

## Electrical Engineering Publications During Calendar Year 2005

### I. Books

Manasreh, O., Semiconductor Heterojunctions and Nanostructures, McGraw-Hill, New York, 2005.

Varadan, V. K., editor, Smart Electronics, MEMS, BioMEMS and Nanotechnology, Proceedings Volume 5763, SPIE Press, Bellingham, WA, 2005.

### II. Chapters

Roychowdhury, J. and **H. A. Mantooth**, “EDA for IC Implementation, Circuit Design, and Process Technology - Analog Simulation: Circuit Level (Including Radio Frequency Methods and Noise) and Behavioral Level,” Electronic Design Automation for Integrated Circuits Handbook, vol. II, Chapter 14, CRC Press, New York, 2006.

### III. Refereed Articles

**Barghouti, M.**, Husam Abu-Safe, Hameed Naseem, and William D. Brown, “The Effects of an Oxide Layer on the Kinetics of Metal-Induced Crystallization of a-Si:H”, *Journal of the Electrochemical Society*, vol. 152, no. 5, pp. G354-G360, 2005.

**Cai, L.**, Hengyu Wang, William Brown, and Min Zou, “Large Grain Polycrystalline Silicon Film Produced by Nano-Aluminum-Enhanced Crystallization of Amorphous Silicon”, *The Electrochemical Society Electrochemical and Solid State Letters*, vol. 8, no. 7, pp. G179-G181, 2005.

**Figueroa, R. F.**, S. Spiesshoefer, S. L. Burkett, and L. Schaper, “Control of Sidewall Slope in Silicon Vias using SF<sub>6</sub>/O<sub>2</sub> Plasma Etching in a Conventional RIE Tool,” *J. Vac. Sci. Technol. B*, vol. 23, no. 5, pp. 2226-2231, 2005.

Funaki, T., **J. C. Balda**, J. Junghans, A. Jangwanitlert, S. Mounce, F. D. Barlow, H. A. Mantooth, T. Kimoto, T. Hikihara, “Switching characteristics of SiC JFET and Schottky diode in high ambient temperature dc-dc power converters”, *IEICE Electronics Express*, vol. 2, no. 3, pp. 97-102, 2005.

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Jacesko, S., **J. K. Abraham**, T. Ji, V. K. Varadan, M. Cole and J. Gardner, “Investigations on an electronic tongue with polymer microfluidic cell for liquid sensing and identification”, *Journal of Smart Materials and Structures*, vol. 14, no. 4, 2005, pp. 1010-1016.

**Ji, Taeksoo**, Hargsoon Yoon, Jose K. Abraham, and Vijay K. Varadan, “Ku-band antenna array feed distribution network with ferroelectric phase shifters on silicon,” Published in *IEEE Trans. Microwave Theory Tech.*, 2005.

**Ji, Taeksoo**, Hargsoon Yoon, Jose K. Abraham, and Vijay K. Varadan, “Design of a Ku-band Wilkinson power divider on surface-stabilized high sensitivity Si substrates,” *Microwave and Optical Technology Letters*, vol. 44, no. 5, pp. 436-439, 2005.

**Ji, Taeksoo**, H. Yoon, J. K. Abraham and V. K. Varadan, "Design of a Ku band Wilkinson power divider on surface-stabilized high-resistivity silicon", *Microwave and Optical Technology Letters*, vol. 44, pp. 436-439, 2005.

Kishore, R., **C. Hotz**, H. A. Naseem, and W. D. Brown, "Transmission Electron Microscopy and X-Ray Diffraction Analysis of Aluminum-Induced Crystallization of Amorphous Silicon in a-Si:H/Al and Al/a-Si:H Structures, *Microscopy and Microanalysis*, vol. 11, no. 1, pp. 133-137, 2005.

**Krommer, M.** and V. V. Varadan, "Control of Bending Vibrations within Sub – Domains of Thin Plates Part I: Theory and Exact Solution ", *J. Applied Mechanics*, vol. 72, pp. 432-444, 2005.

