

Book

Sensors and Low Power Signal Processing, Springer, ISBN 978-0-387-79391-7.

Refereed Journal Articles

- [1] F.C. Jain, **S.K. Islam** and M. Gokhale, "Self-Aligned Metal-SiO₂-InP Based MISFETs Having Modulation-Doped Channel," *International Journal of Infrared and Millimeter Waves of Infrared and Millimeter Waves*, vol. 13, no. 10, pp. 1459-1469, 1992.
- [2] F.C. Jain, M. Gokhale, **S.K. Islam** and C. Chung, "Analysis of Self-Aligned MOS Gate MODFET Having Modulation-Doped Channel," *Solid State Electronics*, vol. 36, no. 11, pp. 1613-1618, 1993.
- [3] **S.K. Islam** and F.C. Jain, "Modeling of Parabolic Quantum Well Wire Channels for Modulation Doped Field-Effect Transistors," *Superlattices and Microstructures*, vol. 14, no. 1, pp. 1993.
- [4] **S.K. Islam** and F.C. Jain, "Parabolic Quantum Well Wire Channels for Modulation-Doped Field Effect Transistor Structures," *Mathematical Modelling and Scientific Computing*, vol. 4, 1994.
- [5] **S.K. Islam** and F.C. Jain, "Terahertz Quantum Interference Transistors (QUIT) Using One Dimensional MODFET-Type Electron Waveguides," *Superlattices and Microstructures*, vol. 17, no. 2, pp. 221-224, 1995.
- [6] **S.K. Islam** and F.C. Jain, "An Analytical Model For One-Dimensional Modulation-Doped Field Effect Transistor (1-D MODFET)," *Mathematical Modelling and Scientific Computing*, vol. 6, pp. 1042-1047, 1996.
- [7] **S.K. Islam** and F.C. Jain, "Analysis of Quantum Well Wire High Electron Mobility Transistor (HEMT) Structure," *Solid State Electronics*, vol. 39, no. 4, pp. 615-620, 1996.
- [8] E. Heller, **S.K. Islam**, G. Zhao and F.C. Jain, "Analysis of Quantum Wire MODFETs Employing Coupled-Well Channels," *Proc. SPIE*, vol. 3384, pp. 90-102, 1998.
- [9] E. Heller, **S.K. Islam**, G. Zhao and F.C. Jain, "High Performance ($f_T \sim 500$ GHz) In_{0.52}Al_{0.48}As/In_{0.53}Ga_{0.47}As/ InP Quantum Wire MODFETs Employing Asymmetric Coupled-Well Channels," *International Journal of Infrared and Millimeter Waves*, vol. 19, no. 8, August 9, pp. 1047-1058, 1998.
- [10] **S.K. Islam** and F.C. Jain, "10 Tera Hertz Operation in One-Dimensional Quantum Interference Transistors (1-D QUIT) Devices," *International Journal of Infrared and Millimeter Waves*, vol. 19, no. 12, pp. 1649-1659, 1998.
- [11] **S.K. Islam**, F.C. Jain, and G. Zhao, "Design and Analysis of InGaN-GaN Modulation-Doped Field Effect Transistors (MODFETs) for Over 60 GHz Operation," *International Journal of Infrared and Millimeter Waves*, vol. 19, no. 12, pp. 1633-1647, 1998.
- [12] E. Heller, **S.K. Islam**, G. Zhao and F.C. Jain, "Design and Analysis of In_{0.52}Al_{0.48}As/In_{0.53}Ga_{0.47}As/ InP Quantum Wire MODFETs Employing Coupled-Well Channels," *Solid State Electronics*, vol. 43, no. 5, pp. 901-914, 1999.
- [13] **S.K. Islam** and F.C. Jain, "Self-Aligned SiGe MOS-Gate FET with Modulation-Doped Quantum Wire Channel for Millimeter Wave Application," *International Journal of Infrared and Millimeter Waves*, vol. 21, no. 8, pp. 1169-1180, 2000.
- [14] **S.K. Islam** and F.C. Jain, "Design and Analysis of InGaN-GaN MODFETs for 90 GHz Operation," *International Journal of Infrared and Millimeter Waves*, vol. 22, no.10, pp. 1495-1501, 2001.
- [15] **S.K. Islam**, V. Srinivasan, and F.C. Jain, "An Analytical Three-Region Two-Dimensional Model for SiGe MOSFETs Operating at Millimeter Wave Frequencies," *International Journal of Infrared and Millimeter Waves*, vol. 22, no.12, pp. 1813-1824, 2001.
- [16] B. Ozpineci, L. Tolbert, **S.K. Islam** and M. Hasanuzzaman, "System Impact of SiC Power Devices", *International Journal of High Speed Electronics and Systems*, vol. 12, no. 2, pp. 439-448, 2002.
- [17] V. Srinivasan, **S.K. Islam**, and B. Blalock, "Minimizing Phase Noise Variation in CMOS Ring Oscillators", *Analog Integrated Circuits and Signal Processing*, vol. 34, pp. 259-263, 2003.
- [18] L. M. Tolbert, B. Ozpineci, **S. K. Islam**, and F. Z. Peng, "Impact of SiC Power Electronic Devices for Hybrid Electric Vehicles," *SAE 2002 Transactions, Journal of Passenger Cars: Electronic and Electrical Systems*, ISBN 0-7680-1291-0, pp. 765-771, 2003.
- [19] M. Hasanuzzaman, **S.K. Islam**, and L.M. Tolbert, "Effects of Temperature Variation (300°-600°K) in MOSFET Modeling in 6H Silicon Carbide," *Solid State Electronics*, vol. 48, no. 1, pp. 125-132, 2004.
- [20] M. Hasanuzzaman, **S.K. Islam**, L.M. Tolbert, and M.T. Alam, "Temperature Dependency of MOSFET Device Characteristics in 4H- and 6H-Silicon Carbide (SiC)," *Solid State Electronics*, vol. 48, no. 10-11, pp. 1877-1881, 2004.

- [21] L.R. Baylor, W.L. Gardner, X. Yang, R.J. Kasica, M.A. Guillorn, B. Blalock, H. Cui, D.K. Hensley, **S. Islam**, D.H. Lowndes, A.V. Melechko, V.I. Merkulov, D.C. Joy, P.D. Rack, M.L. Simpson, and D.K. Thomas, "Initial Lithography Results From the Digital Electrostatic e-beam Array Lithography Concept," *Journal of Vacuum Science & Technology B* 22, pp.3021-3024, 2004.
- [22] H.F. Huq, and **S.K. Islam**, "Effect of Temperature Variation On Characteristics of Microwave Power AlGaIn/GaN MODFET," *International Journal of Infrared and Millimeter Waves*, vol. 26, no. 11, pp. 1501-1512, 2005.
- [23] M. Hasanuzzaman, **S.K. Islam**, L.M. Tolbert, and B. Ozpineci, "Design, Modeling, Testing, and Parameter Extraction of DIMOS Transistors in 4H-Silicon Carbide," *International Journal of High Speed Electronics and Systems (IJHSES)*, vol. 16, no. 2, pp. 733-746, 2006.
- [24] M.A. Adeeb, H. Nguyen, **S.K. Islam**, and M. Zhang, "A Low-Power RF Integrated Circuit for Implantable Sensors," *Analog Integrated Circuits and Signal Processing*, vol. 47, pp 355-363, 2006.
- [25] **S.K. Islam**, C. Durisetty, R. Vijayaraghavan, B. J. Blalock, T. Grundman, L.R. Baylor and W.L. Gardner, "A Novel All-Inverter CMOS Based Dose Control Circuit for using Vertically Aligned Carbon Nanofibers in Maskless Lithography," *Journal of Vacuum Science and Technology B*, 24, no. 2, pp. 1026-1029, 2006.
- [26] C.S.A. Durisetty, R. Vijayaraghavan, L. Seshan, **S. K. Islam**, B.J. Blalock, "Dose Control Circuit for Digital Electrostatic Electron-Beam Lithography," *Analog Integrated Circuits and Signal Processing*, vol. 48, no. 2, pp. 143-150, 2006.
- [27] H. Huq and **S.K. Islam**, "AlGaIn/GaN Self-Aligned MODFET with Metal Oxide Gate for Millimeter Wave Application," *Microelectronics Journal*, vol. 37, pp. 579-582, 2006.
- [28] A. Balijepalli, R. Vijayaraghavan, J. Ervin, J. Yang, **S. K Islam**, and T.J. Thornton, "Large Signal Modeling of SOI MESFETs," *Solid State Electronics*, vol. 50, pp. 943-950, 2006.
- [29] M.T. Alam, and **S.K. Islam**, "A Modified Model for Si/SiGe MOS-Gate Delta-Doped HEMTs," *Microelectronics Journal*, vol. 37, pp. 938-942, 2006.
- [30] **S. K. Islam**, R. Vijayaraghavan, M. Zhang, S. Ripp, S. Caylor, B. Weathers, S. Moser, S.C. Terry, B.J. Blalock, and G.S. Sayler, "Integrated Circuit Biosensors Using Living Whole-Cell Bioreporters for Environmental Monitoring," *IEEE Transactions on Circuits and Systems I*, , vol. 54, no. 1, pp. 89-98, 2007.
- [31] R. Vijayaraghavan, **S. K. Islam**, M. Zhang, S. Ripp, S. Caylor, Nora D. Bull, S. Moser, S.C. Terry, B.J. Blalock, and G.S. Sayler, "A Bioluminescent Bioreporter Integrated Circuit for Very Low-Level Chemical Sensing in Both Gas and Liquid Environments," *Sensors and Actuators B*, 123, pp. 922-928, 2007.
- [32] T. Rahman, **S.K. Islam**, R. Vijayaraghavan, T. Grundman, S.A. Eliza, A.B.M. I. Hossain, B. Blalock, L.R. Baylor, T.S. Bigelow, M.N. Ericson, W.L. Gardner, J.A. Moore, and S.J. Randolph, "Integration Of a Dose Control Circuit with a Vertically Aligned Carbon Nanofiber Field Emission Device," *Journal of Vacuum Science and Technology B*, 25, no. 2, pp. 655-660, 2007.
- [33] M. Zhang, M.R. Haider, M.A. Huque, M.A. Adeeb, S. Rahman, and **S. K. Islam**, "A Low Power Sensor Signal Processing Circuit for Implantable Biosensor Applications," *Smart Materials and Structures*, vol.16, pp. 525-530, 2007.
- [34] M. R. Haider, **S.K. Islam**, and M. Zhang, "A Low-Power Signal Processing Unit for *in vivo* Monitoring and Transmission of Sensor Signals," *Sensors & Transducers Journal (ISSN 1726- 5479)*, vol.84, no. 10, pp. 1625-1632, 2007. (*Top 10 best articles published in 2007, top 25 most downloaded articles in March 2008*)
- [35] M. Zhang, **S.K. Islam**, and M. R. Haider, "A Fast Programmable Frequency Divider with a Wide Dividing-Ratio Range and 50% Duty-Cycle," *IEICE Electronic Express (ELEX)*, vol. 4, no. 21, pp. 672-678, 2007.
- [36] **S.K. Islam** and H.F. Huq, "Improved temperature model of AlGaIn/GaN HEMT and device characteristics at variant temperature," *International Journal of Electronics*, vol. 94, no. 12, pp. 1099-1108, 2007.
- [37] M. Zhang, **S.K. Islam**, and M.R. Haider, "Efficient Driving-Capability Programmable Frequency Divider with a Wide Division Ratio Range," *IET Circuits, Devices, & Systems*, vol. 1, no. 6, pp. 485-493, 2007.
- [38] S.A. Eliza, I. Lee, **S.K. Islam**, and E. Greenbaum, "Cantilever Embedded MOSFET Characteristics for Detection of Photosystem I Reaction Center," *Sensors & Transducers Journal (ISSN 1726- 5479)*, vol. 91, no. 4, pp. 24-30, 2008.
- [39] Martha L. Weeks, Touhidur Rahman, Paul D. Frymier, **Syed K. Islam** and Timothy E. McKnight, "A Reagentless Enzymatic Amperometric Biosensor Using Vertically Aligned Carbon NanoFibers

