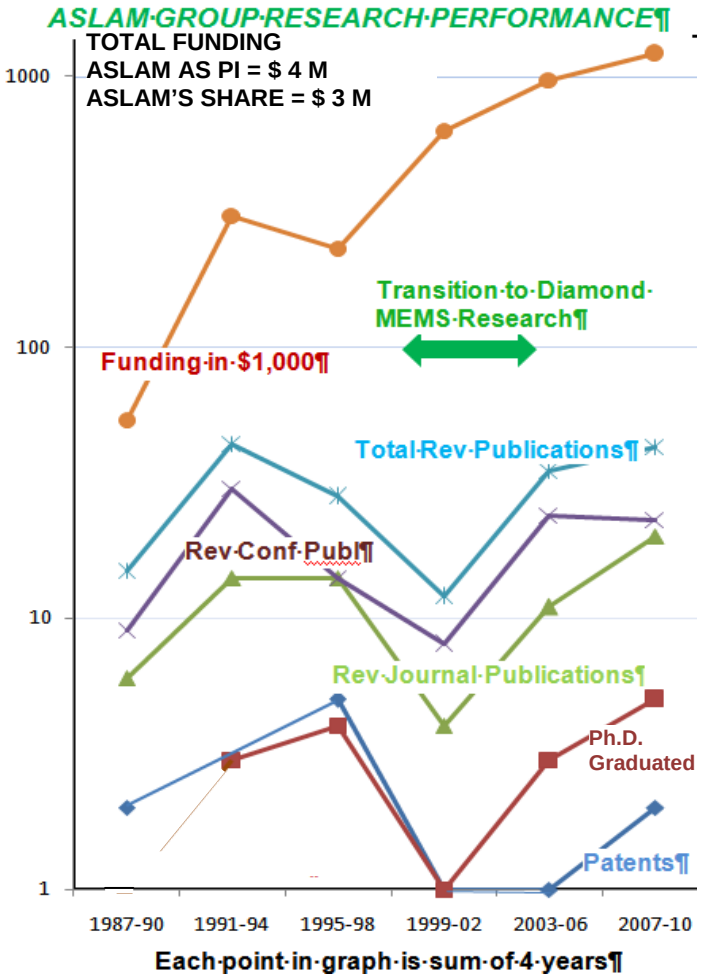
SUMMARY VITAE Dean M. Aslam

EDUCATION; Ph.D., EE, 1983, Aachen Technical University, Germany

RESEARCH AREAS; Neural studies using microprobes, biochemical nanosensors, polycrystalline diamond (poly-C) sensors and MEMS (Bio, RF, Packaging), hands-on Lego-robotics modules for K-12, UG and graduate teaching.

RESEARCH OUTPUT GRAPH: ***Shown on right***



RESEARCH INNOVATIONS: Seminal Work, *First to report;*

- *nano-education hands-on learning modules for K through Ph.D. teaching using Lego-based robotic van de Graaff generators, 2008*
- *all-diamond neural BioMEMS probe with diamond electrodes, 2007*
- *cochlear BioMEMS probe with diamond position sensors and electrodes, 2006*
- *the highest quality factor of 116,000 for cantilever beams made from (i) any polycrystalline material and (ii) for any resonator structure made of polycrystalline diamond (poly-C), 2005*
- *100 nm wide polycrystalline diamond RFMEMS resonators, 2005*
- *all-diamond MEMS packaging with built-in interconnects, 2002*
- *field emission electroluminescence (FEEL) in diamond, 1999*
- *highest piezoresistive gauge factor (over 4000) in polycrystalline diamond, 1998*
- *IC-compatible diamond MEMS technology, 1995*
- *piezoresistive gauge factor in polycrystalline and single crystal diamond, 1990*

CURRENT COLLABORATIONS:

Sandia National Laboratories (ABQ, NM), University of Michigan, Technical University of Berlin (Germany)

RECENTLY TAUGHT COURSES:

Introduction to Microsystems: ECE870
Microsystems Fabrication: ECE871
Integrated Circuit Fabrication: ECE477

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Address: Electrical and Computer Engineering Department, 2120 EB, Michigan State University, E. Lansing, MI 48824, USA Phone: 517-353-6329; Fax: 517-353-1980

1. EDUCATION

Ph.D. (Dr. rer. nat.) 1983, Electrical-Engineering, Aachen Technical University (RWTH), Germany. **Thesis Title**: "Annealing Behavior of Electron and Hole Traps in SiO_2 of MOS Devices". Thesis Adviser: Pieter Balk

M.S. (Dipl. Phy.) 1979, Physics, RWTH Aachen, Germany. **Thesis Title:** "Temperature Dependence of Mobility and Concentration of Electrons in Ion-Implanted Si-MOSFETs". Thesis Adviser: Pieter Balk

→ **PROFESSIONAL EXPERIENCE: See section 8** → **PROFESSIONAL & PUBLIC SERVICE: See section 9**

2. TEACHING

→*If you like to know what researchers at Harvard and Princeton say about my innovative micro and nano modules currently used in the teaching, check:* http://www.egr.msu.edu/~aslam/KtoPhD.html

Current:

Credit Teaching

*ECE 870 (**Intro. MEMS**)*, ECE 477 (**IC Fab**), ECE 871 (**Microsystems Fab**)**

Non-Credit/Outreach Teaching

→**Concepts Used: KPD: From Kindergarten to Ph.D.** **TASEM**: *Technology Assisted Science, Engineering and Mathematics*. **Remote sessions provided to schools through live Internet-based video by MSU faculty.**

→***Summer, In/After School Courses and Workshops; over 1,000 K-12 children served during 2003 - 2007 through 35 short courses***

Past:* *1988 – 2003 ***Solid State Devices and MEMS;*** *ECE 474 (Solid State Dev.: UG level), ECE 874 & 875 (Solid State Dev.: Grad Level), Others (Adv. MEMS, Societal Impact, Adv. Topics Courses, Circuits Courses)*

3. RESEARCH AND INNOVATIONS

3.1 Research Areas

Fundamental Science and Enabling Technologies

(i) Technologies of carbon-based materials:

- ***Carbon nanotubes*** *(CNT); growth, catalyst, adsorbant layers, density, diameter, strain, etc.*
- ***Polycrystalline-diamond (poly-C);*** growth, doping, patterning, MEMS technology.

