Irvine, California (Recipient of Best Student Paper Award - 2<sup>nd</sup> Place)

- A. Garg, R. Gharpurey and E. Charbon, "Reduced Order Models of Integrated RF Spiral Inductors with Geometrical and Technological Automatic Parametrization," IEEE International Behavioral Modeling and Simulation Workshop, pp. 13 - 18, Sept. 2005, San Jose, California
- R. Gharpurey, "Design Challenges in Emerging Broadband Wireless Systems," invited paper, Radio Frequency Integrated Circuits Symposium, pp. 331 - 334, Jun. 2005, Long Beach, California
- T. -L. Hsieh and R. Gharpurey, "A Reconfigurable Oscillator Topology for Dual-Band Operation," 18th International Conference on VLSI Design, pp. 870 - 873, Jan. 2005, Kolkata, India
- C. Xu, R. Gharpurey, T. S. Fiez and K. Mayaram, "A Green Function-Based Parasitic Extraction Method for Inhomogeneous Substrate Layers," Design Automation Conference, pp. 141 - 146, Jun. 2005, Anaheim, California
- R. Gharpurey, "A Broadband Low-Noise Front-End Amplifier for Ultra Wideband in 0.13- $\mu$ m CMOS," IEEE Custom Integrated Circuits Conference, pp. 605 - 608, Oct. 2004, Orlando, Florida
- R. Gharpurey and E. Charbon, "Substrate Coupling: Modeling, Simulation and Design Perspectives," International Symposium on Quality Electronic Design, Invited Tutorial Paper, pp. 283 - 290, Apr. 2004, San Jose, California
- R. Gharpurey, N. Yanduru, F. Dantoni, P. Litmanen, G. Sirna, T. Mayhugh, C. Lin, I. Deng, P. Fontaine, and F. Lin, "A Direct Conversion Receiver for the 3G WCDMA Standard," IEEE Custom Integrated Circuits Conference, pp. 239 - 242, May 2002, Orlando, Florida
- R. Gharpurey, "A Methodology for Measurement and Characterization of Substrate Noise in High Frequency Circuits," IEEE Custom Integrated Circuits Conference, pp. 487 - 490, May 1999, San Diego, California
- R. Gharpurey and T. R. Viswanathan, "Design of Front-End RF Circuits," Southwest Symposium on Mixed-Signal Design, pp. 134 - 139, Apr. 1999, Tucson, Arizona
- S. Hosur, A. G. Dabak, R. Gharpurey, K. Krishna, and P. Papamichalis, "A  $\pi/4$ -shift QPSK receiver for TDMA/TDD systems," Asilomar Conference on Signals, Systems and Computers, pp. 154 - 158, Nov. 1998, Pacific Grove, California
- W. Liu, R. Gharpurey, M. C. Chang, U. Erdogan, R. Aggarwal, and J. P. Mattia, "RF MOSFET Modeling Accounting for Distributed Substrate and Channel Resistances with Emphasis on the BSIM3v3 SPICE Model," Technical Digest of the International Electron Devices Meeting, pp. 309 - 312, Dec. 1997, Washington, DC
- R. Gharpurey and S. Hosur, "Transform Domain Techniques for Efficient Extraction of Substrate Parasitics," IEEE/ACM International Conference on Computer Aided Design, pp. 461 - 467, Nov. 1997, San Jose, California
- E. Charbon, R. Gharpurey, R. G. Meyer and A. Sangiovanni-Vincentelli, "Semi-Analytical Techniques for Substrate Characterization in the Design of Mixed-Signal ICs," IEEE/ACM International Conference on Computer Aided Design, Digest of Technical Papers, pp. 455 - 462, Nov. 1996, San Jose, California
- R. Gharpurey and R. G. Meyer, "Modeling and Analysis of Substrate Coupling in Integrated Circuits," IEEE Custom Integrated Circuits Conference, pp. 125 - 128, May 1995, Santa Clara, California

## Books, Book Chapters; Editor of Books

- "UWB: Circuits, Transceivers and Systems," Editors: R. Gharpurey and P. Kinget, Springer, 2008, 199 pages  
Contributed Chapter "UWB: Circuits, Transceivers and Systems," pp. 1-23

- "Substrate Noise: Analysis and Optimization for IC Design," E. Charbon, R. Gharpurey, P. Miliozzi, R. G. Meyer, and A. Sangiovanni-Vincentelli, Kluwer Academic Press, 2001, 171 pages
- "Self-Induced Noise in Integrated Circuits", R. Gharpurey and S. Naraghi, in DESIGN OF HIGH-SPEED COMMUNICATION CIRCUITS, Editor - Ramesh Harjani, World Scientific, pp. 23-41, Jan. 2006 (contributed chapter)

## Oral Presentations

- *Linearity Enhancement Techniques in Radio Receiver Front-Ends*, invited workshop presentation, IEEE Radio Frequency Integrated Circuits (RFIC) Symposium, Jun. 2013, Seattle, Washington
- *Design Challenges in Radios for Emerging Broadband Wireless Systems*, invited workshop presentation, IEEE Radio Frequency Integrated Circuits (RFIC) Symposium, Jun. 2011, Baltimore, Maryland
- *Linearity Enhancement Techniques for Multi-Standard Radio Systems*, invited workshop presentation, IEEE Radio Frequency Integrated Circuits (RFIC) Symposium, Jun. 2011, Baltimore, Maryland
- *Interference Cancellation and Linearity Enhancement in Wireless Receiver Front-ends*, invited workshop presentation, IEEE Radio Frequency Integrated Circuits (RFIC) Symposium, Jun. 2009, Boston, Massachusetts
- *Managing Linearity in Radio Front-Ends*, invited tutorial, International Solid State Circuits Conference (ISSCC), Feb. 2009, San Francisco, California
- *Front-end Amplifier Design for Ultra Wideband Systems*, invited workshop presentation, IEEE Radio Frequency Integrated Circuits (RFIC) Symposium, Jun. 2007, Honolulu, Hawaii
- *Front-End Design for Wireless Systems*, invited short course, International Solid State Circuits Conference (ISSCC), Feb. 2005, San Francisco, California
- Panel Session, *Ultra-wideband: an Academic Exercise or a Practical Path to Higher Data Rates?*, J. C. Rudell, R. Brodersen, A. Hajimiri, R. Gharpurey, A. Rappaport, J.R. Foerster, J. McCorckle, W. McFarland, IEEE Radio Frequency Integrated Circuits (RFIC) Symposium, Jun. 2004, Fort Worth, Texas
- *A Time-Frequency Interleaved OFDM Based System for Ultra-Wideband*, R. Gharpurey and A. Dabak, invited evening session presentation at International Solid State Circuits Conference (ISSCC), Feb. 2004, San Francisco, California
- *Design of Front-End Circuits for Wireless Applications*, Educational Session at IEEE Custom Integrated Circuits Conference (CICC), May 2000, Orlando, Florida
- Full-day course on RF circuit design presented at the Institute of Microelectronics, Singapore, Dec. 2000
- *Design of Front-End Circuits for Wireless Applications*, Educational Session at IEEE Custom Integrated Circuits Conference (CICC), May 1999, San Diego, California