**Lei, W.**, G. R. Liu and V. K. Varadan, " Estimation of radius and thickness of a thin spherical shell in water using the midfrequency enhancement of a short tone burst response", *Journal of the Acoustical Society of America*, vol. 118, 2005, pp. 2147-2153.

**Liang, J.**, M. O. Manasreh, E. Marega, Jr., and G. J Salamo, "Broadband photoresponse from InAs quantum dots embedded in InGaAs graded well," *IEEE Electron Device Letters*, vol. 26, 631-633, (2005).

**Chua, Y. C.**, E. A. Decuir, Jr., M. O. Manasreh, and B. D. Weaver, "Intersubband transitions in proton irradiated InGaAs/GaAs multiple quantum dots", *Appl. Phys. Lett.*, vol. 87, no. 9, (3 pages) (2005).

**Neupane, P. P.**, M. O. Manasreh, B. D. Weaver, R.P. Rafaele, and B.J. Landi, "Proton irradiation effect on single-wall carbon nanotubes in a poly(3-octylthiophene) matrix", *Appl. Phys. Lett.*, vol. 86, 221908-22190 (2005).

**Philip, B.**, J. Xie, J. K. Abraham and V. K. Varadan, "Polyaniline/carbon nanotube composites: strating with phenylamino functionalized carbon nanotubes", *Polymer Bulletin*, vol. 53, vol. 2, pp.127-138, 2005.

**Schaper, L.**, S. Burkett, S. Spiesshoefer, G. Vangara, Z. Rahman, and S. Polamreddy, "Architectural Implications and Process Development of 3D VLSI Z-Axis Interconnects Using Through Silicon Vias," *IEEE Trans. Advanced Packaging*, vol. 28, no. 3, pp. 356-366, 2005.

**Sidhwa, A.**, Chuck Spinner, Todd Gandy, Mike Goulding, William Brown, Hameed Naseem, Richard Ulrich, Simon Ang, Sherwood Charlton, Vinay Prasad, and Timothy Cale, "Study of the Step Coverage and Contact Resistance by Using Two-Step TiN Barrier and Evolve Simulation", *IEEE Transactions on Semiconductor Manufacturing*, vol. 18, no. 1, pp. 163-173, 2005

**Sohraby, K.**, "Scalable Multiple Channel Scheduling with Optimal Utility in Wireless Local Area Networks", *Wireless Networks Journal*, Springer Verlag, December 2005.

**Sohraby, K.**, "A Stable Rate-Based Algorithm for Active Queue Management", *Computer Communications Journal*, Elsevier, vol. 28, pp. 1731-1740, 2005.

**Spiesshoefer, S.**, Z. Rahman, G. Vangara, S. Polamreddy, S. Burkett, and L. Schaper, "Process Integration for Through-Silicon Vias," *J. Vac. Sci. Technol. A*, vol. 23, no. 4, pp. 824-829, 2005.

**Wang, G.**, M. Van, F. Barlow, and A. Elshabini, "An Interdigital Bandpass Filter Embedded in LTCC for 5 GHz Wireless LAN Applications," *IEEE Microwave and Wireless Components Letters*, vol. 15, no. 5, pp. 357-359, 2005.

**Wang, Q.** and V. K. Varadan, "Stability analysis of carbon nanotubes via continuum models", *Journal of Smart Materials and Structures*, vol. 14, pp. 281-286, 2005

**Wang, Q** and V. K. Varadan, "Wave characteristics of carbon nanotubes", *International Journal of Solids and Structures*, vol. 43, pp. 254-265, 2005.

**Wang, Q** and V. K. Varadan, “Stability analysis of carbon nanotube probes for an atomic force microscope via a continuum model”, *Journal of Smart Materials and Structures*, vol. 14, pp. 1196-1203, 2005.

**Wang, Q.**, S. T. Quek and V. K. Varadan, “Analytical solution for shear horizontal wave propagation in piezoelectric coupled media by interdigital transducer”, *Journal of Applied Mechanics*, vol. 72, pp. 341-350, 2005.

**Xie, J.**, and V. K. Varadan, “Synthesis and characterization of high surface area tin oxide/functionalized carbon nanotubes composite as anode material”, *Materials Chemistry and Physics*, vol. 91, no. 2-3, pp. 274-280, 2005.