- (VACNF),” *Sensors and Actuators B*, 133, pp. 53-59, 2008.
- [40] Touhidur Rahman, Mohammad. A. Huque and **S.K. Islam**, “An Efficient Numerical Method of DC Modeling for Power MOSFET, MEFFET and AlGaN/GaN HEMT,” *International Journal of High Speed Electronics and Systems (IJHSES)*, vol. 18, no. 4, pp. 825-840, 2008.
- [41] M.A. Huque, S.A. Eliza, T. Rahman, H.F. Huq and **S.K. Islam**, “Temperature Dependent Analytical Model for Current-Voltage Characteristics of AlGaN/GaN Power HEMT,” *Solid State Electronics*, vol. 53, pp. 341-348, 2009.
- [42] R. Vijayaraghavan, **S.K. Islam**, M.R. Haider and L. Zuo, “Wideband Injection-Locked Frequency Divider based on a Process and Temperature Compensated Ring Oscillator,” *IET Circuits, Devices, & Systems*, vol. 3, no. 5, pp. 259-267, 2009.
- [43] W. Qu, **S. K. Islam**, M.R. Mahfouz, M.R. Haider, G. To and S. Mostafa, “Micro-Cantilever Array Pressure Measurement System for Biomedical Instrumentation,” *IEEE Sensors Journal*, vol. 10, no. 2, pp. 321-330, 2010.
- [44] M.R. Haider, **S. K. Islam**, S. Mostafa, M. Zhang, and T. Oh, “Low-Power Low-Voltage Current Read-Out Circuit for Inductively-Powered Implant System,” *IEEE Transactions on Biomedical Circuits and Systems*, vol. 4, no. 4, pp. 205-213, 2010.
- [45] M. Zhang, Mohammad R. Haider, **Syed Kamrul Islam**, Rajagopal Vijayaraghavan and Ashraf B. Islam, “A Low-Voltage Low-Power Programmable Fractional PLL in 0.18 micron CMOS Process,” *Analog Integrated Circuits and Signal Processing*, vol. 65, no. 1, pp. 33-42, 2010.
- [46] M.A. Huque, L.M. Tolbert, B.J. Blalock, and S.K. Islam, “Silicon-on-insulator-based high-voltage, high-temperature integrated circuit gate driver for silicon carbide-based power field effect transistors,” *IET Power Electronics*, vol. 3, no. 6, pp. 1001–1009, 2010.
- [47] M.R. Haider, **S.K. Islam** and M.R. Mahfouz, “Power-Efficient Injection-Locked Oscillator for Biomedical Telemetry Applications,” *Electronics Letters*, vol. 46, no.18, pp. 1252-1254, 2010.
- [48] Salwa Mostafa, Ida Lee, **Syed K. Islam**, Sazia A. Eliza, Gajendra Shekhawat, Vinayak P. Dravid and Fahmida S. Tulip, “Integrated MOSFET-Embedded Cantilever Based Biosensor Characteristic for Detection of Anthrax Simulant,” *IEEE Electron Device Letters*, vol. 32, no. 2, pp. 408-410, 2011.
- [49] S.A. Eliza, **S. K. Islam**, T. Rahman, N. D. Bull, B. Blalock, L. R. Baylor, M. N. Ericson, and W. L. Gardner, “A Dose Control Circuit for Maskless E-Beam Lithography with Massively Parallel Vertically Aligned Carbon Nanofibers,” *IEEE Transaction on Instrumentation and Measurement*, vol. 60, no. 4, pp. 1132-1140, 2011
- [50] M.R. Haider, **S.K. Islam** and M.R. Mahfouz, “A Low-Voltage Low-Power Injection-Locked Oscillator for Wearable Health Monitoring Systems,” *Analog Integrated Circuits and Signal Processing*, vol. 66, no. 2, pp. 145-154, 2011.
- [51] S. A. Eliza, I. Lee, F. S. Tulip, S. Mostafa, E. Greenbaum, M. N. Ericson, and **S. K. Islam**, “Isolated Photosystem I Reaction Centers on a Functionalized Gated High Electron Mobility Transistor,” *IEEE Transactions on NanoBioscience*, vol. 10, no. 3, pp. 201-208, 2011.
- [52] A. B. Islam, F. S. Tulip, **S. K. Islam**, T. Rahman, K. C. MacArthur, “Mediator Free Amperometric Bionzymatic Glucose Biosensor Using Vertically Aligned Carbon Nanofibers (VACNF)”, *IEEE Sensors Journal*, vol. 11, no. 11, pp. 2798-2804, 2011.(Invited Paper)
- [53] Mohammad R. Haider, Jeremy Holleman, Salwa Mostafa and **Syed.K. Islam**, “Low-Power Biomedical Signal Monitoring System for Implantable Sensor Applications,” *International Journal of High Speed Electronics and Systems (IJHSES)*, Vol. 20, No. 1, pp. 115-128, 2011.
- [54] Liang Zuo, Robert Greenwell, **Syed K. Islam**, M. A. Huque, Benjamin J. Blalock and Leon M. Tolbert, “A Universal SOI-Based High Temperature Gate Driver Integrated Circuit For SiC Power Switches With On-Chip Short Circuit Protection”, *International Journal of High Speed Electronics and Systems (IJHSES)*, Vol. 20, No. 3, pp. 471-484, 2011.
- [55] M.A. Adeeb, A.B. Islam, M.R. Haider, F.S. Tulip, M.N. Ericson and **S.K. Islam**, “An Inductive Link Based Wireless Power Transfer System for Biomedical Applications,” Volume 2012, Article ID 879294, *Active and Passive Components*.
- [56] M. A. Huque, **S.K. Islam**, L.M. Tolbert and B.J. Blalock, “A 200°C Universal Gate Driver Integrated Circuit for Extreme Environment Applications,” *IEEE Transactions on Power Electronics*, Vol. 27, No. 9, Vol. 27, pp. 4153-4162, 2012.
- [57] Chiahung Su, **S.K. Islam**, Kai Zhu and Liang Zuo, “A High-Temperature, High-Voltage, Fast Response Linear Voltage Regulator,” *Analog Integrated Circuits and Signal Processing*, Vol. 72, pp. 405–417, 2012.

- [57] Kai Zhu, **Syed K. Islam**, Mohammad R. Haider, Melika Roknsharifi and Jeremy Holleman, "Simple Oscillators-Based Readout Circuit for Low-Power Biomedical Implant System," *Analog Integrated Circuits and Signal Processing*, Vol. 72, pp. 383–393, 2012.
- [58] M. Roknsharifi, **S.K. Islam**, and K. Zhu, "Wide-Range, High-Accuracy Signal-Processing Unit for Implantable Potentiostats", *Electronics Letters*, Volume 48, Issue 18, p. 1098-1100, 2012.
- [59] Robert A. Croce Jr., SanthiSagar Vaddiraju, Jun Kondo, Yan Wang, Liang Zuo, Kai Zhu, **Syed K. Islam**, Diane Burgess, Fotios Papadimitrakopoulos and Faquir C. Jain, "A Miniaturized Transcutaneous System for Continuous Glucose Monitoring", *Biomedical Microdevices*, Vol. 15, pp. 151–160, 2013.
- [60] Rajagopal Vijayaraghavan, Kai Zhu, **Syed K. Islam**, "A 2.4-GHz Frequency Synthesizer Based On Process and Temperature Compensated Ring ILFD," *Analog Integrated Circuits and Signal Processing*, Vol. 74, pp. 163–173, 2013.
- [61] Fahmida S. Tulip, Edward Eteshola, Suchita Desai, Salwa Mostafa, S. Roopa, and **Syed K. Islam**, "Detection of Transplant Rejection Chemokine Protein Biomarker in Physiological Salt Concentration", c Accepted for publication in *IEEE Sensors Journal*.
- [62] Ashraf B. Islam, **Syed K. Islam**, and Fahmida S. Tulip, "Design and Optimization of Printed Circuit Board Inductors for Wireless Power Transfer System," accepted for publication in *Journal of Circuits and Systems*.
- [63] Liang Zuo and **S.K. Islam**, "Low-Voltage Bulk-Driven Operational Amplifier with Improved Transconductance," accepted for publication in *IEEE Transactions on Circuits and Systems I*.
- [64] Kai Zhu, Syed Islam, Melika Roknsharifi, Md. Sakib Hasan and Ifana Mahbub, "A Divide-by-3 0.4-1.4 GHz Injection-Locked Frequency Divider Based on Relaxation Oscillator," accepted for publication in *IEEE Microwave and Wireless Component Letters*.