(ii) Devices*; microsensors (piezoresistive, strain, temperature), nano-sensors(chemical, bio), MEMS resonators, energy scavenging structures.*

(iii) Technology-Assisted Science, Engineering and Mathemeatics (TASEM): *Lego-based learning including modules on VD Graaff Generators, fabrication, nanotechnology, Technology-Assisted Business Innovations (TABI), programmable robots, microcontrollers, GPS, HD Video.*

Microsystems

(i) BioMEMS; *design and fabrication of neural probes; in-vitro/in-vivo chemical/electrical detection*

(ii) RFMEMS; *poly-C micro and nano resonators, piezoresistive resonators*

(iii) MEMS Packaging; *smart MEMS packaging*

(ii) Learning Modules; *Lego-based demos showing (a) system integration concept and (b) table-top supply chain systems (factories, warehouses)*

3.2 Researchers:

Current: 3 postdocs (part time), **4** Ph.D., 1 ful time researcher, 2 High School Students

Table 1: ***Current Researchers***

#	Name	Ph.D. Thesis Title/Research Area	Expect. Grad.	Unique Research Aspect
1	M. Varney	All-diamond Neural Probes	2011	Neural probes with channels
2	Xianbo Yang	Carbon Nanotube in Micro GC	2013	CNT in Si channels
3	Z. Cao	Smart Diamond MEMS Packaging	2010	All-Diamond packages
4	Tri Doan (Co-adv: Prof. Birge)	Carbon Nanotube Growth and Nanosensors	2013	CNT in Si channels
5	Dr. M. Shah	Carbon Nanotube in Micro GC	postdoc	All-diamond Structures

6	Dr. A. Janoudi	Biomedical, nano sensors, neural probes	Posdoc	CNTs Bio/Environ. Nanosensors
7	Dr. H. Chan	BioMEMS	Postdoc	Diamond Neural Probes
8	Sean Hatch	Energy Scavenging, Bio Measurements	Researcher	Static Charge Energy Scavenging

Graduated; 1993-06: 12 Ph.D., 3 M.S., 10 undergraduates, 18 High School, 4 postdocs

*Table 2: Only **Ph.D. students** listed*

#	***Name***	***Ph.D. Thesis Title***	***Year***	***Unique Research Result***
1	H.H Tzeng (co-adv.: Prof. Zapp)	VLSI Smart Logic Modeling and Design for Optimum Chip Feature Characterization	1993	Miniaturization if instrumented sphere
2	I. Taher	CVD Diamond Piezoresistive Microsensors	1994	Piezoresistivity in diamond
3	A. Masood	CVD Diamond Temperature Microsensors	1993	Diamond microchip T-sensor (80 – 1300 K)
4	N. Abu-Ageel	Temperature Depend. of Conductivity and Mobility of b- and a-SiC for Temp. Sensors	1996	Seebeck coefficient of alpha & beta SiC reported for the first time
5	G.W Yang	Diamond Seeding, Sensors and Heaters	1996	Single-structure diamond sensor-heater
6	D.S. Hong	Diamond Field Emission Displays	1997	Diamond gated-field-emitter display reported 1st time
7	S. Sahli	Diamond Inter- and Intra-Grain Piezoresistive Microsensors	1997	Piezoresistive gage factor of 4000 in poly-C
8	U. Kim	Field Emission Electro-luminescence (FEEL) in Diamond and Carbon Nanotubes	2002	FEEL discovered in diamond
9	N. Sepulveda-A	Diamond RFMEMS Resonators	2005	Highest quality factor in cantilever beam resonators reported 1st time
10	X Zhu	All-Diamond MEMS Packaging	2006	Built-in interconnects, fast growth
11	Y. Tang	Cochlear Implant Probe with Diamond microsensors and electrodes	2006	Incorporation of diamond sensors in Si cochlear probe for 1st time
12	Ho-Yin Chan	Diamond Neural Probes	2008	All-diamond neural probes demonstrated 1st time

3.3 Innovations:

Recent

1. *Reported energy scavenging from static charges, 2008.*
2. *Reported the fabrication and testing of all-diamond MEMS neural probes for the first time, 2007.*
3. *Reported cochlear BioMEMS probe with diamond position sensors and electrodes, 2006.*
4. *Reported the highest quality factor of 116,000 for cantilever beams made from (i) any polycrystalline material and (ii) for any resonator structure made of polycrystalline diamond, 2005.*
5. *Fabricated 100 nm wide polycrystalline RFMEMS resonators, 2005.*

Past

6. *All-diamond MEMS packaging with built-in interconnects, 2002.*
7. *Reported field emission electroluminescence (FEEL) in diamond for the first time in 2001.*
8. *Application of diamond sensors and MEMS technologies in wireless integrated Microsystems (WIMS) in 2000.*
9. *Field emission induced light emission from poly-C and carbon nanotubes in 1999.*
10. *Implementation of the concept "Elementary School to Ph.D." in K-12 education at Okemos High School (located near MSU) and other schools in Lansing area in 1998.*
11. *Measured an intra-grain piezoresistive gauge factor of above 4,000 in poly-diamond in 1998.*
12. *Developed diamond MEMS technology compatible with Si microfabrication process in 1996.*
13. *Demonstrated gated diamond field emission display in 1995.*
14. *Used Spindt process to fabricate evaporated Si field emitters for displays in 1992.*
15. *A Michigan State and Ford team headed by Dean Aslam was the first to measure piezoresistivity in vapor-deposited p-type diamond in 1990.*

4. COLLABORATIONS

4.1 Industrial

Current (2002-): RFMEMS and nanotechnology with Sandia & Los Alamos, *U of Michigan, Ann Arbor, MI.*

Past (1987-96): *Collaborative research with industry has resulted in a number of joint patents, publications, cash and in-kind funding, and in interaction of MSU graduate students with the scientists from industry. My students and I have used lab facilities in the departments of physics and sensors & actuators in Ford Scientific Research*

Laboratories (FSRL) in Dearborn, Michigan (Drs. B. Artz, S. McCarthy, E.M.. Logothetis, M. Tamor and L. Rimai). This interaction has resulted in new results in diamond sensors, field emission displays and microelectromechanical systems. A collaborative interaction with Dr. M. Olinger of Smiths indusries led to patents and publications in accelerometers.

