Durgamadhab (Durga) Misra

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Fellow of the Electrochemical Society

Education

Ph.D., Electrical Engineering, University of Waterloo, Waterloo, Canada, 1988
M.S., Management, New Jersey Institute of Technology, 1997
M.A.Sc., Electrical Engineering, University of Waterloo, Waterloo, Canada, 1985
M.Tech., Solid-State, IIT Delhi, India, 1983
M.S., Physics, Utkal University, Bhubaneswar, India, 1981
B.S., Physics, Utkal University, Bhubaneswar, India, 1978

Academic Experience

New Jersey Institute of Technology, Newark, NJ	2011- Associate Chair for Graduate Studies, ECE Dept 2006 – 2008 Associate Chair for Graduate Studies, ECE Dept 2002 - Professor, Electrical & Computer Eng. Dept. 2002 – Director, Graduate Program: MS Electrical Eng 1993 - 2002 Associate Professor, Elect & Comp Eng Dept 1996 - 1997 Director, Microelectronics Research Center, 1988 - 1993 Assistant Professor, Elect & Comp Eng Dept
Indian Institute of Science, Bangalore, India	2017 Prof. Ramakrishna Rao Visiting Endowed Chair Professor at Center for Nano Science and Engineering (CeNSE)
Furtwangen University, Furtwngen, Germany	3/2016-5/2016 Visiting Professor, Inst. for Applied Research
Indian Institute of Science, Bangalore, India	1/2016-3/2016 Visiting Professor, Center for Nano Sc. & Eng.
IIT Bombay, Mumbai, India	1/2009-5/2009 Visiting Professor, Electrical Engineering Dept
University of Waterloo, Canada	1991 & 1992 Visiting Research Professor, Electrical Eng 1985 – 1988 Research Assistant 1984 – 1988 Teaching Assistant

Industrial Experience

Bell Labs, Lucent Technologies, NJ	1997 - 1998 Visiting Professor in VLSI Research Dept
Sarnoff Corporation, Princeton, NJ	1990 – 1990 Visiting Professor at SEMATECH Center of Excellence in Plasma Processing
Cement Research Corporation, New Delhi, India	1983 – 1983 Research Engineer

Consulting Experience

Keystone Venture Capital 2000-2001 High Speed CMOS Circuits
Lucent Technologies 1996-1998, Plasma Process Induced Damage, Murray Hill, NJ
Infinite Computer Technologies 1996-1998, Non-volatile Random-Access Memory, Alexandria
Rubicon, Inc., 1997-1998, Development of Circuits for Ferroelectric Memory, Princeton, NJ Memory
Semiconductor Assembly Council, 1996-1997, Development of a Standard Qualifying Die Mountain View, CA

Honors and Awards

- IEEE Electron Device Society Board of Governors Member (Elected) (2014-2020)
- Chair, IEEE EDS Device Reliability Physics Committee (2016-2017)
- Thomas D. Callinan Award of the Dielectric Science and Tech Division of The Electrochemical Society, 2013
- Electronics and Photonics Division Award of The Electrochemical Society, 2013
- Fellow of the Electrochemical Society (ECS), Class of 2006
- Board Member, The Electrochemical Society Board of Governors 2008 – 2010

• Chair, Dielectric Science and Technology Division of ECS 2008 – 2010
• Excellence in Teaching Award, New Jersey Institute of Technology, 2005
• Southern Area Chair, IEEE Region 1 2008 - 2011
• 2008 Leadership Award, IEEE Princeton, Central Jersey Section (Conference Chair, Sarnoff Symposium)
• Chair, IEEE Electron Device Society SRC, North America East (Regions 1, 2, 3 and 7) 2006 - Present
• IEEE Electron Device Society Distinguish Lecturer, 2005 - Present
• IEEE Member and Geographic Activities Board Leadership Award (International) November 2004.
• IEEE North Jersey Section Service Award as Chair, December 1, 2004.
• Editorial Board, Materials (a MDPI journal), since 2015
• Guest Editor, Wide Bandgap Materials and Devices, Microelectronics Reliability, 2018
• Guest Editor, Interface, Vol. 26(4), 2017.
• Associate Editor, IEEE Circuits and Devices Magazine, 2001-2006(end).
• Editorial Board, Interface, Electrochemical Society, 2007-Present
• IEEE Region 1 Award for Distinguish Service for NJ Section and Service to ED Society, 2002.
• Awards Committee Chair, Thomas D. Callinan Award, Electrochemical Society, May 2000-02.
• IEEE North Jersey Section Award for "Distinguish Service and Leadership, 2003.
• Symposium Chair, Dielectric Science & Technology Division, ECS, May 2002-2004.
• Secretary, Dielectric Science & Technology Division, Electrochemical Soc., May 2004-2006.
• Program Chair, International Conference on Information Technology, India, Dec. 21-23, 2000.
• National Science Foundation Panel Review Member, June 1998, May 2001 and Oct. 2003.
• Board Member, National Institute of Science & Technology, India.
• Certificate of Achievement by McNair Achievement Program, NJIT, April 14, 2000.
• Certificate of Achievement by University Research Experience Program, NJIT, April 17, 1998.
• Recognition award by The Minority Academic Carriers Program, State of New Jersey, 1997.
• Recognition award by The Minority Academic Carriers Program, State of New Jersey, 1996.
• Canadian Commonwealth Scholarship Sept. 1983-July, 1988 at University of Waterloo.
• Dean of Graduate Studies Scholarship Sept.85 & May86 at Univ. of Waterloo.

Awards Received by My Students

1. PhD Student Wei Zhong received ECE Department **Hashimoto Award for Best Dissertation** in 2001, $2,500.
2. Undergraduate Student Nasif Akand received ECE Department **Best Senior Project Award**, May 3, 2001, $250.
3. Undergraduate Student Rafal Korczeniewski received **Honorable Mention** for Senior Project, First Industry-University Senior Project with Lucent Technologies, May 3, 2001.
4. **Best Poster Paper Award** in Ninth Annual UNI-Tech Conference, Newark, NJ, April 2000.
5. Tias Kundu, ***IEEE North Jersey Section Best Graduate Student Research Presentation*** for her presentation on "Deuterium Passivation At The Interface of Si And SiO_2- Reliability Of Thin Oxides," IEEE North Jersey Student Presentation Contest held at Fairleigh Dickinson University in March 2003.
7. Purushothamn Srinivas, ***IEEE North Jersey Section Honorable Mention Graduate Student Research Presentation*** for his presentation "Study on Degradation of N-MOSFETs due To Hot Electron Effect," IEEE North Jersey Student Presentation Contest held at Fairleigh Dickinson University in March 2003.
9. Reenu Garg, ***The Electrochemical Society Student Travel Award and GSA Travel Award*** to present her paper "Properties of Thermally Evaporated HfO_2," at 203rd Meeting of the Electrochemical Society, (Abstract #54), Paris, France April 27-May 2, 2003.
10. Ami Patel, ***Electrical and Computer Engineering Department Senior Design Project Poster Presentation Workshop - 2nd BEST POSTER PRESENTATION*** for her Poster "Passivation of Silicon Nanocrystals through Computer Simulation" May 2003.
11. Purushothaman Srinivasan, **2003 International Semiconductor Device Research Symposium Student Award** (Registration Waiver) to present his paper "Screening of Si-H bonds during plasma processing," at 2003 International Semiconductor Device Research Symposium (ISDRS), December 10-12, Washington, DC, 2003.

12. Purushothaman Srinivasan, ***The Inter University Microelectronics Center (IMEC), Belgium Student Travel Award and a Scholarship*** to work on a Research Project "Noise in High-K Dielectrics for sub 45nm CMOS Devices," October 1, 2004 to January 31, 2005.
13. Naser Chowdhury, ***The Electrochemical Society Student Travel Award*** to present his paper "Time Dependent Dielectric Breakdown of Thermally Evaporated HfO_2 for Nanoscale Devices," at 206th Meeting of the Electrochemical Society, Honolulu, HI, October 3-8, 2004.
14. Naser Chowdhury, ***GSA Achievement Travel Award*** to present his paper "Charge Trapping Characteristics of $TiN/HfSi_xO_y/SiO_2/p$-Si MOS Devices under Stress," at the International Workshop on Electrical Characterization and Reliability for High-K Devices, Austin, TX, November 4-5, 2004.
15. Waqas Mahmood, ***Gold Award Winner, Fall 2004, Senior Design Project Presentation,*** for his project "Charge Trapping and Time Dependent Dielectric Breakdown (TDDB) of $HfSi_xO_y$ Gate Stack under Constant Current and Voltage Stress." December 9, 2004.
16. Tias Kundu, ***IEEE North Jersey Section 1st Prize for Graduate Student Research Presentation*** for her paper presentation on "Hydrogen / Deuterium Implantation For Si/SiO_2 Interface Passivation," IEEE North Jersey Student Presentation Contest held at FDU on March 22, 2005.
19. Purushothaman Srinivasan, ***IEEE North Jersey Section 2nd Prize for Graduate Student Research Presentation*** for his paper presentation on "Modeling And Simulation of SiGe Photodiode for Optical Communication Applications," IEEE North Jersey Student Presentation Contest held at FDU on March 22, 2005.
21. Waqas Mahmood, ***Saul K. Fenster Innovation in Design Award*** for his project "Charge Trapping and Time Dependent Dielectric Breakdown (TDDB) of HfSixOy Gate Stack under Constant Current and Voltage Stress." April 8, 2005.
22. Purushothaman Srinivasan, ***The Electrochemical Society Student Travel Award*** to present his paper "1/f Noise Performance of NMOSFETs with Hf-Based Gate Dielectrics," at 207th Meeting of the Electrochemical Society, Quebec City, Canada, May 15-20 2005.
23. Purushothaman Srinivasan and Naser Chowdhury ***First Prize in the PhD category at the*** **Einstein Expo*****, a Student Research Conference at The City College of New York*** for "Study of electrically active traps in high-k dielectrics" The posters were evaluated by four Nobel laureates and eminent professors working in various research areas.
24. Purushothaman Srinivasan, ***GSA Achievement Travel Award*** to present his paper "1/f Noise Performance of NMOSFETs with Hf-Based Gate Dielectrics," at 207th Meeting of the Electrochemical Society, Quebec City, Canada, May 15-20 2005.
25. Purushothaman Srinivasan, ***The Inter University Microelectronics Center (IMEC), Belgium Student Travel Award and a Scholarship*** to work on a Research Project "Noise in High-K Dielectrics for sub 45nm CMOS Devices," June 1, 2005 to January 15, 2006.
26. Tias Kundu ***The Electrochemical Society Student Travel Award*** to present her paper "Annealing Effect On Reliability Of SiO_2 For Deuterium Implanted Silicon Annealing," at the 208th Meeting of the Electrochemical Society, Los Angeles, October 16-21, 2005.
27. Naser Chowdhury, ***The Electrochemical Society Student Travel Award*** to present his paper "Evidence of Deep Energy States from Low Temperature Measurements and its Role in Charge Trapping in Metal Gate/Hf-Silicate Gate Stacks, at the 208th Meeting of the Electrochemical Society, Los Angeles, October 16-21, 2005.
28. Reenu Garg, ***The Electrochemical Society Student Travel Award*** to present her paper "Effect of Nitridation on Ge/HfO_2 Interface, at the 208th Meeting of the Electrochemical Society, Los Angeles, October 16-21, 2005.
29. P. Srinivasan, ***The Electrochemical Society Student Travel Award*** to present his paper "Effect of Nitridation on 1/f Noise in n-MOSFETs with High-k Dielectric, at the 208th Meeting of the Electrochemical Society, Los Angeles, October 16-21, 2005.
30. Purushothaman Srinivasan, **Winner of HASHIMOTO fellowship,** 2005-2006, ECE Department, Newark College Of Engineering, New Jersey Inst. of Technology.
31. N. A. Chowdhury, ***ISDRS Travel Award and Registration Waiver*** to present his paper "Trapping in Deep Defects under Substrate Hot Electron Stress in TiN/Hf-silicate Based Gate Stacks", at the International Semiconductor Device Research Symposium (ISDRS), Bethesda, Maryland, Dec., 2005.
32. N. A. Chowdhury, ***2006 Summer Intern at SEMATECH,*** Austin, TX to work on his research.

33. P. Srinivasan, ***2006 Summer Intern at IBM T.J. Watson Research Center*** to work on his research.
34. Purushothaman Srinivasan, ***IEEE North Jersey Section 1st Prize for Graduate Student Research Presentation*** for his paper presentation on "*Low-frequency 1/f Noise Performance in MOSFET Devices*," IEEE North Jersey Student Presentation Contest held at **NJIT on March 21, 2006.**
35. Nilufa Rahim, ***The Electrochemical Society - Student Travel Award*** to present her paper "Role of Bulk HfO_2 and Interfacial SiO_2 Layer in Breakdown Characteristics of TiN/HfO_2/SiO/Si Gate Stacks," at the 210th Meeting of the Electrochemical Society, Washington, DC, October 7-12, 2007.
36. Nilufa Rahim, ***Best Research Award*** in Newark College of Engineering on **"GSA Research Day"** for her poster "Breakdown characteristics of metal gate/HfO2 based multi layer gate stacks," November 14, 2007.
37. Nilufa Rahim, ***Selected to Present a Poster at the National Science Foundation*** (NSF) headquarters on February 29 at the NSF GK-12 Annual Meeting. The NSF committee reviewed around 100 abstracts and chose 30 to be presented.
38. Nilufa Rahim, ***Graduate Students Association - Student Travel Award*** to present her paper "NBTI Behavior of Ge/HfO_2/Al Gate Stacks," at the IEEE International Reliability Physics Symposium, 2008.
39. Nilufa Rahim, ***The Bronze Award at the CIE-GNYC (Chinese Institute of Engineers- Greater NY Chapter) Annual Convention*** at Marriot Hotel, Newark Liberty Airport for her paper "Breakdown studies of metal gate/high-k dielectric on Si substrate" November 8, 2008.
40. Nilufa Rahim, ***The Electrochemical Society - Student Travel Award*** and ***Graduate Student Association Travel Award*** to present a paper on "Low Voltage SILC Analysis for High-k/Metal gate Dielectrics" at the 215th Meeting of the Electrochemical Society, San Francisco, CA, May 24- May 29, 2009.
41. Nilufa Rahim, ***The Best Poster Award*** *at the Graduate Students Research Day, November 11, 2009* for the paper "Low Voltage SILC Analysis for High-k/Metal gate Dielectrics"

RESEARCH

Research Interests

Solid State Electronic Devices and Materials includes Nanoscale Semiconductor Devices; CMOS Device Gate Stack Reliability with High-K; Integrated sensors including photodetector and MEMS Microconcentrator; Very Large Scale Integration (VLSI) designs includes CMOS Circuits, Electronic Imaging circuits and various algorithms.

Research Collaboration with Industries and Academics

TEL Technology Center, America
Globalfoundries, US Inc
Indian Institute of Science, Bangalore, India
IMEC, Belgium
IIT Bombay, Mumbai, India
SEMATECH, Austin, TX
IBM TJ Watson Research Center, Yorktown Heights, NY
Lucent Technologies, Murray Hill, NJ
Infinite Computer Technologies, Alexandria, VA
Rubicon, Inc., Princeton, NJ
Sarnoff Corporation, Princeton, NJ
Semiconductor Assembly Council, Mountain View, CA
Amkor Electronics Inc., Chandler, AZ
Radiation Monitoring Devices, Watertown, MA
Alphatel, Mendham, NJ
Affiliated Engineering Laboratories, Inc., Edison, NJ

Research Collaboration with Federal Laboratories

Naval Research Laboratories, Washington, DC
ARMY Research Laboratory, Ft Monmouth, NJ

Publication of Edited Books

1. D. Misra, S. De Gandt, M. Houssa, K. Kita, D. Landheer (Editors), *Semiconductors, Dielectrics, and Metals for Nanoelectronics 15 In Memory of Samares Kar,* **ECS Transactions,** Vol. 80, No. 1, Pennington, NJ, 395 pages, October 2017.
2. D. Misra, P. Hesketh, Z. Karim, S. De Gandt, Y. Obeng, P. Srinivasan (Editors), *Emerging Materials for Post CMOS Devices/Sensing and Applications 8*, ECS Transactions, Vol. 77, No. 2, Pennington, NJ, 109 pages, May 2017.
3. S. Kar, K. Kita, D. Landheer, D. Misra (Editors), *Semiconductors, Dielectrics, and Metals for Nanoelectronics 14,* **ECS Transactions,** Vol. 75, No. 5, (ISBN 978-1-62332-364-6), Pennington, NJ, 319 pages, October 2016.
4. D. Misra, D. Bauza, Z. Chen, K.B. Sandaram, Y. Obeng, T. Chikyow, H. Iwai, (Editors), *Dielectrics for Nanosystems 7: Materials Science, Processing, Reliability, and Manufacturing*, **ECS Transactions**, Vol. 72, No. 2, (ISBN 978-1-62332-354-7), Pennington, NJ, 353 pages, May 2016.
5. S. Kar, K. Kita, D. Landheer, D. Misra (Editors), Semiconductors, Dielectrics, and Metals for Nanoelectronics 13, **ECS Transactions**, Vol. 69, No. 5, (ISBN 978-1-62332-312-7). Pennington, NJ, 374 pages, October 2015.
6. S. Kar, M. Houssa, S. Van Elshocht, D. Misra, K. Kita, D. Landheer, S. A. Dayeh, H. Jagannathan (Editors), *Semiconductors, Dielectrics, and Metals for Nanoelectronics 12*, **ECS Transactions,** Vol. 66 No. 8, (ISBN 978-1-62332-188-8) Pennington, NJ 191 pages, October 2014.
7. **D. Misra,** D. Bauza, Z. Chen, Y. Obeng, T. Chikyow, H. Iwai (Editors), *Dielectrics for Nanosystems 6: Materials Science, Processing, Reliability, and Manufacturing* **ECS Transactions,** Vol. 61 No. 2, (ISBN: 978-1-62332-161-1) Pennington, NJ 410 pages, May 2014.
8. S. Kar, M. Houssa, S.Van Elshocht, **D. Misra**, K. Kita, D. Landheer, H. Jagannathan (Editors), Semiconductors, Dielectric, and Metals for Nanoelectronics 11, **ECS Transactions,** Vol. 58 No. 7, (ISBN: 978-1-62332-098-0) Pennington, NJ 391 pages, October 2013.
9. **D. Misra**, S. DeGendt, Y. S. Obeng, P. Srinivasan, Z. Karim (Editors), Graphene, Ge/III-V, and Emerging Materials for Post CMOS Applications 5, **ECS Transactions,** Vol. 53 No. 1, (ISBN: 978-1-62332-023-2) Pennington, NJ 371 pages, May 2013.
10. M. J. Deen, **D. Misra**, D. N. Buckley (Editors), Integrated Optoelectronics 6, **ECS Transactions,** Vol. 45 No. 33, (ISBN: 978-1-62332-056-0 PDF) Pennington, NJ 67 pages, 2013.
11. S. Kar, S. Van Elshocht, K. Kita, D. Misra (Editors), Dielectric Materials and Metals for Nanoelectronics and Photonics 10, **ECS Transactions,** Vol. 50 No. 4, (ISBN: 978-1-62332-003-4) Pennington, NJ 358 pages, October 2012.
12. **D. Misra,** D. Bauza, Z. Chen, T. Chikyow, H. Iwai, Y. Obeng, S. Datta (Editors), *Dielectrics for Nanosystems 5: Materials Science, Processing, Reliability, and Manufacturing -and- Tutorials in Nanotechnology: More than Moore - Beyond CMOS Emerging Materials and Devices,* **ECS Transactions,** Vol. 45 No. 3, (ISBN: 978-1-56677-955-5) Pennington, NJ 598 pages, May 2012.
13. Y. Obeng, S. De-Gendt, Z. Karim, **D. Misra**, P. Srinivasan (Editors), *Graphene, Ge/III-V, Nanowires, and Emerging Materials for Post-CMOS Applications 4*, **ECS Transactions** (Volume 45, no. 4, 242 pages, ISBN 978-1-56677-956-2, Hardcover-May 2012.
14. S. Kar, M. Houssa, S. Van Elshocht, **D. Misra**, K. Kita (Editors), *Physics and Technology of High-k Materials 9,* **ECS Transactions,** Vol. 41 No. 3, (ISBN: 978-1-56677-903-6) Pennington, NJ 492 pages, October 2011.
15. K. Sundaram, **D. Misra**, H. Iwai, J. Fenton (Editors), ECS Transactions, Volume 41, no. 34, 50 pages, ISBN 978-1-56677-974-6, PDF-2012 "Solid State Topics (General)."
16. K. Kondo, F. Roozeboom, R. Akolkar, M. Koyanagi, **D. Misra** (Editors), Processing Materials of 3D Interconnects, Damascene and Electronics Packaging, ECS Transactions, Volume 41, no. 43, 134 pages, ISBN 978-1-56677-985-2, PDF-2012.
17. Z. Karim, **D. Misra**, P. Srinivasan, Y. Obeng, S. De Gendt, (Editors), **ECS Transactions** (Volume 35, no. 3, 532 pages, ISBN 978-1-56677-884-0, Hardcover-May 2011), "Dielectrics in Nanosystems and Graphene, Ge/III-V, Nanowires and Emerging Materials for Post-CMOS Applications-3"
18. K. Sundaram, **D. Misra**, A. Baca (Editors), ECS Transactions, Volume 33, no. 31, 121 pages, ISBN 978-1-56677-889-3, PDF-October 2010) "Solid State Topics (General)."
19. S. Kar, M. Houssa, S. Van Elshocht, D. Landheer, **D. Misra**, K. Kita (Editors), *Physics and Technology of High-k Materials 8,* **ECS Transactions,** Vol. 33 No. 3, (ISBN: 978-1-56677-822-0) Pennington, NJ 605 pages, October 2010.