Contribution to Edited Volumes

- [1] B. Ozpineci, L. Tolbert, **S.K. Islam** and M. Hasanuzzaman, "System Impact of SiC Power Devices", *Frontiers in Electronics- Selected Topics in Electronics and Systems*, Volume 26, World Scientific, 2006, pp.233-242, ISBN 981-238-222-4
- [2] M. Hasanuzzaman, **S.K. Islam**, L.M. Tolbert, and B. Ozpineci "Design, Modeling, Testing, and Parameter Extraction of DIMOS Transistors in 4H-Silicon Carbide", *Frontiers in Electronics- Selected Topics in Electronics and Systems*, Volume 41, World Scientific, 2006, pp. 733-746, ISBN 981-256- 84-0
- [3] S. Ripp, J. L. Garland, B. J. Blalock, **S. K. Islam**, and G. S. Saylor. 2005. " Bioluminescent bioreporter integrated circuit sensing of the chemical and biological spacecraft environment", p. 433-436. A. Tsuji, M. Matsumoto, M. Maeda, L. J. Kricka, and P. E. Stanley (ed.), *Bioluminescence and Chemiluminescence Progress and Perspectives*. World Scientific, Hackensack, New Jersey.
- [4] Hasina F. Huq, and **Syed K. Islam**, "Analytical model, simulation, and parameter extraction of AlGaIn/GaN HEMT for microwave circuit applications", *Gallium Nitride Materials and Devices II*, Editors: Hadis Morkoc and Cole W. Litton, SPIE™ digital library Vol. 6473, ISBN 9780819465863; 64731N, Feb. 8, 2007
- [5] Touhidur Rahman, Mohammad. A. Huque and **S.K. Islam**, "An Efficient Numerical Method of DC Modeling for Power MOSFET, MEFFET and AlGaIn/GaN HEMT", *Frontiers in Electronics: Selected Topics in Electronics and Systems - Vol. 50: Edited by: Sorin Cristoloveanu and Michael Shur*, ISBN: 978-981-4273-01-5
- [6] M. R. Haider, J. Holleman, S. Mostafa and **S.K. Islam**, "Low-Power Biomedical Signal Monitoring System for Implantable Sensor Applications" *Frontiers in Electronics: Selected Topics in Electronics and Systems - Vol. 52: Edited by: Sorin Cristoloveanu and Michael Shur*, ISBN: 978-981-4383-71-4
- [7] **Syed K. Islam**, Fahmida Shaheen Tulip, Kai Zhu and Melika Roknsharifi "Low-Power Electronics for Biomedical Sensors", *Integrated Circuits for Analog Signal Processing*, Editor: Esteban Tlelo Cuautle, Springer, ISBN 978-1-4614-1382-0, July 2012.

Magazine Articles

- [1] "Computer Based Exercise: Therapeutic Program to Prevent Childhood Obesity"- H.F. Huq, **S.K. Islam** and M. Ferdjallah- *Osmani Medical Teachers Association Journal*, vol. 2, no. 2, 2003.
- [2] "Biosensors Using Genetically Engineered Whole-Cell Bioreporters on Integrated Circuits"- **S.K. Islam**,

Papers in Refereed Conference Proceedings

- [1] F.C. Jain, **S.K. Islam**, M. Gokhale, and E. Donkor, "Self-Aligned Metal-SiO₂-InP Based MISFETs Having Modulation-Doped Channel," *16th International Conference on Infrared and Millimeter Waves*, August 1991 (Lausanne, Switzerland).
- [2] F.C. Jain, **S.K. Islam**, M. Gokhale and C. Chung, "Novel FETs Combining Self-Aligned MOS Gates With Modulation Doped Channels Using SiGe Strained Layers," *1991 Intl. Semiconductor Device Research Symposium*, Dec. 4, 1991 (Charlottesville, VA).
- [3] **S.K. Islam**, F.C. Jain and C-L Chung, "Modeling of a Quantum Well Wire (QWW) Structure Using a Novel Two-Dimensional Modal Approach," *International Electron Device and Materials Symposium*, pp. 363-366, November 1-4, 1992 (Taipei, Taiwan).
- [4] M. Gokhale, F.C. Jain and **S.K. Islam**, "Enhanced Performance of PMOS and CMOS Circuits Using Self-Aligned MOSFETs with Modulation Doped Si-Ge Channel," *Tenth Biennial University Government Industry Microelectronics Symposium*, pp. 219-222, May 18-19, 1993 (Research Triangle Park, NC).
- [5] **S.K. Islam** and F.C. Jain, "Parabolic Quantum Well Wire Channels for Modulation -Doped Field Effect Transistor (MODFET) Structures," *Ninth International Conference on Mathematical Modelling and Scientific Computing*, July 26-29, 1993 (Berkeley, CA).
- [6] **S.K. Islam** and F.C. Jain, "Modulation-Doped Field-Effect Transistor (MODFET) Structures Using Quantum Well Wire (QWW) High Electron Mobility Channel," *1993 International Conference on Luminescence*, August 9-13, 1993 (Storrs, CT).
- [7] **S.K. Islam** and F.C. Jain, "TeraHertz Quantum Interference Transistors Using One-Dimensional MODFET-Type Electron Waveguides," *IEEE Princeton/Central Jersey Sarnoff Symposium*, April 22, 1994 (David Sarnoff Research Center, Princeton, NJ).
- [8] **S.K. Islam** and F.C. Jain, "An Analytical Model for One-Dimensional Modulation-Doped Field Effect Transistor (1-D MODFET)," *Tenth International Conference on Mathematical Modelling and Scientific Computing*, July 5, 1995 (Boston, MA).
- [9] **S.K. Islam** and F.C. Jain, "Modeling of InGaN-GaN-GaN Modulation-Doped Field-Effect Transistors (MODFETs) for 60 GHz Operation," *22nd International Conference On Infrared and Millimeter Waves*, July 20-25, 1997 (Wintergreen, VA).
- [10] E.K. Heller, F.C. Jain, and **S.K. Islam**, "Enhanced Performance Quantum Wire MODFET Employing Coupled Well Channels," (*Invited Paper*) *SPIE's International Symposium on Aerospace/Defense Sensing, Simulation, and Controls*, April 13-17, 1998 (Orlando, FL).
- [11] B. Ozpineci, L. M. Tolbert, **S. K. Islam**, and M. Hasanuzzaman, "Effects of Silicon Carbide (SiC) Power Devices on HEV PWM Inverter Losses," *27 Annual Conference of the IEEE Industrial Electronics Society (IECON'01)*, November 29 -December 2, 2001 (Denver, Colorado).
- [12] B. Ozpineci, L. Tolbert, **S.K. Islam** and M. Hasanuzzaman, "System Impact of SiC Power Devices," *Advanced Workshop on 'Frontiers in Electronics' (WOFE)*, January 6-January 11, 2002 (St. Croix, Virgin Islands, USA).
- [13] V. Srinivasan, and **S.K. Islam**, "A Method for Estimation of Aperture Uncertainty in A-D Converters," *IEEE International Symposium on Circuits and Systems (ISCAS 2002)* , May 26-29, 2002 (Scottsdale, Arizona).
- [14] L.M. Tolbert, B. Ozpineci, **S. K. Islam**, and F.Z. Peng, "Impact of SiC Power Electronic Devices for Hybrid Electric Vehicles," *2002 Future Car Congress*, June 3-5, 2002 (Arlington, VA).
- [15] B. Ozpineci, L. M. Tolbert, **S. K. Islam**, and F.Z. Peng, "Testing, Characterization, and Modeling of SiC Diodes for Transportation Applications," *33rd Power Electronics Specialists Conference*, June 23-27, 2002 (Cairns, Australia).
- [16] H. Rahman, and **S.K. Islam**, "Fully Differential High-Speed Current-Mode Controlled Dividers Designed Using Modular Approach," *45th International Midwest Symposium on Circuits and Systems*, August 4-7, 2002 (Tulsa, Oklahoma).
- [17] B. Ozpineci, L.M. Tolbert, **S. K. Islam**, and T.J. Theiss, "Parametric SiC Power Device Study for HEV Traction Drives," *2002 IEEE 56th Vehicular Technology Conference -VTC2002*, September 24-29, 2002 (Vancouver, British Columbia, Canada).
- [18] B. Ozpineci, L.M. Tolbert, **S. K. Islam**, and M. Hasanuzzaman, "A Parametric Device Study for SiC Power Electronics," *IEEE Industry Application Society (IAS) Annual Meeting*, October 13-18, 2002