**Yoon, H.**, J. Xie, J. K. Abraham, V. K. Varadan, and P. B. Ruffin, “Passive Wireless Sensors using Electrical Transition of Carbon Nanotube Junctions in Polymer Matrix,” *Smart Materials Structures*, vol. 15, pp. 14-20, 2005.

Zhang, K. L., S. K. Chou, and **S. S. Ang**, “Development of a Novel Solid Propellant Microthruster,” *Journal of Micromechanics and Microengineering*, vol. 15, pp. 944-952, 2005.

Zhang, K. L., S. K. Chou, and **S. S. Ang**, “A MEM-Based Solid Propellant Microthruster with Au/Ti Igniter,” *Sensors and Actuators A: Physical*, vol. 122, pp. 113-123, 2005.

**Zou, M.**, Li Cai, and William Brown, “Nano-Aluminum Low-Temperature Crystallization of Plasma-Enhanced Chemical Vapor Deposited Amorphous Silicon”, *The ECS Electrochemical and Solid State Letters*, vol. 8, no. 5, pp. G103-G105, 2005.

#### **IV. Unrefereed Publications and Conference Proceedings**

**Abraham, Jose K.**, Jining Xie and Vijay K. Varadan, “Development of nanowire arrays for neural probe”, *Proceedings of SPIE - The International Society for Optical Engineering*, v 5763, *Smart Structures and Materials 2005 - Smart Electronics, MEMS, BioMEMS, and Nanotechnology*, pp. 133-138, 2005.

**Abraham, Jose K.**, Sonal Karjathkar, Stefany Jacesko, Vijay K. Varadan and Julian W. Gardner, “Identification of soft drinks using MEMS-IDT microsensors”, *Proceedings of SPIE - The International Society for Optical Engineering*, v 5763, *Smart Structures and Materials 2005 - Smart Electronics, MEMS, BioMEMS, and Nanotechnology*, pp. 414-424, 2005.

**Abraham, Jose K.**, Ashwin Whitchurch and Vijay K. Varadan, “Wireless microsensor network solutions for neurological implantable devices”, *Proceedings of SPIE - The International Society for Optical Engineering*, v 5763, *Smart Structures and Materials 2005 - Smart Electronics, MEMS, BioMEMS, and Nanotechnology*, pp. 36-46, 2005.

**Abraham, Jose K.**, Ashwin Whitchurch and Vijay K. Varadan, “Wireless microsensor network solutions for neurological implantable devices” *Proceedings of SPIE - The International Society for Optical Engineering*, v 5763, *Smart Electronics, MEMS, BioMEMS, and Nanotechnology*, pp. 36-46, 2005.

**Al-Barghoute, Marwan A.**, Husam H. Abu-Safe, Hameed A. Naseem, William D. Brown, Mowafak M. Al-Jassim, and Kim M. Jones, “Large Grain Poly-Si Thin Films By Metal Induced Crystallization of a-Si:H”, *31st IEEE Photovoltaic Specialists Conference*, pp. 1070-1073, 2005.

**Busada, C. A.**, H. G. Chiacchiarini, J. C. Balda, “Resistive Load Síntesis in Three-Phase Four-Wire Systems Using a Parallel Active Power Filter”, *IEEE 2005 Applied Power Electronics Conference*, Vol. 3, pp. 1703-1709, 2005.

**Busada, C. A.**, H. G. Chiacchiarini, J. C. Balda, "Evaluation of a Power Segmentation Strategy in High Power/High Speed Flywheel Energy Storage Systems", IEEE Power Electronics Specialists Conference, pp. 2937-2942, 2005.

Chernukhin, Y., M. Polenov, C. Vemulapally, E. Solodovnik, **H. A. Mantooth**, R. A. Dougal, "Deploying Modelica models into multiple simulation environments," IEEE International Behavioral Modeling and Simulation Workshop, pp. 134-139, 2005.