20. **D. Misra**, D. Bauza, Z. Chen, T. Chikyow, H. Iwai, and Y. Obeng (Editors), *Dielectrics for Nanosystems 4: Materials Science, Processing, Reliability, and Manufacturing*, **ECS Transactions,** Vol. 28 No. 2, (ISBN: 978-1-56677-792-6) Pennington, NJ 574 pages, April 2010.
21. P. Srinivasan, Z. Karim,Y. Obeng, S. De-Gendt, **D. Misra** (Editors), *Graphene, Ge/III-V, and Emerging Materials for Post-CMOS Applications 2,* **ECS Transactions,** Vol. 28 No. 5, (ISBN: 978-1-56677-795-7) Pennington, NJ 247 pages, April 2010.
22. Y. Obeng, S. De-Gendt, P. Srinivasan, **D. Misra**, H. Iwai, Z. Karim, D. Hess, H. Grebel (Editors), *Graphene and Emerging Materials for Post-CMOS Applications***, ECS Transactions,** Vol. 19 No. 5, (ISBN: 978-1-56677-713-1) Pennington, NJ 407 pages, May 2009.
23. K. Worhoff, P. Mascher, **D. Misra**, K. Shiraishi (Editors), *Science and Technology of Dielectrics for Active and Passive Devices,* **ECS Transactions**, Vol. 16, No. 21, Pennington, NJ, (Online volume, Item No. *ECSTF8000016000021*), October 2008
24. S. Kar, D. Landheer, M. Houssa, D. Misra, S. Van Elshocht, H. Iwai (Editors), *Physics and Technology of High-k Gate Dielectrics 6*, **ECS Transactions**, Vol. 16, No. 5, Pennington, NJ, (ISBN 978-1-56677-651-6), 530 pages, October 2008.
25. **D. Misra**, H. Iwai, Y. Obeng, T. Chikyow, J. Vanhellemont (Editors), *Dielectrics for Nanosystems 3: Materials Science, Processing, Reliability, and Manufacturing*, **ECS Transactions,** Vol. 13 No. 2, (ISBN: 978-1-56677-627-1) Pennington, NJ 405 pages, May 2008.
26. S. Kar, S. De Gendt, M. Houssa, D. Landheer, **D. Misra**, and H. Iwai (Editors), *Physics and Technology of High-k Gate Dielectrics 5*, **ECS Transactions**, Vol. 11, No. 4, Pennington, NJ, (ISBN 978-1-56677-570-0), 552 pages, October 2007.
27. S. Kar, S. De Gendt, M. Houssa, D. Landheer, H. Iwai, and D. Misra (Editors) Physics and Technology of High-k Gate Dielectrics 4, **ECS Transactions,** Vol. 3, No. 3, Pennington, NJ, October 2006.
28. P. Mascher, K. Wörhoff, and D. Misra, (Editors), Science and Technology of Dielectrics for Active and Passive Photonic Devices*,* **ECS Transactions,** Vol. 3, No. 11, (Online) Pennington, NJ, October 2006.
29. H. Z. Massoud, J. H. Stathis, T. Hattori. D. Misra, and I. Baumvol (Editors), Physics and Chemistry of SiO_2 and Si-SiO_2 Interface-5 **ECS Transactions** Vol. 1 No. 1, October 2005, Pennington, NJ (ISBN 1-56677-431-4).
30. S. Kar, D. Misra, H. Iwai. M. Houssa, D. Landheer, W. Tsai, S. De Gendt, and A. Chin (Editors), High Dielectric Constant Gate Stacks III, **ECS Transactions**, Vol. 1, No. 5 Pennington, NJ, March 2006.
31. D. Misra and H. Iwai, Dielectrics for Nanosystems – II: Materials Science, Processing, Reliability, and Manufacturing, **ECS Transactions** Vol. 2 No. 1, May 2006, Pennington, NJ (ISBN 1-56677-438-1).
32. L. Cook, D. Misra, S. Mukhopadhyay, W. Wong.Ng, O. Leonte, and K. Sundaram (Editors), Interfaces in Electronic Materials, Electrochemical Society Proceedings Volume, PV-2003-31, 334 pages, 2006 (ISBN 1-56677-425-X).
33. J.L. Davidson, P.J. Hesketh, **D. Misra**, and S. Shoji, (Editors), M*icrofabicated Ststems and MEMS-VII,* Electrochemical Society Proceedings Volume PV-2004-09, 340 pages, 2004 (ISBN 1-56677-272-5).
34. S. Kar, R. Singh, **D. Misra**, H. Iwai, M. Houssa, J. Morais, and D. Landheer, Physics and Technology of High-k Gate Dielectrics II, Electrochemical Society Proceedings Volume PV-2003-22, (ISBN 1-56677-405-5), 490 pages, October 2003.
35. S. Kar, **D. Misra**, R. Singh, F. Gonzalez, Physics and Technology of High-k Gate Dielectrics I, Electrochemical Society Proceedings Volume PV-2002-28, (ISBN 1-56677-395-4), 304 pages, 2003.
36. **D. Misra**, K. Worhoff, and P. Mascher, Dielectrics in Emerging Technologies, Electrochemical Society Proceedings Volume PV-2003-1, (ISBN 1-56677-346-6), 436 pages, April 2003.
37. R. E. Sah, K. B. Sundaram, M. J. Deen, D. Landeer, W. D. Brown, and **D. Misra**, Silicon Nitride and Silicon Dioxide Thin Insulating Films (7th), Electrochemical Society Proceedings Volume PV-2003-2, (ISBN 1-56677-347-4), 636 pages, April 2003.
38. M.J. Deen, **D. Misra** and J. Ruzyllo (Editors), Integrated Optoelectronics, Electrochemical Society Proceedings Volume PV-2002-4, 444 pages, 2002 (ISBN 1-56677-370-5).
39. P.J. Hesketh, S.S. Ang, J.L. Davidson, H.G. Hughes, and **D. Misra**, (Editors), M*icrofabicated Ststems and MEMS-VI,* Electrochemical Society Proceedings Volume PV-2002-6, 260 pages, 2002 (ISBN 1-56677-272-5).
40. K.B. Sundaram, M.J. Deen, D. Landheer, W.D. Brown, **D. Misra**, M.D. Allendorf and R.E. Sah, (Editors), *Silicon Nitride and Silicon Dioxide Thin Insulating Films - VI,* Electrochemical Society Proceedings Volume PV-2001-7, 286 pages, 2001 (ISBN 1-56677-3136-X).
41. R.K. Ghosh, and **D. Misra** (Editors), CIT 2000, Proceedings of the Third International Conference on Information, Tata McGraw-Hill Publishing, New Delhi, 308 pages, 2001. (ISBN 0-07-043546-4).
42. P.J. Hesketh, S.S. Ang, W.E. Bailey, J.L. Davidson, H.G. Hughes, **D. Misra**, (Editors), M*icrofabicated Ststems and MEMS-V,* Electrochemical Society Proceedings Volume PV-2000-19, 394 pages, 2000 (ISBN 1-56677-286-9).
43. K.B. Sundaram, M.J. Deen, W.D. Brown, R.E. Sah, E. Poindexter, **D. Misra**, M.D. Allendorf, and S.I. Raider, (Editors), *Silicon Nitride and Silicon Oxide Insulating Film - V*, Electrochemical Society Proceedings Volume PV-99-6, 284 pages,

1999. (ISBN 1-56677-228-1)

44. G.S. Mathad, D.W. Hess, Y. Horiike, T. Li, **D. Misra,** and L. Simpson, (Editors), *Plasma Etching Processes For Sub-Quarter Micron Devices*, Electrochemical Society Proceedings Volume PV-99-30, 378 pages, 1999. (ISBN 1-56677-253-2)
45. G.S. Mathad, **D. Misra**, K.B. Sundaram, (Editors), *Plasma Processing - XII,* Electrochemical Society Proceedings Volume PV-98-4, 292 pages, 1998. (ISBN 1-56677-198-6)

Feature Book Chapters

46. **D. Misra**, Damage Due to Reactive Ion Etching - A Review, Trends in Electrochemistry, Editor: J. Menon, Publisher: Research Trends, Trivandrum, India, 1992, pp. 25-37.
47. **D. Misra,** "MIS, MIM, and MSM STRUCTURES." Wiley Encyclopedia of Electrical and Electronics Engineering: Semiconductor Manufacturing, Edited by J.G. Webster, John Wiley & Sons, Inc. New York (Published: September 26, 2001).
48. M. N. Bhyian and D. Misra, "High-k Dielectrics and Device Reliability," in Nano-CMOS and Post-CMOS Electronics: Devices and Modelling, 2016, Saraju P. Mohanty and Ashok Srivastava, editors, The Institution of Engineering and Technology.

Refereed Journal Publications

1. M. N. Bhuyian, P. Shao, A. Sengupta, Y. Ding, D. Misra, K. Tapily, R. D. Clark, S. Consiglio, C. S. Wajda, and G. J. Leusink, "Post Plasma Oxidation Processed ALD Al2O3/Hf1-xZrxO2 Thin Films on Ge Substrates: Reliability," **ECS Journal of Solid State Science and Technology**, Vol. 7(2), pp. N1-N6, 2018.
2. H. Iwai, A. Toriumi and D. Misra, "High Dielectric Constant Materials for Nanoscale Devices and Beyond," **Interface**, Vol. 26(4), pp. 77-81, 2017.
3. D. Misra, "Importance of Dielectric Science in Today's Technology," **Interface**, Vol. 26(4), pp. 65, 2017.
4. Y. Ding, D. Misra, K. Tapily, R. D. Clark, S. Consiglio, C. S. Wajda, and G. J. Leusink, "Impact of Slot Plane Antenna Annealing on Carrier Transport Mechanism and Reliability on ZrO_2/Al_2O_3/Ge Gate Stack," **IEEE Transactions on Device and Materials Reliability**, 17(2), 349-354, (2017).
5. M. R. Philip, D. D. Choudhary, M. Djavid, M. N. Bhuyian, T.H.Q. Bui, D. Misra, A. Khreishah, J.S. Piao, H.D. Nguyen, K.Q. Le and H. P. T. Nguyen, "Fabrication of Phosphor-Free III-Nitride Nanowire Light-Emitting Diodes on Metal Substrates for Flexible Photonics," **ACS Omega**, 2(9), 5708-5714, (2017).
6. R. Yuan, P.A. Taylor, T.L. Alvarez, D. Misra and B. Biswal, "MAPBOT: Meta-analytic parcellation based on text, and its application to the human thalamus. **NeuroImage,** 157, 716-732, (2017).
7. M. R. Philip, D. D. Choudhary, M. Djavid, M. N. Bhuyian, J. Piao, T. T. Pham, D. Misra and H. P. T. Nguyen, "Controlling color emission of InGaN/AlGaN nanowire light-emitting diodes grown by molecular beam epitaxy," **J. Vac. Sci. Technol. B** 35(2), 02B108, (2017).
8. Y. M. Ding, D. Misra and P. Srinivasan, "Flicker Noise Performance on Thick and Thin Oxide FinFET," **IEEE Transaction on Electron Devices**, Vol. 64, No. 5, pp. 2321-2325, 2017.
9. Y. M. Ding, Z. Cheng, X. Tan, D. Misra, A. E. Delahoy, and K. K. Chin, "Detection of electron emission as DLTS signal in CdTe solar cells," **Journal of Applied Physics**, 120, 135704, 2016; doi: 10.1063/1.4964438
10. M. N. Bhuyian, R. Sengupta, P. Vurikiti, and D. Misra, "Oxygen Vacancy Defect Engineering Using Atomic Layer Deposited HfAlOx in Multi-Layered Gate Stack," **Appl. Phys. Lett**. 108, 183501, 2016.
11. Y. Ding, D. Misra, M. N. Bhuyian, K. Tapily, R. D. Clark, S. Consiglio, C. S. Wajda, and G. J. Leusink, "Electrical Characterization of Dry and Wet Processed Interface Layer in Ge/High-K Devices," **J. of Vac. Sci. and Technol. B**, 34(2), 021203, 2016.
12. M. N. Bhuyian, D. Misra, K. Tapily, R. Clark, S. Consiglio, C. Wajda, G. Nakamura, and G. Leusink, "Interface State Density Engineering in Hf1-xZrxO2/SiON/Si gate stack," **J. of Vacuum Sci. and Technol. B**, 34(1), 011207, 2015.
13. M. N. Bhuyian and D. Misra "ALD Hf0.2Zr0.8O2 and HfO2 with Cyclic Annealing/SPA Plasma Treatment: Reliability," **Emerging Materials Research**, 4, 229 (2015).
14. M. N. Bhuyian, S. Poddar, D. Misra, K. Tapily, R. D. Clark, S. Consiglio, C. S. Wajda, G. Nakamura, and G. J. Leusink, "Impact of cyclic plasma treatment on oxygen vacancy defects in TiN/HfZrO/SiON/Si gate stacks," **Applied Physics Letters**, vol. 106, 193508, 2015.
15. M.N. Bhuyian and D. Misra, "Multilayered ALD $HfAlO_x$ and HfO_2 for High-Quality Gate Stacks," **IEEE Transactions on Device and Materials Reliability**, vol. 15(2), 229, 2015.

16. Y.M. Ding and D. Misra, Oxide structure-dependent interfacial layer defects of HfAlO/SiO_2/Si stack analyzed by conductance method," **Journal of Vacuum Science & Technology B**, vol. 33, 021203, 2015.
17. M. N. Bhuyian, D. Misra, K. Tapily, R. D. Clark, S. Consiglio, C. S. Wajda, G. Nakamura, and G. J. Leusink, "Cyclic Plasma Treatment during ALD $Hf_{1-x}Zr_xO_2$ Deposition," **ECS Journal of Solid State Science and Technology**, vol. 3, issue 5, N83-N88, 2014.
18. S.K. Sahoo, B.L. Sopori, D. Misra, R. Rivero and N.M. Ravindra, "Impact of interface trap density at metal/SiN_x/n^+ MOS capacitor in multilayered Si solar cells," **Emerging Materials Research**, Vol. 3, pp 101-105, 2013.
19. R. Kwadzogah, D. Misra, "Simultaneous Identification of Friction and Transfer Function of a DC Servo Positioning System via Simulation," ***The International Journal of Intelligent Control And Systems****, 18*(1), 10-16, 2013.
20. P. Kharangarh, D. Misra, G.E. Georgiou, K.K. Chin, "Characterization of space charge layer deep defects in n+-CdS/p-CdTe solar cells by temperature dependent capacitance spectroscopy," **Journal of Applied Physics**, vol. 113, 144504, 2013.
21. D. Misra, J. Kasinath and A.N. Chandorkar, Voltage and current stress induced variations in TiN/$HfSi_xO_y$/TiN MIM capacitors, **Microelectronics Reliability**, vol. 53, 270–273, 2013.
22. P. Kharangarh, D. Misra, G.E. Georgiou, K.K. Chin, Evaluation of Cu Back Contact Related Deep Defects in CdTe Solar Cells, **ECS Journal of Solid State Science and Technology**, vol. 1, issue 5, Q110-Q113, 2012.
23. Zhi Yong Li, Gianluigi De Geronimo, D. Peter Siddons, D. Misra, T. A. Tyson, Emerson Vernon, A Switcher ASIC Design for Use in a Charge-Pump Detector, **IEEE Transaction on Nuclear Science,** vol. 59(6), pp. 3205-3212**,** 2012.
24. Vinay Budhraja, B.Sopori, N.M.Ravindra, D.Misra, "An Improved Dislocation Model of Silicon Solar Cell," **Progress in Photovoltaics Research & Applications,** DOI: 10.1002/pip.2412, 2013
25. S. K. Sahoo and D. Misra, Interfacial layer growth condition dependent carrier transport mechanisms in HfO2/SiO2 gate stacks, **Applied Physics Letters**, vol. 100, 232903, 2012.
26. Vinay Budhraja, D.Misra, N.M.Ravindra, "Simulation of Device Parameters of High Efficiency Multicrystalline Silicon Solar Cells", **Emerging Materials Research**, Vol. 1, pp 25-32, 2012.
27. S. K. Sahoo and D. Misra, Field dependent electrical conduction in HfO_2/SiO_2 gate stack for before and after constant voltage stressing, **Journal of Applied Physics**, vol. 110, 084104 (2011)
28. S. K. Sahoo, D. Misra, M. Sahoo, C. A. MacDonald, H. Bakhru, D. C. Agrawal, Y. N. Mohapatra, S. B. Majumder, and R. S. Katiyar, Improved dielectric properties and their temperature insensitivity in multilayered Ba0.8Sr0.2TiO3/ZrO2 thin films, **Journal of Applied Physics**, vol. 109, 064108 (2011)
29. S. K. Sahoo, D. Misra, D. C. Agrawal, Y. N. Mohapatra, S. B. Majumder, and R. S. Katiyar, Leakage mechanism of Ba0.8Sr0.2TiO3/ZrO2 multi layer thin films, **Journal of Applied Physics**, vol. 108, 074112 (2010).
30. V. Budhraja, X. Wang, and D. Misra, "MOS capacitors with metal gate/high-k dielectrics on GaAs bulk substrate," **J Materials Science: Materials in Electronics,** 10.1007/s10854-010-0069-z, February 2010.
31. N.A. Chowdhury, X. Wang, G. Bersuker, C. Young, N. Rahim and **D. Misra**, "Temperature dependent time-to-breakdown (TBD) of TiN/HfO2 n-channel MOS devices in inversion", **Microelectronics Reliability**, 49(5), pp. 495-498, 2009.
32. N. Rahim and **D. Misra**, "Temperature Effects on Breakdown Characteristics of Hig-k Gate Dielectrics with Metal Gates", ***IEEE Transactions on Device and Materials Reliability,*** 8 (4), pp. 689-693**,** 2008.
33. N. Rahim and **D. Misra**, "TiN/HfO_2/SiO_2/Si Gate Stack Breakdown: Contribution of HfO_2 and Interfacial SiO_2 Layer" ***Journal of Electrochemical Society,*** **155** (10) G194-G198, October 2008.
34. N. A. Chowdhury, G. Bersuker, C. Young, R. Choi, S. Krishnan and D. Misra, "Breakdown characteristics of metal gate/HfO_2 based high-k gate stacks," ***Microelectronic Engineering***, vol. 85, No. 1, pp. 27-35, 2008.
35. N. Rahim and D. Misra, "Temperature Effects on Breakdown Characteristics of Hig-k Gate Dielectrics with Metal Gates", accepted in ***IEEE Transactions on Device and Materials Reliability,*** August 2008.
36. N. Rahim and D. Misra, "Role of Hydrogen in Ge/HfO2/Al Gate Stacks Subjected to Negative Bias Temperature Instability," ***Applied Physics Letters***, vol. 92, 023511, 2008.
37. N. Rahim and D. Misra, "TiN/HfO_2/SiO_2/Si Gate Stack Breakdown: Contribution of HfO_2 and Interfacial SiO_2 Layer" ***Journal of Electrochemical Society,*** **155** (10) G194-G198, 2008.
38. P. Srinivasan, B.P. Linder, V. Narayanan, D. Misra and E. Cartier, Impact of high-κ and SiO_2 interfacial layer thickness on low-frequency (1/f) noise in aggressively scaled metal gate/HfO_2 n-MOSFETs: role of high-κ phonons, ***Microelectronic Engineering***, vol. 84, No. 9-10, pp. 2274-2277, 2007.
39. N. A. Chowdhury and D. Misra, "Charge Trapping at Deep States in Hf-Silicate based High-k Gate Dielectrics," Accepted for **Journal of Electrochemical Society,** vol. 154, No. 2, pp. G30-G37, 2007.
40. N. A. Chowdhury, D. Misra, G. Bersuker, C. Young, and R. Choi, "Role of Interfacial Layer on Breakdown of TiN/High-k Gate Stacks," **Journal of Electrochemical Society**, vol. 154, No. 12, pp. G298-G306, 2007.