- (Pittsburgh, Pennsylvania).
- [19] B. Ozpineci, L.M. Tolbert, and **S. K. Islam**, "Silicon Carbide Power Device Characterization for HEVs," *IEEE Workshop on Power Electronics in Transportation*, October 24-25, 2002 (Auburn Hills, Michigan).
- [20] M. Hasanuzzaman, **S.K. Islam**, and L.M. Tolbert, "Model Simulations and Verifications of a Vertical Double Implanted (DIMOS) Transistor in 4H-Silicon Carbide," *IASTED International Conference on Power and Energy Systems (PES 2003)*, February 24-26, 2003 (Palm Springs, California).
- [21] A. Gothandaraman, and **S.K. Islam**, "An All - Digital Frequency Locked Loop (ADFLL) with a Pulse Output Direct Digital Frequency Synthesizer (DDFS) and an Adaptive Phase Estimator," *2003 Radio Frequency Integrated Circuits Symposium*, June 8-10, 2003 (Philadelphia, Pennsylvania).
- [22] B. Ozpineci, L.M. Tolbert, **S. K. Islam**, and M. Chinthavali "Comparison of Wide Bandgap Semiconductors for Power Applications," *EPE 2003*, ISBN 90-75815-07-7, September 2003 (Toulouse, France).
- [23] B. Ozpineci, L.M. Tolbert, and **S. K. Islam**, "System Level Benefits of Silicon Carbide Power Devices in DC-DC Converters", *EPE 2003*, ISBN 90-75815-07-7, September 2003 (Toulouse, France).
- [24] M. Hasanuzzaman, **S.K. Islam**, and M.T. Alam, "Temperature Dependency of MOSFET Device Characteristics in 4H- and 6H-Silicon Carbide (SiC)", *2003 International Semiconductor Device Research Symposium*, pp. 132-133, December 10-12 (Washington, DC).
- [25] Zhiyu Hu, Nazmul Islam, Mohmmad T. Alam, **Syed Islam**, Thomas G. Thundat, "Multi-Channel Piezoresistive Micromechanical Sensor Readout System", *MRS 2004 Spring Meeting*, April 12-16, 2004 (San Francisco, CA).
- [26] H. Huq, **S.K. Islam**, and M. Ferdjallah "Wireless 3D Integrated Accelerometer for Biofeedback Game-Based Exercise for Children with Obesity," *MPRG 14th Annual Wireless Symposium*, June 9-11, 2004 (Blacksburg, Virginia).
- [27] N. Islam, M. Zhang and **S.K. Islam**, "Transmitting Data From Bioluminescent Bioreporter Integrated Circuits (BBIC) Using Wireless Media," *MPRG 14th Annual Wireless Symposium*, June 9-11, 2004 (Blacksburg, Virginia).
- [28] S. C. Terry, S. Chen, B. J. Blalock, J. R. Jackson, B. M. Dufrene, M. M. Mojarradi, **S. K. Islam**, and M. N. Ericson, "Temperature Compensated Reference Circuits for SOI," *IEEE SOI Conference*, pp. 112 - 114, October 4-7, 2004 (Charleston, South Carolina).
- [29] M. Hasanuzzaman, **S.K. Islam**, L.M. Tolbert, and B. Ozpineci, "Design, Modeling, Testing, and Parameter Extraction of DIMOS Transistors in 4H-Silicon Carbide," *Advanced Workshop on 'Frontiers in Electronics' (WOFE)*, December 17-22, 2004 (Palm Beach, Aruba).
- [30] M. Hasanuzzaman, **S.K. Islam**, and L.M. Tolbert, "Design, Modeling, , and Characterization of Power MOSFETs in 4H-SiC for Extreme Environment Applications," *Government Microcircuit Applications and Critical Technology Conference (GOMAC Tech)*, April 4-7, 2005 (Las Vegas, Nevada).
- [31] Z. Hu, D. Yi, N. Islam, M. Alam, **S. Islam**, A. Choudhury and T. Thundat, "Miniature Multi-Channel High-sensitivity Implantable MEMS Pressure Sensor and CMOS Readout System", *207th Meeting of The Electrochemical Society*, May 15-20, 2005 (Quebec City, Quebec, Canada).
- [32] L. R. Baylor, W. L. Gardner, X. Yang, R.J. Kasica, B. Blalock, C. Durisety, J. Fowlkes, D. K. Hensley, **S. Islam**, D. C. Joy, A. V. Melechko, P. D. Rack, S.J. Randolph, D.K. Thomas, and M. L. Simpson, "Progress Toward Full Implementation of the Digital Electrostatic E-beam Array Lithography (DEAL) Concept," *Forty-Ninth International Conference on Electron, Ion and Photon Beam Technology and Nanofabrication*, May 31-June 3, 2005 (Orlando, Florida).
- [33] Zhiyu Hu, Dechang Yi, Nazmul Islam, Mohmmad T. Alam, **Syed Islam**, Arnab Choudhury, Wenchao Qu and Thomas Thundat, "Integrated Multi-Channel MEMS Sensor and CMOS Readout System," *SPM Sensors and Nanostructures Conference*, June 4-8, 2005 (Cancun, Mexico).
- [34] L. R. Baylor, W. L. Gardner, X. Yang, R.J. Kasica, B. Blalock, C. Durisety, J. Fowlkes, D. K. Hensley, **S. Islam**, D. C. Joy, A. V. Melechko, P. D. Rack, S.J. Randolph, R. Rucker, D.K. Thomas, and M. L. Simpson, "Progress Toward Full Implementation of the Digital Electrostatic E-beam Array Lithography (DEAL) Concept," *18th International Vacuum Nanoelectronics Conference (IVNC 2005)*, 10-14 July 2005 (Oxford, UK).
- [35] **S.K. Islam**, C. Durisety, R. Vijayaraghavan, H. Nguyen, B. Blalock, L.R. Baylor and W.L. Gardner, "A Novel All-Inverter CMOS Based Dose Control Circuit for using Vertically Aligned Carbon NanoFibers in Maskless Lithography," *18th International Vacuum Nanoelectronics Conference (IVNC 2005)*, 10-14 July 2005 (Oxford, UK).

- [36] H.F. Huq, and **S.K. Islam**, "Self-Aligned AlGaIn/GaN MODFET With Liquid Phase Deposited Oxide Gate For Microwave Power Applications," *2005 Midwest Symposium on Circuits and Systems (MWSCAS)*, August 7-10, 2005 (Cincinnati, Ohio).
- [37] R. Vijayaraghavan, V. Srinivasan, **S.K. Islam**, and B.J. Blalock, "A Novel Programmable Frequency Divider Based on Analog Counter," *2005 Midwest Symposium on Circuits and Systems (MWSCAS)*, August 7-10, 2005 (Cincinnati, Ohio).
- [38] M. Zhang, R. Vijayaraghavan, M.A. Adeeb, and **S.K. Islam**, "A Low Power CMOS Integrated Circuit For Implantable Sensor," *2005 Midwest Symposium on Circuits and Systems (MWSCAS)*, August 7-10, 2005 (Cincinnati, Ohio).
- [39] **S.K. Islam**, B. Weathers, S.C. Terry, M. Zhang, B. Blalock, S. Caylor, S. Ripp, and G.S. Saylor, "Genetically-Engineered Whole-Cell Bioreporters on Integrated Circuits for Very Low-Level Chemical Sensing," *2005 European Solid-State Device Research Conference (ESSDERC)*, September 12-16, 2005 (Grenoble, France).
- [40] Z. Hu, W. Qu, N. Islam, **S. Islam** and T. Thundat, "High Sensitivity Multi-Channel Piezoresistive Cantilever CMOS Readout System," *Electrochemical Society 208th Meeting*, October 16-21, 2005 (Los Angeles, California).
- [41] A. Balijepalli, R. Vijayaraghavan, J. Ervin, J. Yang, **S.K. Islam** and T.J. Thronton, "Large-Signal Modeling of SOI MESFETs," *2005 International Semiconductor Device Research Symposium (ISDRS)*, December 7-9, 2005 (Bethesda, Maryland).
- [42] M. Hasanuzzaman, **S.K. Islam** and M.T. Alam, "Parameter Extraction and SPICE Model Development for 4H-Silicon Carbide (SiC) Power MOSFET," *2005 International Semiconductor Device Research Symposium (ISDRS)*, December 7-9, 2005 (Bethesda, Maryland).
- [43] M. T. Alam, T. Rahman, and **S.K. Islam**, "Analytical Modeling and Simulation of V_{th} and V_{tl} of Delta-Doped MOS-Gate Si/SiGe HEMT," *2005 International Semiconductor Device Research Symposium (ISDRS)*, Bethesda, MD, December 7-9, 2005 (Bethesda, Maryland).
- [44] H.F. Huq, M. T. Alam, and **S.K. Islam**, "Analysis of Temperature Model on Device Characteristics for lGaIn/GaN MODFET for High Power Electronics," *2005 International Semiconductor Device Research Symposium (ISDRS)*, December 7-9, 2005 (Bethesda, Maryland)..
- [45] S. Ripp, S. Moser, J. Brigati, B. Weathers, S. Caylor, B. Blalock, **S. Islam**, and Gary S. Saylor, "Bioluminescent Bioreporter Integrated Circuit (BBIC) Sensors," *ASM BioMicroNano Conference*, January 15-18, 2006 (San Francisco, California).
- [46] S. Ripp, S. Moser, B. Weathers, S. Caylor, J. Brigati, B. Blalock, **S. Islam**, and Gary S. Saylor, "Bioluminescent Bioreporter Integrated Circuit (BBIC) Sensing of the Chemical and Biological Environment," *ASM Biodefense Conference*, February 15-18 2006 (Washington DC).
- [47] S. Ripp, S. Moser, B. Weathers, B. Blalock, **S. Islam**, and G. S. Saylor, "Bioluminescent Bioreporter Integrated Circuit (BBICs)", *Biosensors 2006*, May 10-12, 2006 (Toronto, Ontario, Canada).
- [48] H.F. Huq, **S.K. Islam**, and L.M. Tolbert, "AlGaIn/GaN MODFET Device for High Temperature Applications," *IMAPS International Conference and Exhibition on High Temperature Electronics (HiTEC 2006)*, May 15-18, 2006 (Santa Fe, New Mexico).
- [49] S.J. Randolph, L.R. Baylor, W.L. Gardner, K.L. Klein, R. Vijayaraghavan, T. Grundman, S. Eliza, T. Rahman, **S. Islam**, D. Joy, P.D. Rack, T. Bigelow, M.N. Ericson, J.A. Moore, C.L. Britton, D.K. Hensley, R.J. Kasica, Y. Guan, H.M. Meyer III, J.B. Coughman, M.L. Guillorn, and R. B. Rucker, "Design Improvement and Performance Enhancements of the Digital Electrostatic E-Beam Array Lithography (DEAL) Prototype," *50th International Conference on Electron, Ion and Photon Beam Technology and Nanofabrication*, May 30-June 2, 2006 (Baltimore, Maryland).
- [50] S.J. Randolph, L.R. Baylor, K.L. Klein, W.L. Gardner, R.J. Kasica, M.A. Guillorn, D.K. Hensley, H.M. Meyer III, **S. Islam**, P.D. Rack, R. Rucker, T. Rahman, T. Grundman, T. Bigelow, S.A. Eliza, R. Vijayar, J.A. Moore, M.L. Simpson, and M.N. Ericson, "New Strategies for Improvement and Implementation of the Digital Electrostatic E-Beam Array Lithography (DEAL) Concept," *The Joint 19th International Vacuum Nanoelectronics Conference (IVNC 2006) and 50th International Field Emission Symposium (IFES 2006)*, July 17-20, 2006 (Guilin, China).
- [51] T. Rahman, **S.K. Islam**, R. Vijayaraghavan, T. Grundman, S.A. Eliza, A.B.M. I. Hossain, B. Blalock, L.R. Baylor, T.S. Bigelow, M.N. Ericson, W.L. Gardner, J.A. Moore, and S.J. Randolph, "Integration of a Dose Control Circuit with a Vertically Aligned Carbon Nanofiber Field Emission Device," *The Joint 19th International Vacuum Nanoelectronics Conference (IVNC 2006) and 50th International Field Emission Symposium (IFES 2006)*, July 17-20, 2006 (Guilin, China).

