Publications

I. Books

Ang, S. S., and Alejandro Oliva, "Power-Switching Converters, 3rd Edition" 619 pages, *Taylor & Francis*, November 2010.

J. Gardner, **V. K. Varadan,** and O. Awadelkarim, "Microsensors, MEMS and Smart Devices," (in Chinese), John Wiley, 2010.

Varadan, V. K., (Editor), "Nanosensors, Biosensors and Info-Tech Sensors and Systems," SPIE Publishing, Bellingham, Washington, 2010.

Varadan, V. K., S. Pillai D. Mukherji, M. Dwivedi and L. F. Chen, "Nanoscience and Technology in Engineering and Medicine," World Scientific Publishing, 2010.

II. Chapters

None

III. Refereed Articles

Ang, S.S., B. L. Rowden, J. C. Balda, H. A. Mantooth, "Packaging of High Temperature Power Semiconductor Module**",** *ECS Transactions - CSTIC 2010, Vol. 27, "Packaging and Assembly"*, March 2010.

Mustain, H. A., W. D. Brown, and **S. S. Ang**, "Transient Liquid Phase Die Attach for High-Temperature Silicon Carbide Devices," *IEEE Transaction on Component and Packaging Technologies*, vol. 33, no. 3, pg. 563-570, 2010

Zhang, K. L., **S. S. Ang**, and S.K. Chou, "Micro/Nano Functional Manufacturing," *Key Engineering Materials*, vol. 426-427, pg. 240-244, 2010.

El-Shenawee M., "Polarization Dependence of Plasmonic Nanotoroid Dimer Antenna," *IEEE Antennas and Wireless Propagation Letters*, vol. 9, pp. 463-466, 2010.

Hajihashemi, M.R. and **M. El-Shenawee**, "TE versus TM for the Shape Reconstruction of 2-D PEC Targets using the Level-Set Algorithm," *IEEE Trans. Geosci. & Rem. Sens*., vol. 48, no. 3, pp. 1159-1168, March 2010.

Hajihashemi, M.R and **M. El-Shenawee**, "The Level Set Shape Reconstruction Algorithm Applied to 2D PEC Targets Hidden Behind a Wall," *Progress In Electromagnetics Research* B, vol. 25, pp. 131–154, 2010.

Hajihashemi, M.R. and **M. El-Shenawee**, "High Performance Computing of the Level-Set Reconstruction Algorithm," *Journal of Parallel and Distributed Computing JPDC*, vol. 70, pp. 671-679, June 2010.

Hassan, A., and **M. El-Shenawee**, "Modeling Biopotential Signals and Current Densities of Multiple Breast Cancerous Cells," *IEEE Transactions on Biomedical Engineering*, vol. 57, no. 9, pp. 2099-2106, Sept. 2010.

Woten, D.A., M. R. Hajihashemi, A. M. Hassan and **M. El-Shenawee**, "Experimental Microwave Validation of the Level-Set Reconstruction Algorithm," *IEEE Transactions on Antennas and Propagation*, vol. 58, no. 1, pp. 230-233, Jan 2010.

Woten, D.A, M. R. Hajihashemi, A. M. Hassan and **M. El-Shenawee**, "Experimental Microwave Validation of the Level-Set Reconstruction Algorithm," *IEEE Transactions on Antennas and Propagation*, vol. 58, no. 1, pp. 230-233, Jan 2010

Jung, S., **T. Ji,** and V. K. Varadan, "Pentacene-based Low Voltage Strain Sensors with PVP/Ta2O5 Hybrid Gate Dielectrics," *IEEE Transactions on Electronic Devices,* Vol. 57, no. 2, Feb., 2010, pp. 391-396.

Mietze, C., E.A. DeCuir, Jr., **M.O. Manasreh**, K. Lischka, and D. J. As, "Inter- and Intrasubband Ppectroscopy of Cubic AlN/GaN Superlattices Grown by Molecular Beam Epitaxy on 3C-SiC," *Phys. Stat. Solid*. (c) **7**, 64–67 (2010).

Narsingi, K. Y., **M. O. Manasreh**, and B. D. Weaver, J. Appl. Phys. "Optical Absorption of Proton Irradiated Colloidal CdSe/ZnS Core/Shell Nanocrystals," *IEEE Transactions on Nuclear Science* 57, 2929-2932 (2010).