41. C. Claeys, E. Simoen , P. Srinivasan, D. Misra, "Impact of gate-dielectric interface on the low-frequency noise of thin gate oxide n-channel metal-oxide-semiconductor field-effect-transistors", **Solid State Electronics,** vol. 51, No. 4, pp. 627-632, 2007.
42. P. Srinivasan, F. Crupi, E. Simoen, P. Magnone, C. Pace, D. Misra, and C. Claeys, "Interfacial layer quality effects on low-frequency noise (1/f) 3 in p-MOSFETs with advanced gate stacks," ***Microelectronics Reliability,*** vol. 47, No. 4-5, pp. 501-504, 2007.
43. N.A. Chowdhury, D. Misra and N. Rahim, "Negative Bias Temperature Instability in TiN/Hf-Silicate Based Gate Stacks," **International Journal of High Speed Electronics and Systems,** vol. 17, No. 1, pp. 129-141, 2007.
44. N. A. Chowdhury, P. Srinivasan and D. Misra, "Trapping in deep defects under substrate hot electron stress in TiN/Hf-silicate based gate stacks," **Solid-State Electronics**, vo. 51, No. 1, pp. 80-88, 2007.
45. D. Misra, R. Garg, P. Srinivasan, N. Rahim, N.A. Chowdhury, "Interface Characterization of High-K Dielectrics on Ge Substrates, Accepted for **Materials Science and Semiconductor Processing,** vol. 9, No. 4-5, pp. 741-748, 2006.
47. P. Srinivasan, E. Simoen, B. DeJaeger, C. Claeys and D. Misra, "1/f noise performance of MOSFETs with HfO_2 and metal gate on Ge-on-Insulator substrates," **Materials Science and Semiconductor Processing,** vol. 9, No. 4-5, pp. 721-726, 2006.
48. R. Garg, D. Misra, S. Guha "Effect of Ge Surface Nitridation on the Ge/HfO_2/Al MOS Devices," Accepted for **IEEE Transaction of Device and Materials Reliability**, vol. 6, No. 3, pp. 455-460, September 2006.
49. T. Kindu and D. Misra, "Electron Transport Model in Photodetectors For High Speed Imaging," **Semiconductor Science and Technology**, vol. 20, No. 11, pp. 1122-1126, November 2005.
50. P. Srinivasan, N.A. Chowdhury, and D. Misra, Charge Trapping in Ultra-thin Hafnium Silicate / Metal Gate Stacks, **IEEE Electron Device Letters**, vol. 26, No. 12, pp. 913-915, December 2005.
51. M. Kim, R. Brukh, S. Kishore, S. Mitra and D. Misra, "Design and Fabrication of Heated Microchannels," **Sensors and Materials**, vol. 18, No. 1, pp. 035– 048, January 2006.
52. R. Garg, D. Misra and P. K. Swain, "Ge MOS Devices with Thermally Evaporated HfO_2 As Gate Dielectric," ***Journal of Electrochemical Society***, vol. 153, No. 2, pp. F29-F34, February 2006.
53. P. Srinivasan, E. Simoen, L. Pantisano, C. Claeys and D. Misra, Low-Frequency (1/F) Noise Performance of N- And P-MOSFETS with Poly-Si / Hf-Based Gate Dielectrics, ***Journal of Electrochemical Society***, vol. 153, No. 4, pp. G324-329, April 2006.
54. T. Kindu and D. Misra, "Enhanced SiO_2 Reliability on Deuterium Implanted Silicon," ***IEEE Transaction on Device and Materials Reliability***, vol. 6, No. 2. June 2006.
55. P. Srinivasan, E. Simoen, R. Singanamalla, H.Y. Yu, C. Claeys, and D. Misra, "Gate Electrode Effects on Low-Frequency (1/f) Noise in p-MOSFETs with High-K Dielectrics," ***Solid State Electronics,*** vol. 50, No. 6, pp. 992-998, June 2006.
56. P. Srinivasan, E. Simoen, Z. M. Rittersma, W. Deweerd, L. Pantisano, C. Claeys and D. Misra, "Effect of Nitridation on Low-Frequency (1/f) Noise in N- And P- MOSFETs With HfO_2 Gate Dielectrics," ***Journal of Electrochemical Society***, Vol. 153, No. 9, pp. G819-G825, 2006
57. F.Crupi**,** P. Srinivasan, P. Magnone, E.Simoen, C. Pace, D. Misra, C. Claeys – "Impact of the interfacial layer on the low-frequency noise (1/f) behavior of MOSFETs in advanced gate stacks," ***IEEE Electron Device Letters,*** vol. 27, No. 8, pp.688-691, August 2006.
58. N. A. Chowdhury, R. Garg, and D. Misra, "Charge Trapping and Interface Characteristics of Thermally Evaporated HfO_2," **Applied Physics Letters,** vol. 85, No. 15, pp. 3289-3291, October 11, 2004.
59. T. Kundu and D. Misra, "Si-SiO_2 Interface Passivation Using Hydrogen And Deuterium Implantation, **Electrochemical and Solid-State Letters**, vol. 8, No. 2, pp. G35-G37, 2005.
60. P. Srinivasan, E. Simoen, L. Pantisano, C. Claeys, D. Misra, "Low frequency noise performance of MOSFETs with metal gate Hf-based dielectrics," **Microelectronic Engineering**, vol. 77(6), June 2005.
61. R. Garg, N. A. Chowdhury, M. Bhaskaran, P. K. Swain and D. Misra, "Electrical Characteristics of Thermally Evaporated HfO_2," **Journal of Electrochemical Society**, vol. 151, No. 10, pp. F215-F219, 2004.
62. P.Srinivasan, B.Vootukuru, and D. Misra, "Screening of Si-H bonds during plasma processing," **Solid-State Electronics**, vol. 48(10-11), pp. 1809-1814, 2004.
63. M. Bhaskaran, P. K. Swain, and D. Misra, "Thermally Evaporated ZrO2," **Electrochemical and Solid-State Letters,** vol. 7, No. 6, pp. F38-F40, 2004.
64. Ralph Bucher, and D. Misra, "A Synthesizable VHDL Model of the Exact Solution for Three-dimensional Hyperbolic Positioning System," **VLSI Design Journal**, vol. 15, No. 2, pp. 507-520, November 2002.
65. R.K. Jarwal and D. Misra, "Interface Hardening with Deuterium Implantation," **Journal of Electrochemical Society,** vol. 149, No. 8, pp. G446-G450, August 2002.
66. D. Misra, "Effect of Reverse Biased Floating Voltage at Source and Drain on Plasma Damage," **IEEE Transaction on**

Electron Devices, vol. 49, No. 6, pp. 1090-1093, June 2002

67. R.K. Jarwal and D. Misra, "Reliability of Thin Oxides Grown on Deuterium Implanted Silicon Substrate," **IEEE Transaction on Electron Devices,** vol. 48, No. 5, pp 1015-1016, May 2001.
68. R.K. Jarwal, D. Misra and J.L. Lawrance, "Charge Transfer in a Multi-Implant Pinned-Buried Photodetector," **IEEE Transaction on Electron Devices**, vol. 48, No. 5, pp. 858-862, May 2001.
69. D. Misra and R.K. Jarwal, "Metal-Oxides-Semiconductor Diodes on Deuterium-Implanted Silicon Substrate," **Applied Physics Letters,** vol. 76, No. 21, pp. 3076-3078, May 2000.
70. D. Misra and S. Kishore, "Gate Oxides Grown on Deuterium Implanted Silicon Substrate," **IEEE/ECS Electrochemical and Solid-State Letters**, vol. 2, No. 12, pp. 637-639, December 1999.
71. D. Misra**,** "Charge-Trapping Properties of Gate Oxide Grown on Nitrogen-Implanted Silicon Substrate," **Applied Physics Letters**, vol. 75, No. 15, pp. 2283-2285, October 1999.
72. P.K. Swain, S. Madapur, and D. Misra "Plasma Process-Induced Band Gap Modifications of Strained SiGe Heterostructure," **Applied Physics Letters**, vol. 74, No. 21, pp. 3173-3175, May 1999.
73. K.P.Cheung, D. Misra, J. I. Colonell, C-T. Liu, Y. Ma, C-P. Chang, W-Y-C. Lai, R. Liu and C-S. Pai, "Plasma damage immunity of thin gate oxide grown on very lightly N+ implanted silicon," **IEEE Electron Device Letters,** vol. 19, no. 7, pp. 231, 1998.
74. D. Misra and K.P. Cheung, "Effect of source and drain junctions on plasma charging" **Semiconductor Science and Technology**, vol. 13, No. 5, pp. 529-531, 1998.
75. D.Misra and P.K. Swain, "Strain relaxation in SiGe due to process induced defects and their subsequent annealing behavior," **Microelectronics and Reliability**, vol. 38, no. 6, pp. 1611-1619, 1998.
76. D. Misra, W. Zhong, B. Bartynski, V. Patel, and B. Singh, Etch Induced Damage in High Density Inductively Coupled Plasma Etching Reactor, **Semiconductor Science and Technology**, vol. 11, No. 5, pp. 816-821, May 1996.
77. P.K. Swain, D. Misra**,** and P.E. Thompson, Effect of Dry Etching and Subsequent Annealing of Si/SiGe/Si Heterostructure, **Journal of Applied Physics,** Vol. 79, No. 8, pp. 4402-4406, 15 April, 1996.
78. D. Misra and B. Wang, Three-Dimensional Magnetic Sensors in BiCMOS Technology, **Sensors and Materials,** vol. 5 (6), pp. 369-384, 1994.
79. D. Misra, and B. Wang, Elimination of Cross-Sensitivity in a 3-Dimensional Magnetic Sensor, **IEEE Transactions on Electron Devices,** vol. ED-41(4), pp. 622-624, April 1994.
80. O.W. Purbo, C.R. Selvakumar, and D. Misra, Reactive Ion Etching of SOI (SIMUX and ZMR) Silicon in Nitrogen Containing CF4 + O2 and SF6 + O2 Plasmas, **Journal of Electrochemical Society**, vol. 140, no. 9, pp. 2659-2668, Sept. 1993.
81. D. Misra and V.S. Simhadri, "A Survey of the Potential of IrSi Schottky Barrier MOSFET Based on Simulation Studies," **Solid-State Electronics**, vol. 35, no. 6, pp. 829-833, June 1992.
82. D. Misra, M. Zhang, and Z. Cheng, "A Novel 3-D Magnetic Field Sensor in Standard CMOS Technology," **Sensors and Actuators**, vol. 34, no. 1, pp. 67-75, 1992.
83. D. Misra, "Reactive Ion Etching (CF4 + O2 Plasma) Induced Deep Levels In MOS Devices," **Journal of Vac. Sc. And Technology** (A), vol. 10(2), pp. 301-304, March/April 1992.
84. V. Patel, M. Patel, S. Ayyagari, **D. Misra**, W.F. Kosonocky, and B. Singh, "Wafer Temperature Measurements and End-Point Detection During Plasma Etching by Thermal Imaging," **Applied Physics Letters**, vol. 59, no. 11, pp. 1299-1301, Sept. 9, 1991.
85. D. Misra and E.L. Heasell, "Annealing Behavior of Reactive Ion Etching Induced Deep Levels," **Journal of Electrochemical Society**, vol. 137, No. 5, pp. 1559-1563, May 1990.
86. D. Misra, "A Novel CMOS Magnetic Field Sensor Array," **IEEE Journal of Solid State Circuit**, vol. SC-25, No. 2, April 1990.
87. D. Misra and E.L. Heasell, "Electrical Damage to Silicon Devices Due to Reactive Ion Etching," **Semiconductor Science and Technology**, vol. 5, No. 3, pp. 229-236, March 1990.
88. D. Misra and E.L. Heasell, "Investigation of dry etching damage using p+ _n diodes," **Journal of Electrochemical Society**, vol. 136, No. 1, pp. 234-238, 1989.
89. D. Misra**,** C.R. Selvakumar, E.L. Heasell and D.J. Roulston, "Effect of RIE on electrical characteristics of poly-emitter bipolar transistors," **Solid State Electronics**, vol. 31, No. 11, pp. 1647-1649, 1988.
90. D. Misra and E.L. Heasell, "A study of reactive ion etching (CF4 + O2 plasma) induced deep levels in silicon," **Journal of Electrochemical Society**, vol. 134, no. 4, pp. 956-958, April 1987.
91. D. Misra, T.R. Viswanathan and E.L. Heasell, "A novel high gain MOS magnetic field sensor," **Sensors and Actuators**, vol. 9, pp. 213-221, September 1986.

Other Journal Publications

92. D. Misra, Educational Initiatives in the Field of Dielectric and Semiconductor Materials, Devices, and Processing, ***Interface***, vol. 21, No. 1, pp. 77, 2012.
93. D. Misra, High k Dielectrics on High-Mobility Substrates: ***Interface***, vol. 20, No. 4, pp. 47-51, 2011.
94. D. Misra, Evolution of Dielectric Science and Technology for Nanoelectronics, ***Interface***, vol. 20, No. 4, pp. 31, 2011.
95. D. Misra, H. Iwai, and H. Wong, "High-K Gate Dielectrics," ***Interface***, vol. 14, No. 2, pp. 30-34, 2005.
96. T. Kundu, R. Garg, N.A. Chowdhury and D. Misra, "Electrical Techniques for the Characterization of Dielectric Films," ***Interface,*** vol. 14, No. 3, pp. 17-19, 2005.
97. D. Misra and J. Brewer, "Crystal Radio Detector ("Cat's Whisker"): The First Wireless Device," **IEEE Circuits and Devices Magazine, Devices** Unlimited Column, vol. 17, No. 2, pp. 12, March 2001.
98. P.K. Swain, H.K. Sehgal, and D. Misra, Preparation and Characterization of HgMnSe Thin Films Prepared by Flash Evaporation Technique, Electrochemical Society ***Interface***, Vol. 4, No. 3, pp. 179, 1995.
99. P.K. Swain, D. Misra**,** Y. Qui, and P.E. Thompson, Effect of Dry Etching and Subsequent Annealing of Si/SiGe/Si Heterostructure, Electrochemical Society ***Interface***, Vol. 4, No. 3, pp. 180, 1995.
100. D. Misra, A Book Review: "VLSI Fabrication Principle: Silicon and Gallium Arsenide" 2nd Ed., by Sorab K. Ghandi, John Wiley Interscience, 1994," **Semiconductor Science and Technology**, Vol. 10, pp. 213-214, February 1995.
101. V. Patel, W. Zhong, D. Misra, J. Gaudani, B. Bartynski, and B. Singh, Etch Induced Damage in High Density Inductively Coupled Plasma Etching Reactor, Electrochemical Society ***Interface***, Vol. 3, No. 1, pp. 130, 1994.
102. W. Zhong, D. Misra, H. Amin, J. Gaudani, and M. Patel, Electrical studies on SF6 and O2 plasma etched Si1-xGex/Si p+_n heterojunction, Electrochemical Society ***Interface***, Vol. 2, No. 3, pp. 122, 1993.
103. O.W. Purbo, D. Misra and C.R. Selvakumar, "Reactive Ion Etching of SOI (ZMR and SIMOX) Silicon in CF4 + O2 and SF6 + O2 Plasmas," **Journal of Electrochemical Society**, Vol. 139, No. 3, pp. 151C, 1992.
104. D. Misra and E.L. Heasell,"Annealing Behavior of Reactive Ion Etching Induced Deep Levels," **Journal of Electrochemical Society**, Vol. 136, No. 3, pp. 121C, March 1989.

Invited Talks in National and International Conferences and Meetings

1. D. Misra, Invited Talk, "Why Do We do Characterization," CeNSE Lecture, Indian Institute of Science, Bangalore, January 8, 2018.
2. D. Misra, Invited Talk, "Trends in Gate Dielectric Scaling, Processing and Reliability Issues," Lam Research India, Bangalore, India, January 4, 2018.
3. D. Misra, Invited IEEE EDS Distinguished Lecturer, "Reliability Implications of Next Generation Nanoelectronic Devices" IEEE EDS Delhi Chapter, Indian Institute of Technology, Delhi, New Delhi, India, December 20, 2017.
4. D. Misra, Keynote Talk, "Challenges of Converging Nanoelectronics and Nanotechnology for Internet of Things," IEEE International Symposium on Nanoelectronic and Information Systems (IEEE-iNIS), Bhopal, India, December 18, 2017.
5. D. Misra, Invited IEEE EDS Distinguished Lecturer, "Challenges for Nanoelectronics: More Moore and More than Moore," IEEE EDS Ottawa Chapter ay 5th International Workshop on High-Performance Chip, Packaging and Systems, Carleton University, Ottawa, Canada, September 23, 2017.
6. D. Misra, Invited Talk, "Low Power Requirement in Nanoscale CMOS Devices and Introduction of High-k Materials," Indian Institute of Science, Bangalore, India, Indian Institute of Science, Bangalore, India, August 28, 2017.
7. D. Misra, Invited Talk, "Dielectric-Semiconductor Interface with High-k Gate Dielectrics," Indian Institute of Technology Madras, Chennai, India, Indian Institute of Technology Madras, Chennai, India, August 16, 2017.
8. D. Misra, Invited IEEE EDS Distinguished Lecturer, "Interface Issues in Ge/High-k Gate Stacks: Can it be solved?" IEEE EDS Chengdu Chapter, University of Electronic Science and Technology, China, July 20, 2017.
9. D. Misra, Invited IEEE EDS Distinguished Lecturer, "High-k Gate Stacks Processing and Reliability on Si and Ge Substrates," IEEE EDS Nanjing Chapter, School of Electronic Science & Engineering, Southeast University, Nanjing, China, July 18, 2017.
10. D. Misra, Invited Talk, "Solving the Interface Problem in Ge/High-k Gate Stack," International Semiconductor Conference for Global Challenges (ISCGC 2017), Nanjing, China, July 17, 2017.
11. D. Misra, Invited Talk, "Next Generation NanoSystems: Scientific and Technical Challenges," Ramakrishna Mission, Kolkata, India, Ramakrishna Mission, Kolkata, India, January 10, 2017.
12. D. Misra, Invited Talk, "Challenges in nanoelectronics, Nanotechnology and Information Technology for Internet of Things (IoT)," Assam University, Silchar, Assam, India, January 9, 2017.
9. D. Misra, 5-Day Short Course; GIAN Lecture Series "Nanoelectronics Challenges for Internet of Things," GIAN: Global Initiative of Academic Networks, Ministry of Human Resource Development, Govt. of India, National Institute of

Technology, Silchar, Assam, India, January 5-9, 2017.

10. D. Misra, Reduction of Interface States in Ge/High-K Gate Stacks and its Reliability Implications, 13th IEEE ICSICT, Hangzhou, China, October 27, 2016.
11. D. Misra, Scientific and Technical Challenges for Building NanoSystems, Zhejiang Sci-Tech University, Hangzhou, China, October 25, 2016.
12. D. Misra, "High-k Gate Stacks Processing on Si and Ge Substrates for sub-14nm CMOS Technology, IEEE EDS Mini-Colloquium, Hangzhou Dianzi University, Hangzhou, China, October 24, 2016.
13. D. Misra, "Visiting United States in General and at NJIT in Particular for Exchange Student or Graduate Studies," International Center of Furtwangen University (HFU), Furtwangen University's Schwenningen Campus. May 11, 2016.
14. D. Misra, "Introduction to CMOS VLSI Design," Microsystems Department, Furtwangen University, Furtwangen University's Furtwangen Campus, Germany. May 10, 2016.
15. D. Misra, Invited IEEE EDS Distinguished Lecturer, "Processing and Reliability of Higher-k Gate Stacks for sub-14nm CMOS Technology," IEEE EDS Germany Chapter, IMS-Chips, The Institute for Microelectronics, Stuttgart, Germany. May 3, 2016.
16. D. Misra, Invited Talk, "Dielectric-Semiconductor Interface with Higher-k Gate Dielectrics for sub-14nm CMOS Technology," The Institute of Applied Physics (IAP), Technical University of Freiberg, Germany. April 29, 2016.
17. D. Misra, Invited Talk, "Higher-k Gate Dielectrics for sub-14nm CMOS Technology: Processing and Reliability," NamLab, Technical University of Dresden, Germany, Technical University of Dresden, Germany. April 28, 2016.
18. D. Misra, Invited Guest Lecture, "More Moore or More than Moore: CMOS High-k Gate Stacks to Nanotechnology," Microsystems Department, Furtwangen University, Furtwangen University's Furtwangen Campus, Germany. April 26, 2016.
19. D. Misra, Invited Tutorial, "CMOS Processing Technology," Microsystems Department, Furtwangen University, Furtwangen University's Furtwangen Campus, Germany. April 26, 2016.
20. D. Misra, Invited Talk, "How to be Innovative in a Start-up: The US Perspective," Business School of Furtwangen University (HFU), Furtwangen University's Schwenningen Campus, Germany. April 22, 2016.
21. D. Misra, Invited Talk, "How to move forward as a Researcher and Innovate," Department of Medical Engineering of Furtwangen University (HFU), Furtwangen University's Schwenningen Campus, Germany. April 21, 2016.
22. D. Misra, Invited Guest Lecture, "Interface State Density and Role of Hydrogen in Dielectrics and Interfaces," Microsystems Department, Furtwangen University, Furtwangen University's Furtwangen Campus, Germany. April 19, 2016.
23. D. Misra, Invited Talk, "Exchange Students at NJIT and in the USA," International Center of Furtwangen University (HFU), Furtwangen University's Tuttlingen Campus, Germany. April 13, 2016.
24. D. Misra, Invited IEEE EDS Distinguished Lecturer, "More Moore or More than Moore: CMOS High-k Gate Stacks to Nanotechnology," IEEE EDS SJCE Student Chapter, Sri Jayachamarajendra College of Engineering, Mysore, India. March 8, 2016.
25. D. Misra, Invited IEEE EDS Distinguished Lecturer, "Dielectric-Semiconductor Interface with High-k Gate Dielectrics," IEEE EDS Bombay Chapter, Indian Institute of Technology Bombay, Mumbai, India. March 4, 2016.
26. D. Misra, Invited Talk at 10th Chandigarh Science Congress: CHASCON 2016, "Scientific and Technical Challenges for Nanometer-scale CMOS Technology," Punjab University, Chandigarh, Punjab University, Chandigarh, India. February 29, 2016.
27. D. Misra, Invited IEEE EDS Distinguished Lecturer, "Higher-k Gate Stacks for sub-14nm CMOS Technology," IEEE EDS Bangalore Chapter, Indian Institute of Science, Bangalore, India. February 24, 2016.
28. D. Misra, Invited IEEE EDS Distinguished Lecturer, "More Moore or More than Moore: CMOS High-k Gate Stacks to Nanotechnology," IEEE EDS Calcutta Chapter, Silicon Institute of Technology, Bhubaneswar, India. February 22, 2016.
29. D. Misra, Invited IEEE EDS Distinguished Lecturer, "High-k Gate Dielectrics and Dielectric-Semiconductor Interface for sub-14nm CMOS Technology," IEEE EDS NIST Student Chapter, National Institute of Science and Technology, Berhampur, India. February 20, 2016.
30. D. Misra, Invited Research Presentation, "Breakdown of MOS devices with multilayer high-k gate stacks," Center for Nano Science and Engineering (CeNSE), Indian Institute of Science, Bangalore, India. February 17, 2016.
31. D. Misra, Invited Research Presentation, "Charge Trapping & Reliability in High-K Devices," Center for Nano Science and Engineering (CeNSE), Indian Institute of Science, Bangalore, India. February 16, 2016.
32. D. Misra, Invited Research Presentation, "Interface State Density and Role of Hydrogen in Dielectrics and Interfaces," Center for Nano Science and Engineering (CeNSE), Indian Institute of Science, Bangalore, India. February 15, 2016.
33. D. Misra, Invited Talk, "More Moore or More than Moore: CMOS High-k Gate Stacks to Nanotechnology," SHRI RAMDEOBABA COLLEGE OF ENGINEERING & MANAGEMENT, SHRI RAMDEOBABA COLLEGE OF ENGINEERING & MANAGEMENT. February 6, 2016.