- [52] M.R. Haider, M.A. Huque, M.A. Adeeb, **S.K. Islam**, W. Qu, M. N. Ericson, "A Low-Power Sensor Signal Read-Out Circuit Powered by Inductive Link," *8th International Conference on Solid-State and Integrated-Circuit Technology*, October 23-26, 2006 (Shanghai, China).
- [53] **S.K. Islam**, W. Qu, R. Vijayaraghavan, S.C. Terry, M. Zhang, B. Blalock, S. Caylor, S. Ripp, and G. S. Sayler, "Bioluminescent Bioreporter Integrated Circuit (BBIC) Sensors for Very Low-Level Chemical Detection," *Invited Paper, 8th International Conference on Solid-State and Integrated Circuit Technology*, October 23-26, 2006 (Shanghai, China).
- [54] T. Rahman, T.E. McKnight, B.L. Fletcher, A.V. Melechko, M.L. Simpson, **S.K. Islam**, and L.M. Edwards, "Integration of Vertically Aligned Carbon Nano Fibers with CMOS Integrated Circuits for Sensor Application," *4th International Conference on Electrical and Computer Engineering*, December 19-21, 2006 (Dhaka, Bangladesh).
- [55] H.F. Huq and **S.K. Islam**, "Analytical Model, Simulation and Parameter Extraction of AlGaIn/GaN HEMT for Microwave Circuit Applications," *SPIE Symposium on Integrated Optoelectronic Devices 2007*, January 20-25, 2007, (San Jose, California).
- [56] Martha L. Weeks, Touhidur Rahman, Paul D. Frymier, **Syed K. Islam**, and Timothy E. McKnight, "A Reagent-less Enzymatic Amperometric Alcohol Biosensor Using the Vertically Aligned Carbon Nanofiber (VACNF)," *Nano and Giga Challenges in Electronics and Photonics, March 12-16, 2007 (Phoenix, Arizona)*.
- [57] Touhidur Rahman, Timothy E. McKnight and **Syed K. Islam**, "Interface and Integration of Vertically Aligned Carbon NanoFiber with CMOS for Sensor Applications," *Nano and Giga Challenges in Electronics and Photonics, March 12-16, 2007 (Phoenix, Arizona)*.
- [58] Hasina F. Huq, and **Syed K. Islam**, "DC characterization and validation of the improved Analytical Model of AlGaIn/GaN HEMT", *IEEE Region 5 Conference*, April 20-22, 2007 (Fayetteville, Arkansas).
- [59] M. A Huque, R. Vijayaraghavan, M. Zhang, B. J. Blalock, L M. Tolbert, and **S. K. Islam**, "An SOI-based High-Voltage, High-Temperature Gate-Driver for SiC FET," *38th IEEE Power Electronics Specialists Conference*, pp. 1491-1495, June 17-21, 2007 (Orlando, Florida).
- [60] M. Huque, M. Haider, M. Zhang, T. Oh, and **S. Islam**, "A Low-Power, Low-Voltage Current Read-out Circuits for Implantable Glucose Sensor for Metabolic Monitoring," *IEEE Sensors 2007*, October 28-31, 2007 (Atlanta, Georgia).
- [61] S. Eliza, **S. Islam**, I. Lee, E. Greenbaum, M. Ericson and A. Khan, "Detection of Photosystem I Reaction Centers Using Chemically Derivatized High Electron Mobility Transistors," *IEEE Sensors 2007*, October 28-31, 2007 (Atlanta, Georgia).
- [62] W. Qu, **S. Islam**, G. To, and M. Mahfouz, "Micro-Cantilever Array Pressure Measurement System for Biomedical Instrumentation," *IEEE Sensors 2007*, October 28-31, 2007 (Atlanta, Georgia).
- [63] M. Weeks, T. Rahman, P. Frymier, **S. Islam**, and T. McKnight, "Detection of Alcohol with Vertically Aligned Carbon Nanofiber (VACNF)," *IEEE Sensors 2007*, October 28-31, 2007 (Atlanta, Georgia).
- [64] M. A. Huque, S.A. Eliza, T. Rahman, H.F. Huq, and **S. K. Islam**, "Effect of the Aspect Ratio in AlGaIn/GaN HEMT's DC and Small Signal Parameters," *International Semiconductor Device Research Symposium (ISDRS)*, December 12-14, 2007 (College Park, Maryland).
- [65] T. Rahman, S.A. Eliza, **S. K. Islam**, L.R. Baylor, and T.R. Grundman, "A Semi Empirical Model of Vertically Aligned Carbon Nanofiber for Field Emission Devices for Circuit Application," *International Semiconductor Device Research Symposium (ISDRS)*, December 12-14, 2007 (College Park, Maryland).
- [66] S. A. Eliza, **S. K. Islam**, I. Lee, and E. Greenbaum, "Analysis of AlGaIn/GaN HEMT Modulated by Photosystem I Reaction Centers," *International Semiconductor Device Research Symposium (ISDRS)*, December 12-14, 2007 (College Park, Maryland).
- [67] S. A. Eliza, **S. K. Islam**, T. Rahman, R. Vijayaraghavan, T. Grundman, B. Blalock, S. J. Randolph, L. R. Baylor, T. S. Bigelow, W. L. Gardner, M. N. Ericson and J. A. Moore, "Digitally Addressable Vertically Aligned Carbon Nanofibers for Implementation of Massively Parallel Maskless Lithography," *International Semiconductor Device Research Symposium (ISDRS)*, University of December 12-14, 2007 (College Park, Maryland).
- [68] M. A Huque, R. Vijayaraghavan, **S. K. Islam**, B. J. Blalock, and L M. Tolbert, "An SOI-Based High-Temperature Integrated Gate-Driver Circuit for SiC Power Switches," *Advanced Workshop on 'Frontiers in Electronics' (WOFE)*, December 15-19, 2007 (Cozumel, Mexico).
- [69] S. A. Eliza, **S. K. Islam**, T. Rahman, R. Vijayaraghavan, T. Grundman, B. Blalock, S. J. Randolph, L. R. Baylor, T. S. Bigelow, W. L. Gardner, M. N. Ericson, and J. A. Moore, "Exploration of Nanotechnology for the Development of Massively Parallel Electron-Beam Lithography," *Advanced Workshop on*

- 'Frontiers in Electronics' (WOFE)*, December 15-19, 2007 (Cozumel, Mexico).
- [70] S. A. Eliza, **S. K. Islam**, I. Lee, and E. Greenbaum, "Characterization of Photosystem I Reaction Centers using a Field Effect Transistor for Realization of Biomolecular Photodiodes," *Advanced Workshop on 'Frontiers in Electronics' (WOFE)*, December 15-19, 2007 (Cozumel, Mexico).
- [71] T. Rahman, M. A. Huque and **S.K. Islam**, "DC Modeling of AlGaIn/GaN Power HEMT on SiC Substrate at the Room Temperature," *Advanced Workshop on 'Frontiers in Electronics' (WOFE)*, December 15-19, 2007 (Cozumel, Mexico). (*Invited paper- WOFE Best Paper Award*)
- [72] R. Vijayaraghavan, M.R. Haider, **S.K. Islam**, and C Su, "Wideband Injection Locked Frequency Divider Based on a Process and Temperature Compensated Ring Oscillator," *IEEE Radio and Wireless Symposium*, January 22- 24, 2008 (Orlando, Florida).
- [73] T. Rahman, **S.K. Islam**, Y.F. Guan, J. Park, P.D. Rack, and A. Bradley, "Nanostructured Sensors for Astrobiology Exploration," Astrobiology Science Conference (AbSciCon), April 14-17, 2008 (Santa Clara, California).
- [74] M.A. Huque, B.J. Blalock, C. Su, R. Vijayaraghavan, **S.K. Islam**, L.M. Tolbert, "SOI Based Integrated Circuits for High Temperature Applications," International Conference on High Temperature Electronics (HiTEC 2008), May 12-15, 2008 (Albuquerque, New Mexico).
- [75] Nora Bull, **Syed Islam**, Ben Blalock, S Ripp, S Moser, G.S. Saylor, "Genetically-Engineered Whole-Cell Bioreporters on Integrated Circuits for Environmental Monitoring," (Invited Paper), 2008 IEEE International Symposium on Circuits and Systems (ISCAS), May 18-21, 2008 (Seattle, Washington).
- [76] M. A Huque, **S. K. Islam**, B. J. Blalock, C. Su, R. Vijayaraghavan, and L M. Tolbert, "Silicon-on-Insulator Based High Temperature Electronics for Automotive Applications," 2008 IEEE International Symposium on Industrial Electronics (ISIE08), June 30-July 2, 2008 (Cambridge, United Kingdom).
- [77] M.R. Haider, M.R. Mahfouz, **S.K. Islam**, S.A. Eliza, W. Qu and E. Pritchard, "A Low-power Capacitance Measurement Circuit with High Resolution and High Degree of Linearity," *2008 Midwest Symposium on Circuits and Systems (MWSCAS)*, August 10-13, 2008 (Knoxville, Tennessee).
- [78] M.R. Haider, S. Mostafa, and **S.K. Islam**, "A Low-power Sensor Read-out Circuit with FSK Telemetry for Inductively-Powered Implant System," *2008 Midwest Symposium on Circuits and Systems (MWSCAS)*, August 10-13, 2008 (Knoxville, Tennessee).
- [79] Mohammad Aminul Huque, **Syed Kamrul Islam**, and Phani Teja Kuruganti, "Towards Fully Integrated High Temperature Wireless Sensors Using GaN-based HEMT Devices," *2008 Midwest Symposium on Circuits and Systems (MWSCAS)*, August 10-13, 2008 (Knoxville, Tennessee).
- [80] Mohammad Haider and **S.K. Islam**, "Power-Efficient Body-Coupled Self-Cascode LC Oscillator for Low-Power Injection-Locked Transmitter Applications," IEEE Computer Society Annual Symposium on VLSI (ISVLSI), May 13-15, 2009 (Tampa, Florida).
- [81] **S.K. Islam**, S.A. Eliza, N.D. Bull, T. Rahman, B. Blalock, L.R. Baylor, M.N. Ericson, and W.L. Gardner, "A Precision Dose Control Circuit for Vertically Aligned Carbon Nanofiber Based Maskless Lithography," *22nd International Vacuum Nanoelectronics Conference (IVNC 2009)*, July 20-24, 2009 (Hamamatsu, Japan).
- [82] Sazia .A. Eliza, **Syed K. Islam**, Ida Lee, Elias Greenbaum, and Fahmida S. Tulip, "Modeling of Floating Gate AlGaIn/GaN Heterostructure-Transistor Based Sensor," *International Semiconductor Device Research Symposium (ISDRS)*, December 9-11, 2009 (College Park, Maryland).
- [83] Sazia .A. Eliza, Salwa Mostafa, **Syed K. Islam**, Ida Lee, Barbara Evans, and Elias Greenbaum, "AlGaIn/GaN ChemFET Devices as Biosensors for Detection and Characterization of Photosystem I Reaction Centers," *International Semiconductor Device Research Symposium (ISDRS)*, December 9-11, 2009 (College Park, Maryland).
- [84] Ashraf B. Islam, **Syed K. Islam**, and Touhidur Rahman, "A Vertically Aligned Carbon Nanofiber (VACNF) Based Amperometric Glucose Sensor," *International Semiconductor Device Research Symposium (ISDRS)*, December 9-11, 2009 (College Park, Maryland).
- [85] M.R. Haider, S. Mostafa, and **S.K. Islam**, "An Inverter-Based Low-Voltage, Low-Power Integrated Circuit System for Continuous Monitoring of Implantable Electro-Chemical Sensor," *Advanced Workshop on 'Frontiers in Electronics' (WOFE)*, December 12-16, 2009 (Rincon, Puerto Rico).
- [86] M.A. Huque, B.J. Blalock, B. McCue, N.D. Bull, L. Zuo, **S.K. Islam**, and L.M. Tolbert, "A Universal BCD-on-SOI Gate Driver IC for SiC Based Extreme Temperature Power Electronics Applications," *Advanced Workshop on 'Frontiers in Electronics' (WOFE)*, December 12-16, 2009 (Rincon, Puerto Rico).
- [87] Sazia .A. Eliza, and **Syed K. Islam**, "Effects of Nonlinear Sheet Charge Variation with Gate and Drain