**Chua, Y. C.**, Jie Liang, B. S. Passmore, E. A. Decuir, M. O. Manasreh, Zhining Wang and G. J. Salamo, "Intersubband Transitions in In<sub>0.3</sub>Ga<sub>0.7</sub>As/GaAs Multiple Quantum of Varying Dot-Sizes," Materials Research Society, vol. 829, pp. 15-20, 2005.

**Decuir, E. A.**, Y. C. Chua, B. S. Passmore, J. Liang, J. Xie, H. Morkoc, A. Payne and I. T. Ferguson, "Intersubband transition in GaN/AlGa<sub>N</sub> multi-quantum wells," Materials Research Society, vol. 829, pp. 175-181, 2005.

**El-Shenawee, Magda** and Eric Miller, "Microwave Imaging of Malignant Breast Cancer Tumor Based on Optimization Technique," Proc. of the 16th International Zurich Symposium on Electromagnetic Compatibility-Biomedical EMC, pp. 85-88, 2005.

**Feng, Y., W. Zheng, X. Huang, and H. A. Mantooth**, "Model topology formulation for nonlinear dynamic behavioral modeling," IEEE Custom Integrated Circuits Conf., pp. 721-724, 2005.

**Figueroa, R. F.**, S. Spiesshoefer, S. Burkett, and L. Schaper, "Control of sidewall slope in high aspect ratio vias using SF<sub>6</sub>/O<sub>2</sub> plasma etching," Proc. AVS ICMI Conf., March 2005.

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Funaki, T., T. Kimoto, T. Hikiyara, A. S. Kashyap, P. Ramavarapu, S. Mounce, **J. C. Balda** and H. A. Mantooth, "Characterization of Cascode SiC JFET / Si MOSFET Devices," International Power Electronics Conference, 6 pgs., 2005.

**Gentry, Brad**, Neil Schmitt and Martin, Terry, "State-Space Implementation of Disturbance Accommodation Control to Improve Switching Converter Performance", Seventh IASTED International Conference on Control and Applications, pp 12-18, 2005.

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**Mantooth, H. A.**, M. Francis, V. Chaudhary and M. Vlach, "Model-based design tools for extreme environments," Proc. Government Microcircuit Applications and Critical Technology Conference (GOMAC), 4 pgs., 2005.

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**Raja, Vigneshwar K.** and Magda El-Shenawee, "Eccentric Annular Slot Antenna for Breast Cancer Detection Based on the Finite-Difference-Time-Domain Method," Proc. of the IEEE/ACES International Conference on Wireless Communications and Computational Electromagnetics, Hawaii, April 3-7, 2005.

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**Selvam, R. P.**, S. Bhaskara, J. C. Balda, F. D. Barlow, A. Elshabini, "Computer Modeling of Liquid Droplet Impact on Heat Transfer During Spray Cooling", 2005 ASME Summer Heat Transfer Conference, San Francisco, CA, July 17-22, 2005.

**Sepko, B.** and W. Lee, "The effect of beam control error on the power efficiency of transmit-beamforming basestations," Proc. IEEE Vehicular Technology Conference, pp. 2472-2476, 2005.

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**Zhang, K. L.**, S. K. Chou, and S. S. Ang, “A Wireless Address Circuitry for Microthruster Array Applications,” PowerMEMS 2005, November 28-30, 2005, Tokyo, Japan.

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## **V. Invited Lectures**

**Abbasi, O.**, H. Gunupudi, and H. A. Mantooth, “Certify: A Tool for Model Characterization and Validation,” Synopsys Users Group (SNUG) Saber Conference, 22 slides, Detroit, Michigan, Sept. 2005.

**Elshabini A.**, and F. D. Barlow, “Low Temperature Cofired Ceramic Technology”, 10 hours, Boston, IMAPS’ 2005.

**Elshabini A.**, and F. D. Barlow, “Microwave and Millimeter Wave Packaging”, 10 hours, Boston, IMAPS’ 2005.

**Kashyap, A. S.**, B. Ozpineci, and H. A. Mantooh, “Silicon Carbide Device and System Modeling with MAST and SABER,” Synopsys User’s Group (SNUG ’05), 25 slides, Detroit, MI, September 2005.