4.2 Inter-disciplinary

Current: Others

***NSF ERC-related collaborations** are underway with Professors Najafi, Zellers and Wise of University of Michigan.*
***Sandia/Los Alamos National Labs;** RFMEMS resonators, CNT nano-sensors, Drs. John Sullivan and Elshan Akhadov*

Current: MSU

- **Mechanical Engineering;** MEMS, Prof. Norbert Mueller
- **Supply Chain Management**: Technology Assisted Business Innovations (TABI), Prof. Anthony Ross
- **Department of Teacher Education**: Nanoeducation, Prof. David Futus

Past: *Over the past 10 years, collaborations with MSU faculty from departments of physics (superconductors, sensors), chemistry (sensors), mechanical engineering (thermal conductivity, microrobots, temperature sensors), and computer science (microrobot) has resulted in publications, patents and joint funding from DARPA, NSF, Ford.*

5. PATENTS 9+2

1. Patent # 4,912,087; "Rapid Thermal Annealing of Superconductor Oxide Precursor Films on Si and SiO_2 Substrates," **M. Aslam**, E.M. Logothetis, R.E. Soltis, Ford Motor Co., March 1990.
2. Patent # 4,943,558; "Preparation of Superconducting Oxide Films Using Pre-oxygen Nitrogen Anneal," R.E. Soltis, E.M. Logothetis, **M. Aslam,** Ford Motor Co., July 1990.
3. Patent # 5,413,668; "Method for Making Mechanical Devices and Micro-Electromechanical Systems", **M. Aslam**, M.A. Tamor, Ford Motor Company, May 1995.
4. Patent # 5,424,241; "Force Detecting Sensor and Method of Making..", **M. Aslam**, M. Olinger, J. Page, Smiths Industries, June, 1995.
5. Patent # 5,474,808; "Method of Seeding Diamond", **M. Aslam**, Michigan State University, Dec, 1995.
6. Patent # 5,488,350; "Diamond Film Structures and Methods Related to Same", "**M. Aslam** and Jim Beck, Michigan State University, January, 1996.
7. Patent # 5,526,703; "Detecting Sensor and Method of Making --", **M. Aslam**, M. Olinger, J. Page, Smiths Industries, June, 1996.
8. Patent #6,082,200; **D.M. Aslam** and S. Sahli, "Ultra-High Sensitivity Intra-grain Piezoresistive CVD Diamond Sensors", Michigan State University, 2000.
9. Patent # 6,868,736; "Ultra-Miniature Optical Pressure Sensing System", Takeo Sawatari, Alex Klooster, **Dean M. Alsam**, Yuping Lin, and James Marks , Sentec Corporation, March 22, 2005.
10. Pending Patents:
    a) "CNT for GC and Nanosensors", **D.M. Aslam,** Ted Zellers, Yang Lu, filed in 2005.
    b) US 61/005,326; Electrostatic Charge Generating Assembly, filed November 25, 2008.
    c) Provisional Patent; Lego-embedded Microsystems, 2007
11. Invention Disclosures:
    1. Discl # 08031F; Fabrication of All-Diamond Neural Probes for Electrical and Elecrochemical Sensing Applications submitted on December 17, 2007.

6a. EDITORSHIPS

1. Founding Editor-in-Chief of **Journal of Nano Systems and Technology (JNST)**, A.J. Boggs, Ann Arbor, MI (USA); first issue is scheduled for March 2009.
2. Proceeding Co-Editor (along with Mike Tamor), Diamond Film Semiconductors, SPIE Proceedings Vol 2151, 1994. ISBN 0-8194-1446-8.

6b. PUBLICATIONS 170 (58 Journal + 112 conference papers)

In Progress/Review 9

1. *Z. Cao and D.M. Aslam, "Challenges in Diamond MEMS Technology for BioMEMS, RFMEMS and MEMS Packaging", in preparation 2009.*
2. *Z. Cao and D.M. Aslam, Diamond MEMS Resonators with Piezoresistive Detection", in preparation 2009.*
3. *A. Shao and D.M. Aslam, "PCF with High Surface Area Adsortant Structures for Micro GC", in preparation 2009.*

4. *D.M. Aslam, "Technology Assisted Science, Engineering and Mathematics (TASEM) Education Using K-Ph.D. Concept", in preparation for IEEE Trans. Edu, 2009.*
5. *D.M. Aslam, "TECHNOLOGY ASSISTED SCIENCE ENGINEERING AND MATHEMATICS USING PROGRAMMABLE ROBOTIC LEGO-BASED VAN DE GRAAF GENERATORS ", in progress 2009.*
6. *D.M. Aslam, "TECHNOLOGY ASSISTED SCIENCE, ENGINEERING AND MATHEMATICS USING PROGRAMMABLE NANOTECHNOLOGY LEARNING MODULES ", in progress 2009.*
7. *D.M. Aslam,"TECHNOLOGY ASSISTED BUSINESS INNOVATIONS FOR K-12, INFORMAL AND PROFESSIONAL STEM EDUCATION ", in progress 200.*

Refereed Journal Articles 58

1. *Ho-Yin Chan, **Dean M. Aslam,** M. Varney, James Wiler and Brendan Casey,* "A novel diamond micro probe for Neuro-chemical and -electrical recording in neural prosthesis", to be published in *IEEE J. Micro Electro Mech. Sys, 2009.*
2. N. Sepulveda, Jing Lu, **Dean Aslam** and John Sullivan, "High-Performance Polycrystalline Diamond Micro- and Nano-resonators", IEEE J. Micro Electro Mech. Sys,Vol. 17, No. 2, pp. 473-482, April 2008.
3. F. Iancu, X. Zhu, Y. Tang, **D. M. Aslam**, and N. Muller, "Design and Fabrication of Microchannel Test Rig for Ultra-Micro Wave Rotors," Microsystem Technologies, Vol. 14 (1), pp. 79-88, January 2008.
4. N. Sepulveda, **D.M. Aslam**, J.P. Sullivan, "Polycrystalline Diamond MEMS Resonator Technology for Sensor Applications" Diamond and Related Materials, Volume 15, Issues 2-3, 398-403 (2006).
5. X. Zhu and **D.M. Aslam**, "CVD diamond thin film technology for MEMS packaging", Diamond & Rel. Mat. 15, 254-258(2006).
6. Y. Tang and **D.M. Aslam,** J. Wang and K.D. Wise, "Study of polycrystalline diamond piezoresistive position sensors for application in cochlear implant probe", Diamond and Related Materials, Volume 15, Issues 2-3, 199-202 (2006).
7. Y. Tang, ***D.M. Aslam,*** "*Technology of polycrystalline diamond thin films for microsystems applications",* J. Vac. Sci. Technol. B23(3), 1088-1095(2005).
8. **D.M. Aslam** and G.D. Dangi, "Design, Fabrication and Testing of a Smart Robotic Foot", Robotics and Autonomous Sys., **vol. 51** (2,3), July 31, 207-214(2005).
9. N. Supelveda-Alancastro and **D. M. Aslam**, "Polycrystalline Diamond Technology for RFMEMS Resonators", Microelectronic Engineering, 73-74, 435-440 (2004).
10. *X. Zhu, **D. M. Aslam**, Y. Tang, B. Stark, and K. Najafi, "The Fabrication of All Diamond Packaging Panels With Built-in Interconnects For Wireless Integrated Micro-Systems", IEEE J. Micro Electro Mechan. Sys,. **Vol. 13**, 396-405 (2004).*
11. **D.M. Aslam**, "Electroluminescence in Diamond", in Handbook of Electroluminescent Materials", edited by D. R. VIJ, Institute of Physics Publishing, U.K. (2004).
12. **D.M. Aslam**, "Optical Properties of Diamond", Encyclopedia of Optics, Elsvier Publ., 2004.
13. U. Kim and **D.M. Aslam**, "Field emission electroluminescence on diamond and carbon nanotube films", J. Vac. Sci. Technol. **B 21**(4), 1291-1296 (2003).
14. S. Guillaudeu, X. Zhu and **D.M. Aslam**, "Fabrication of 2-μm Wide Poly-crystalline Diamond Channels Using Silicon Molds for Micro-fluidic Applications", Diamond & Rel. Mat., 12, 65-69 (2003).
15. L Tummala, R. Mukherjee, N. Xi, **D.M. Aslam**, H. Dulimarta, J. Xiao, M. Minor and G. Dangi, "Climbing the Walls", IEEE Robot. Autom. Magazine, vol. 9, 10-19 (2002).
16. U. Kim, R. Pcionek, **D.M. Aslam** and D. Tománek, "Synthesis of high-density carbon nanotube films by microwave plasma chemical vapor deposition", Diamond & Related Materials (10), pp. 1947-1951 (2001).
17. Abu-Ageel, **D.M. Aslam**, R. Ager, L. Rimai, "The Seebeck coefficient of monocrystalline alpha-SiC and polycrystalline beta-SiC measured at 300-533 K", Semicond. Sci. Technol., 15, 32-33 (2000).
18. S. Hong and **D.M. Aslam**, "Poly-Diamond Gated Field Emitter Display Cells", IEEE Trans. Electron Dev., vol. 46(4), 787-791(1999).
19. S. Sahli and **D.M. Aslam**, "Ultra-high Sensitivity Intra-Grain Poly-Diamond Piezoresistors", Sensors and Actuators: A, vol. 71/3, 193-197(1998).
20. S.J. Kwon, Y.H. Shin, **D.M. Aslam** and J.D. Lee, "Field emission properties of polycrystalline diamond film prepared by microwave-assisted plasma chemical vapor deposition", J. Vac. Sci. Technol. B 16(2), 712-714(1998).