34. D. Misra, Invited Talk, "More Moore or More than Moore: CMOS High-k Gate Stacks to Nanotechnology," VLSI and Nanotechnology Center, Visvesvaraya National Institute of Technology, Nagpur, India. (February 5, 2016).
35. D. Misra, Invited Talk, "Research and Development in the US: How to move forward as a Researcher/Faculty," Electronics and Communication Department, Visvesvaraya National Institute of Technology, Nagpur, India. February 5, 2016.
36. D. Misra, Invited Talk, "Research Internship: International Undergraduate Research Experience," Electronics and Communication Department, Visvesvaraya National Institute of Technology, Nagpur, India. February 5, 2016.
37. D. Misra, Thin films and Nanomaterials for Device Applications (TNDA-2016), "More than Moore: Creating a Perfect Dielectric-Semiconductor Interface with High-k Gate Dielectrics," NMIT, Bangalore, Nitte Meenakshi Institute of Technology (NMIT), Bangalore, India. January 22, 2016.
38. D. Misra, Invited IEEE EDS Distinguished Lecturer, "Creating a Perfect Dielectric-Semiconductor Interface with High-k Gate Dielectrics for sub-14nm CMOS Technology," IEEE EDS Delhi Chapter/Department of Electronics Science, Delhi University, New Delhi, India. January 13, 2016.
39. D. Misra, Invited IEEE EDS Distinguished Lecturer, "Creating a Perfect Dielectric-Semiconductor Interface with High-k Gate Dielectrics for sub-14nm CMOS Technology," IEEE EDS Calcutta Chapter/Institute of Radio Physics and Electronics, Calcutta University, Kolkata, India. January 11, 2016.
40. D. Misra, Invited Talk, "Creating a Perfect Dielectric-Semiconductor Interface with High-k Gate Dielectrics for sub-14nm CMOS Technology," Center for Nano Science and Engineering (CeNSE), Indian Institute of Science, Bangalore, India. January 7, 2016.
41. D. Misra, Dielectric-Semiconductor Interface for High-k Gate Dielectrics for sub-16nm CMOS Technology, EDSSC 2015, Singapore, June 2, 2015.
42. D. Misra, Integration of Nanoelectronics, Nanotechnology and Information Technology: Future Research Challenges, PES University, Bangalore, India, January 6, 2015.
43. D. Misra, High-k Gate Dielectrics for sub-16nm CMOS Technology, University of Electronic Science and Technology of China, Chengdu, China, July 21, 2014.
44. D. Misra, High-K Gate Stack and Reliability Requirements for Sub-16nm CMOS Technology, SEMINATEC 2014, IX Workshop on Semiconduction and Mocro & Nano Technology, São Paulo, Brazil, April 25, 2014.
45. D. Misra, Invited Distinguished Lecturer, "Scaling and Reliability Challenges for sub-16nm CMOS Technology," Fudan University, Shanghai, China, March 14, 2014.
46. D. Misra, Invited Distinguished Lecturer, "Integration of Information Technology and Nanoelectronics: Direction and Challenges," Panipat Institue of Engineering Technology, Panipat, India, Panipat, Haryana, India, August 19, 2013.
47. D. Misra, Invited Distinguished Lecturer, "Convergence of Nanoelectronics, Nanotechnology and Information Technology: Future challenges," IEEE EDS Student Chapter, HIT Kolkata, Calcutta Section, Kolkata, India, August 14, 2013.
48. D. Misra, Invited Distinguished Lecturer, "Next Generation of Nanoelectronics: More Moore and/or More than Moore," IEEE EDS/SSC Chapter of Gujarat Section, Rajkot, Gujarat, India, August 7, 2013.
49. D. Misra, Invited Distinguished Lecturer, "Challenges for Nanoelectronics Innovation: More Moore and/or More than Moore," Larsen & Toubro Integrated Engineering Services, Bangalore, India, Bangalore, India, January 8, 2013.
50. D. Misra, 2013 International Conference on Emerging Trends in VLSI, Embedded System, Nano Electronics and Telecommunication System, "High-k on High-Mobility Substrate: In Interface Challenge," Tiruvannamalai, TN, India, January 7, 2013.
51. D. Misra, Invited Distinguished Lecturer, ""More Moore" or "More than Moore": Challenges for Nanoelectronics," Thiagarajar College of Engineering, Madurai, TN, India, Madurai, TN, India, January 4, 2013.
52. Misra, D. (Presenter Only), Invited Distinguished Lecturer, "Technical Challenges for Nanoelectronics and Beyond," Xidian University, Xi'an, China, Xi'an, China, October 29, 2012.
53. D. Misra, Invited Distinguished Lecturer, "Challenges for Nanoelectronics and Beyond: More Moore and/or More than Moore," Tsinghus University, Beijing, China, Beijing, China, October 26, 2012.
54. D. Misra, "High-k Dielectrics and Nanotechnology" Samsung Advanced Institute of Technology, Seoul, South Korea, June 14, 2011
55. D. Misra, "High-K Dielectrics on High-Mobility Substrates," IEEE Mini-Colloquium, Concordia University, Montreal, Canada, April 29, 2011.
56. D. Misra, "A Successful Faculty Member: Essential Components," Workshop for Engineering Scholars, International Symposium on Electronic Systems Design – 2010, Bhubaneswar, India, December 20-22, 2010.
57. D. Misra, IEEE EDS Distinguished Lecture, "CMOS Nanoelectronics and Nanotechnology Evolution," Gandhi Institute of Technology and Management, IEEE EDS Bhubaneswar, India, December 18, 2010.

58. D. Misra, Distinguished Lecture, "TiN/High-k Gate Stacks for CMOS: Reliability Issues," SKP Engineering College, Tiruvannamalai, IEEE EDS Chennai, India, December 16, 2010.
59. D. Misra, "Faculty Success: Teaching Excellence," Temple City Institute of Technology and Engineering, Khurda, India, December 14, 2010
60. D. Misra, "How to be a Successful Faculty Member: Essential Components," BRCM College of Engineering and Technology, Bahal, Haryana, India, December 10, 2010.
61. D. Misra "Breakdown of TiN/High-k Gate Stacks in Nanoscale CMOS" IEEE Mini-Colloquium on Large Area Electronics, Friday, November 6, 2009, University of Waterloo, Waterloo, Canada
62. D. Misra**,** "Correlation of HCS and NBTI in Degradation of High-k Gate Dielectrics" International Symposium on Silicon Nitride, Silicon Dioxide, and Alternate Emerging Dielectrics 10, 215th Electrochemical Society Conference, San Francisco, CA , May 24- May 29, 2009.
63. D. Misra, *High-k Gate Dielectrics and Their Reliability*, Department of Electronics & Communication Engineering (ECE), Indian Institute of Technology, Guwahati, Assam at ECE Conference room on April 13, 2009 (Monday) at 3:00 PM. Host: Prof. S. Majhi, Dept. Chair and Prof. Roy P. Paily
64. D. Misra, *How to be a Successful Faculty Member,* Research Scholars' Forum Talk at Electrical Engineering Seminar Hall of IIT Bombay on April 2, 2009 (Thursday) at 4:00 PM. Host: Shamlan Reshamwala, President, Research Scholars Forum.
65. D. Misra, *General Trends in Nanoelectronics***,** Sardar Patel College of Engineering, Bhavans Campus, Andheri (West), Mumbai on March 25, 2009 (Wednesday) at 4 PM. Host: Dr. S.Y. Mhaiskar, Principal.
66. D. Misra, *High-k Dielectrics on Alternate Substrates*, IEEE AP/ED BOMBAY CHAPTER DISTINGUISHED LECTURE at Nanoelectronics Conference Room, 3 rd Floor, EE Annex Building of IIT Bombay on March 5, 2009 (Thursday), 2009 at 4:30 PM. Host: Prof. Ramgopal Rao
67. D. Misra, *VLSI Design and CMOS Technology Evolution,* Sree Vidyanikethan Engineering College (SVEC), Sree Sainath Nagar, Tirupati, AP at Conference Hall on February 24, 2009 (Tuesday) at 12:00-2:00 PM. Host: Dr. P.C. Krishnamachary, Principal.
68. D. Misra, *CMOS Nanoelectronics and Nanotechnology Evolution,* Sree Vidyanikethan Engineering College (SVEC), Sree Sainath Nagar, Tirupati, AP at Conference Hall on February 24, 2009 (Tuesday) at 11:00 AM. Host: Dr. P.C. Krishnamachary, Principal.
69. D. Misra, *Current Trends in Nanoelectronics and Nanotechnology*, The Institution of Electronics and Telecommunications Engineers (IETE), Bhubaneswar Chapter along with IEEE – EDS Bhubaneswar Chapter Distinguished Lecture, BSNL Building 3rd Floor Seminar room on February 16, 2009 (Monday) at 7:00 PM. Host: Dr. Partha Sarkar, IEEE-EDS Chapter Chair and Er. Subrat Kumar Prusty, Secretary, IETE.
70. D. Misra, *Current Trends in Nanoelectronics and Nanotechnology*, The Ramnirnanjan Jhunjhunwala College, Mumbai, at Seminar Hall, Ground Floor of RJ College on January 30, 2009 (Friday), 2009 at 11:00 AM. Host: Dr. Usha Mukundan, Principal.
71. D. Misra, *Breakdown of Nanoscale CMOS Devices with TiN/High-k Gate Stacks*, IEEE AP/ED BOMBAY CHAPTER DISTINGUISHED LECTURE at Nanoelectronics Conference Room, 3 rd Floor, EE Annex Building of IIT Bombay on January 23 (Friday), 2009 at 4:30 PM. Host: Prof. Ramgopal Rao
72. D. Misra, High-k Gate Dielectric Reliability in Nanoscale CMOS, Electrical and Computer Engineering Department, University of Kentocky, Lexington, KY 40506, on November 18, 2008 (Tuesday), at 2:00 PM. Host: Prof. Zhi (David) Chen
73. D. Misra, *Reliability of Nanoscale CMOS Devices with High-k Gate Dielectrics*, Electrical and Computer Engineering Department, University of Louisville, Louisville, KY 40292, on November 17, 2008 (Monday), at 2:30 PM. Host: Prof. James H. Graham, Dept. Chair
74. D. Misra, "Reliability of High-k Dielectric Gate Stacks," IEEE Distinguished Lecturer, Department of Electrical and Computer Engineering, University of Waterloo, Waterloo, Canada, July 2, 2008.
75. D. Misra, "Reliability Concerns for sub-45nm CMOS Devices with High-K Gate Dielectrics," IEEE EDS Distinguished Lecture at National Technical University of Athens, Athens, Greece for EDS Greece Mini-Colloquium hosted by EDS Europe, Africa, and Middle East Regions/Chapters Subcommittee (SRC-EAM), June 2, 2008.
76. D. Misra, "Reliability of High-k Gate Dielectrics in sub-45nm CMOS Devices," IEEE EDS Distinguished Lecture at School of Engineering Sciences, Simon Fraser University, Vancouver, Canada, May 23, 2008.
77. D. Misra, "VLSI Design and CMOS Technology Evolution," IEEE EDS Distinguished Lecture at Nalanda Institute of Technology for EDS Bhubaneswar Chapter, Bhubaneswar, Orissa, India, March 14, 2008.
78. D. Misra, "Reliability Concerns for sub-45nm CMOS Devices," IEEE EDS Distinguished Lecture at WORKSHOP & IEEE EDS MINI-COLLOQIIA ON NANOMETER CMOS TECHNOLOGY (WIMNACT) 2008 ON NANOELECTRONICS, at Sikkim Manipal Institute of Technology, Majitar, Sikkim, India, March 6, 2008.

79. D. Misra, "Role of Interfacial Layer on Breakdown of TiN/High-k Gate Stacks," International Symposium on ULSI Process Integration 5, 212th Meeting of the Electrochemical Soc., Washington, DC, October 7-11, 2007.
80. D. Misra, Nanotechnology and Nanoelectronics Revolution, a Management Challenge, School of Management, NJIT, May 22, 2007.
81. D. Misra, Deuterium at the Si-Dielectric Interface in Nanoscale Devices, IEEE Distinguished Lecturer, February 21, 2007, IEEE NJ Section Electron Devices, Circuits and Systems Chapters, at NJIT
82. D. Misra, New Dielectrics for Sub-45nm CMOS Devices, IEEE Distinguished Lecture at Columbia University, February 14, 2007, IEEE New York Section.
83. D. Misra, Negative Bias Temperature Instability in TiN/Hf-based Gate Stacks, IEEE Distinguished Lecture at Indian Institute of Science, Bangalore, January 5, 2007. IEEE EDS Bangalore Chapter.
84. D. Misra, Nanoelectronics with Standard CMOS Devices and Beyond, IEEE EDS Mini-Colloquium on Microelectronics and VLSI, January 3, 2007, IEEE Calcutta Chapter at Bhubaneswar, India.
85. D. Misra, Introduction to VLSI Design, Institute of Technical Education and Research, Bhubaneswar, India, December 28, 2006. http://iter.ac.in/
86. D. Misra, Introduction to VLSI Design, Trident Academy of Creative Technology, at Bhubaneswar, India on December 20, 2006. http://www.tat.ac.in/event.htm
87. D. Misra, Nanoelectronics with CMOS Devices, IEEE Distinguished Lecturer, November 28, 2006, IEEE NJ Section LEOS Chapters, at NJIT.
88. D. Misra, "High-K Gate Dielectrics for sub-65nm CMOS Devices," IEEE Distinguished Lecture, University of Central Florida, **IEEE EDS Orlando Chapter,** February 24, 2006.
89. D. Misra and N. A. Chowdhury, , "Charge Trapping in High-_ Gate Dielectrics: A Recent Understanding", **Second International Symposium on Dielectrics for Nanosystems:** Materials Science, Processing, Reliability, and Manufacturing, 209th Electrochemical Society Meeting, Denver, Colorado, May, 2006.
90. D. Misra and R. Garg, Interface Characterization of High-*K* Dielectrics on Ge Substrates, **European – Material Research Society**, Nice, France, May-Jun 2006.
91. D. Misra, N.A. Chowdhury, and N. Rahim, Negative Bias Temperature Instability in TiN/Hf-Silicate Based Gate Stacks, 2006 **Lester Eastman Conference on High Performance Devices**, Cornell University, August 2-4, 2006
92. D. Misra, "High-K Dielectrics for Nanoscale CMOS Devices,' Distinguished Lecture, **IEEE Electron Device Society Calcutta Chapter**, Jadavpur University, Kolkata, July 15, 2005
93. D. Misra, "Dielectrics for sub-65nm CMOS Devices,' Presented at the Graduate School, **Department of Physics, University of Delhi**, August 9, 2005.
94. T. Kundu and D. Misra, (Invited Paper) "Interface Passivation by Deuterium for Nanoscale CMOS Devices," **7th International Conference on Solid-State and Integrated Circuit Technology (ICSICT 2004)**, pp. Beijing, China, October 18-21, 2004.
95. D. Misra, N.A. Choudhury, R. Garg, and P. Srinivasan, (Invited Paper) "Integration of High-K Dielectrics into Sub-65nm CMOS Technology: Requirements and Challenges," **IEEE TENCON 2004,** pp. TA11(1401), Chiang Mai, Thailand, 21-24 November 2004.
96. **D. Misra,** "Computer-Aided VLSI Design: A Current Perspective," National Institute of Science and Technology, Pallur Hills, India, June 14, 2003
97. **D. Misra**, "Systems Level Design to Physical Design: Current Trends in VLSI Design," Kalinga Institute of Industrial Technology, Bhubaneswar, India, June 4, 2003
98. **D. Misra**, Micro-Fabricated Microconcentrator for Volatile Organic Compound Sensors, University of Toledo Nanotechnology Research Center. October 2, 2001.
99. D. Misra, "Electrical Characterization of Thin Oxides Grown on Deuterium Implanted Silicon Substrate," **Fourth International Symposium on the Physics and Chemistry of SiO2 and the Si-SiO2 Interface,** 197th Meeting of the Electrochemical Society, Toronto, Ontario, Canada, May 14-18, 2000.
100. **D. Misra**, Process-Induced Damage to Deep-Submicrometer CMOS Transistors, **ASM International**, NJ Chapter Meeting, January, 26, 1999.
101. **D. Misra**, Electron Transit Time Estimation in Photodiodes for Ultra High Frame Rate (UHFR) Burst Image Sensors, November 4, 1998. POEM Annual Research Review of Photonics, Princeton. NJ.
102. **D. Misra**, "Recent Trends in VLSI Design," August 17, 1998, **Software Technology Park Seminar,** at Kalinga Institute of Industrial Technology, Bhubaneswar, India.
103. **D. Misra**, "Polarity Dependent Plasma Charging Damage in sub-um MOSFETs," July 10, 1998, Center for Advanced Research in Electronics Seminar at Indian Institute of Technology, New Delhi, India.
104. **D. Misra**, "Process Induced Damage (Plasma Damage) To CMOS Electronic Chips" November 4, 1997, **Sigma Xi Seminar** at NJIT.

105. **D. Misra**, A 3-Dimensional Magnetic Sensor and Its Applications, University of Aizu, Aizu-Wakamashu, Japan, March 20, 1995.
106. **D. Misra**, Processing of Strained SiGe Materials, **ASM International**, NJ Chapter, NJ, January 24, 1995.
107. **D. Misra**, Processing of Strained SiGe Materials, University of Aizu, Aizu-Wakamashu, Japan, March 20, 1995.
108. **D. Misra**, Effect of Dry Etching to Si1-xGex Devices, Naval Research Laboratory, Washington, DC, June 25, 1993.
109. **D. Misra**, "Physics of IC Design and Technology," Institute of Physics, Bhubaneswar, India, June 14, 1991.
110. **D. Misra**, "Basic VLSI Design" and "Wafer Monitoring by Infrared Camera During Plasma Etching," Central Research Laboratory of Bharat Electronics Ltd, Bangalore, India, June 4-5, 1991.
111. **D. Misra**, "VIMDE - A Vertically Integrated Multi-Chip-Module Design environment," AT&T Engineering Expo'91, Princeton, NJ, March 5, 1991.
112. **D. Misra**, "Introduction to VLSI Design" IEEE Seminar Series, NJIT IEEE Students' Chapter, November, 1990.
113. **D. Misra,** "Signal Processing for Integrated Sensors," Presented at NJIT Microelectronics Seminar Series and Sigma Xi Lectures Fall 90, Newark, NJ, October 3, 1990.
114. D. Misra, "Circuit Design for Integrated Sensors," **Workshop on Analog Circuit Engineering,** Sheraton - Silicon Valley East Milpitas, California, January 15-16, 1990.
115. **D. Misra**, "Integrated Magnetic Field Sensor," Presented at NJIT Day, SIEMENS Corporate Research Inc., Princeton, NJ, October 1989.
116. **D. Misra**, "Tungsten Silicide as Micromechanical Material," NATO Advanced Study Institute, Boca Raton, FL, July 17-28, 1989.
117. **D. Misra**, "A study of RIE-induced surface damage in VLSI applications," Microelectronics Seminar Series - Fall 86, Sponsored by Alberta Microelectronics Center and Department of Electrical Engineering, University of Alberta, Edmonton, Canada, October 1986.

Refereed Conference Proceedings

1. P. Paliwoda, Z. Chbili, A. Kerber, A. Gondal and D. Misra, "Self-heating measurement methodologies and their assesment on bulk FinFET devices," Proceedings of the IEEE International Integrated Reliability Workshop, Stanford Sierra Conference Center, Fallen Leaf Lake, CA, October 8-11, 2017.
2. P. Shao, M.N. Bhuyian, Y.M. Ding, and D. Misra, "Breakdown Characteristics of TiN/$Hf_xZr_{1-x}O_2$/Al_2O_3/Ge Gate Stacks," ECS Transactions, 80(1), pp. 71-77, 2017.
3. I. Mitevski, D. Misra, M.N. Bhuyian, Y.M. Ding, "Frequency and Area Dependence of High-K/Ge MOS Capacitors," ECS Transactions, 77(2), pp. 1977-1984, 2017.
4. M.N. Bhuyian, A. Sengupta, Y. Ding, D. Misra, K. Tapily, R. D. Clark, S. Consiglio, C. S. Wajda, and G. J. Leusink, "Reliability of Post Plasma Oxidation Processed ALD Al2O3/Hf1-xZrxO2 Thin Films on Ge Substrates," ECS Transactions, 77(2), pp. 99-108, 2017.
5. Y. Ding, D. Misra, K. Tapily, R. D. Clark, S. Consiglio, C. S. Wajda, and G. J. Leusink, "The Effect of Defects on Time Dependent Dielectric Breakdown Acceleration in TiN/ZrO2/Al2O3/p-Ge Gate Stacks," ECS Transactions, 77(5), pp. 43-50, 2017.
6. D. Misra, Y.M. Ding, S. Mukhopadhyay, K.L. Ganapathi, and N. Bhat, "Reduction of Interface States In Ge/High-K Gate Stacks and its Reliability Implications," 13th IEEE International Conference on Solid-State and Integrated Circuit Technology, Hangzhou, China, October 25-28, 2016.
7. Y. M. Ding, D. Misra, and P. Srinivasan, "BiasTemperature Instability and Its Correlation to Flicker (1/f) Noise in FinFETs," Proceedings of the IEEE International Integrated Reliability Workshop, Stanford Sierra Conference Center, Fallen Leaf Lake, CA, October 9-13, 2016.
8. Y. Ding and D. Misra, "Dry and Wet Processed Interface Layer in Ge/High-K Devices Studied by Deep Level Transient Spectroscopy," ECS Transactions, 72(2), 319, 2016.
9. S. Mukhopadhyay, S. Mitra, Y. Ding, K.L. Ganapathi, D. Misra, N. Bhat, K. Tapily, R.D. Clark, S. Consiglio, C.S. Wajda, and G.J. Leusink, "Effect of Post Plasma Oxidation on Ge Gate Stacks Interface Formation," ECS Transactions, 72(4), 303, 2016.
10. Y. M. Ding, Z. Chen, D. Misra, A.E. Delahoy, G.E. Georghiou, X. Cao, S. Peng, K.K. Chin, *"Spatial-Sensitive Feature of DLTS and Application in CdS/CdTe Solar Cells", EU PVSEC 10/2015*, Session Reference number: 3DV.3.49; DOI: 10.4229/EUPVSEC20152015-3DV.3.49
11. Y. Ding, D. Misra, M. N. Bhuyian, K. Tapily, R. D. Clark, S. Consiglio, C. S. Wajda, and G. J. Leusink, "Electrical Characterization of Dry and Wet Processed Interface Layer in Ge/High-K Devices," ECS Transactions, 69(5), 313, 2015.
12. D. Misra, M.N. Bhuyian, and Y. Ding, Dielectric-Semiconductor Interface for High-k Gate Dielectrics for sub-16nm CMOS Technology, Proceedings of IEEE Conference on EDSSC 2015, Singapore, June 2-4, 2015.