Mantooh, H. A., “Modeling tools & techniques for the 21st century,” IEEE Circuits and Systems Society Distinguished Lecture, 51 slides, Kuala Lumpur, Malaysia, September 2005.

Mantooh, H. A., “Bridging the gaps between circuit designers, compact model developers, and device physicists,” IEEE Compact Modeling of RF/Microwave Applications (CMRF 2005), 27 slides, Santa Barbara, CA, October 2005.

Mantooh, H. A., “Analog behavioral modeling: fantasy, fad, or foundation for the future,” Panel at IEEE Custom Integrated Circuits Conference, 5 slides, San Jose, CA, September 2005.

Mantooh, H. A., “Design and verification: Can the analog mixed-signal (AMS) standard bridge the chasm?,” Panel at Accellera Breakfast at Design Automation Conference, 6 slides, Anaheim, CA, June 2005.

**Naseem, Hameed A.**, Husam H. Abu-Safe, Khalil Sharif, Marwan A. Albarghouti, Maruf Hossain, William D. Brown, and Ram Kishore, “Comprehensive study of the mechanism of metal induced crystallization of hydrogenated amorphous silicon thin films,” Thirteenth International Workshop on the Physics of Semiconductor Devices Workshop, New Delhi, India, December 13-17, 2005.

Schaper, L., “Integrated Passives: an Enabling Technology for 3D Electronics,” Workshop on 3D Architectures for Semiconductor Integration and Packaging, RTI International, June 2005.

Schaper, L., “Considerations for Decoupling Capacitors in High Speed Systems,” Fraunhofer Institute IZM, Berlin, Germany, September 13, 2005.

Schaper, L., “Considerations for Decoupling Capacitors for High Speed Devices,” IBM Laboratories, Böblingen, Germany, September 30, 2005.

Schaper, L., “Considerations for Decoupling Capacitors in High Speed Systems,” NEC Laboratories, Sagamihara, Japan, November 10, 2005.

Schaper, L., “3-D Electronics: Reasons, Approaches, Processes,” NEC Laboratories, Sagamihara, Japan, November 11, 2005.

Schaper, L., “Critical Issues in Electronic Packaging,” NEC Laboratories, Tamagawa, Japan, November 25, 2005.

Schaper, L., “3-D Electronics: Reasons, Approaches, Processes,” NEC Laboratories, Tsukuba, Japan, November 28, 2005.

Varadan, V. K., Nanotechnology, BioMEMS and Wireless Devices for Control and Monitoring of Neurological Disorders, National Brain Research Center, Delhi, India, February 3, 2005.

Varadan, V. K., Wireless nano- and micro-sensors, MEMS for health monitoring of engineering structures and neurological disorders in human; can we get smarter, University of California, San Diego, March 8, 2005.

Varadan, V. K., Bio-micro-electromechanical systems (BioMEMS) and Neuroelectronics, International Conference on Smart Materials. Structures and Systems, Bangalore, India, July 28, 2005 (keynote lecture).

Varadan, V. K., Carbon nanotube based microsensors and wireless sensor network for physiological monitoring and monitoring and control of neurological brain disorder, International Joint Conference on Intelligent/Smart Materials for Engineering and Biomedical Applications (SMEBA), Tokyo, Japan, October 30, 2005 (keynote lecture).

Varadan, V. K., Nanotechnology and its applications in engineering and medicine, United Arab Emirates University, Abu Dhabi, November 14, 2005.

Varadan, V. K., “Carbon nanotube based microsensors and wireless sensor network for physiological monitoring”, International Symposium on Microelectronics, MEMS and Nanotechnology, SPIE, Brisbane, Australia, December 14, 2005.

Varadan, V. K., “Wireless EEG and EOG systems for monitoring epilepsy”, International Conference on Biomedical Applications of Micro and Nanoengineering, Sydney, Australia, December 14, 2005.

Varadan, V. V., Physics Colloquium, University of Arkansas, – “Chirality, Order, Disorder and Surface Plasmon Resonances in Negative Refractive Index Materials”, February 4, 2005.