21. D.S. Hong and **D.M. Aslam**, "Technology and Characterization of Diamond Field Emitter Structures", IEEE Trans. Electron Dev., vol. 45(4), 977-985(1998).
22. N. Abu-Ageel, **D. M. Aslam** and L. Rimai, "Temperature-dependence of conductivity and Hall concentration of poly-SiC deposited on fused silica by laser ablation", J. Vac Sci. Technol. B16(1), 142-146(1998).
23. S. Sahli and **D.M. Aslam**, "Piezoresistive pressure sensors using p-type poly-crystalline diamond films", Sensors and Actuators A vol 69/1, 27-32(1998).
24. S. Sahli and **D. M. Aslam**, "Nonuniform Conduction in B-Doped Cemical Vapor Deposited Diamond Studied by Inter- and Intra-grain Measurements", Appl. Phys. Lett. 70 (16), 2129-2131(1997).
25. G. Yang, **D.M. Aslam** and J. McGrath, "The Characterization of Single Structure Diamond Heater and Temperature Sensor", Diamond and Related Materials 6, 394-397(1997).
26. S. Sahli and **D. M**. **Aslam**, "Effect of Post-Deposition Anneal on the Resistivity of P-Type Polycrsytalline Diamond Films", Appl. Phys. Lett., **69** (14), 2051-2052(1996).
27. G. Yang and **D.M. Aslam**, "Single-Structure Heater and Temperature Sensor Using a p-Type Polycrsytalline Diamond Resistor", IEEE Electron Dev. Lett. **17(5)**, 250-252 (1996).
28. S. Bhargava, H.D. Bist, S. Sahli and **M. Aslam**, H.B. Tripathi, "Diamond polytypes in the chemical vapor deposited diamond films", Appl. Phys. Lett., 67(12), 1706-1708(1995).
29. S. Herr, J. Beck, J. McGrath, S. Sahli and **M. Aslam**, "An optimized Experimental Method for Measuring Thermal Conductivity of Thin, Boron-doped Diamond Films", Rev. Sci. Instrum., 66(10), 4967-4971(1995).
30. G.S. Yang, **M. Aslam**, K.P. Kuo, D.K. Reinhard and J. Asmussen, "Effect of Ultra-High Nucleation Density on Diamond Growth at Different Growth Rates and Temperatures", J. Vac. Sci. Technol. **B**, vol. 13, 1030-1036(1995).
31. G.S.Yang and **M. Aslam**, "Ultra-High Nucleation for Growth Smooth Diamond Films", Appl. Phys. Lett., **66** (3), 311-313(1995).
32. D.S. Hong and **M. Aslam**, "Field Emission From p-Type Polycrystalline Diamond Films", J. Vac. Sci. Technol., **B 13(2)**, 427-430(1995).
33. **M. Aslam**, G.S. Yang and A. Masood, "Boron-Doped Vapor-Deposited Diamond Temperature Microsensors", Sensors and Actuators A, vol. 45 (2), pp. 131-138, 1994.
34. I. Taher, **M. Aslam**, M. Tamor, "Piezoresistive Microsensors using p-type CVD Diamond Films", Sensors and Actuators A, vol. 45 (1), 35-43, 1994.
35. H.D. Bist, S. Bhargava, T.S. Little, J.K. Gardner, Jr., J.R. Durig, S. Sahli and **M. Aslam**, "Fourier Transform Raman Spectroscopy and Scanning Electron Microscopic Studies of Chemical Vapor Deposited Diamond Films", J. Raman Spect., 25, 67-73(1994).
36. S. Tseng, R. Zapp, **M. Aslam** and G. Brown, "Miniaturization of the Instrumented Sphere Using Smart Logic", Appl. Engin. Agriculture, vol. 10(4), 567-72, 1994.
37. D.S. Hong, **M. Aslam**, M. Olinger and M. Feldmann, "Simulations of Fabricated Field Emitter Structures", J. Vac. Sci. Technol. B 12(2), 764-769(1994).
38. S. Bhargava, H.D. Bist, H. Joshi, J.R. Durig and **M. Aslam**, "Micro-Raman Analysis of Thin-Film Diamond Temperature Sensors", J. Raman Spect., 24, 419-422(1993).
39. L. Rimai, R. Ager, J. Hangas, C. Peters, E.M. Logothetis, N. Abu-Ageel and **M. Aslam**, "Pulsed Laser Deposition of SiC on Fused Silica and Sapphire Substrates", J. Appl. Phys., **73**, 8242-8249(1993).
40. C. Pawlowski, **M. Aslam**, and L. Rimai, "Laser Ablation Deposition of $YBa_2Cu_3O_{7-x}$ Thin Films Using a Microwave Plasma Disk Reactor Oxygen Source", J. Appl. Phys., 74, 6430-6431, 1993.
41. **M. Aslam**, P. Klimecky, G. Myers, H. Busta, L. Cathey, R. Elder and B. Artz, "Triode Characteristics and Vacuum Considerations of Evaporated Si Microdevices", J. Vac. Sci. Technol., **B** 11(2), 422-425(1993).
42. G. Myers, **M. Aslam**, P. Klimecky, L. Cathey, R. Elder and B. Artz, "Si Cold Cathodes Using Electron Beam Evaporation", J. Vac. Sci. Technol., **B**, 11(3), 642-646(1993).
43. **M. Aslam**, B. Artz, T. J. Pratter, and S. Kaberline, "A Comparison of Cleaning Procedures for Removing Potassium from Si Wafers Exposed to KOH", IEEE Trans. Electron Dev., 40, 292-295(1993).
44. A. Masood, **M. Aslam**, M.A. Tamor, T.J Potter, "Synthesis and Characterization of CVD Diamond", Appl. Phys. Lett., 61, 1832-1834(1992).