13. Y.M. Ding and D. Misra, Oxide Structure-Dependent Interfacial Layer Defects of HfAlO/SiO2/Si Stack Analyzed by Conductance Method, *ECS Transactions, vol. 66, No. 4, pp. 245-262, 2015 doi: 10.1149/06604.0245ecst.*
14. M. N. Bhuyian and D. Misra, "Reliability of HfAlOx in Multi Layered Gate Stack," In Proc. IEEE IRPS, 2015.
15. M. N. Bhuyian, D. Misra, K. Tapily, R. Clark, S. Consiglio, C. Wajda, G. Nakamura, and G. Leusink, "Effect of Al Doping on the Reliability of ALD HfO2," ECS Transactions, 64(8), 29(2014).
16. M. N. Bhuyian, D. Misra, K. Tapily, R. Clark, S. Consiglio, C. Wajda, G. Nakamura, and G. Leusink, "Cyclic Plasma Treatment during ALD Hf1-xZrxO2 Deposition," ECS Transactions, 61(2), 41(2014).
17. M. Bhuyian, and D. Misra, "Reliability Considerations of High- Dielectrics Deposited by Various Intermediate Treatment," ECS Transactions, 60(1), 103(2014).
18. M. N. Bhuyian, D. Misra, K. Tapily, R. Clark, S. Consiglio, C. Wajda, G. Nakamura, and G. Leusink, "Reliability of ALD Hf1-xZrxO2 Deposited by Intermediate Annealing or Intermediate Plasma Treatment," ECS Transactions, 58(7), 17(2013).
19. S. K. Sahoo and D. Misra, "Interfacial layer growth condition dependent electrical conduction in HfO2/SiO2 heterostructured thin films" Mater. Res. Soc. Proc. 1397, DOI: 10.1557/opl. 2012.506, (2012).
20. S. K. Sahoo, H. Bakhru, S. Kumar, D. Misra, Y. N. Mohapatra and D. C. Agrawal, "Relaxor behavior in Ba0.8Sr0.2TiO3/ZrO2 heterostructured thin films" Mater. Res. Soc. Proc. 1454, DOI: 10.1557/opl. 2012.1254, (2012).
21. G. Wang and D. Misra, "A Compact CMOS 3-D Magnetic Field Sensor" Dielectrics for Nanosystems 5, *ECS Transactions, vol. 45, No. 3, pp. 543-556, 2012.*
22. P. Kharangarh, D. Misra, G. Georgiou, A.E. Delahoy, Z. Cheng, G. Liu, H. Opyrchal, T. Gessert, K.K. Chin, "Investigation of defects in N+-CDS/P-CdTe solar cells," 38th IEEE Photovoltaic Specialists Conference (PVSC), pp. 1286-1290, June 3-8, 2012
23. D. Misra, "Issues and Challenges of High-k Dielectrics on High-Mobility Substrates," E9 - ULSI Process Integration 7, *ECS Transactions, vol. 41, No. 7, pp. 109-118, 2011*.
24. P. Paliwoda and D. Misra, "Impact of Constant Voltage Stress on High-κ Gate Dielectric for RF IC Performance," E4 - High Dielectric Constant and Other Dielectric Materials for Nanoelectronics and Photonics 9, *ECS Transactions, vol. 41, No. 3, pp. 415-419, 2011*.
25. P. R. Kharangarh, D. Misra, G. Georgiou, and K. Chin, "Investigation of Electrically Active Defects in n-CdS/p-CdTe Solar Cells," E6 - Photovoltaics for the 21st Century 7, *ECS Transactions, vol. 41, No. 4, pp. 233-240, 2011*.
26. S. Sahoo and D. Misra, Field Dependent Electrical Conduction in TiN/HfO_2/SiO_2/P-Si (nMOS) Capacitor for Before and After Stressing, *ECS Transactions, vol. 33, No. 3, pp. 591-599, 2010.*
27. S. Sahoo and D. Misra, Dielectric Properties of BST/(Y2O3)x(ZrO2)1-x/BST Trilayer Films, *Mater. Res. Soc. Proc*., vol. 1292, (2011), DOI: 10.1557/opl.2011.151, MRS Fall Meeting, Nov 29-Dec 3, 2010, Boston, MA
28. Santosh K. Sahoo, D. Misra, D. C. Agrawal, and Y. N. Mohapatra, "ZrO_2 layer thickness dependent Electrical and dielectric properties of BST/ZrO_2/BST multilayer thin films" *Mater. Res. Soc. Proc*. 1368, (2011), DOI: 10.1557/opl.2011.891.
29. N. Rahim, E.Y. Wu and D. Misra, Investigation of progressive breakdown and non-Weibull failure distribution of high-k and SiO2 dielectric by ramp voltage stress, Proceedings of the International Reliability Physics Symposium (IRPS), 2011, pp. GD.2.1-GD.2.6. (10.1109/IRPS.2011.5784579).
30. N. Rahim and D. Misra, Correlation of Negative Bias Temperature Instability and Breakdown in HfO_2/TiN Gate Stacks, *ECS Transactions, vol. 28, No. 2, pp. 323-330, 2010.*
31. K. Jyothi (IITB), A.N. Chandorkar (IITB), and D. Misra (NJIT), "*Impact of Voltage and Current Stress on TiN/HfO2/TiN MIM Capacitors," presented* at the 216th meeting of the Electrochemical Society at Vienna, Austria to be held during Oct 4th – 9th 2009. Published in *ECS Transactions, vol. 25, No. 6, pp. 241-246, 2009*.
32. D. Yadav, K. Yadav and D. Misra, "Vending Machine Controller Design using VHDL," Proceedings of the National Conference on Virtual and Intelligent Instrumentation (NCVII-09), November 13-14, 2009, Pilani, India pp. 89.
33. N. Rahim and D. Misra, "Low Voltage SILC Analysis for High-k/Metal gate Dielectrics", Advanced Gate Stack, Source/Drain, and Channel Engineering for Si-Based CMOS 5: New Materials, Processes, and Equipment, ECS Transactions, 19 (1), pp. 283-287, 2009.
34. V. Budhraja and D. Misra, "Electrical Characterization of Metal Gate/High-k Dielectrics on GaAs Substrate," Physics and Technology of High-k Gate Dielectrics 6, ECS Transactions, Vol. 16, No. 5, pp. 455-461, 2008.
35. N. Rahim and D. Misra, "Breakdown Characteristics of High-k Gate Dielectrics With Metal Gate", International Symposium on Dielectrics for Nanosystems 3: Materials Science, Processing, Reliability, and Manufacturing, ECS Transactions, 13(2), pp. 91-97, 2008.
36. N. Rahim and D. Misra, "NBTI behavior of Ge/HfO_2/Al gate stacks", 46th annual Proceedings of the 2008 IEEE international reliability physics symposium, pp. 653-654, 2008.

37. N. A. Chowdhury, D. Misra, G. Bersuker, C. Young, and R. Choi, "Role of Interfacial Layer on Breakdown of TiN/High-k Gate Stacks, ECS Transactions on ULSI Process Integration 5, Editors: C. Claeys, H. Iwai, M. Tao, J. Murota, J.J. Liou, vol. 11, No. 6, pp. 143-160, 2007. 212th Meeting of the Electrochemical Society, Washington, DC, October 7-11, 2007.

38. P. Srinivasan and D. Misra, "Modeling and Simulation of Drain Current 1/f Noise in High-k Based n-MOSFETs," ECS Transactions on Physics and Technology of High-k Gate Dielectrics, Editors: S. Kar, S. De Gendt, M. Houssa, D. Landeer, D. Misra, H. Iwai, vol. 11, No. 4, pp. 645-655, 2007. 212th Meeting of the Electrochemical Society, Washington, DC, October 7-11, 2007.
39. N. Rahim, N. Chowdhury and D. Misra, "Role of Bulk HfO2 and Interfacial SiO2 Layer in Breakdown Characteristics of TiN/HfO2/SiO2/Si Gate Stacks," ECS Transactions on Physics and Technology of High-k Gate Dielectrics, Editors: S. Kar, S. De Gendt, M. Houssa, D. Landeer, D. Misra, H. Iwai, vol. 11, No. 4, pp. 629-638, 2007. 212th Meeting of the Electrochemical Society, Washington, DC, October 7-11, 2007.
40. Bedabrata Pain, Chao Sun, Paul Vo, Bruce Hancock, Thomas Cunningham, Chris Wrigley, Risaku Toda, Victor White, Amrita Banerjee and Durgmadhab Misra, "Wafer-Level Thinned CMOS Imagers Implemented in a Bulk-CMOS Technology," Proceedings of International Image Sensing Workshop, Ogunquit, ME, June 6-10, 2007.
41. G. Bersuker, N. Chowdhury, C. Young, D. Heh, D. Misra, R. Choi, Progressive Breakdown Characteristics of High-K/Metal Gate Stacks**,** . Proceedings of the 45th Annual IEEE International Physics Symposium, 2007, pp. 49 – 54, Phoenix, AZ, 15-19 April 2007.
42. P. Srinivasan, B.P. Linder, V. Narayanan, D. Misra and E. Cartier, "Impact of high-κ and SiO_2 interfacial layer thickness on low-frequency (1/f) noise in aggressively scaled metal gate/HfO_2 n-MOSFETs: role of high-κ phonons," Proceedings of the Insulating Films on Semiconductors (INFOS-2007), pp. 2274-2277, Glyfada Athens, June 20-23, 2007.
43. N. Rahim, N. Chowdhury and D. Misra, "Role of Experimentally Observed Defect Energy Levels in Carrier Transport and Charge Trapping in Metal Gate/Hf-Silicate Based Gate Stacks," Extended Abstracts, No. 35, 210th Meeting of the Electrochemical Society, Cancun, Mexico, October 29 – November 3, 2006.
44. N. Chowdhury and D. Misra, "NBTI Effects in pMOSFETS with TiN/Hf-Silicate Based Gate Stacks," *ECS Transactions*, Volume 3, Issue 3, Physics and Technology of High-*k* Gate Dielectrics 4, pp. 215-224, 2006.
45. N. Chowdhury, G. Bersuker, C. Young, R. Choi and D. Misra, "Breakdown Characteristics of Metal Gate/HfO2 based High-k Gate Stacks, 3rd SEMATECH Workshop on Advanced Gate Stacks Technology, Austin, Texas, Sep. 27-29, 2006.
46. P. Srinivasan, E. Simoen, L. Pantisano, C. Claeys, D. Misra, "Impact of gate material on low-frequency noise of nMOSFETs with 1.5 nm SiON gate dielectric: testing the limits of the number fluctuations theory," Proceedings of the **18th International Conference on Noise and Fluctuations (ICNF 2005)**, Salamanca, Spain, 19-23 September, 2005.
47. T. Kundu and D. Misra, Annealing Effect On Reliability Of SiO_2 For Deuterium Implanted Silicon, ECS Transaction, Vol. 1, No. 1, pp. 221-232, 2005, Proceedings of the **International Symposium on Physics and Chemistry of SiO_2 and the Si-SiO_2 Interface V**, 208th Meeting of the Electrochemical Society, Los Angeles, October 16-21, 2005.
48. R. Garg and D. Misra, Effect of Nitridation on Ge/HfO2 Interface, ECS Transaction, Vol. 1, No. 5, pp. 17-26, 2006, Proceedings of the **International Symposium on High Dielectric Constant Gate Stacks III,** 208th Meeting of the Electrochemical Society, Los Angeles, October 16-21, 2005.
49. P. Srinivasan, E. Simoen, L. Pantisano, C. Claeys and D. Misra, Effect of Nitridation on 1/f Noise in n-MOSFETs with High-k Dielectric, ECS Transaction, Vol. 1, No. 5, pp. 681-691, 2006, Proceedings of the **International Symposium on High Dielectric Constant Gate Stacks III**, 208th Meeting of the Electrochemical Society, Los Angeles, October 16-21, 2005.
50. N. Chowdhury, P. Srinivasan and D. Misra, Evidence of Deep Energy States from Low Temperature Measurements and its Role in Charge Trapping in Metal Gate/Hf-Silicate Gate Stacks, ECS Transaction, Vol. 1, No. 5, pp. 767-775, 2006, Proceedings of the **International Symposium on High Dielectric Constant Gate Stacks III**, 208th Meeting of the Electrochemical Society, Los Angeles, October 16-21, 2005.
51. P. Srinivasan, E. Simoen, R. Singanamalla, Y. Hong Yu, C. Claeys and D. Misra, " Gate-dielectric interface effects on low-frequency noise performance in p-MOSFETs with high-K dielectrics", Proceedings of **International Semiconductor Device Research Symposium (ISDRS)**, Washington DC, USA, Dec 2005.
52. N. A. Chowdhury, P. Srinivasan and D. Misra, "Trapping in Deep Defects under Substrate Hot Electron Stress in TiN/Hf-silicate Based Gate Stacks", Proceedings of **International Semiconductor Device Research Symposium (ISDRS),** Bethesda, Maryland, Dec., 2005, p. WP1-03.
53. D. Misra and N. A. Chowdhury, (Invited Paper), "Charge Trapping in High-_ Gate Dielectrics: A Recent Understanding", Second International Symposium on **Dielectrics for Nanosystems:** Materials Science, Processing, Reliability, and Manufacturing, 209th Electrochemical Society Meeting, Denver, Colorado, May, 2006.

54. P.Srinivasan, E. Simoen, L. Pantisano, C. Claeys, D. Misra," 1/f noise as a tool to assess Fermi Level pinning (E_F) at the HfO_2/poly-Si interface in high-k n-MOSFETs", accepted to be presented at the **Tenth Int. Symp. on Silicon Materials Science and Technology,** 209th meeting of Electrochemical Society, Denver, USA, May 7-12, 2006.

55. C. Claeys, E. Simoen, P. Srinivasan and D. Misra, High-k Gate Stack Engineering and Low Frequency Noise Performance, **Second International Symposium on Dielectrics for Nanosystems:** Materials Science, Processing, Reliability, and Manufacturing, 209th Electrochemical Society Meeting, Denver, Colorado, May, 2006.
56. P.Srinivasan, E. Simoen, B. de Jaeger, C. Claeys, D. Misra, "1/f noise performance of p-MOSFETs with HfO_2 and metal gate on Ge-based substrates", presented at Symposium T - Germanium based Semiconductors ... from materials to devices, **European – Material Research Society,** Nice, France, May-Jun 2006.
57. D. Misra and R. Garg, **(Invited Paper)** Interface Characterization of High-*K* Dielectrics on Ge Substrates, **European – Material Research Society,** Nice, France, May-Jun 2006.
58. P.Srinivasan, J.-M. Routoure, E. Simoen, C. Claeys, D. Misra, "Static characteristics of Hf-based silicates at low temperatures", presented at **ESA Seventh International Workshop on Low Temperature Electronics (WOLTE),** Noordwijk, Netherlands, June 2006.
59. D. Misra, N. Chowdhury and N. Rahim, **(Invited Paper)** Negative Bias Temperature Instability in TiN/Hf-Silicate Based Gate Dielectrics, Proceedings of the **2006 Lester Eastman Conference on High Performance Devices,** pp. 67, Cornell University, Ithaca, NY August 2-4, 2006.
60. T. Kundu and D. Misra, "Hydrogen/Deuterium Implantation for Si-Dielectric Interface in Nanoscale Devices," Proceedings of the **International Symposium on Dielectrics for Nanosystems:** Materials Science, Processing, Reliability and Manufacturing, (PV 2004-04), pp. 346-355, 206th Meeting of the Electrochemical Society, Honolulu, HI, October 3-8, 2004.
61. Naser Chowdhury, R. Garg and D. Misra "Time Dependent Dielectric Breakdown of Thermally Evaporated HfO_2 for Nanoscale Devices," Proceedings of the **International Symposium on Dielectrics for Nanosystems:** Materials Science, Processing, Reliability and Manufacturing, (PV 2004-04), pp. 381-391, 206th Meeting of the Electrochemical Society, Honolulu, HI, October 3-8, 2004.
62. T. Kundu and D. Misra, (Invited Paper) "Interface Passivation by Deuterium for Nanoscale CMOS Devices," Proceedings of the **7th International Conference on Solid-State and Integrated Circuit Technology (ICSICT 2004),** pp. Beijing, China, October 18-21, 2004.
63. D. Misra, N.A. Choudhury, R. Garg, and P. Srinivasan, (Invited Paper) "Integration of High-K Dielectrics into Sub-65nm CMOS Technology: Requirements and Challenges," Proceedings of the **IEEE TENCON 2004**, pp. TA11(1401), Chiang Mai, Thailand, 21-24 November 2004.
64. P. Srinivasan, E. Simoen, L. Pantisano, C. Claeys and D. Misra, "1/f Noise Performance of NMOSFETs with Hf-Based Gate Dielectrics," Proceedings of the **International Symposium on Advanced Gate Stack, Source/Drain and Channel Engineering for Si-Based CMOS:** New Materials, Processes and Equipment (PV 2005-xx), pp. 151-160, 207th Meeting of the Electrochemical Society, Quebec City, Canada, May 15-20, 2005.
65. P. Srinivasan, N. A. Chowdhury, A. Peralta, D. Misra, R.Choi and B.H.Lee, "Charge Trapping in Metal Gate/High-K N-MOSFETs during Substrate Injection," Proceedings of the **International Symposium on Advanced Gate Stack, Source/Drain and Channel Engineering for Si-Based CMOS:** New Materials, Processes and Equipment (PV 2005-xx), pp. 366-375, 207th Meeting of the Electrochemical Society, Quebec City, Canada, May 15-20, 2005.
66. P. Srinivasan, E. Simoen, L. Pantisano, C. Claeys, D. Misra, "Low frequency noise performance of MOSFETs with metal gate Hf-based dielectrics," **14th bi-annual conference on Insulating Films on Semiconductors (INFOS 2005),** Leuven, Belgium, June 22-24, 2005.
67. P. Srinivasan, E. Simoen, L. Pantisano, C. Claeys, D. Misra, "Impact of gate material on low-frequency noise of nMOSFETs with 1.5 nm SiON gate dielectric: testing the limits of the number fluctuations theory," Proceedings of the **18th International Conference on Noise and Fluctuations (ICNF 2005),** Salamanca, Spain, 19-23 September, 2005.
68. P. Srinivasan, N. A. Chowdhury, and D. Misra, "Study of electrically active traps in high-k gate dielectrics," Proceedings of the **Einsteins in the City, A Student Research Conference** at The City College of New York, New York, April 11-12, 2005.
69. K. Guo, H. Ou, T. Grycewicz, A. Joshi, X. Wang, G. Thomas, H. Wang, R. Greene, **D. Misra**, S. Liu, Z. Liu, J. Zhen, X. Wang, B. Li, Z. Xiao, N.A. Ciampa, J. Opyrchal, H. Opyrchal, and K.K. Chin, "1D InGaAs Lock-in FPA," Proceedings of **SPIE Defense and Security Symposium,** Orlando, Florida, 12 - 16 April 2004.
70. R. Garg, N. A. Chowdhury, R. K. Jarwal, M. Bhaskaran, P. K. Swain, and D. Misra, Characteristics of Thermally Evaporated HfO_2, Proceedings of the **International Symposium on Physics and Technology of High-k Gate Diectrics II,** vol. PV-2003-22, pp. 385, Orlando, FL, October 12-16, 2003.
71. P. Srinivasan, B. Vootukuru and D. Misra, "Si-SiO_2 interface behavior in n-MOSFETs with reverse biased voltage during high-field and hot electron injection," Proceedings of the **International Symposium on Interfaces in**

Electronics Materials, Orlando, FL, October 12-16, 2003.