- Biases in an AlGaIn/GaN HEMT,” *Advanced Workshop on 'Frontiers in Electronics' (WOFE)*, December 12-16, 2009 (Rincon, Puerto Rico).
- [88] M.R. Haider, A.B. Islam and **S.K. Islam**, “Reduction of Supply Voltage and Power Consumption of an Injection-Locked Oscillator for Biomedical Telemetry,” *IEEE Radio and Wireless Symposium*, January 10-14, 2010 (New Orleans, Louisiana).
- [89] Chiahung Su, **S. K. Islam**, B. J. Blalock, and L. M. Tolbert, “A High-Temperature Folded-Cascode Operational Transconductance Amplifier in 0.8- μm BCD-on-SOI,” *International Conference on High Temperature Electronics (HiTEC 2010)*, May 11-13, 2010 (Albuquerque, New Mexico).
- [90] Liang Zuo, **S. K. Islam**, M. A Huque, B. J. Blalock, and L. M. Tolbert, “A Universal BCD-on-SOI Based High Temperature Short Circuit Protection for SiC Power Switches,” *International Conference on High Temperature Electronics (HiTEC 2010)*, May 11-13, 2010 (Albuquerque, New Mexico).
- [91] Salwa Mostafa, **Syed Islam**, Wenchao Qu and Mohamed Mahfouz, “A Calibration Circuit for Reconfigurable Smart ADC for Biomedical Signal Processing,” *IEEE Computer Society Annual Symposium on VLSI (ISVLSI)*, July 5-7, 2010 (Lixouri, Kefalonia, Greece).
- [92] Mohammad Haider, Ashraf Islam and **Syed Islam**, “Ultra-Low-Power Sensor Signal Monitoring an dImpulse Radio Architecture for Biomedical Applications,” *IEEE Computer Society Annual Symposium on VLSI (ISVLSI)*, July 5-7, 2010 (Lixouri, Kefalonia, Greece).
- [93] Kai Zhu, Mohammad R. Haider, Song Yuan, Syed K. Islam, “A Sub-1 μA Low-Power FSK Modulator for Biomedical Sensor Circuits,” *IEEE Computer Society Annual Symposium on VLSI (ISVLSI)*, July 5-7, 2010 (Lixouri, Kefalonia, Greece).
- [94] Liang Zuo, Robert Greenwell, **Syed K. Islam**, Benjamin J. Blalock and Leon M. Tolbert, “Universal SOI Based High Temperature Gate Driver Integrated Circuit for SiC Power Switches with Short Circuit Protection,” *2010 IEEE Lester Eastman Conference on High Performance Devices*, Rensselaer Polytechnic Institute, August 3-5, 2010 (Troy, New York).
- [95] Ashraf B. Islam, **Syed K. Islam**, Touhidur Rahman, and Paul D. Frymier, “Detection of Multiple Biosignatures Using Vertically Aligned Carbon Nanofibers,” *2010 IEEE Lester Eastman Conference on High Performance Devices*, Rensselaer Polytechnic Institute, August 3-5, 2010 (Troy, New York).
- [96] Qingyun Ma, Mohammad Haider, Song Yuan, **Syed Islam**, “Power-Oscillator Based High Efficiency Inductive Power-Link for Transcutaneous Power Transmission,” *53rd IEEE International Midwest Symposium on Circuits and Systems (MWSCAS)*, August 1-4, 2010 (Seattle, Washington).
- [97] S. Yuan, **S.K. Islam**, S. Mostafa, N. Kulkarni, and D.M. Nicholson, “A Comparative Study of the Performance and the Power Consumption of VLSI Circuits Based on Cu RIE and Cu Damascene Interconnect Technologies,” *27th Annual Advanced Metallization Conference 2010*, October 5-7, 2010 (Albany, New York).
- [98] Q. Ma, M.R. Haider and **S.K. Islam**, “A High Efficiency Inductive Power Link and Backward Telemetry for Biomedical Applications,” *IEEE Sensors 2010*, November 1-4, 2010 (Big Island, Hawaii).
- [99] A.B. Islam, **S.K. Islam**, and T. Rahman, “A Highly Selective Mediator Less Glucose Detector Employing Vertically Aligned Carbon Nanofiber (VACNF),” *IEEE Sensors 2010*, November 1-4, 2010 (Big Island, Hawaii).
- [100] M.R. Haider and **S.K. Islam**, “Ultra-Low-Power Signal Processing Unit for Implantable Biosensor Applications,” *6th International Conference on Electrical and Computer Engineering*, December 18-20, 2010 (Dhaka, Bangladesh).
- [101] Sazia A. Eliza, **Syed K. Islam**, Salwa Mostafa, and Fahmida S. Tulip, “Modeling of AlGaIn/GaN HEMT Based Stress Sensors,” *6th International Conference on Electrical and Computer Engineering*, December 18-20, 2010 (Dhaka, Bangladesh).
- [102] Fahmida S. Tulip, Salwa Mostafa, **Syed Kamrul Islam**, Edward Eteshola, Sazia A. Eliza, Ida Lee, Elias Greenbaum and Barbara R. Evans, “GaN-AlGaIn High Electron Mobility Transistors for Multiple Biomolecule Detection Such As Photosystem I and Human MIG,” *6th International Conference on Electrical and Computer Engineering*, December 18-20, 2010 (Dhaka, Bangladesh).
- [103] A.B. Islam, M.R. Haider, A. Atla, **S.K. Islam**, R. Croce, S. Vaddiraju, F. Papadimitrakopoulos, and F. Jain, “A Potentiostat Circuit for Implantable Electrochemical Sensor,” *6th International Conference on Electrical and Computer Engineering*, December 18-20, 2010 (Dhaka, Bangladesh).
- [104] A.B. Islam, S. Mostafa, M.R. Haider and **S.K. Islam**, “A Digitally Controllable Current Readout Circuit and Modulator Unit for Remote Monitoring and Biometry Applications,” *6th International Conference on Electrical and Computer Engineering*, December 18-20, 2010 (Dhaka, Bangladesh).

- [105] M.R. Haider, K. Zhu, **S.K. Islam** and S. Yuan, "Phase Noise Optimization of a Self-Cascode Voltage Controlled Oscillator (VCO) by Changing the Capacitor ratio and Substrate Bias," 2011 IEEE Radio and Wireless Week, January 16-19, 2011 (Phoenix, Arizona).
- [106] K. Zhu, **S.K. Islam**, J. Holleman and S. Yuan, "A Low-Power Dual-Modulus Injection-Locked Frequency Divider for Medical Implants," 2011 IEEE Radio and Wireless Week, January 16-19, 2011 (Phoenix, Arizona).
- [107] M. Roknsharifi, M.R. Haider, and **S.K. Islam**, "A Low-Power Area Efficient Voltage Reference and Data Generation Unit for Inductively Powered Implant System," 2011 IEEE Radio and Wireless Week, January 16-19, 2011 (Phoenix, Arizona).
- [108] R. Greenwell, B. McCue, L. Zuo, M. Huque, L. Tolbert, B. Blalock, **S. Islam**, "SOI-Based Integrated Circuits for High-Temperature Power Electronics Applications," The Applied Power Electronics Conference and Exposition (APEC 2011), March 6-10, 2011 (Fort Worth, Texas).
- [109] Ashraf B. Islam and **Syed K. Islam**, "Design of a Multi-Spiral Solenoidal Inductor for Inductive Power Transfer in Biomedical Applications," The 27th Annual Review of Progress in Applied Computational Electromagnetics (ACES 2011), March 27 - 31, 2011 (Williamsburg, Virginia).
- [110] Salwa Mostafa, Nicolay Lavrik, Thirumalesh Bannuru, Slo Rajic, **Syed K. Islam**, Panos G. Datskos and Scott R. Hunter, "A Finite Element Model Of Self-Resonating Bimorph Microcantilever For Fast Temperature Cycling In A Pyroelectric Energy Harvester," 2011 MRS Spring Meeting, April 25-29 (San Francisco, California).
- [111] Fahmida Shaheen Tulip, Edward Eteshola, **Syed Kamrul Islam**, Salwa Mostafa, and Hasina F. Huq, "Label Free Detection of Human MIG Using AlGaIn/GaN High Electron Mobility Transistor," International Semiconductor Device Research Symposium, December 7-9, 2011 (College Park, Maryland).
- [112] B. M. McCue, R. L. Greenwell, M. I. Laurence, B. J. Blalock, **S. K. Islam**, and L. M. Tolbert, "SOI Based Voltage Regulator for High-Temperature Applications," **International Conference on High Temperature Electronics (HiTEC 2012)**, May 8-10, 2012 (Albuquerque, New Mexico).
- [113] R. L. Greenwell, B.M. McCue, M.I. Laurence, C.L. Fandrich, B.J. Blalock, L.M. Tolbert, and **S.K. Islam**, "SOI-Based Integrated Gate Driver Circuit for High-Temperature Applications," **International Conference on High Temperature Electronics (HiTEC 2012)**, May 8-10, 2012 (Albuquerque, New Mexico).
- [114] Kimberly C. MacArthur, Khandaker A. Al Mamun, Fahmida S. Tulip, Nicole McFarlane, and **Syed K. Islam**, "Fabrication and Characterization of Vertically Aligned Carbon Nanofibers as a Biosensor Platform for Hypoglycemia," 2012 Lester Eastman Conference on High Performance Devices, Brown University, August 7-9, 2012 (Providence, Rhode Island).