Wu, Jiang, Dali Shao, Vitaliy G. Dorogan, Alvason Z. Li, Shibin Li, Eric A. DeCuir, Jr., **M. Omar Manasreh**, Zhiming M. Wang, Yuriy I. Mazur, and Gregory J. Salamo, "Intersubband Infrared Photodetector with Strain-Free GaAs Quantum Dot Pairs Grown by High Temperature Droplet Epitaxy," *Nano Letters* **10**, 1512-1516, (2010).

Du, B., J. L. Hudgins, E. Santi, A. T. Bryant, P. R. Palmer, **H. A. Mantooth**, "Transient Electrothermal Simulation of Power Semiconductor Devices", *IEEE Trans. On Power Electronics,* vol. 25, no 1, pp. 237-248, Jan. 2010.

Kashyap, A. S., **H. A. Mantooth**, T. Vo, M. M. Mojarradi, "Compact Modeling of LDMOS Transistors for Extreme Environment Analog Circuit Design," *IEEE Trans. Electron Devices,* vol. 57, no. 6, pp. 1431-1439, June 2010.

Mudholkar, M., **H. A. Mantooth**, G. Niu and J. D. Cressler, "Direct Parameter Extraction of Base and Emitter Resistances for SiGE HBTs using DC Data Only", *Electro-Chemical Society Transactions*, vol. 33, issue 6, pp. 337-348, Oct. 2010.

Ulaganathan, C., N. Nambiar, K. Cornett, J. A. Yager, R. L. Greenwell, B. S. Prothro, K. Tham, S. Chen, R. S. Broughton, G. Fu, B. J. Blalock, C. L. Britton, M. N. Ericson, **H. A. Mantooth**, M. M. Mojarradi, R. W. Berger, "A SiGe BiCMOS Instrumentation Channel for Extreme Environment Applications," *VLSI Design*, vol. 2010, Article ID 156829, 12 pages, 2010

Mohammed, H. K., Husam Abu-Safe, Benjamin Newton, Samir El-Ghazaly, **Hameed A. Naseem**, "Fabrication of Horizontally Grown Silicon Nanowires using a Thin Aluminum Film as a Catalyst", *Thin Solid Films* 519(5) 1681–1686 (2010).

Smith, S. C., W. K. Al-Assadi, and J. Di, "Integrating Asynchronous Digital Design into the Computer Engineering Curriculum," *IEEE Transactions on Education*, Vol. 53/3, August 2010, pp. 349 – 357.

Li, B., H. Lin, **K. Sohraby**, C. Wang, "Future Internet Services and Applications," *IEEE Network Special Issue*, 24(4), July 2010.

Li, Y., **K. Sohraby**, "Spare Node Cooperative Method for IEEE 802.11 Networks," *Wireless Networks Journal* (WINET), 2010.

Li, Zhenhua, Jiang Wu, Zhiming M. Wang, Dongsheng Fan, Aqiang Guo, Shibing Li, **Shui-Qing Yu**, Omar Manasreh, and Gregory J. Salamo,"InGaAs Quantum Well Grown on High Index Surfaces for Superluminescent Diode Applications," *Nanoscale Research Letters* **5**, 1079-2084 (2010).

Chen, L., , J. Xie, K. R. Aatre, and **V. K. Varadan,** "Iron Oxide Magnetic Nanotubes and their Drug Loading and Release Capabilities", *Journal of Nanotechnology in Engineering and Medicine*, 1. pp. 011009-1, 011009-8, 2010.

Chen, L., J. Xie, J. Yancey, M. Srivastan and **V. K. Varadan**, "Biocompatibility and Delivery of NGF by Hematite Nanotubes for Differentiation of PC 12 Cells", *Journal of Nanotechnology in Engineering and Medicine*, 1. pp. 041014-1, 041014-8, 2010.

Ho, T., P. Rai, J. Xie, **V. K. Varadan** and J. A. Hestekin, "Stable Flexible Electrodes with Enzyme Cluster Decorated Carbon Nanotubes for Glucose-Driven Power Source in Bio-sensing Applications", *Journal of Nanotechnology in Engineering and Medicine*, 1, pp. 041013-1, 041013-7, 2010.