72. P. Srinivasan, B. Vootukuru and D. Misra, "Screening of Si-H bonds during plasma processing," Proceedings of the 2003 **International Semiconductor Device Research Symposium (ISDRS)**, pp. 462, December 10-12, Washington, DC, 2003.
73. P. Srinivasan, B. Vootukuru and D. Misra, "Screening of Hot Electron Effect during Plasma Processing," Proceedings of **17th International Conference on VLSI Design,** pp. 3A.3, Mumbai, India, January 5-9, 2004.P.
74. Srinivasan, B. Vootukuru and D. Misra, "Impact of High Field and Hot Electron Injection on Si-H Bonds At The Si-SiO_2 Interface in n- MOSFETs," Proceedings of the **12th International Workshop on The Physics of Semiconductor Devices**, Chennai, India, December 16-20, 2003.
75. V. Briller, F. Deek, R. Friedman, K Joshi, and **D. Misra**, Active Research Experience for Undergraduates Increases Students' Motivation and Academic Performance, **2003 ASEE Annual Conference & Exposition**, June 22-25, 2003, Nashville, Tennessee.
76. M. Bhaskaran, P. Swain, and **D. Misra**, Characterization of Thermally Evaporated ZrO_2, Proceedings of the **International Symposium on Science and Technology of Dielectrics in Emerging Fields**, 203rd Meeting of the Electrochemical Society, Paris, France, pp. 393, April 27-May 2, 2003.
77. B. Patel, R. Jarwal, and **D. Misra**, MOSFET Degradation with Reverse Biased Source and Drain During High-Field Injection through Thin Gate Oxide, Proceedings of the **Seventh International Symposium on Silicon Nitride and Silicon Dioxide Thin Insulating Films**, 203rd Meeting of the Electrochemical Society, Paris, France, pp. 541, April 27-May 2, 2003.
78. Y.R. Vadapalli and **D.Misra,** An Interface Circuit for a SAW based Chemical Sensor in an Ad-hoc Network, Proceedings of **IASTED International Conference on Modeling and Simulation (S 2003),** pp. 60-63, February 24-26, 2003, Palm Springs, California.
79. K. Gururaj, N. Guinde, R. Garg, M. Deoghare, A. Deshmukh, U. Dharmavaram, D. Chandok, N.Chakravarthy, R. Erukulla, S. Devireaddy, S. Papavassiliou and **D. Misra**, VLSI Design Of Position-Guided Sliding Window Routing Protocol For Mobile Ad-Hoc Networks, Proceedings of the **IASTED International Conference on Applied Modeling and Simulation** (Editor M.H. Hamza), pp. 140-145, November 4-6, Cambridge, MA, 2002.
80. K. K Gururaj, L. Zakrevski, and **D.Misra,** VLSI Architecture for Deadlock Avoidance in Wormhole Networks, Proceedings of the **Fifteenth International Conference On Systems Engineering,** Las Vegas, 6-8 August, 2002.
81. T. Kundu, R.K. Jarwal, and **D. Misra**, Enhanced Electron Transit Time in Pinned-Buried Photodetector, **Proceedings of First International Symposium on Integrated Optielectronics,** Electrochemical Society Proceedings Volume PV 2002-4, pp. 253-259, 2002.
82. **D. Misra** and R. K.. Jarwal, Study of Hole Mobility of PMOSFETs in Inversion Layer During High-Field Stressing **Proceedings of Sixth International Symposium on Silicon Nitride and Silicon Dioxide Thin Insulating Films**, Electrochemical Society Proceedings Volume PV-2001-7, pp. 52-59, 2001.
83. R. K. Jarwal and **D. Misra,** "Degradation Of NMOSFETs During High-Field Injection With Reverse Biased Voltage At Source And Drain Junctions," **Proceedings of the 14th International Conference on VLSI Design, an IEEE Computer Society Publication**, Bangalore, India, pp. 485-490, January 4-7, 2001.
84. **D. Misra** and R. K. Jarwal, "Electrical Characterization of Thin Oxides Grown on Deuterium Implanted Silicon Substrate," **Proceedings of the Fourth International Symposium on the Physics and Chemistry of SiO2 and the Si-SiO2 Interface,** Electrochemical Society proceedings volume PV-2000-2, pp.79-88, 2000.
85. R. Bucher and **D. Misra,** "A Synthesizable Low Power VHDL Model of the Exact Solution of Three Dimensional Hyperbolic Positioning System**," Proceedings of the International Conference on Modeling and Simulation of Microsystems 2000,** San Diego, CA, pp. T51.03, March 27-29 2000.
86. R.K. Jarwal and **D. Misra**, Effect of Reverse Biased Floating Voltage at Source and Drain on the Performance of NMOSFETs, **Proceedings of the Symposium on Structure and Electronic Properties of Ultrathin Dielectric Films on Silicon and Related Structures**, Materials Research Society Fall Meeting, Vol. 592, pp. 123-128, Boston, MA, Nov. 29-Dec. 3, 1999.
87. **D. Misra** and R. K. Jarwal, "Effect of Plasma Damage on Gate Oxide Grown on Nitrogen Implanted Silicon Substrate for 0.25μm CMOS Technology," **Proceedings of the International Symposium on Plasma Etching Processes for Sub-Quarter Micron Devices**, Electrochemical Society proceedings volume PV-99-30, pp. 159-166, 1999.
88. **D. Misra** and S. Kishore, "Thin-Gate Oxides Grown on Light Deuterium Implanted Silicon Substrate," **Proceedings of the Symposium on Silicon Nitride and Silicon Dioxide Thin Insulating Films**, Electrochemical Society proceedings volume PV-99-6, pp. 270-278, 1999.
89. C. Sylla, H.J. Wen and **D. Misra**, A Road-map for the Evaluation of Information Technology (IT) Investment, **Proceedings of the International Conference on Information Technology**, ICIT'98, Bhubaneswar, India, December 21-23, 1998.

90. **D. Misra**, "Plasma Charging in NMOSFET Due to Forward and Reverse-Biased Source and Drain Junctions during Metal-1 Etching, **Proceedings of the Symposium on Plasma Processing XII,** Electrochemical Society proceedings volume PV-98-4, pp. 36-42, 1998.
91. P.K. Swain and **D. Misra**, "Strain Relaxation in SiGe Due to P-Implantation and Subsequent Annealing," **Proceedings of the Symposium on State-of-the-Art Program on Compound Semiconductors XXVII** at The 193rd Electrochemical Society Meeting, May 3-8, 1998, San Diego, CA.
92. K.P.Cheung, S. Martin, **D. Misra**, K. G. Steiner, J. I. Colonell, C-P. Chang, W-Y-C. Lai, C-T. Liu, R. Liu and C-S. Pai, "Impact of Plasma-Charging Damage Polarity on MOSFET Noise," **IEEE International Electron Device Meeting,** pp. 437-440, Washington, DC, Dec. 7-10, 1997.
93. R.Kabra, V. Patel, J. Tower, J. Lowrance, V. Mastrocola, **D. Misra**, "180 x 180 Element Ultra High Frame Rate Burst Image Sensor," **Proceeding of the 40th Midwest Symposium on Circuits and Systems**, pp. 1423-1425, Sacramento, CA, Aug 02 - Aug. 06, 1997.
94. C-T.Liu, **D. Misra**, K.P. Cheung, G.B. Alers, C-P. Chang, J. I. Colonell, W-Y-C. Lai, C-S. Pai, R. Liu and J.T. Clemens, "Reduced 1/f noise and gm degradation for Sub-0.25μm MOSFETs with 25A-50A gate oxides grown on nitrogen implanted Si Substrate," **Proceedings of 1997 Device Research Conference**, June 23-25, Ft Collins, CO, pp. 124.
95. K.P.Cheung, **D. Misra**, K. G. Steiner, J. I. Colonell, C-P. Chang, W-Y-C. Lai, C-T. Liu, R. Liu and C-S. Pai, "Is NMOSFET hot carrier lifetime degraded by charging damage?", **Proceedings of 2nd International Symposium on Plasma Process-Induced Damage,** Monterey, CA, May 13-14, 1997, pp. 186.
96. P.K.Swain, H.K. Sehgal, and **D. Misra,** "Structural And Electrical Properties Of Mercury Zinc Sulphide Thin Films Prepared By Flash Evaporation Technique," **Proceedings of the Symposium on Thin Films - Surface and Morphology** (pp. Cb14.16), MRS Meeting, December 2-6, 1996.
97. P.K Swain and **D. Misra,** Strain Relaxation due to Phosphorus Implantation into Strained Si/SiGe/Si Heterostructure, **Proceedings of the 26th European Solid State Device Research Conference**, pp. 321-324, Bologna, Italy, September 9 - 11, 1996.
98. P.K Swain and **D. Misra,** Annealing Behavior of Plasma Etching Induced Defects in Si/SiGe/Si Heterostructure, **Proceedings of the Symposium on Plasma Processing XI,** Electrochemical Society proceedings volume PV-96-12, pp. 196-177, 1996.
99. S. Ganesh, S. Chamarti, and **D. Misra**, Design and Simulation of a Micromechanical Sensor for Detection of Charging Damage During Plasma Etching, **Proceedings of the Symposium on Plasma Processing XI,** Electrochemical Society proceedings volume PV-96-12, pp. 178-184, 1996.
100. P.K. Swaing, **D. Misra** and M. Cole, TEM and DLTS Measurements on Reactive Ion Etched Si/SiGe/Si Heterostructure**, Proceedings of the 1st International Symposium on Plasma Process Induced Damage**, Northern California Chapter of American Vacuum Society, pp. 133-136, 1996.
101. P.K. Swain, **D. Misra,** Y. Qui, and P.E. Thompson, Effect of Dry Etching and Subsequent Annealing of Si/SiGe/Si Heterostructure**, Proceedings of the State-Of-The-Art Program on Compound Semiconductors XXIII (SOTAPOCS XXIII),** Electrochemical Society proceedings volume PV-95-21, pp. 368-378, 1995.
102. P.K. Swain, H.K. Sehgal, and **D. Misra**, Preparation and Characterization of HgMnSe Thin Films Prepared by Flash Evaporation Technique**, Proceedings of the State-Of-The-Art Program on Compound Semiconductors XXIII (SOTAPOCS XXIII),** Electrochemical Society proceedings volume PV-95-21, pp. 274-284, 1995.
103. W. Zhong, **D. Misra**, J. Gaudani, B. Bartynski, V. Patel, and B. Singh, Etch Induced Damage in High Density Inductively Coupled Plasma Etching Reactor, **Proceedings of the Tenth Symposium on Plasma Processing,** G.S. Mathad and D.W. Hess, Editors, Electrochemiocal Society proceedings volume PV-94-20, pp. 120-131, 1994.
104. W. Zhong and **D. Misra**, Reactive Ion Etching Damage to Strained Si1-xGex Heterojunction Diode, **Proceedings of the 23rd European Solid State Device Research Conference**, pp. 321-324, Grenoble, France, September 13 - 16, 1993.
105. B. Wang and **D. Misra**, Cross Sensitivity Elimination in a 3-Dimensional Magnetic Sensor, **Proceedings of the 23rd European Solid State Device Research Conference**, pp. 775-778, Grenoble, France, September 13-16, 1993.
106. **D. Misra,** O.W. Purbo, and C.R. Selvakumar, Reduction of Damage in Reactive Ion Etched Surfaces Through Process Modifications, **Proceedings of the Microelectronic Processes, Sensors and Control**, SPIE Symposium proceedings volume 2091, pp. 248-257, 1993.
107. **D. Misra**, W. Zhong, H. Amin, J. Gaudani, M. Patel, M.W. Cole, T.P. Monahan and R.T. Lareau, Electrical studies on SF6 and O2 plasma etched Si1-xGex/Si p+_n heterojunction, Proceedings of the Symposium on the Degradation of Electronics Device Due to Device Application as well as Crystalline and Process-Induced Defects, H.J. Queisser, K.E. Bean, J.E. chung, T.J. Shaffner, Editors, Electrochemical Society Proceedings volume PV-94-1, pp. 149-156, 1993.
108. **D. Misra** and B. Wang, An Integrated Magnetic Sensor System for Robotic Applications, **Proceedings of the IEEE Regional Conference on Control Systems**, pp. 101-104, Newark, NJ, August 13 - 14, 1993.
109. O.W. Purbo, **D. Misra** and C.R. Selvakumar, "Reactive Ion Etching of SOI (ZMR and SIMOX) Silicon in CF4 + O2 and

SF6 + O2 Plasmas," **Proceedings of the 5th International Symposium on Silicon-On-Insulator Technology and Devices,** W. E. Bailey, editors, pp. 409-415, Electrochemical Society Softbound Series PV 92-13, 1992.

110. M. Zhang and **D. Misra**, "A Novel 3-D Magnetic Field Sensor in Standard CMOS Technology," **Proceedings of IEEE Transducers - 91**, pp.1085-1088, The 6th International Conference on Solid-State Sensors and Actuators, San Francisco, CA, June 23-27, 1991.
111. **D. Misra**, J. Kim, and W.N. Carr, "Anisotropic Reactive Ion Etching of Tantalum Silicide Films In CF4+O2 Plasma For Micromechanical Structures," **Proceedings of the 2nd International Conference on Electronics Materials,** pp. 415-420, Newark, NJ. Sept 17-19, 1990.
112. E.L. Heasell and **D. Misra**, "Reactive Ion Etching - Process Induced Damage and Recovery," (Invited Paper), **Proceedings of the 5th International Workshop on Physics of Semiconductor Devices**, pp. 591-599, New Delhi, India, December 1989.
113. **D. Misra** and E.L. Heasell, "Annealing Behavior of Reactive Ion Etching Induced Deep Levels," **Proceedings of the Second International Symposium on Ultra Large Scale Integration Science and Technology**, C.M. Osburn and J.M. Andrews, Editors, Electrochemical Society Softbound Series PV 89-9, pp. 430-444, 1989.
114. **D. Misra** and E.L. Heasell, "Side wall etching anisotropicity due to CF4 + O2 RIE for the fabrication of V-groove emitter transistors," "**Proceedings of the Symposium on Dry Process**" J. Nishizawa, Y. Horiike, M. Hirose, and K. Suto, Editors, The Electrochemical Society Softbound Series PV-88-7, pp. 71-77, 1988.
115. B.S. Gill, **D. Misra** and E.L. Heasell, "Novel MOSFET structures for integrated magnetic field sensors," (Invited Paper), Physics of Semiconductor Devices, Editors, S.C. Jain and S.Radhakrishna, World Scientific, New Jersey, **Proceedings of the 4th International Workshop on Physics of Semiconductor Devices**, pp. 3-12, Madras, India, December 1987.
116. D. Misra and T.R. Viswanathan, "Circuit design for a CMOS magnetic field sensor," **Proceedings of the IEEE International Symposium on Circuits and Systems (ISCAS)**, pp. 1183-1185, San Jose, California, May, 1986.
117. D. Misra, T.R. Viswanathan and E.L. Heasell, "A novel high gain MOS magnetic field sensor," **Proceedings of the 15th European Solid-State Device Research Conference (ESSDERC)**, pp. 94-95, Aachen, West Germany, September 1985.

Conference Abstracts

118. K. Jyothi (IITB), A.N. Chandorkar (IITB), and D. Misra (NJIT), "*Impact of Voltage and Current Stress on TiN/HfO2/TiN MIM Capacitors," presented* at the 216th meeting of the **Electrochemical Society** at Vienna, Austria to be held during Oct 4th – 9th 2009.
119. N. Rahim and **D. Misra**, "Low Voltage SILC Analysis for High-k/Metal gate Dielectrics", International Symposium on Advanced Gate Stack, Source/Drain, and Channel Engineering for Si-Based CMOS 5: New Materials, Processes, and Equipment, 215th Electrochemical Society Conference, San Francisco, CA , May 24- May 29, 2009.
120. **D. Misra,** "Correlation of HCS and NBTI in Degradation of High-k Gate Dielectrics" International Symposium on Silicon Nitride, Silicon Dioxide, and Alternate Emerging Dielectrics 10, 215th Electrochemical Society Conference, San Francisco, CA , May 24- May 29, 2009.
121. N. Rahim and **D. Misra**, "Elevated temperature breakdown study for high-k/metal gate stacks", The Dana Knox Student Research Symposium, NJIT, Newark, NJ, April 8,2009.
122. V. Budhraja and **D. Misra**, "Electrical Characterization of Metal Gate/High-k Dielectrics on GaAs Substrate," International Symposium on High Dielectric Constant Materials and Gate Stacks VI, 214th Meeting of the Electrochemical Society, Honolulu, Hawaii, October 12-17, 2008.
123. N. Rahim and D. Misra, "Breakdown Characteristics of High-k Gate Dielectrics With Metal Gate" ECS Extended Abstract, vol. MA 2008-01, Abstract No. 706, 213th Meeting of the Electrochemical Society, Phoenix, AZ, May 18-22, 2008.
124. N. Rahim and D. Misra, "Breakdown characteristics of metal gate/HfO_2 based multi layer Gate stacks", National Science Foundation headquarter, Arlington, VA, Feb. 2008.
125. D. Misra, "Role of Interfacial Layer on Breakdown of TiN/High-k Gate Stacks," ECS Extended Abstract, vol. MA 2007-02, Abstract No. 1284, 212th Meeting of the Electrochemical Society, Washington, DC, October 7-11, 2007.
126. P. Srinivasan, D. Misra, C. Claeys and E. Simoen"Modeling and Simulation of Drain Current 1/f Noise in High-k Based n-MOSFETs," ECS Extended Abstract, vol. MA 2007-02, Abstract No. 1171, 212th Meeting of the Electrochemical Society, Washington, DC, October 7-11, 2007.
127. N. Rahim, N. Chowdhury and D. Misra, "Role of Bulk HfO_2 and Interfacial SiO_2 Layer in Breakdown Characteristics of TiN/HfO2/SiO2/Si Gate Stacks," ECS Extended Abstract, vol. MA 2007-02, Abstract No. 1169, 212th Meeting of the Electrochemical Society, Washington, DC, October 7-11, 2007.

128. P. Srinivasan and D. Misra, Characterization and Modeling of Low-Frequency (1/f) Noise in High-κ Based Dielectrics, The Third Annual Provost's Student Research Showcase, April 11, 2007.
129. N. Chowdhury and D. Misra, Observation of deep bulk defects using low temperature techniques in TiN/HfSixOy gate stack and their role in BTI and HCS effects, 2nd International Workshop on Advanced Gate Stack Technology, September 26-28, 2005.
130. R. Garg and D. Misra, Effect of Nitridation on Ge/HfO2 Interface, Extended Abstract (Abstract #492), vol. 2005-02, 208th Meeting of the Electrochemical Society, Los Angeles, October 16-21, 2005.
131. P. Srinivasan, E. Simoen, L. Pantisano, C. Claeys and D. Misra, Effect of Nitridation on 1/f Noise in n-MOSFETs with High-k Dielectric, Extended Abstract (Abstract #568), vol. 2005-02, 208th Meeting of the Electrochemical Society, Los Angeles, October 16-21, 2005.
132. N. Chowdhury, P. Srinivasan and D. Misra, Evidence of Deep Energy States from Low Temperature Measurements and its Role in Charge Trapping in Metal Gate/Hf-Silicate Gate Stacks, Extended Abstract (Abstract #575), vol. 2005-02, 208th Meeting of the Electrochemical Society, Los Angeles, October 16-21, 2005.
133. T. Kundu and D. Misra, Annealing Effect On Reliability Of SiO_2 For Deuterium Implanted Silicon Annealing, Extended Abstract (Abstract #744), vol. 2005-02, 208th Meeting of the Electrochemical Society, Los Angeles, October 16-21, 2005.
134. Adinis Peralta and D. Misra, Charge Trapping in Metal Gate/High-k NMOSFETs, Senior Design Project Poster Presentation, ECE Dept., NJIT pp. 6, December 13, 2005.
135. N.A. Chowdhury, N. Rahim, and D. Misra, Role of Experimentally Observed Defect Energy Levels in Carrier Transport and Charge Trapping in Metal Gate/Hf-Silicate Based Gate Stacks," Proceedings of Graduate Student Research Day, NJIT, pp. 38, March 6, 2006.
136. D. Misra, N.A. Chowdhury, and N. Rahim, Negative Bias Temperature Instability in TiN/Hf-Silicate Based Gate Stacks, 2006 Lester Eastman Conference on High Performance Devices, pp. 67, Cornell University, August 2-4, 2006.
137. T. Kundu and D. Misra, "Hydrogen/Deuterium Implantation for Si-Dielectric Interface in Nanoscale Devices," Extended Abstracts (Abstract# 882), vol. 2004-02, 206th Meeting of the Electrochemical Society, Honolulu, HI, October 3-8, 2004.
138. Naser Chowdhury, R. Garg and D. Misra "Time Dependent Dielectric Breakdown of Thermally Evaporated HfO_2 for Nanoscale Devices," Extended Abstracts (Abstract #887), vol. 2004-02, 206th Meeting of the Electrochemical Society, Honolulu, HI, October 3-8, 2004.
139. R. Garg, D. Misra and P.K. Swain, "Ge MOS Devices with Thermally Evaporated HfO2 as Gate Dielectric," Extended Abstracts (Abstract #382), vol. 2005-01, 207th Meeting of the Electrochemical Society, Quebec City, Canada, May 15-20, 2005.
140. P. Srinivasan, E. Simoen, L. Pantisano, C. Claeys and D. Misra, "1/f Noise Performance of NMOSFETs with Hf-Based Gate Dielectrics," Extended Abstracts (Abstract #625), vol. 2005-01, 207th Meeting of the Electrochemical Society, Quebec City, Canada, May 15-20, 2005.
141. P. Srinivasan, N. A. Chowdhury, A. Peralta, D. Misra, R.Choi and B.H.Lee, "Charge Trapping in Metal Gate/High-K N-MOSFETs during Substrate Injection," Extended Abstracts (Abstract #662), vol. 2005-01, 207th Meeting of the Electrochemical Society, Quebec City, Canada, May 15-20, 2005.
142. P. Srinivasan, N. A. Chowdhury, and D. Misra, "Study of defects in MOS devices with high-k gate dielectric using tunneling mechanism and flicker noise analysis," Abstract #10.15, Einsteins in the City, A Student Research Conference at The City College of New York, New York, April 11-12, 2005.
143. Adonis Peralta, MOSFETS with High-K Dielectric, Presented Provost Research Day, April 13, 2005.
144. N. Chowdhury, R. Garg, and D. Misra, "Charge Trapping and Interface Characteristics of Thermally Evaporated HfO_2," Extended Abstract, vol. 2004-01, 205th Meeting of the Electrochemical Society, (Abstract #3), San Antonio, TX, May 9-14, 2004.
145. N. Chowdhury and D. Misra, "Interface Characteristics of Thermally Evaporated HfO_2," NCE Graduate Research Poster Session Abstracts, pp. 17, Newark, NJ, April 14, 2004.
146. P. Srinivasan and D. Misra, "Screening of Hot Electron Effect during Plasma Processing," NCE Graduate Research Poster Session Abstracts, pp. 20, Newark, NJ, April 14, 2004.
147. K. Guo, H. Ou, T. Grycewicz, A. Joshi, X. Wang, G. Thomas, H. Wang, R. Greene, D. Misra, Z. Liu, J. Zhen, X. Wang, B. Li, J. Opyrchal, H. Opyrchal, and K. K. Chin, "1D InGaAs Lock-in FPA," Proceedings of the SPIE Conference on Infrared Imaging Systems: Design, Analysis Modeling, And Testing XV (OR34), Orlando, FL, 12-16 April, 2004.
148. R. Garg, R.K. Jarwal, M. Bhaskaran, P.K. Swain, D. Misra "Characteristics of Thermally Evaporated HfO_2," Extended Abstracts, vol. 2003-02, 204th Meeting of the Electrochemical Society, (Abstract #580), Orlando, FL, October 12-16, 2003.
149. T. Kundu and D. Misra, "Interface Passivation By Hydrogen and Deuterium Implantation," Extended Abstracts, vol. 2003-02, 204th Meeting of the Electrochemical Society, (Abstract #643), Orlando, FL, October 12-16, 2003.