45. **M. Aslam**, I. Taher, A. Masood, M.A. Tamor and T.J. Potter, "Piezoresistivity in CVD Diamond", Appl. Phys. Lett., 60, 2923-2925(1992).
46. A. Masood, **M. Aslam**, M. Tamor, T. Potter, "Patterning of CVD Diamond Films on Si, Si_3N_4 and SiO_2," J. Electrochem. Soc. 138, L67-67(1991).
47. **M. Aslam**, R.E. Soltis, E.M. Logothetis, and D. Chase, "Technology of Superconducting Films on Si, SiO_2, and Si3N_4 Substrates for Vacuum Microelectronics", IEEE Trans. Electron Devices, ED-36, 2693-2696(1989).
48. R. Soltis Re, Donlon Wt, Shinozaki S, Ager Rm, Peters Cr, Logothetis Fm, Aslam M, Wenger Le, Chen Jt, Nelson R, "Properties Of Bisrcacuo Films Prepared By Rf Triode Sputtering", Physica C, 162: 649-650, Part 1 (1989)
49. **M. Aslam**, R.E. Soltis, E.M. Logothetis, R. Ager, M. Mikkor, W. Win, J.T. Chen and L.E. Wenger "Rapid Thermal Annealing Behavior of YBaCuo Films on Si and SiO_2 Substrates", Appl. Phys. Lett. 53, 153-155 (1988).
50. **M. Aslam,** "Electron Mobility in B-implanted Si Inversion Layers of MOSFETs", IEEE Trans. Electron Devices, ED-35, 1563-1564 (1988)
51. **M. Aslam**, "Common Origin for Electron and Hole Traps in MOS. Devices", IEEE Trans. Electron Devices, vol. ED-34, No. 12, pp. 2535-2539, 1987.
52. **M. Aslam**, "Electron Self-Trapping in SiO_2", J. Appl. Phys., 62, 159-162, 1987.
53. Do Thanh, **M. Aslam** and P. Balk, "Defect Structure and Generation of Interface States in MOS System", Solid Stat. Electron, 29, 829-840 (1986).
54. M. Offenberg, T. Johannson, **M. Aslam** and P. Balk, "Electron Tapes in B^+ - Implanted SiO_2", Physica, 129b, 240-244(1985).
55. **M. Aslam**, R. Singh, and Balk, "Nature of Electron and Hole Traps in MOS Systems with Poly-Si Electrode", Phys. Status Solidi, vol. 84, pp. 659-668, 1984.
56. **M. Aslam**, P. Balk and D.R. Young, "High Temperature Annealing Behavior of Electron Traps in Thermal SiO_2", Solid Stat. Electron., 27, 709-719 (1984).
57. **M. Aslam** and P. Balk, "Insulating Films on Semiconductors", Electrochem. Soc. Ext. Abst. 1983, 103(1983).
58. **M. Aslam** and P. Balk, "Processing Dependence and Structure of Hole Traps in SiO_2", Insulating Films on Semiconductors, eds. V.J. Verwey and Wolters, North Holland Publishing Co. (1983),

Reviewed Conf. Proceedings 113

1. ***D.M. Aslam**, S. Hatch, and C. Rostamzadeh, "On the Diverse Educational Applications of Van de Graaff Generators", Proc. ASEE North Central Section Conf., pp., 2009.*
2. *Mike Varney, Abed Janoudi, Sean Hatch, **D.M. Aslam**, Diane Graham, "Hands-on TASEM Modules for Third Graders in Woodcreek Magnet Elementary School", Proc. ASEE North Central Section Conf., pp., 2009.*
3. *D.M. Aslam, Z. Cao, and C. Rostamzadeh, "Hands-on Micro and Nano Learning Modules Using Programmable Lego® Robotic Van de Graaf Generators and Their Commercialization", Proc. COMS 2008, pp. , 2008.* ***Best Paper Award***
4. *H-Y Chan, **D. Aslam**, S. Hatch, J. Wiler, and B. Casey, "In vitro and In vivo Neural Recordings using Diamond Neural Probes", Proc. COMS 2008, pp. , 2008.*
5. ***D.M. Aslam** and A. Shao, "Nanotechnology Learning Modules Using Technology Assisted Science, Engineering and Mathematics", Proc. ASEE Zone 1 Conf., pp., 2008.*
6. ***D.M. Aslam**, Z. Cao, and C. Rostamzadeh "Innovative Engineering Education Using Programmable Lego Robotic VD Graaf Generators", Proc. ASEE Zone 1 Conf., pp., 2008.*
7. *Najamuddin, Shafaat A. Bazaz, H.Y.Chan, **D.M.Aslam**, "Impedance Characterization of MEMS based All Diamond Neural Probe", 20th IEEE International Conference on Microelectronics, pp 424-429, 2008.*
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Keynote Talks 6