Papers in Non-Refereed Conference Proceedings

- [1] F.C. Jain, **S.K. Islam**, M. Gokhale and C. Chung, "Self-Aligned Heterostructure MOSFETs Using Modulation-Doped Strained Layers of SiGe on Si Substrates," *American Physical Society Meetings*, March 1991. (Cincinnati, Ohio).
- [2] **S.K. Islam** and F.C. Jain, "Transport in Modulation-Doped Field Effect Transistors Having Parabolic Quantum Well Channel," *American Physical Society Meetings*, March 1991 (Cincinnati, Ohio).
- [3] F.C. Jain, **S.K. Islam** and M. Gokhale, "Self-Aligned MOS Gate Modulation Doped Field-effect Transistors Using Si-Ge and InP Based Systems," *Connecticut Microelectronics and Optoelectronics Symposium (CMOC)*, March, 1992 (East Hartford, Connecticut).
- [4] **S.K. Islam**, F.C. Jain and C-L Chung, "Two-Dimensional Modal Analysis Approach to Evaluate the Parameters of a Quantum Well Wire (QWW)," *American Physical Society Meetings*, March 1992. (Indianapolis, Indiana).
- [5] **S.K. Islam**, F.C. Jain and R. LaComb, "A Novel Analytical Model for Quantum Well Wire (QWW) High Electron Mobility Transistors (HEMTs)," *American Physical Society Meetings*, 38, p 234, March 1993 (Seattle, Washington).
- [6] **S.K. Islam** and F.C. Jain, "A Novel Quantum Well Wire High Electron Mobility (HEMT) Structure," *Connecticut Microelectronics and Optoelectronics Symposium (CMOC)*, March 18-19, 1993 (SNET, New Haven, CT).
- [7] **S.K. Islam** and F.C. Jain, "Quantum Interference Transistor (QIT) Structure Using Two Parallel Quantum Well Wire (QWW) Channels," *American Physical Society Meetings*, March 1994 (Pittsburgh,

- Pennsylvania).
- [8] **S.K. Islam** and F.C. Jain, "Transport in One-Dimensional Semiconductor Devices," *SOUTHCON/ 95 Technical Conference*, March 7, 1995 (Ft. Lauderdale, Florida).
 - [9] S. Ahderom, **S.K. Islam** and F.C. Jain, "Analysis of Quantum Interference Transistor (QUIT) Device Using Si/Si_xGe_{1-x} Material System," *Connecticut Microelectronics and Optoelectronics Symposium (CMOC)*, March 16, 1995 (Yale University, New Haven, Connecticut).
 - [10] **S.K. Islam** and F.C. Jain, "Modeling and Simulation of InGaN-GaN-GaN Modulation-Doped Field Effect Transistors (MODFETs) for 15 GHz+ Operation," *Connecticut Symposium on Microelectronics and Optoelectronics (CMOC)*, March 13, 1997 (Yale University, New Haven, Connecticut).
 - [11] G. Zhao, **S. K. Islam**, E. Heller, X. G. Zhang, D. W. Parent, J.E. Ayers and F.C. Jain, "Design and Modeling of ZnSe/ZnMgSSe and InGaN/GaN Based Modulation Doped Field Effect Transistors for High Temperature Operation," *Connecticut Symposium on Microelectronics and Optoelectronics (CMOC)* pp. P17-19, March 24, 1998 (Hartford, Connecticut).
 - [12] **S.K. Islam** and F.C. Jain, "Self-Aligned Schottkty-SiO₂ -InGaAs-InP Based One-Dimensional High Electron Mobility Transistors," *Connecticut Symposium on Microelectronics and Optoelectronics (CMOC)*, pp. P-14, March 24, 1998 (Hartford, Connecticut).
 - [13] **S.K. Islam**, and F.C. Jain, "Self-Aligned SiGe MOSFET with Modulation-Doped Quantum Wire Channel Dimensional High Electron Mobility Transistors," *Connecticut Symposium on Microelectronics and Optoelectronics (CMOC)*, April 3, 2001 (Storrs, Connecticut).
 - [14] F.C. Jain , V. Srinivasan and **S.K. Islam** , "An Analytical Three-Region Two-Dimensional Model for SiGe MOSFETs Operating at Millimeter Wave Frequencies," *Connecticut Symposium on Microelectronics and Optoelectronics (CMOC)*, April 3, 2001 (Storrs, Connecticut).
 - [15] **S.K. Islam**, F.C. Jain, and M. Hasanuzzaman, "Design and Analysis of InGaN-GaN Modulation Doped Field-Effect Transistors (MODFETs) for 90 GHz Operation", *Connecticut Symposium on Microelectronics and Optoelectronics (CMOC)*, April 3, 2001 (Storrs, Connecticut).
 - [16] M. Hasanuzzaman, and **S.K. Islam**, "Analytical Modeling of Vertical Double-Implanted Power MOSFET DIMOS) in 4H-SiC," *Connecticut Symposium on Microelectronics and Optoelectronics (CMOC)*, March 13, 2002 (Yale University, New Haven, Connecticut).
 - [17] L. Seshan, and **S.K. Islam**, "Design of LC-VCO using on-chip Inductor," *2002 Connecticut Symposium on Microelectronics and Optoelectronics (CMOC)*, March 13, 2002 (Yale University, New Haven, Connecticut).
 - [18] M. Zhang, N. Islam, **S. K. Islam**, and S.C. Terry, "916 MHz Transmitter for Bioluminescent Bioreporter Integrated Circuits," *Connecticut Symposium on Microelectronics and Optoelectronics (CMOC)*, April 9, 2003 (Storrs, Connecticut).
 - [19] M.A. Ahad and **S. K. Islam**, "An Adaptive Cable-Equalizer Filter Design in 0.5 μm CMOS Process", *Connecticut Symposium on Microelectronics and Optoelectronics (CMOC)*, April 9, 2003 (Storrs, Connecticut).
 - [20] Hasina Huq, **S.K. Islam**, and M. Ferdjallah, "3D Accelerometer for Biofeedback Game-Based Exercise for Children with Obesity," *Connecticut Symposium on Microelectronics and Optoelectronics (CMOC)* pp. 42-44, April 7, 2004 (Storrs, Connecticut).
 - [21] **S.K. Islam**, Stephen Terry, Nazmul Islam, Mo Zhang, Benjamin Blalock , Gary Sayler and M.L. Simpson, "Low-Power Bioluminescent Bioreporter Integrated Circuit (BBIC) for Photodetection", *Connecticut Symposium on Microelectronics and Optoelectronics (CMOC)*, pp. 32-34, April 7, (Storrs, Connecticut).
 - [22] Mohmmad T. Alam, Changgan Zeng, H.H. Weitering, **Syed K. Islam** and Md. Hasanuzzaman Spin Polarized Electron Injection into Semiconductor: Prospects, Problems and Possible Solutions," *IEEE/NTC Quantum Device Technology Workshop*, May 17-21, 2004, (Potsdam, New York).
 - [23] R. Vijayaraghavan, C. Durisety, **S. K. Islam**, and B.J. Blalock, "A Novel CMOS Based Electron Counter for Charge Sensing Application," *Connecticut Symposium on Microelectronics and Optoelectronics (CMOC)*, March 18, 2005 (Yale University, New Haven, Connecticut).
 - [24] Hung Nguyen, **Syed K. Islam**, Mo Zhang, P. Dufilie and Faquir C. Jain, "Low-Power Low-Voltage Integrated Circuit for Implantable Sensor," *Connecticut Symposium on Microelectronics and Optoelectronics (CMOC)*, March 18, 2005 (Yale University, New Haven, Connecticut).
 - [25] Mo Zhang and **S.K. Islam**, "A New Programmable Frequency Divider with Integer and Fractional Dividing Ratio", *2005 Connecticut Symposium on Microelectronics and Optoelectronics (CMOC)*, March 18, 2005 (Yale University, New haven, Connecticut).