Varadan, V. V., “Re-Engineering the Life Sciences for the 21st Century”, Plenary Lecture at 2005 Electrical & Computer Engineering Department Heads Association (ECEDHA) Annual Meeting, New Orleans, LA, March 19, 2005.

Varadan, V. V., “The Development of a Self-Contained Ambulatory Cough Data Recorder”, Invited Lecture to Consumer Health Products Association (CHPA) Washington DC, April 19, 2005.

Varadan, V. V., Invited Speaker at the International Metamaterials Workshop, Zheijinag University, Hangzhou China, August 2005.

Varadan, V. V., Invited lecture: “Negative Index Materials and Their Applications”, Indian Institute of Science, Bangalore, India, October 28, 2005.

Varadan, V. V., Opening Plenary Speaker ANDE 2005, Jeju Island, S. Korea: Microwave and Millimeter Wave NDE, 2005.

Varadan, V. V., “Negative Index materials and their Applications”, Kyungpook National University, Taegu, S. Korea, November 7, 2005.

Varadan, V. V., Invited Panel Moderator, Wichita State University, College of Engineering, IGERT proposal presentations, November 12, 2005.

Varadan, V. V., “Applications of Negative Index Materials” at Texas A&M University, November 17, 2005.

**Vemulapally, C.** and H. A. Mantooth, “Model generation and parameter extraction tools for the VTB environment,” VTB User’s Conference, 25 slides, Columbia, SC, September 2005.

## VI. Other Lectures, papers, and oral presentations

**Abu-Safe, Husam H.**, Hameed A. Naseem, Marwan A. Albarghouti, Maruf Hossain, Khalil Sharif, William D. Brown, Vincent Liu, Mowafak M. Al-Jassim, Kim M. Jones, Harry Meyer, Christian Kisielowski, Cheng Yu Song, Ram Kishore, and A. K. Srivastava, "National/International Lab-partnerships for the Investigation of Low Temperature Poly/Epi-Silicon Thin Film Growth using Metal Induced Crystallization," DOE/NSF EPSCoR Conference 2005, "Collaborative Research Opportunities for Clean, Affordable, & Secure Energy", Morgantown, WV, June 14-16, 2005.

**Abu-Safe, Husam H.**, Hameed A. Naseem, and William D. Brown, "Synthesis of poly silicon thin films on glass substrate using laser initiated metal induced crystallization of amorphous silicon for space and power applications," 19th Space Photovoltaic Research and Technology Conference, Ohio Aerospace Institute, NASA Glenn Research Center, Cleveland, Ohio, September 20-22, 2005.

**Abu-Safe, Husam H.**, M. Saad Abbasi, Hameed A. Naseem, William D. Brown, and Ram Kishore, "Synthesis of crystalline nanowires inside amorphous silicon thin films at low temperatures," 15th International Photovoltaic Science and Engineering Conference & Solar Energy Exhibition, Shanghai, China, October 10-15, 2005.

**Al-Barghouti, Marwan A.**, Husam H. Abu-Safe, Hameed A. Naseem, William D. Brown, Mowafak M. Al-Jassim, and Kim M. Jones, "Large grain poly-Si thin films by metal induced crystallization of a-Si:H," 31st IEEE Photovoltaic Specialists Conference, Orlando, Florida, January 3-7, 2005.

**Balda, J.**, and F. D. Barlow, ONR Thermal Management Project Review, Orlando (FL), October 27, 2005.

**Curry, C. S.** and W. Lee, "Synchronization and equalization in matched filter and DFT based OFDM systems," the 89th Arkansas Academy of Science Annual Meeting, Conway, Arkansas, April 8-9, 2005.

**Francis, M.**, B. Woods, H. A. Mantooth, L. Lemaitre, M. Vlach, "A Methodology for Rapid Development and Simulator Integrations of Compact Models," SRC TechCon, 4 pgs., Portland, OR, October 2005.

**Hossain, Maruf**, Husam Abu-Safe, Hameed Naseem, William D. Brown, Harry Meyer "Aluminum induced crystallization of sputtered hydrogenated amorphous silicon for economically viable thin film silicon solar cells", 31st IEEE Photovoltaic Specialists Conference, Orlando, Florida, January 3-7, 2005.