150. P. Srinivasan, B. Vootukuru and D. Misra, "Si-SiO_2 interface behavior in n-MOSFETs with reverse biased voltage during high-field and hot electron injection," Extended Abstracts, vol. 2003-02, 204th Meeting of the Electrochemical Society, (Abstract #672), Orlando, FL, October 12-16, 2003.
151. V. Briller, F. Deek, R. Friedman, D. Misra, and K Joshi, Poster Presentation, Active Research Experience For Undergraduates Increases Students' Motivation And Academic Performance, 2003 ASEE Annual Conference & Exposition, June 22-25, 2003, Nashville, Tennessee.
152. R. Garg, M. Bhaskaran, P.K. Swain, R. Jarwal, and **D. Misra**, Properties of Thermally Evaporated HfO_2, 203rd Meeting of the Electrochemical Society, (Abstract #54), Paris, France April 27-May 2, 2003.
153. T. Kundu, R.K. Jarwal, and D. Misra, Enhanced Electron Transit Time in Pinned-Buried Photodetector, Extended Abstract (Abstract # 663), 201st Meeting of the Electrochemical Society, May 12-17, Philadelphia, PA, 2002.
154. M. Kim, S. Mitra and **D. Misra**, Micro-Concentrator Interface for Real-Time VOCs Sensors, Charles W. Tobias Memorial Student Poster Session, 200th Meeting of The Electrochemical Society, Inc., and the 52nd Meeting of The International Society of Electrochemistry, San Francisco, CA, September 2-7, 2001.
155. **D. Misra** and R. K. Jarwal, Study of Hole Mobility of PMOSFETs in Inversion Layer During High-Field Stressing, Extended Abstract, 199th Meeting of the Electrochemical Society, March 25-29, Washington, DC, 2001.
156. M. Phillips, S. Halim, R.K. Jarwal and D. Misra, Reliability of Thin Oxides Grown on Deuterium Implanted Silicon Substrate, Students' Poster Session, 198th Meeting of the Electrochemical Society, Phoenix, Arizona, October 22-27, 2000.
157. M. Kim, S. Kishore, S. Mitra and **D. Misra**, Design Fabrication, Testing and Simulation of MEMS Heater, Students' Poster Session, 197th Meeting of the Electrochemical Society, Toronto, Ontario, Canada, May 14-18, 2000.
158. R.K. Jarwal and **D. Misra**, Effect of Reverse Biased Floating Voltage at Source and Drain on the Performance of NMOSFETs, Proceedings of the Symposium on Structure and Electronic Properties of Ultrathin Dielectric Films on Silicon and Related Structures, Materials Research Society Fall Meeting, Boston, MA, Nov. 29-Dec. 3, 1999.
159. **D. Misra** and R. K. Jarwal, "Effect of Plasma Damage on Gate Oxide Grown on Nitrogen Implanted Silicon Substrate for 0.25μm CMOS Technology," Extended Abstracts (Abstract #684), 196th Meeting of the Electrochemical Society, Honolulu, Hawaii, October 17-22, 1999.
160. S. Kishore and **D. Misra**, "Thin-Gate Oxides Grown on Light Deuterium Implanted Silicon Substrate," Extended Abstracts (Abstract #3), 195th Meeting of the Electrochemical Society, Seattle, Washington, May 2-6, 1999.
161. **D. Misra**, "Plasma Charging in NMOSFET Due to Forward and Reverse-Biased Source and Drain Junctions during Metal-1 Etching, Extended Abstract (Abstract # 173), The 193rd Electrochemical Society Meeting, May 3-8, 1998, San Diego, CA.
162. P.K. Swain and **D. Misra**, "Strain Relaxation in SiGe Due to P-Implantation and Subsequent Annealing," Extended Abstract (Abstract # 420), The 193rd Electrochemical Society Meeting, May 3-8, 1998, San Diego, CA.
163. K. Linga, R. Kabra and **D. Misra**, "Noise sources in longwavelength InGaAs/InP Focal Plane Array," POEM Annual Research Review of Photonics, November 4, 1998, Princeton. NJ.
164. J. Patel, P. Mohare, D. Pattnaik, S. Sadeq, N.R. Patel, A. Patel, M. Babladi, C. Fang, E. Hou, and **D. Misra,** " Implementation of Exponential and Logarithmic Function Generator VHDL Models Using Quick_VHDL and Autologic-II, 10th Annual Mentor Graphics Mid-Atlantic Region Local Users' Group Conference, Laurel, Maryland, May 28, 1998.
165. D.K. Pattnaik and **D. Misra,** " Modeling A 4-Bit Microprocessor In VHDL Using Quick_VHDL, 10th Annual Mentor Graphics Mid-Atlantic Region Local Users' Group Conference, Laurel, Maryland, May 28, 1998.
166. R.Kabra, V. Patel, J. Lowrance, V. Mastrocola, **D. Misra**, "Ultra High Frame Rate Burst Image Sensor," NJCOE Poster Presentation, Princeton University, April 3, 1998.
167. K.Linga, C.S. Wang. **D. Misra,** "High performance InGaAs/InP Focal Plane Arrays," NJCOE Poster Presentation, Princeton University, April 3, 1998.
168. S.Ganesh and **D. Misra**, "A simple technique for anisotropic dry etching and release of polysilicon cantilever beams," Extended Abstracts (Abstract # 1167), 191st Meeting of the Electrochemical Society, May 4-9, 1997.
169. R.Kabra, V. Patel, J. Lowrance, V. Mastrocola, **D. Misra**, "Ultra High Frame Rate Burst Image Sensor," NJCOE Poster Presentation, Princeton University, March 20, 1997.
170. K.Linga, C.S. Wang. **D. Misra,** "High performance InGaAs/InP Focal Plane Arrays," NJCOE Poster Presentation, Princeton University, March 20, 1997.
171. T. Golota, Y. Cai, T. Fukaya, K. Linga, S. Ziavras, and **D. Misra,** VHDL Modeling of the BLITZEN Massively Parrel Processing, MARLUG 1996, Spring Conference, May 24, 1996.
172. X.Q. Zhang, R. Kabra, G. Qin, S. Ziavras, and **D. Misra,** Implementation of a 4x4 Reconfigurable Generalized Hypercube, MARLUG 1996, Spring Conference, May 24, 1996.
173. P.K. Swain, **D.Misra**, Y. Qiu, and P.E. Thompson, Annealing Behavior of Process Induced Defects in Si/SiGe/Si.

Proceedings of the Emerging Technology Symposium of the Advanced Technology Center for Surface Engineered Materials (ATC/SEM), Princeton, NJ, Oct. 26, 1995.

174. P.K. Swain, H.K. Sehgal, and **D. Misra**, Preparation and Characterization of HgMnSe Thin Films Prepared by Flash Evaporation Technique, 188th Meeting of the Electrochemical Society, 1995, Vol. 95-2, Abstract No. 1045.
175. P.K. Swain, **D. Misra,** Y. Qui, and P.E. Thompson, Effect of Dry Etching and Subsequent Annealing of Si/SiGe/Si Heterostructure, 188th Meeting of the Electrochemical Society, 1995, Vol. 95-2, Abstract No. 1036.
176. Sabnis, E.S. Aydil and **D. Misra**, Introduction to Manufacturing Process Control for Microelectronic Deveices and Cicuits, SPIE Proceedings, Vol. 2336, pp. ix, 1994.
177. V. Patel, W. Zhong, **D. Misra**, J. Gaudani, B. Bartynski, and B. Singh, Etch Induced Damage in High Density Inductively Coupled Plasma Etching Reactor, 185th Meeting of the Electrochemical Society, 1994, Vol. 94-1, Abstract No. 203.
178. W. Zhong, **D. Misra**, H. Amin, J. Gaudani, and M. Patel, Electrical studies on SF6 and O2 plasma etched Si1-xGex/Si p+_n heterojunction, 184th Meeting of the Electrochemical Society, 1993, Vol. 93-2, Abstract No. 268.
179. **D. Misra**, Dry Etching Damage to Electronic Devices, Dry Etching Workshop, ETDL, Ft. Monmouth, NJ, June 17, 1993.
180. W. Zhong, H. Amin, J. Gaudani, and **D. Misra,** Damage to Si1-xGex strained layers due to reactive ion etching, The Microelectronic Processing '93, SPIE Symposium Monterey, California, Septmber 27 - 29, 1993.
181. O.W. Purbo, **D. Misra** and C.R. Selvakumar, "Reactive Ion Etching of SOI (ZMR and SIMOX) Silicon in CF4 + O2 and SF6 + O2 Plasmas," 181th Meeting of the Electrochemical Society, 1992, Vol. 92-1, Abstract No. 193, pp. 323-324.
182. L. Simhadri, and **D. Misra,** Verilog Model for VLSI Implementation of Mathematical Morphology Operations, Open Verilog International UG Meeting, Santa Clara, CA, March 24-25, 1992.
183. B. Wang and **D. Misra,** "A Novel 3-Dimensional Magnetic Field Sensor Array in Merged BiCMOS Technology," Late News Paper, 1992 IEEE Solid-State Sensor and Actuator Workshop, Hilton Head Island, SC, June 21-25, 1992.
184. **D. Misra**, O.W. Purbo, and C.R. Selvakumar, "Reactive Ion Etching of SOI Silicon," Proceedings of the Symposium of the Advanced Technology Center for Surface Engineered Materials (ATC/SEM), Piscataway, NJ, Nov. 25, 1991.
185. **D. Misra**, and Alkesh Shah, "A Microengineered Beam Diaphragm Structure for the High Performance Pressure Sensor," Proceedings of the Symposium of the Advanced Technology Center for Surface Engineered Materials (ATC/SEM), Piscataway, NJ, May 13, 1991.
186. **D. Misra** and W.N. Carr, "Microengineered Sensors: A Review," Proceedings of the Electro/International (IEEE) Conference, New York, NY, April 16-18, 1991.
187. V. Patel, M. Patel, S. Ayyagari, **D. Misra**, W.F. Kosonocky, and B. Singh, M. Leahy, "Application of Thermal Imaging for Monitoring Wafer Temperature and End-Point Detection In Plasma Etching," SRC TECHCON '90, San Jose, CA, October 16-18, 1990.
188. **D. Misra**, Reactive Ion Etching (CF4 + O2 Plasma) Induced Deep Levels In MOS Devices," Presented at the 37th National Symposium of American Vacuum Society, Toronto, Canada, October 8-12, 1990.
189. V. Patel, M. Patel, S. Ayyagari, **D. Misra,** W.F. Kosonocky, and B. Singh, M. Leahy, "Wafer Monitoring by Infrared Camera During Plasma Etching: Analysis and Experimental Results," Presented at the New Jersey SEMATECH Center of Excellence for Plasma Etching - Annual Review, Princeton, NJ, August 7, 1990.
190. **D. Misra** and B. Pathak, "Design and Processing of Micromechanical Structures of Silicide Films," Proceedings of the Symposium of the Advanced Technology Center for Surface Engineered Materials (ATC/SEM), Hoboken, NJ, May 16, 1990.
191. **D. Misra**, "Modulus of Elasticity Measurement of Micromechanical Tungsten Silicide Cantilever Beams," (Poster Presentation), Consortium for Surface Processing, Rutgers University, June 8, 1989.
192. B. Pathak and **D. Misra**, "Modulus of Elasticity Measurement of Micromechanical Tungsten Silicide Cantilever Beams," Presented at the 36th National Symposium of American Vacuum Society, Boston, MA, October 23-29, 1989.
193. **D. Misra** and E.L. Heasell,"Annealing Behavior of Reactive Ion Etching Induced Deep Levels," 175th Meeting of the Electrochemical Society, 1989, Vol. 89-1, Abstract No. 168.
194. **D. Misra** and E.L. Heasell, "Side wall etching anisotropicity due to CF4 + O2 RIE for the fabrication of V-groove emitter transistors," 172nd Meeting of the Electrochemical Society, 1987, Vol. 87-2, Abstract No. RNP - 1829.

Research Grants and Contracts

1. **NSF: (Co-PI),** "REU Site: Optics and photonics: Technologies, Systems, and Devices," $359,663.00, May 15, 2016 to April 30, 2019.
2. **NSF: (PI),** KAUST-NSF Research Conference On Electronic Materials, Devices And Systems For A Sustainable Future 2015**,"** $25,000.00, January 15, 2015 - December 31, 2015**.**

3. **Heritage Institute of Technology, Kolkata, India: (PI)** Summer Research Institute for 99 Students, Summer 2009-2016, $478,426, July 1, 2010 to June 30, 2017.
4. **Heritage Institute of Technology, Kolkata, India: (PI)** Summer Research Institute for 9 Students, Summer 2009, $39,411, June 15, 2009 to June 15, 2010.
5. **Heritage Institute of Technology, Kolkata, India: (PI)** Summer Research Institute for 20 Students, Summer 2008, $77,180, June 15, 2008 to June 15, 2009.
6. **NSF-4: (Co-PI)** A Research Experience for Undergraduates Site for Computer Networking and Security, Amount: $300,000, Duration: March 1, 2006 to February 28, 2009.
7. **NASA/California Institute of Technology, Jet Propulsion Laboratory: (PI)** Back-Illuminated CMOS Imager Technology, NMO 715652, $37,196.00, July 6, 2005 to September 30, 2007.
8. D. Misra, PI, **National Science Foundation** Award No. ECS 0140584, Passivation of Silicon Dangling Bonds by Deuterium Implantation, $268,000, May 1, 2002 to April 30, 2006.
9. D. Misra, PI, **NSF REU Supplement** to ECS 0140584, $12,000, May 1, 2002 to April 30, 2003.
10. D. Misra, PI, **NSF REU Supplement** to ECS 0140584, $6,000, May 1, 2003 to April 30, 2004.
11. D. Misra, PI, Research in MEMS Using Bonded Wafers, **Sarnoff Corporation,** $4,800.00, June 1, 2001 to December 2002.
12. D. Misra, Co-PI, New Jersey Center for Optoelectronics, **New Jersey Commission on Science and Technology,** $75,000.00 (NJIT), March 1, 2001 to February 28, 2002 (With H. Grebel).
13. D. Misra, PI, A Micro-concentrator Interface for Real-time VOCs Sensors, **Center for Airborne Organics, An EPA Research Center at MIT,** with Prof. S. Mitra from Chem Eng. $59,355.00, July 1, 2000 to December 31, 2001 (Amount allotted: Half of the total amount).
14. D. Misra, Co-PI, New Jersey Center for Optoelectronics, **New Jersey Commission on Science and Technology,** $75,000.00 (NJIT share), March 1, 2000 to February 28, 2001 (with Prof. Grebel & Amount allotted: $22,372).
15. D. Misra, Co-PI, Acquisition of Instrumentation for Deep Reactive Ion Etching of Bonded Ultra-Thin Silicon Wafers, **National Science Foundation,** $467,380.00, July 15, 1998 to June 30, 1999 (With Prof.s Farmer and Mitra).
16. D. Misra, PI, Research Experience for Undergraduates (REU) Supplement Grant for Device And Materials Processing, **National Science Foundation**, $10,000.00, January 1, 1999 to December 31, 2000.
17. D. Misra, PI, Acquisition of Specialized Instrumentation for Research & Development of Materials, Devices and Processes, **National Science Foundation**, $55,000.00, July 15, 1998 to June 30, 1999.
18. D. Misra, Co-PI, New Jersey Center for Optoelectronics, **New Jersey Commission on Science and Technology,** $85,000.00 (NJIT share), March 1, 1998 to February 28, 1999 (with Prof. Grebel & Amount allotted: $22,000).
19. D. Misra, PI, Fabrication of Students' VLSI design projects tiny-chips through MOSIS, **National Science Foundation**, an educational supplemental grant of $1,785, October 1997 to April 30, 1998.
20. D. Misra, PI, Investigation of Gate Oxides Grown on Light Deuterium Implanted Silicon Substrate, **Microelectronics Research Center**, NJIT, $10,000, March 1, 1998 to June 30, 1999.
21. D. Misra, PI, Air-gap Capacitance to Improve Interconnect Delay, **Microelectronics Research Center**, NJIT, $10,000, March 1, 1998 to June 30, 1999.
22. D. Misra, PI, "Two Part Nonvolatile Random Access Memory Using Conducting Polymer," **Infinite Computer Technologies** (**Air Force Office of Scientific Research , STTR Program**), $19,152.00, January 1, 1997 to December 31, 1997.
23. D. Misra, PI, "Two Part Nonvolatile Random Access Memory Using Indium," **Rubicon Inc.** (**National Science Foundation, SBIR Program**), $19,885.00, June 1, 1997 to November 30, 1997.
24. D. Misra, PI, "Silicon Photodetectors for Radiation Monitoring," **Radiation Monitoring Devices, Inc**., $19,000.00, Sept. 1, 1996 to Jan. 31, 1997.
25. D. Misra, PI, "Research for Advanced CMOS Process," **Sarnoff Corporation**, $24,000.00, December 1996 to May 1997.
26. D. Misra, PI, "Design and Fabrication of Test Structures to Study the Reliability of Semiconductor Packaging," (Graduate Student Support & Training in Clean room) **Amkor Electronics Inc.,** $74,000, July 1, 1996 to March 31, 1997.
27. D. Misra, PI, Equipment Grant, "Upgrade to 6" Wafer Processing," **Amkor Electronics Inc.,** $15,000 (cash award), January 1997.
28. D. Misra. PI, "DLTS Measurement System," **Lucent Technologies (Allentown, PA)** Equipment donation, Equivalent cost $10,000.00, May 1997.
29. D. Misra, PI, Research Experience for Undergraduates, **National Science Foundation**, a supplemental grant of $10,000, Jan. 1, 1995 to Dec. 31, 1995
30. D. Misra, PI, Damage Elimination using an in-situ Contactless Sensor and Real Time Process Monitor During Plasma

Etching in Microelectronic Manufacturing, **Center for Manufacturing Systems**, $20,000, July 1, 1995 to June 30, 1996.

31. D. Misra, PI, Study of Defects and Process Induced Damage in Si1-xGex Materials, **National Science Foundation,** $141,000.00, September, 1, 1992 to June 30, 1996.
32. D. Misra, PI, Study of Dry Etching Induced Damage in Silicon Dioxide, **SEMATECH Center of Excellence in NJ,** $15,000, Aug. 1, 93 to Nov 30, 1993.
33. D. Misra, Co-PI, Very-High-Frame-Rate Solid-State Sensor, **New Jersey Commission on Science and Technology,** $75,000, W.F. Kosonocky PI, July 1, 1993 to June, 30, 1994 (Amount allotted: $30,000).
34. D. Misra, Co-PI, Design, Simulation and Prototype Fabrication of a Digital Compression Chip, **Digital Compression Technology, Inc.** $130,000, Jan 4, 1993 to Dec 31, 1993. (Amount allotted: $36,000).
35. D. Misra, PI, Use of MOSIS for fabrication of VLSI chips, **National Science Foundation,** an educational supplemental grant of $4,750, October, 1991 to August 1992.
36. D. Misra, PI, Pre-Small Business Innovation Research Program, **Consortium For Surface Processing (ATC/SEM),** $5,000, October 1, 1991 - November 30, 1992.
37. D. Misra, PI, VLSI Design and Signal Processing Laboratory, **Sun Microsystems Inc.** $12,295, June 1, 1992, Equipment.
38. D. Misra, PI, RIE Processed Micromechanical Systems (Cantilevers) Using Silicides, **Consortium For Surface Processing (ATC/SEM),** $27,600, June 1, 1989 - May 31, 1990.
39. D. Misra, PI, Use of MOSIS for fabrication of VLSI chips for Small Projects, **National Science Foundation,** an educational supplemental grant of $5,500, October, 1990 to August 1991.
40. D. Misra, PI, Circuit Design, Analysis And Testing of A Novel CMOS Magnetic Field Sensor With A Temperature Compensation Scheme, **SIEMENS Corporate Research, Inc.**$10,000, (June 1, 1989 - May 31, 1990).
41. D. Misra, PI, VIMDE - A Vertically Integrated Multi-Chip-Module Design Environment, **AT&T Foundation,** $22,000, May 31, 1990.
42. D. Misra, PI, Electrical Breakdown Phenomena in Micromechanical Structures, **Consortium For Surface Processing (ATC/SEM),** $14,295, June 1, 1991 - May 31, 1992.
43. D. Misra, PI, VLSI Design Softwares, Autologic etc, **Mentor Graphics Corporation,** $370,000.00, January 1992.
44. D. Misra, Co-PI, Wafer Monitoring During Plasma Etching by IR Camera, **SEMATECH Center of Excellence for Plasma Etching, Semiconductor Research Corporation,** $30,000, with Prof. W.F. Kosonocky CP, July 1, 1989 - June 30, 1990 (Amount allotted: $10,000).
45. D. Misra, Co-PI, Trade-Off Study and Design of a Foveating Image Sensor For High Speed data Capture, **Rutgers University CAIP Center** $15,000, with Prof. W.F. Kosonocky, CP, July 1, 1988 - June 30, 1989 (Amount allotted: $8,000).

TEACHING

Courses Taught

FED 101 Fundamental of Engineering Design: Electrical Engineering Module
EE 291 Electrical Engineering Laboratory
EE 310 Cooperative Education and Internship
EE 405 Electrical Engineering Principle
EE 413 Introduction To Professional Engineering Practice
EE 463 Microelectronics Devices
EE 478 VLSI Semiconductor Circuits (Introduced New Course)
ECE 648 Digital Microelectronics
ECE 650 Electronic Circuits (Analog)
ECE 658 VLSI Design – I (Introduced New Course)
ECE 758 VLSI Design – II (Introduced New Course)
ECE 789 Introduction to Design Using VHDL (Introduced initially as a Special Topic Course)

Short Courses:

1. D. Misra, Nanoelectronics Challenges for Internet of Things, **Global Initiative of Academic Networks (GIAN) Lecture at National Institute of Technology, Silchar**, India, January 5-9, 2017
2. **D. Misra,** Introduction to VLSI Design Using VHDL, A Two Days Intensive Course at **Computer Science Department,**

Texas A&M University, College Station, Texas, June 14-15, 1999.
3. **D. Misra,** "Introduction to VLSI Design and VHDL," at Sarnoff Corporation, Princeton, New Jersey, May 18, 1998 to July 7, 1998 (8 weeks), **Sponsored by Sarnoff Corporation**.
4. D. **Misra,** Two Days Intensive Course on "Principles and Recent Advances in VLSI Design - Use of VHDL as VLSI Design Tool," at National Institute of Science and Technology, Palur Hills, Berhampur, India, July 20th and 21st, 1998, **Sponsored by Council for Industrial and Scientific Research (CSIR), India.**

New Courses Developed:

ECE 475-001 VLSI Semiconductor Circuits.
ECE 658-101 VLSI Design - I.
ECE 758 VLSI Design – II.