- [26] S. A. Eliza, **S. K. Islam**, T. Rahman, R. Vijayaraghavan, T. Grundman and B. Blalock, and S. J. Randolph, L. R. Baylor, T. S. Bigelow, W. L. Gardner, M. N. Ericson and J. A. Moore, "Maskless Lithography using Vertically Aligned Nanofiber Field Emission Devices," *Connecticut Symposium on Microelectronics and Optoelectronics (CMOC)*, March 21, 2007 (Yale University, New Haven, Connecticut).
- [27] M. Haider and **S.K. Islam**, "Low Power Medical Telemetry for Wireless Body Area Network", *Connecticut Symposium on Microelectronics and Optoelectronics (CMOC)*, April 9, 2008 (Storrs, Connecticut).
- [28] M. A. Huque, **S. K. Islam**, B. J. Blalock, and L. M. Tolbert, "Diode Leakage Current Based Low Power, On-chip High Temperature Sensor Circuit," *Connecticut Symposium on Microelectronics and Optoelectronics (CMOC)*, March 11, 2009 (Yale University, New Haven , Connecticut).
- [29] M. A. Huque, and **S. K. Islam**, "Choice of Material for Power Semiconductor Devices in High Switching Frequency Applications: From Power Loss Perspective," *2009 Connecticut Symposium on Microelectronics and Optoelectronics (CMOC)*, March 11, 2009 (Yale University, New Haven , Connecticut).
- [30] M. R. Haider, A.B. Islam and **S. K. Islam**, "A Low-Power RF Oscillator for Wireless Medical Telemetry Applications", *Connecticut Symposium on Microelectronics and Optoelectronics (CMOC)*, March 11, 2009 (Yale University, New Haven , Connecticut).
- [31] S. Mostafa, M. R. Haider, and **S. K. Islam**, "A Comparative Study of Low-Power Telemetry Schemes for Biomedical Application", *Connecticut Symposium on Microelectronics and Optoelectronics (CMOC)*, March 11, 2009 (Yale University, New Haven , Connecticut).
- [32] A.B. Islam, S. Mostafa, and **S.K. Islam**, "Fabrication and Characterization of Vertically Aligned Carbon Nano Fiber as a Biosensor Platform", *Connecticut Symposium on Microelectronics and Optoelectronics (CMOC)*, April 7, 2010. (Storrs, Connecticut). **Best Oral Paper Award.**
- [33] M. Roknsharifi, A.B. Islam, K. Zhu, S. Yuan, and **S.K. Islam**, "Controlling an Implanted Sensor From Outside by An Inductively-Powered Circuit," *2010 Connecticut Symposium on Microelectronics and Optoelectronics (CMOC)*, April 7, 2010 (Storrs, Connecticut).
- [34] S. Mostafa, W. Qu, and **S.K. Islam**, "A Smart Analog-to-Digital Converter With Adaptively Reconfigurable Resolution and Sampling Rate for Biomedical Signal Processing," *Connecticut Symposium on Microelectronics and Optoelectronics (CMOC)*, University of Connecticut, Storrs, CT, April 7, 2010 (Storrs, Connecticut).
- [35] C. Su, L. Zuo, **S.K. Islam**, B.J. Blalock, and L.M. Tolbert, "A 0.8-mm BCD-on-SOI Temperature Stable Current Reference in a High Temperature, High Voltage Linear Regulator," *Connecticut Symposium on Microelectronics and Optoelectronics (CMOC)*, April 7, 2010 (Storrs, Connecticut).
- [36] M. Roknsharifi, L. Zuo, K. Zhu, S. Yuan and **S.K. Islam**, "Ultra Low Power and Extended Accuracy Temperature Sensor," *Connecticut Symposium on Microelectronics and Optoelectronics (CMOC)*, March 16, 2011 (Yale University, New Haven , Connecticut).
- [37] R. Croce Jr, P. Gogna, M. Gogna, A. Islam, L. Zuo, K. Zhu, M. Roknsharifi, V. Sagar, F. Papadimitrakopoulos, **S. Islam** and F. Jain, "Finite-State Machine Architecture for Implantable Biosensor Platform Using Optical Communication", *Connecticut Symposium on Microelectronics and Optoelectronics (CMOC)*, March 16, 2011 (Yale University, New haven , Connecticut).
- [38] Ashraf B. Islam and **Syed K. Islam**, "Design and Optimization of Multi-Spiral Solenoidal Integrated Inductor for Biotelemetry Applications", *Connecticut Symposium on Microelectronics and Optoelectronics (CMOC)*, March 16, 2011 (Yale University, New Haven , Connecticut).
- [39] K. Zhu, L. Zuo, M. Roknsharifi and **S. K. Islam**, "A Power Regulator and a Monitoring Circuit for Optically-powered Implant Sensor", *Connecticut Symposium on Microelectronics and Optoelectronics (CMOC)*, March 16, 2011 (Yale University, New Haven , Connecticut).
- [40] Song Yuan, **Syed K. Islam** and Akila Gothandaraman, "An All Digital Frequency Locked Loop (ADPLL) Based on Phase Estimator and Direct Digital Frequency Synthesizer (DDFS) Architectures," *Connecticut Symposium on Microelectronics and Optoelectronics (CMOC)*, March 16, 2011 (Yale University, New Haven , Connecticut).
- [41] Fahmida S. Tulip, **Syed K. Islam** and Sazia A. Eliza, "GaN/AlGaN High Electron Mobility Transistor based Biosensor for PS I Detection", *Connecticut Symposium on Microelectronics and Optoelectronics (CMOC)*, March 16, 2011 (Yale University, New Haven, Connecticut).
- [42] Fahmida Shaheen Tulip, Edward Eteshola and **Syed Kamrul Islam**, "Immobilization of Protein Molecules onto AlGaN/GaN High Electron Mobility Transistor for Biosensing Applications,"

- Connecticut Symposium on Microelectronics and Optoelectronics (CMOC)*, April 11, 2012 (Storrs, Connecticut). **Best Poster Award.**
- [43] Kai Zhu, Melika Roknsharifi, Liang Zuo, Song Yuan and **Syed K. Islam**, “A Relaxation Oscillator-based Divide-by-3 Injection-Locked Frequency Divider,” *Connecticut Symposium on Microelectronics and Optoelectronics (CMOC)*, April 11, 2012 (Storrs, Connecticut).
- [44] Melika Roknsharifi, Kai Zhu and **Syed Kamrul Islam**, “Rectifier Design for Ultra-Low Power Radio Frequency Identification (RFID),” *Connecticut Symposium on Microelectronics and Optoelectronics (CMOC)*, April 11, 2012 (Storrs, Connecticut).
- [45] Melika Roknsharifi, Kai Zhu and **Syed Kamrul Islam**, “A Very-Low-Power, Highly-Stabilized (Phase Margin of 90°) Three Electrode Potentiostat for Implanted Systems,” *Connecticut Symposium on Microelectronics and Optoelectronics (CMOC)*, April 11, 2012 (Storrs, Connecticut).
- [46] Khandaker A. Al Mamun, Kimberly MacArthur, Fahmida S. Tulip, Dale Henseley, Nicole McFarlane, and **Syed K. Islam**, “Vertically Aligned Carbon Nanofiber Forest Biosensing Platform for Wide Range Glucose Detection,” *Connecticut Symposium on Microelectronics and Optoelectronics (CMOC)*, March 13, 2013 (Yale University, New Haven, Connecticut). **Best Oral Paper Award.**
- [47] Logan S. Taylor, Fahmida S. Tulip, **Syed Kamrul Islam**, “A Floating-Gate Model for AlGaIn/GaN HEMT Device for Biomolecule Detection,” *Connecticut Symposium on Microelectronics and Optoelectronics (CMOC)*, March 13, 2013 (Yale University, New Haven, Connecticut).
- [48] Chia Hung Su, Ifana Mahbub, Md. Sakib Hasan and **Syed K. Islam**, “A Pole Swap Compensation Technique for High Temperature Linear Voltage Regulator Design,” *Connecticut Symposium on Microelectronics and Optoelectronics (CMOC)*, March 13, 2013 (Yale University, New Haven, Connecticut).
- [49] Terence C. Randall, Ifana Mahbub, and **Syed Kamrul Islam**, “A Reconfigurable Pipeline ADC with Ultra Low Power Consumption for Biomedical Application,” *Connecticut Symposium on Microelectronics and Optoelectronics (CMOC)*, March 13, 2013 (Yale University, New Haven, Connecticut).

Invited Presentations

- [1] “Transport in Quantum Wire Devices”, Department of Electrical and Systems Engineering Colloquium, University of Connecticut, Storrs, CT, March 1, 1996.
- [2] “Modeling and Simulation of InGaIn-GaN Modulation-Doped Field-Effect Transistors (MODFETs) for 15 GHz+ Operation”, Department of Electrical and Systems Engineering Colloquium, University of Connecticut, Storrs, CT, March 14, 1997.
- [3] “Enhanced Performance Quantum Wire MODFET Employing Coupled Well Channels”- Invited paper presented at SPIE’s International Symposium on Aerospace/Defense Sensing, Simulation, and Controls, April 14, 1998 (Orlando, FL)
- [4] “Transport in One-Dimensional Quantum Interference Transistors (1-D QUIT) Devices”, Department of Electrical and Systems Engineering Colloquium, University of Connecticut, Storrs, CT, November 20, 1998
- [5] “Design of LC VCO Using On-Chip Inductors”, Department of Electrical and Computer Engineering Colloquium, University of Connecticut, Storrs, CT, March 14, 2002
- [6] “Analog/Mixed-Signal research Program at the University of Tennessee”, ADTRAN, Huntsville, AL, December 7, 2001
- [7] “Analog and Mixed-Signal VLSI Research at The University of Tennessee”, Department of Electrical and Electronic Engineering, Bangladesh University of Engineering and Technology, Dhaka, Bangladesh, June 22, 2002.
- [8] “Wide Bandgap Semiconductor Devices”- Graduate Seminar, Department of Materials Science and Engineering, University of Tennessee, November 4, 2003.
- [9] “Biophotonic Biosensors using Genetically Engineered Whole-Cell Bioreporters on Integrated Circuits”- Department of Electrical and Computer Engineering Colloquium, University of Connecticut, Storrs, CT, March 18, 2005
- [10] “Recent Developments in Wide Bandgap Semiconductor Devices”- Department of Electrical and Computer Engineering and Computer Science, University of Cincinnati, Cincinnati, OH, February 3, 2006.
- [11] “Wide Bandgap Semiconductor Devices for Vehicular Applications”, IEEE Electron Device Society – Bangladesh Chapter, Dhaka, Bangladesh, June 25, 2007.

- [12] “Challenges in RF Circuit Design”, Department of Electrical and Electronic Engineering, East West University, Dhaka, Bangladesh, June 26, 2007.
- [13] “Analog, Mixed-Signal and RF Microelectronic Research at The University of Tennessee ”, Department of Electrical and Electronic Engineering, Bangladesh University of Engineering and Technology, Dhaka, Bangladesh, July 9, 2007.
- [14] “High Temperature Electronics for Automotive and Wireless Sensor Applications”, Center for Embedded Systems for Critical Applications, Bradley Department of Electrical and Computer Engineering, Virginia Tech, Blacksburg, Virginia, March 19, 2010.