Ji, Taeksoo, "Design of Pentacene thin film transistors on flexible substrates" presented at SPIE Conference, San Diego, CA, March, 2005.

Ji, Taeksoo, "Design of a stacked array antenna system integrated with low temperature co-fired ceramics (LTCC)," presented at SPIE Conference, San Diego, CA, March, 2005..

Ji, Taeksoo, "Fabrication of three dimensional structures by microstereolithography for electromagnetic absorber applications," presented at SPIE Conference, San Diego, CA, March, 2005.

Ji, Taeksoo, "Wilkinson power divider for antenna distribution networks," presented at SPIE Conference, San Diego, CA, March, 2005.

Kishore, R., S. Hata, N. Kuwano, Y. Tomokiyo, **H. A. Naseem**, and W.D. Brown, "In-situ TEM Investigation of Aluminum Induced Crystallization of Sputtered Amorphous Silicon," Thirteenth International Workshop on the Physics of Semiconductor Devices Workshop, New Delhi, India, December 13-17, 2005.

Kishore, R., **A. S. Islam**, S. Goeke, Husam Abu-Safe, H. A. Naseem and W. D. Brown, "TEM investigation of Capping Layer Effect on Aluminum Induced Crystallization of Amorphous Silicon," Thirteenth International Workshop on the Physics of Semiconductor Devices Workshop, New Delhi, India, December 13-17, 2005.

Liao, E. B., A. A. O. Tay, **S. S. Ang**, H. H. Feng, R. Nagarajan, V. Kripesh, R. Kumar, and I. Mahadevan, "Compliance, Deformation and Thermal Fatigue Behavior of Multi-Copper-Column Interconnects", EPTC 2005, Singapore, December 7-9, 2005.

**Liu, Vincent H.**, Husam H. Abu-Safe, Hameed A. Naseem, and William D. Brown, "Fabrication of silicon nanowire network in aluminum thin films," MRS Meeting, San Francisco, CA, March 28-April 1, 2005.

Mantooth, H. A., "Modeling and Simulation of Mixed-Signal Circuits," IEEE Circuits and Systems Society Distinguished Lecture, Kuala Lumpur, Malaysia, September 2005.

McCann, R., "Analysis of an Interior Permanent Magnet Synchronous Motor with MEMS Based Rotor Flux Sensing," Annual Meeting of the IEEE Industry Applications Society, Hong Kong, October 2005.

McCann, R., "Analysis of an Interior Permanent Magnet Synchronous Motor with MEMS Based Rotor Flux Sensing," Annual Meeting of the IEEE Industry Applications Society, Hong Kong, October 2005.

**McCann R.**, and S. Damugatla, "Analysis of MEMS Based Rotor Flux Sensing in a Hybrid Reluctance Permanent Magnet Motor", 2005 IEEE Vehicle Power and Propulsion (VPP), Illinois Institute of Technology, Chicago, Illinois, Conference September 7-9, 2005.

**McCann R.**, and S. Nguyen, "A New Multisensor Network for Collision Avoidance and Jackknife Prevention of Articulated Vehicles using Lebesgue Sampling," 2005 IEEE Vehicle Power and Propulsion (VPP) Conference, Illinois Institute of Technology, Chicago, Illinois, September 7-9, 2005.

**McCann R.**, and A. Le, "Electric Motor Based Steering for Jackknife Avoidance in Large Trucks" 2005 IEEE Vehicle Power and Propulsion (VPP) Conference, Illinois Institute of Technology, Chicago, Illinois, September 7-9, 2005.

**McCann R.**, and A. Gunda, "Sliding Mode Observer for Real Time Diagnosis of an Interior Permanent Magnet Synchronous Motor," 2005 IEEE Vehicle Power and Propulsion (VPP) Conference, Illinois Institute of Technology, Chicago, Illinois, September 7-9, 2005.

**Polamreddy, S.**, R. Figueroa, S. Burkett, S. Spiesshoefer, L. Schaper, "Sloped Sidewall DRIE Process Development for Through Silicon Vias," Proceedings of the International Conference and Exhibition on Device Packaging, 2005.