Other Teaching Related Activities

- Excellence in Teaching Award, New Jersey Institute of Technology, 2005
- Nominated by ECE Department for Excellence in Teaching Award for Graduate Instruction.
- Course Supervisor for the courses ECE 475 (since Fall 1990) and ECE 658 (since Fall 1988).
- Receiving $1,500 to $5,000 per year from **National Science Foundation/DARPA** to fabricate students' designs as part of their course projects.
- Received Grants as PI and Co-PI for instructional laboratory development.
- Contributing to the Computer Engineering program through CAD services.
- First time introduced VHDL course at NJIT.

GRADUATE STUDENT ADVISING

Post-Doctoral Fellows

- R.K. Jarwal, January 1999 to Present, **Research Work:** Simulation of Ultra High Frame Rate Imager) and CMOS Device Physics and reliability, Supported by New Jersey Center for Optoelectronics. Currently as Research Engineer at NJIT.
- P.K. Swain, March 1995 to May 1997, **Research Work:** Processing of SiGe Devices and materials, as per NSF proposal, **Development Work:** Developed the CMOS process in NJIT clean room. Currently as CTO and VP Technology at Fusion UV Systems, Inc, Gaithersburg, MD

Doctoral Students (Current)

Peter Paliwoda, Tri-Gate Transistors design
Rui Yuan, Meta-Analytic Parcellation Based on Text, and its application to the human thalamus
Meenakshisundar Gurunathan, RF Devices and Circuits: Active tunable inductors
Balamurali Bhat, RF Devices and Circuits: Low noise oscillators
Nathaniel McCaffrey, *Dissertation Title:* Design of Drift Field Voxel (DFV) for Efficient Detection.
Expected Graduation Date: December 2012

Doctoral Students (Graduated)

Yiming Ding, Electrical Characterization of High-K Gate Dielectrics for Advanced CMOS Gate Stacks
Graduation Date: August 2016, Currently at SMIC, Shanghai, China
M.N. Bhuyian, Reliability Study of Zr and Al Incorporated Hf-based High-k Dielectric Deposited by Advanced Processing, Graduation Date: January 2015, Currently post-doc at NJIT.
P. Kharangarh, Study of Deep Level Defects of n+-CdS/p-CdTe Solar Cells, jointly supervised by Dr. K. Chin of Physics, Graduation Date: May 2013.
Vinay Budhraja, *Dissertation Title:* Defects in Multicrystalline Silicon: Influence on Solar Cell Performance
Graduation Date: December 2011, Currently in Finland

Santosh Sahoo, *Dissertation Title:* High Temperature-Stress Induced Leakage Current (HT-SILC) Analysis of High-K Gate stacks. *Graduation Date:* December 2012
Zhi Li, *Dissertation Title:* Design and Fabrication of a Fluoresence Detector
Graduation Date: May 2012 Currently working at Brookhaven National Laboratory (BNL), Upton, NY 11973
Nilufa Rahim, TiN/HfO_2/SiO_2/Si Gate Stacks Reliability: Contribution of HfO_2 and Interfacial SiO_2 Layer, Graduation Date*:* January 2011, Currently with IBM Burlington.
P. Srinivasan, Reliability Study of Nanoscale MOS Transistors with High-K Gate Dielectrics"
PhD Thesis, Graduation Date: May 2007. Currently at Globalfoundries, NY
N.A. Chawdhury, "Low Temperature Trapping Characteristics of HfO_2 Gate Dielectrics"
PhD Thesis, Graduation Date: December 2006. Currently at Spansion Inc, CA
R. Garg, "Ge MOS Devices with Thermally Evaporated HfO_2 as Gate Dielectrics"
PhD Thesis, Graduation Date: January 2006. Currently at Infeneon Technologies, CA
T. Kundu, "Isotope Effect at Si/SiO_2 Interfaces,"
PhD Thesis, Graduation Date: August 2005. Currently at Micron Technologies, VA
M. Kim, "Microconcentrator Interface for Chemical Sensors," Supported by MRC, Jointly supervised by Dr. S. Mitra of Chem. Eng. Currently at US Dept of Commerce, Washington, DC
PhD Thesis, Graduation Date: Summer 2002.
Wei Zhong, "Process Induced Damage and Defects to Materials and Devices," Supported by NSF and Anadigics.
PhD Thesis, May 2001. **Winner of ECE Department's 2001 Hashimoto Award.**
Current Employment: Anadigics, Warren, NJ
R.K. Kabra, "Design and Characterization of Ultra High Frame Rate Burst Image Sensors," Supported by PSI Inc and Sarnoff Corp.
PhD Thesis, January 1998
Current Employment: Sarnoff Corporation, Princeton, NJ.
K.R. Linga, Design, "Fabrication and Characterization of High Performance InGaAs/InP Focal Plane Arrays in the 1-2.6μm Wavelength Region," Supported by PSI Inc and Epitaxx.
PhD Thesis, May 1997, Current Employment: President, InPhot Inc., NJ

Masters Graduates

Nayana Vishwanath, MS Project, FPGA Implementation of baseband equivalent discrete time system transmitter model, December 2014.
Amrita Banerjee, MS Thesis Title: Fabrication And Characterization Of High Performance Si-SiO_2 Back Illuminated CMOS Photodiode Array, August 2006.
Jagtar S. Dhillon, MS Project:
Ravishankar B. Bannigidadmath, MSEE, Project Title**:** Performance Evaluation of Low Power SRAM in Deep Submicron Technology, January 2005.
Don Guelich, MSEE, Project Title**:** Custom Dither ASIC for "Full Color" on 18-bit LCD , August 2005.
Purushothaman Srinivas, "VLSI Architecture for Deadlock Avoidance in Wormhole Networks," M.S. Thesis: January 2004.
Soumya Das Sharma, "Chip Design for Multicast Oriented Routing Algorithm," M.S. Project: January 2004.
Bhawar Patel, "MOSFET Degradation with Reverse Biased Source and Drain During High-Field Injection," M.S. Thesis: Aug 2003.
Harsha R. Sipuram, "Low power transceiver design for mobile wireless chemical and biological sensors, M.S. Thesis: May 2003
Y. Ramakrishna Vadapalli, "An Interface chip for SWA based chemical sensor in ad-hoc networks," M.S. Thesis: January 2003
Vishnu Mandava, "VLSI Design Of Stability Routing Protocol For Sensors In Manets," M.S. Thesis, January 2003.
Reenu Garg, "Chip Design for Multicast Oriented Routing Algorithm," M.S. Project: January 2003.
Damanjeet Chandok, "Video Processing in a Machine Vision System," M.S. Project: January 2003
K. Gururaj, "VLSI Architecture for Deadlock Avoidance in Wormhole Networks," M.S. Thesis, August 2002.
S. Polturi, "Hyperbolic Position Location Estimator with TDOA from Four Stations," M.S. Thesis, Fall 2001.
R. Bucher, "A Synthesizable Low Power VHDL Model of the Exact Solution of Three Dimensional Hyperbolic Positioning

System," M.S. Project, January 2000.
S. Kishore, "Investigation of Gate Oxides Grown on Light Deuterium Implanted Silicon Substrate," M.S. Thesis, August 1999.
P. Mohare, "Generic Emulation of Microprocessors," M.S. Thesis, May 1999.
S. Madapur, "Design, Simulation and Fabrication of a Two-Part Non Volatile Random Access Memory Circuit," M.S. Thesis, January 1998.
S. Ganesh, "Design, Simulation and Fabrication of a MEMS In-situ, Contactless Sensor to Detect Plasma Induced Damage During Reactive Ion Etching," M.S. Thesis, January 1997.
Y. Qiu, "The Study of SiGe-Channel Heterostructure MOS Device," M.S. Thesis, May 1996.
P. Patel, "Design of Neuron Cell Using FPGA." M.S. Project, May 1996.
J. Shah, Graduated, "Automation of Reactive Ion Etching Process using a MC 68000 Microprocessor," M.S. Thesis, August 1993.
B. Wang, "Three Dimensional Magnetic Sensors and Array in BiCMOS Technology" M.S. Thesis, January 1993.
L. Simhadri, "A Verilog Model for VLSI Implementation of Mathematical Morphology Operations," M.S. Project, May 1992.
A. Shah, "A Novel Micromachined Beam-Diaphragm Structure for High Performance Pressure Transducers," M.S. Thesis, August 1991.
V. Satyanarayana, "A 4-Bit BiCMOS Full Adder for ALU," M.S. Project, May 1991.
O. Ezebuiroch, "Offset Cancellation in a MAGFET," M.S. Project, May 1991.
T. Jaswal, "A CMOS Logic Circuit to Reduce Substrate Current/Hot Carrier Effect," M.S. Thesis, May 1991.
S. Patel, An n-Channel MOSFET with Schottky Source and Drain," M.S. Project, December 1990.
M. Zhang, "3-D Magnetic Field Sensor Design Based on Standard IC Technology," M.S. Thesis, December 1990.
D.K. Sampath, "A Novel CMOS Magnetic Field Sensor with Temperature Compensation Scheme," M.S. Thesis, December 1990.
V.S. Simhadri, "A Novel Schottky Barrier MOSFET for VLSI Applications," M.S. Thesis, August 1990.
B. Pathak, "Investigation of Micromechanical Properties of Tungsten Silicide Thin Films," M.S. Thesis, August 1990.
M.D. Bunyan, "Damage Effects in Si-SiO2 Structures Due to Reactive Ion Etching," M.S. Thesis, May 1990.
Y. Chakravarthy, "A 512x512 Random Addressable Variable Resolution Image Sensor." M.S. Thesis, March 1990.

PROFESSIONAL ACTIVITIES:

Editorial Activities

1. Editorial Board, *Materials* (Journal) 2014-present
2. Special Issue Editor, *Materials* (Journal) on High-K Gate Dielectrics (2014)
3. Associate Editor, *Advances in Electronics* January 2014 – 2016
4. Editorial Board, ECS *Interface* Magazine, May 2008 - Present
5. Editorial Board, *ECS Transactions*, May 2010 - May 2015

The Electrochemical Society (ECS)

- Symposium Chair and Lead Editor, Dielectrics for Nanosystems, may 2004 – present, ECS Meetings: Manuscript review and Session Chairing activities.
- Committee Member, Honors and Awards Committee of The Electrochemical Society. Appointed, May 15, 2012 – May 15, 2016).
- Symposium Organizing Committee Member and Editor, Semiconductors, Dielectrics, and Metals for Nanoelectronics, January 2002 – Present, ECS Meetings, Manuscript review and Session Chairing activities.
- Symposium Organizing Committee Member and Editor, Graphene and Post-CMOS Materials and Devices – Present, ECS Meetings, Manuscript review and Session Chairing activities.
- Fellow of Electrochemical Society
- Serving as the Vice-Chair of the Dielectric Science and Technology Division of the Society 2006-2008.
- Served as the Secretary of the Dielectric Science and Technology Division of the Society 2004-2006.
- Serving in the **Executive Committee** of the **Dielectric Science and Technology Division** of the Society.
- Awards Committee Member, Solid State Science & Technology Award, Electrochemical Society, May 2000.
- Chair, Awards Committee, Thomas D. Callinan Award, Electrochemical Society, May 2000-2004.
- Chair, Membership Committee of Dielectric and Science Division of Electrochemical Society in May 1998 to May

2001.
• Providing Travel Grants and Awarded Memberships to Students all over the world to present a paper in all the ECS meetings since October 1998.

International Symposiums at ECS

• Co-organizer & Session Chair, International Symposium on High Dielectric Constant Materials: Material Science, Processing, Manufacturing and Reliability Issues (S. Kar, R. Singh, **D. Misra**, H. Iwai, M. Houssa, J. Morais, D. Landheer), 204th Meeting – Orlando, FL, October 12-16, 2003 in collaboration with the Electronic Division of American Ceramic Society.
• Co-organizer & Session Chair, H1 – Interfaces in Electronic Materials (L.P. Cook, **D. Misra**, S.M. Mukhopadhyay, O. Leonte, K. Sundaram, W. Wong-Ng), 204th Meeting – Orlando, FL, October 12-16, 2003 in collaboration with the Electronic Division of American Ceramic Society.
• Co-organizer & Session Chair, H1 - First International Symposium on High Dielectric Constant Materials: Material Science, Processing, Manufacturing and Reliability Issues, 202nd Meeting - Salt Lake City, UT, October 20-24, 2002
• Co-organizer & Session Chair, H2 - Emerging Technologies in Nanoelectronics (D. Misra, K.B. Sundaram and S. Seal), 202nd Meeting - Salt Lake City, UT, October 20-24, 2002
• Co-organizer & Session Chair, F1 - Science and Technology of Dielectrics in Emerging Fields (D. Misra, K. Worhoff, P. Mascher), 203rd Meeting - Paris, France, April 27-May 2, 2003.
• Co-organizer & Session Chair, G1 - Seventh International Symposium on Silicon Nitride and Silicon Dioxide Thin Insulating Films (R.E. Sah, K.B. Sundaram, M.J. Deen, D. Landheer, W.D. Brown, D. Misra), 203rd Meeting - Paris, France, April 27-May 2, 2003.
• Co-organizer, International Symposium on *Silicon Nitride and Silicon Dioxide Thin Insulating Films – VI* at the 199th Meeting of Electrochemical Society at Washington, DC March 25-29, 2001.
• D. Misra: Session Chair, International Symposium on *Silicon Nitride and Silicon Dioxide Thin Insulating Films – VI* at the 199th Meeting of Electrochemical Society at Washington, DC March 25-29, 2001.
• Co-organizer, International Symposium on Microfabricated Systems And MEMS-V at the 198th Meeting of Electrochemical Society at Phoenix, Arizona October 22-27, 2000.
• D. Misra: Session Chair, International Symposium on Microfabricated Systems and MEMS V, 198th Meeting of Electrochemical Society, Phoenix, Arizona, October 22-27, 2000.
• Co-organizer, International Symposium on Plasma Etching Processes For Sub-Quarter Micron Devices at the 196th Meeting of Electrochemical Society and 1999 Joint International Meeting at Honolulu, Hawaii, October 17-22, 1999. Chaired a Session in the Symposium.
• Co-organizer, International Symposium Interconnects And Contact Metallization For ULSI at the 196th Meeting of Electrochemical Society and 1999 Joint International Meeting at Honolulu, Hawaii, October 17-22, 1999. Chaired a Session in the Symposium.
• Co-organizer, Student Poster Session at the 196th Meeting of Electrochemical Society and 1999 Joint International Meeting at Honolulu, Hawaii, October 17-22, 1999. Chaired the Session in the Symposium.
23 • Co-organizer, International Symposium on Fifth
International Symposium On Silicon Nitride And Silicon Dioxide Thin Insulating Films, Processes and Reliability at the 195th Meeting of Electrochemical Society at Seattle, WA, May 1999. Chaired a Session in the Symposium.
• Organizer, Student Poster Session at the 195th Meeting of Electrochemical Society at Seattle, WA, May 1999. Chaired a Session in the Symposium.
• Co-organizer, International Symposium on Interconnect and Contact Metallization: Materials, Processes and Reliability at the 194th Meeting of Electrochemical Society at Boston, MA, November 1998. Chaired a Session in the Symposium.
• Co-organizer, Fifth International Symposium on Quantum Confinement: Nanostructures at the 194th Meeting of Electrochemical Society at Boston, MA, November 1998. Chaired a Session in the Symposium.
• Co-organizer, International Symposium on Microstructures and Microfabricated Systems IV at the 194th Meeting of Electrochemical Society at Boston, MA, November 1998. Chaired a Session in the Symposium.
• Organizer, Student Poster Session at the 194th Meeting of Electrochemical Society at Boston, MA, November 1998. Chaired a Session in the Symposium.
• Co-organizer, International Symposium on Plasma Processing at the 193rd Meeting of Electrochem Soc at San Diego, CA, May 1998. Chaired a Session in the Symposium.
• Organizer, Student Poster Session at the 193rd Meeting of Electrochemical Society at San Diego, CA, May 1998. Chaired a Session in the Symposium.

Institute of Electrical and Electronics Engineers (IEEE)

• IEEE Electron Device Society Board of Governors, January 1, 2015 - Present.
• Chairperson, North Jersey Section of IEEE: EDS Chapter, North Jersey Section, New Jersey. Elected, (January 1, 2010 - Present)
• Steering Committee Member, IEEE International Conference on Information Technology, May 1, 1999 - Present).
• Steering Committee Member, IEEE International Symposium on Electronic System Design (ISED) May 1, 2011 – Present).
• Chairperson, North Jersey Section of IEEE: EDS Chapter, North Jersey Section, New Jersey. Elected, (January 1, 2010 - Present).
• Associate Editor, IEEE Circuits and Device Magazine till 2006.
• Special Section Editor (Column Editor: ***Device Unlimited***), IEEE C&Devices Magazine till 2006
• Senior Member of the IEEE
• Chair, North Jersey Section of IEEE 2003 and 2004.
• ADCOM Member IEEE Electron Device Society, 2004.
• Editorial Board Meeting, IEEE Circuits and Devices Magazine, Orlando, FL, Nov. 18, 2000.
• Editorial Board Meeting, IEEE C and D Magazine, San Francisco, CA, June 23, 2001.
• Treasurer, IEEE North Jersey Section, for 2001 and 2002.
• 2000 (elected) Member at Large of the North Jersey Section of the IEEE.
• Presently serving as the Associate Chair of Electron Device Society and Circuit and Systems division of the North Jersey Section of IEEE.
• Represented North Jersey Section of IEEE since 1997 the National Meeting of the Electron Device Society at IEDM.
• Organizing seminars at NJIT campus for IEEE.
• A constant reviewer of articles for International Journals such as IEEE Transaction on Electron Devices, IEEE Electron Device Letters.
• Session Chair, VLSI Technology Session, VLSI Design 2001, 14th International Conference on VLSI Design, January 5, 2001.
• D. Misra: Program Committee Member, Int. Conf. on VLSI Design, 01, 02, 03, 04 & 05

International Conference on Information Technology

• D. Misra: Program Committee Member, International Conference on Information Technology, 2001, 2002, 2003, 2004.
• D. Misra: Session Chair, Session for Keynote Papers, International Conference on Information Technology, Bhubaneswar, India, Dec. 21-23, 2000.
• Served as the **Program Chair** of International Conference on Information Technology, CIT'2000, in Bhubaneswar, India, December 21-23, 2000.
24 • Served as the **Tutorial Chair** of International Conference on Information Technology, CIT'99, in Bhubaneswar, India, December 20-22, 1999.
• Served in the **Technical Program Committee** of International Conference on Information Technology, CIT'98, in Bhubaneswar, India, December 21-23, 1998.
• Submitted a proposal to NSF to support CIT'2000.

Reviewing Activities

• Regular Reviewer of articles for International Journals:

IEEE Transaction on Electron Devices
IEEE Electron Device Letters
IEEE/ECS Electrochemical and Solid-State Letters
IEEE Transaction on Circuit and Systems
Applied Physics Letter (AIP)
Journal of Applied Physics (AIP)
Journal of Vacuum Science and Technology (AVS)
Journal of the Electrochemical Society
Journal of Physics D: Applied Physics

Journal of Micromechanics and Microengineering
Material Science in Semiconductor Processing
Nanotechnology
Semiconductor Science & Technology
Grant Proposals for National Science Foundation.

- Awarded Membership of The Institute of Physics, London, 2000 for Reviewing Activities.
- Served as a Panel Member in Enabling Technology Division (ECS) of NSF in June 1998 to review 24 proposals.
- Served as a Panel Member in Enabling Technology Division (ECS) of NSF in May 2001 to review 8 individual MRI proposals and 34 proposals in the panel.
- Served as a Panel Member in Enabling Technology Division (ECS) of NSF in October 2003 to review 21 individual career proposals in the panel.

University Service

- Provided an outstanding service with leadership as the Acting Director of Microelectronics Research Center in 1996-97 Academic Year.
- Provided an outstanding service as a Mentor for University Research Experience program for Undergraduates in Equal Opportunity Program, New Jersey State Minority Academic Career Program, McNair Fellow Program (99-00) for last several years (since 1995-96).

University Committees

- Served in the University Research Committee
- Serving in the Graduate Studies Committee for Best Thesis
- Served in the Academic Computing Committee
- Served as the Library Committee

Departmental Committees

- Director, Graduate Program: MS Electrical Engineering.
- Area Coordinator: Solid-State, VLSI and Elecro-Optics Systems
- Served in the Chairperson Search Committee (elected)
- Currently serving in (i) Committee of Committees (elected), (ii) Doctoral Committee, (iii) Financial Aid Committee.
- Served as the Computer Engineering Faculty Search Committee for two academic years in 1997-98 and 1998-99.
- Served as the Chair of the departmental A&V committee.
- Served as the Assistant Director of the Electronic Imaging Center at NJIT and established the VLSI/CAD facility for the Center.

PUBLIC SERVICE

- Secretary Treasurer, Orissa Society of Americas, New York Chapter, 2002-2004.
- Participated as a Panel Member at the One day Workshop on Rebuilding Orissa (India) after Killer Cyclone on Saturday, February 5, 2000, University of Maryland, College Park, MD.
- An active volunteer member at the "Sustainable Economic and Educational Developmental Society (SEEDS) [http://www.seedsnet.org]. SEEDS has been active to promote educational and economic progress and development for the common folks particularly in Orissa, but in the developing world in general. SEEDS in principle, also would take stand against social evils and injustices whenever possible. SEEDS best hope that these, in turn, would indirectly bring about and foster the other important ingredient – political consciousness and empowerment-- among the people.
- Serving as a fund raiser and volunteer for the Orissa Cyclone Relief Program
- Served as Vice President of Orissa Society of Americas' New York Chapter 1998-2000.
- Served as an advisor to Association of Indian Students at NJIT.
- Served as an organizer for the 25th National Convention of Orissa Society of Americas in 1994.
- Member SPIE, Sigma Xi.