1. **D.M. Aslam,** "Technology Assisted Science, Engineering and Mathematics Outreach Education Using K-Ph.D. Concept", **Keynote**, NSF IGERT Interdisciplinary Research Symposium on 'Cultivating and Developing Leaders for the New Millennium', University of South Florida, Tampa, April 5, 2006.
2. **D.M. Aslam,** "Micro- and Nano- Technologies in K through Ph.D. Education and Research", **Keynote**, Second World Congress Biomimetics, Artificial Muscles and Nano-Bio (Nano-Bio 2004) Albuquerque, New Mexico, December 6-8, 2004.
3. **D.M. Aslam**, "Small Tech Education", **Keynote,** High Desert MNT Regional Workshop, TVI Workforce Training Center - Albuquerque, NM, October 12-13, 2004.
4. E. T. Zellers, **D. M. Aslam** and Yang Lu, "Materials and Processing Challenges Related to the Fabrication of a MEMS Micro Gas Chromatograph," Symposium on Materials, Mechanisms, and Systems for Chemical and Biological Detection and Remediation, Materials Research Society Meeting, ***keynote***, San Francisco, CA, April 12-16th, 2004.
5. **D. M. Aslam** and K. D. Wise, "Micro and Nano Technologies in K-12", Sensors Expo conference, ***Session Keynote***, June 4, Chicago, 2003.
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Invited Talks 15

1. **D.M. Aslam**, "Energy Scavenging from Static Charges and other sources", IEEE SEM Fall Conf. on Green Energy in Great Lakes, Dearborn, MI, November, 2008.
2. **D.M. Aslam**, "Carbon Based Micro- and Nano-Technologies; Materials, Devices and Systems", 6th International Workshop & Training Course on Microelectronics; Micro- and Nano-electronics & Photonics, Islamabad, Pakistan, April 9-13, 2007.
3. **D.M. Aslam** and A. Ross**, "**Microsystems, RFID Technology and Supply Chain Management; Research and Education", 6th International Workshop & Training Course on Microelectronics; Micro- and Nano-electronics & Photonics, Islamabad, Pakistan, April 9-13, 2007.
4. **D.M. Aslam,** "Diamond MEMS and Wireless Integrated Micro Systems", **invited**, Materials Research Group, University of South Florida, Tampa, April 5, 2006.
5. **D.M. Aslam,** "Technology Assisted Science, Engineering and Mathematics Outreach Education Using K-Ph.D. Concept", **invited**, K-5 Science Education Mini-Summit, Center for Urban and transportation Research, University of South Florida, Tampa, April 6, 2006.

6. **D. M. Aslam** and Y. Lu, "CNT for Micro GC and Chemical Sensors ", Sensors Expo conference, ***Invited***, June, Detroit, 2004.
7. **D. M. Aslam**, K. Najafi, K. D. Wise and T. Zellers, "Poly-Carbon Nano- And Micro-Technologies For Wireless Integrated Micro-Systems", ***Invited***, Proc. COMS 2002, Ypsilanti, MI.
8. D.M. **Aslam**, "Intra-grain Diamond Piezoresistive Sensors", ***Invited,*** SID Symposium, University of Michigan, Ann Arbor, 1999.
9. **M. Aslam**, "On-Chip Microdevices and Microtubes", ***Invited,*** APSENA 1994 Conf., Oakland University, Rochester Hills, MI, 1994.
10. M.A. Tamor and **M. Aslam**, "Diamond Microsensors", ***Invited,*** 3rd International Conf. on New Diamond Science and Technol. & Diamond 92, Heidelberg, Germany, 1992.
11. **M. Aslam**, "Technology Si Vacuum Microtubes for Microsensors", ***Invited,*** AMSE Conf., MSU, East Lansing, MI, 1992.
12. **M. Aslam**, "Micromachined On-chip Vacuum Tubes", ***Invited,*** CFMR Industrial Meeting, MSU, 1992.
13. **M. Aslam**, "Diamond Piezoresistive Devices", ***Invited,*** ISHM Workshop on Diamond and Diamond-like Films, Breckenridge, Colorado, 1992.
14. **M. Aslam**, "Piezoresistive Pressure Sensors", ***Invited,*** CFMR Industrial Symposium, East Lansing, MI, 1991.
15. **M. Aslam**, "New and Conventional Materials for VLSI Devices", ***Invited,*** Meeting of Detroit Chapter of ASM International, Farmington Hills, MI, U.S.A. (1990).

Multimedia Appearances 6

1. **MSU State News, "K-12 outreach Using Legos", November, 2008.**
2. **MSU State News, "Plasma/LCD TVs", October 2008.**
3. **Local TV Interviews**, "K-12 Education", Local Channels in Lansing, 2004, 2005, 2007**.**
4. **Voice of America Urdu Service**, "Youth and Education", 2007**.**
5. **Pakistan TV Program,** "Late Night Visitor Show", 2001.
6. **German TV,** "DAAD Scholar", 1979.

Book Chapters and Encyclopedia Articles 3

7. **D.M. Aslam**, "Electroluminescence in Diamond", in Handbook of Electroluminescent Materials", edited by D. R. VIJ, Institute of Physics Publishing, U.K. (2004), ***also listed under J. Papers.***
8. **D.M. Aslam**, "Optical Properties of Diamond", Encyclopedia of Optics, Elsvier Publ., 2004, ***also listed under J. Papers.***
9. **M. Aslam** and P. Balk, "Processing Dependence and Structure of Hole Traps in SiO_2", Insulating Films on Semiconductors, eds. V.J. Verwey and Wolters, North Holland Publishing Co. (1983), ***also listed under J. Papers.***

Conference Chair/Co-Chair, Workshop-Chair, Session-Chair 16

1. **Workshop Chair**, "Hands-on Nanotechnology and Microsystems", ASEE NCS Conference, Grand Rapids, USA, March 2009.
2. **Student Poster Session Chair**, "Energy Scavenging for Microsystems", IEEE SEM Fall Conference on Green Energy in Great Lakes, Dearborn, MI, November, 2008.
3. **Session Chair**, Int Conference on Commercialization of Micro and Nano Sysytems (COMS), Puerto Vallarta, Mexico, 2008.
4. **Workshop Co-Chair**, "Robotics and Nanotechnology", IEEE Science Teacher Workshop (10 teachers), Dearborn, MI, USA, August 2008.
5. **Workshop Chair**, "Hands-on Nanotechnology and Microsystems", ASEE Conference (17 teachers), Pittsburgh, USA, June 2008.
6. **Chair Technical Session D,** "Material Considerations", ASEE Zone 1 Conference, West Point, New York, USA, March 2008.
7. **Workshop Chair**, "Hands-on Nanotechnology and Microsystems Learning Modules", ASEE Zone 1 Conference (16 teachers), West Point, New York, USA, March 2008.