Kegley, L., and **V. K. Varadan**, "In-vivo Testing of Vertically Aligned Nanowire Implantable Titanium Electrodes in the Rattus Norvegicus Hippocampus", Inquiry, an *Undergraduate Student Journal*, vol. 11, pp. 70-74, 2010.

Lee, U., K. D. Song, Y. Park, **V. K. Varadan** and S. H. Choi, "Perspective in Nanoneural Electronic Implants with Wireless Power-feed and Sensory Control", *Journal of Nanotechnology in Engineering and Medicine*, 1. pp. 021007-1, 021007-13, 2010

Rai, P., T. Ho, J. Xie, J. A. Hestekin, and **V. K. Varadan**, "Glucose Driven Nanobiopower Cells for Biomedical Applications", *Journal of Nanotechnology in Engineering and Medicine*, 1. pp. 021009-1, 021009-8, 2010.

Ramachandran, V., H. Yoon and **V. K. Varadan**, "Potassium Ion Sensing with Nanowire Electrodes on a Flexible Substrate for Early Detection of Myocardial Ischemia", *Journal of Nanotechnology in Engineering and Medicine*, 1. pp. 011008-1, 011008-5, 2010.

Varadan, V. K., S. Oh, H. Kwon, and P. Hankins, "Wireless Point-of-Care Diagnosis for Sleep Disorder with Dry Nanowire Electrodes", *Journal of Nanotechnology in Engineering and Medicine*, 1. pp. 031012-1, 031012-14, 2010.

Yoon, H., D. C. Deshpande, T. H. Kim, E-K. Jeong, R. E. Harbaugh and **V. K. Varadan**, "Development of Titanium Needle Probes for Neural Recording and Evaluation of Magnetic Resonance Imaging Artifacts", *Journal of Nanotechnology in Engineering and Medicine*, 1. pp. 011004-1, 011004-8, 2010

Yoon, H., P. Hankins, S. Oh, R. E. Harbaugh and **V. K. Varadan**, "Heterostructured IrO2/Au Nanowire Eelctrode and Unit Recordings from Hippocampal Rat Brain", *Journal of Nanotechnology in Engineering and Medicine*, 1, pp. 021006-1, 021006-6, 2010.

Kim, I., and **V. V. Varadan**, " Electrically Small Isotropic Antenna using an Infinitesimally Small Dipole and a Split Ring Resonator" *IEEE Transactions Antennas & Propagation* , Vol. 58, pp. 3458-3463, 2010.

Wu, Song-Nan, Ding Ding, Shane R. Johnson, **Shui-Qing Yu**, and Yong-Hang Zhang, "Four-Junction Solar Cells Using Lattice-Matched II-VI and III-V Semiconductors*", Prog. Photovolt: Res. Appl*. 2010; 18:328-333.

IV. Unrefereed Publications and Proceedings

Barnes, B., J. Rios, A. Vasudevan, A. Manoharan, and **T. Ji,** "Organic Sensors using Carbon Nanotubes for Detecting Gases with the Wheatstone Bridge Design," *Proceedings of the 2nd Annual FEP Honors Research Symposium,* (2010): Best Paper in Material Track.

Kumar, M., S. Jung, and **T. Ji**, "Polymer Based Biosensors for Effective Detection of Cancer in Human Body," *Nanotech Conference*, Anaheim, CA (June 21-24, 2010).

Mantooth, H. A., and R. Dougal, "Center for GRid-Connected Advanced Power Electronic Systems – GRAPES," *IEEE Power Electronics Society Newsletter*, vol. 24, no. 1, pp. 29-31, 1st quarter, Feb. 2010.

Mantooth, H. A., "Smart Grid: Definition, Road Map and Breadth of this grand Challenge," Connected Planet, **http://connectedplanetonline.com/home/commentary/smGrt-grid-road-map-0105/**, Jan. 5, 2010.

Young, M., **Hameed Naseem**, "Low Cost Silicon Nanowire Core-Shell Plasmonic Solar Cells," Poster Presentations at the *Arkansas/NSF EPSCoR Kick-off Meeting*, Oct. 4, 2010.

Newton, B., **S.-Q. Yu,** Hameed Naseem, 'Fabricating Hybrid Nanomaterials", Poster Presentations at the *Arkansas/NSF EPSCoR Kick-off Meeting*, Oct. 4, 2010.