**Raghuveer, R.**, Susan L. Burkett, Leonard W. Schaper, Richard K. Ulrich, "Decoupling Capacitors by Reactive Sputtering and Anodization Processes," IMAPS Advanced Technology Workshop on Integrated Passives, January 2005.

**Sabbarini, O. M.** and W. Lee, "Characteristics and estimation of direction-of-arrivals (DOAs) and direction-of-transmission (DOTs) in wireless communication systems," the 89th Arkansas Academy of Science Annual Meeting, Conway, Arkansas, April 8-9, 2005.

**Sepko, B. J.** and W. Lee, “Efficiency of transmit beamforming with closed-loop beam control in mobile wireless systems,” the 89th Arkansas Academy of Science Annual Meeting, Conway, Arkansas, April 8-9, 2005.

**Schaper, L.,** and R. K. Ulrich, “Electrical Performance Limitations of On-Package Decoupling Capacitors,” IMAPS Advanced Technology Workshop on Integrated Passives, January 2005.

Tomm, Jens W., Mark L. Biermann, B. S. Passmore, **M. O. Manasreh,** A. Gerhardt and Tran Q. Tien, “Spectroscopic analysis of external stresses in semiconductor quantum-well materials,” Materials Research Society, Vol. 829, 233-242, 2005.

**Ulrich, R.,** L. Schaper, and V. Joshi, “Decoupling Simulation for Embedded Capacitors,” IMAPS Advanced Technology Workshop on Integrated Passives, January 2005.

Varadan, V. V., “Periodicity and Negative Refractive Index”, IEEE AP/URSI, Washington DC, July 2005.

Varadan, V. V., “Homogenization Methods for Negative Index Media”, PIER Hangzhou, China, August 2005.

Varadan, V. V., “Homogenization Methods for Negative Index Media”, PIER Hangzhou, China, August 2005.

Varadan, V. V., “Resonant behavior of Omega Media at MW frequencies”, PIER Hangzhou, China, August 2005.

Varadan, V. V., “Determination of the Effective Permittivity and Permeability from Transmission and Reflection Measurements for Omega and Chiral Media”, Metamaterials Workshop, Zhejiang University, China, August 2005.

**Varadan, V. V.,** and S. Puligalla, “Negative Index Behavior and Brewster Angles for 3D Omega Media at MW and MM Frequencies”, URSI General Assembly, Delhi, India, October 2005.

**Varadan, V. V.,** and S. Penumarthy, “Negative Index and Reciprocal Behavior using Resonances of Omega Image Pairs”, URSI General Assembly, Delhi, India, October 2005.

Varadan, V. V., “Millimeter and Submillimeter Characterization of the Complex Permeability and Permittivity as a function of Temperature and Frequency using Free Space Methods”, URSI General Assembly, Delhi, India, October 2005.

Xie, J., “Aligned blank and metal encapsulated conducting polymer nanotubules”, Proceedings of SPIE - The International Society for Optical Engineering, Smart Structures and Materials 2005 - Smart Electronics, MEMS, BioMEMS, and Nanotechnology, San Diego, 2005.

Xie, J., “Functional carbon nanotube material-based enzyme biosensors for glucose sensing”, Proceedings of SPIE - The International Society for Optical Engineering, , Smart Structures and Materials 2005 - Smart Electronics, MEMS, BioMEMS, and Nanotechnology, San Diego, 2005.

Zhang, K. L., S. K. Chou, and **S. S. Ang,** “A wireless address circuitry for microthruster array applications,” PowerMEMS 2005, Tokyo, Japan, November 28-30, 2005.

Zhang, K. L., S. K. Chou, and **S. S. Ang**, “A solid propellant microthruster for micropropulsion applications,” Transducers 2005, Korea, June 2005.

Zhu, J., J. Yuan, and **S. S. Ang**, “Study on the polishing mechanism of ceramic for microsystem applications”, The 3rd International Conference on Leading Edge Manufacturing in the 21st Century, Nagoya, Japan, October 19-21, 2005.