8. **Workshop Chair,** "Hands-on Nanotechnology and Microsystems Learning Modules", New York State United Teachers (76 teachers), Latham, New York, USA, March 2008.
9. **Chair Technical Session B,** 6th International Workshop & Training Course on Microelectronics; Micro- and Nano-electronics & Photonics, Islamabad, Pakistan, April 9-13, 2007.
10. **Poster session Chair,** 2006 Nanomedicine Symposium, Michigan State University, E. Lansing, MI, April 29, 2006.
11. **Member of Organizational Committee**, 2006 Nanomedicine Symposium, Michigan State University, E. Lansing, MI, April 29, 2006.
12. **Chair Hands-On One-Day Science Teacher Workshop**, Science and Math Education, Michigan State U, 2002.
13. **Workshop Chair,** Sci Teacher Workshop at Okemos High School near Michigan State University "Elementary School to Ph.D.", June 2002.
14. **Workshop Chair,** Sci Teacher Workshop at University of Michigan on "Elementary School to Ph.D.", June 2001.
15. **Poster Session Co-Chair,** SID Symposium, University of Michigan, Ann Arbor, 1999.
16. **Poster Session Co-Chair:** 3rd Int. Conf. on Applications of Diamond Films And Related Materials, Gaithersburg, Washington D.C.; Co-chair of Poster Session II, 1997.
17. **Conference Co-Chair:** SPIE Conference on "Diamond Film Semiconductors" (vol. 2151), Los Angeles, CA, 1994; co-chaired by M.A. Tamor and M. Aslam, 1994.

Research Short Courses 7

1. **Two Short Courses;** "Hands-on Learning Modules for Understanding Microsystems/MEMS", GIKI, Topi, Pakistan, April 2007.
2. **Short Course:** "Microcontroller Programming and Educational Modules", Michigan Technological University, Houghton, Summer 2004.
3. **Short Course:** "Microcontroller Programming and Robots", Naval Engineering College (Karachi), 2001.
4. **Short Course:** "Microcontroller Programming and Robots", EME College, NUST (Islamabad), Pakistan, 2001.
5. **Short Course:** "Diamond Sensors and MEMS", IEEE Int. Conf. on Solid State Sensors and Actuators (Transducers'97), Chicago, 1997.
6. **Short Course** on sensors given at NUST (Pakistan), 1993.

Outreach Short Courses 51

1. **Four** 14-week courses at Woodcreek Magnet Elementary School, Lansing, 2008, Each course; 50 min per week, 20 children (2 in Fall and 2 in Spring).
2. **Short Course;** "Nano Robotics and Technology", Impressions 5 Museum, March 2008; 5 hours, 120 visitors.
3. **Six Short Courses;** "Technology Assisted Science, Engineering and Mathematics (TASEM)", MSU Nanotechnology and Robotics Summer Camp, July-August 2007, each short course; 8 hours, 30 children.
4. **One Short Course;** "Technology Assisted Science, Engineering and Mathematics (TASEM)", MSU Nanotechnology and Robotics DAPCEP, July-August 2007, each short course; 12 hours, 26 High School students.
5. **Four** 14-week courses at Woodcreek Magnet Elementary School, Lansing, 2007, Each course; 50 min per week, 20 children (2 in Fall and 2 in Spring).
6. **Short Course;** "Technology Assisted Science, Engineering and Mathematics (TASEM)", Impressions 5 Museum, April 2007, 6 hours, 80 visitors.
7. **Six Short Courses;** "Technology Assisted Science, Engineering and Mathematics (TASEM)", Woodcreek Magnet Elementary School, Lansing, 2004 - 2006.
8. **Eight Short Courses;** "Technology Assisted Science, Engineering and Mathematics (TASEM)", MSU Summer Camp, July-August 2006.

9. **Two Short Courses;** "Technology Assisted Science, Engineering and Mathematics (TASEM)", Oakland Schools Summer Camp, June/July 2006.
10. **Six Short Courses;** "Technology Assisted Science, Engineering and Mathematics (TASEM)", MSU Summer Camp, July-August 2005.
11. **Two Short Courses;** "Technology Assisted Science, Engineering and Mathematics (TASEM)", Oakland Schools Summer Camp, June/July 2005.
12. **Six Short Courses;** "Technology Assisted Science, Engineering and Mathematics (TASEM)", MSU Summer Camp, July-August 2004.
13. **Short Course:** "WIMS for precollege students", Okemos community Education, Summer 2003.
14. **Short Course:** "WIMS for precollege students", July 2000, Sponsored by Diversity Programs Office at Michigan State University, 2002.
15. **Short Course:** "WIMS for precollege students", July 2000, Sponsored by Diversity Programs Office at Michigan State University, 2001.
16. **Short Course:** "WIMS for precollege students", July 2000, Sponsored by Diversity Programs Office at Michigan State University, 2000. ***First ever courses on WIMS.***

Oral/Poster Conference Presentations 119

1. ***D.M. Aslam****, S. Hatch, and C. Rostamzadeh, "On the Diverse Educational Applications of Van de Graaff Generators", ASEE North Central Section Conf., Grand Rapids, MI, 2009.*
2. *Mike Varney, Abed Janoudi, Sean Hatch, **D.M. Aslam**, Diane Graham, "Hands-on TASEM Modules for Third Graders in Woodcreek Magnet Elementary School", ASEE North Central Section Conf., Grand Rapids, MI, 2009."*
3. *S. Hatch, B. Chaudhry, C. Rostamzadeh, and D.M. Aslam, "Energy Scavenging from Static Charges", IEEE SEM Fall Conference on Green Energy in Great Lakes, Dearborn, MI, November, 2008.*
4. *Z. Cao and D.M. Aslam, "MEMS Packaging with Built-in Energy Scavenging Devices", IEEE SEM Fall Conference on Green Energy in Great Lakes, Dearborn, MI, November, 2008.*
5. *D.M. Aslam, Z. Cao, and C. Rostamzadeh, "Hands-on Micro and Nano Learning Modules Using Programmable Lego® Robotic Van de Graaf Generators and Their Commercialization", COMS 2008 Conf., 2008.* ***Best Paper Award***
6. *H-Y Chan, D.M. Aslam, S. Hatch, J. Wiler, and B. Casey, "In vitro and In vivo Neural Recordings using Diamond Neural Probes", COMS 2008 Conf., 2008.*
7. *D.M. Aslam, Z. Cao and C. Rostamzadeh , "Innovative Engineering Education Using Programmable Lego Robotic VD Graaf Generators", Proc. ASEE Zone 1 Conf., West Point, New York, 2008.*
8. *D.M. Aslam and A. Shao, "Nanotechnology Learning Modules Using Technology Assisted Science, Engineering and Mathematics", Proc. ASEE Zone 1 Conf, West Point, New York, 2008.*
9. Najamuddin, Shafaat A. Bazaz, H.Y.Chan, **D.M.Aslam**, "Impedance Characterization of MEMS based All Diamond Neural Probe", The 20th IEEE International Conference on Microelectronics, Sharjah, 14-17 December, 2008.
10. *H. Chan, M. Varney, **D.M. Aslam** and K.D. Wise, "Fabrication and Characterization of All-diamond Microprobes for Electrochemical Analysis", IEEE NEMS, China, 2008;* ***selected among the 10 best papers.***
11. *J. Lu, N. Sepulveda, Z. Cao, **D.M. Aslam**, J.P Sullivan "High Performance Polycrystalline Diamond Micro Resonators", IEEE NEMS, China, 2008.*
12. *H. Chan, **D.M. Aslam** and K.D. Wise, "Fabrication and Characterization of All-diamond Microprobes for Electrochemical Analysis", IEEE MEMS, Phoenix, Arizona, 2008.*
13. *A. Shao, **D.M. Aslam** and E. T. Zellers, "Carbon nanotube selective growth for micro gas chromatograph and chemical nano-sensors", ENATBio, Emerging Nanoscience Applications in Technology and Biomedicine , Wayne State University, Detroit, 2007.*
14. *G. Wile and **D.M. Aslam**, "Design, Fabrication and Testing of a Miniature Wall Climbing Robot Using Smart Robotic Feet", International Conference on Cybernetics and Information Technologies, Systems and Applications, Orlando, FL, 2007.*
15. *Y. Tang and **D.M. Aslam**, "3rd generation Diamond Cochlear Probes", ADC Conf., 2006.*
16. *X. Zhu and **D.M. Aslam**, "Thin Film Diamond MEMS Packaging", ADC Conf., 2006.*
17. *Y. Tang and **D.M. Aslam,** "Diamond Cochlear Probe", IEEE NEMS, China, 2006.*
18. *X. Zhu and **D.M. Aslam,** "Diamond MEMS Packaging", IEEE NEMS, China, 2006.*
19. *N. Sepulveda-Alancastro, **D.M. Aslam,** "RFMEMS Resonators", J. Sullivan, IEEE NEMS, China, 2006.*

20. N. Sepulveda, **D.M. Aslam** and J. Sullivan, "Polycrystalline Diamond RFMEMS Resonators with Highest Quality Factors", EEE Int. Conference on Micro Electro Mechanical Systems (MEMS 2006), Istambol, Turkey, 2006.
21. Y. Tang, **D.M. Aslam,** J. Wang, K.D. Wise, "Diamond Position Sensors for Cochlear Probe", Transducrs' 05, Seoul, S. Korea, 2005.
22. X. Zhu and **D.M. Aslam,** "All-Diamond Thin Film Packaging", Transducrs' 05, Seoul, S. Korea, 2005.
23. J. Ren, T. Li and **D.M. Aslam**, "A Power Efficient Link-layer Security Protocol (llsp) for Wireless Sensor Networks", IEEE Milcom 2005, Oct. 17-20, 2005, Atlantic City, NJ.
24. Tang et al., ADC 2005, Chicago.
25. Zhu et al., ADC 2005, Chicago.
26. Lu et al., ADC 2005, Chicago.
27. Sepulveda-Alancastro et al., ADC 2005, Chicago.
28. **D. M. Aslam** and Y. Lu, "CNT for Micro GC and Chemical Sensors ", Proc. Sensors Expo 2004, ed., Roger Grace, June, Detroit, 2004.
29. N. Supelveda-Alancastro and **D.M. Aslam,** "Polycrystalline Diamond Technology for RFMEMS Resonators", Proceedings of Micro and Nano Engineering 2003, Cambridge, UK, Sept. 2003.
30. M. Baur and D.M. Aslam, Robotics Conf., Orlando, Florida, 2003.
31. X. Zhu and D. Aslam, MEMS 2003. Japan, 2003.
32. Y. Tang, S. Sahli, **D. M. Aslam**, D. Merriam, and K. D. Wise, "Poly-diamond inter- and intra-grain piezoresistive position sensor design for WIMS", AICHE Annual Conference on Sensors, Indianapolis, 2002.
33. U. Kim and D.M. Aslam, "Field Emission Electro-Luminescence on Diamond and Carbon Nanotube Films", SID symposium, Detroit, MI, 2001.
34. U. Kim and D. Aslam, SID Symposium, 2000.
35. R. La1 Tummala', R. Mukherjee', **D. M. Aslam**, Ning Xi', S. Mahadevan, and J. Weng, " Reconfigurable Adaptable Micro-robot", IEEE Conf. on Systems, Man and Cybernetics, Tokyo, Japan, 1999.
36. V. Papageorgiou, D.M. Aslam and K. Najafi, "Diamond MEMS", SID Symposium, University of Michigan, 1999.
37. U. Kim and D.M. Aslam and S. Kwon, "Field Emission Mapping", ,IVMC 98, Ashevillea, NC, 1998.
38. C. Koellner, U. Kim and D.M. Aslam and S. Kwon, "Field Emission Testing System", ,IVMC 98, Ashevillea, NC, 1998
39. D. Hong and D.M. Aslam, "Field emission Displays", SID 97, U of Michigan, 1997.
40. D. Hong and D.M. Aslam, "Simulation of FE structures", IVMC 97, South Korea, 1997.
41. D. Hong, D.M. Aslam, T. Grimm and S. Bandy, "Ion Implanted FE structures", IVMC 97, South Korea, 1997.
42. Y. Li, D.M. Aslam and S. Kwon, "Field Emission From Low Temperature Diamond", , IVMC 97, South Korea, 1997.
43. S. Kwon, D.M. Aslam, Y. Li and Y. Lee, "Field Emission From MPCVD Films", , IVMC 97, South Korea, 1997.
44. D.M. Aslam, Y. Li and W. McColl, "Field emission from Diamond deposited at low temperature", Diamond'97, UK, 1997.
45. D. Hong and D. M. Aslam, "Fabrication and Optimization of Diamond Field Emiion DisplayCell in Triode Modes", Diamond '96, Tours, France.
46. S. Sahli and D. M. Aslam, "Effect of Annealing Resistivity", Diamond '96, Tours, France, 1996.
47. S. Sahli and D. M. Aslam, "Inter- and Intra-grain Conduction in Polycrystalline Diamond", Diamond '96, Tours, France, 1996.
48. G.S. Yang and D. M. Aslam[2], Diamond Temperature Sensors and Heaters", Diamond '96, Tours, France, 1996.
49. D. Hong and D. M. Aslam, "Diamond Field Emitters", IVMC 96, Saint Petersburg, Russia, 1996.
50. D. Hong and D. M. Aslam, "Diamond Field Emitter Displays", IVMC 96, Saint Petersburg, Russia, 1996.
51. M. Aslam and D. Hong, "Diamond Field Emitter display Technology", SID Symposium on Vehicle Displays, Ypsilanti, MI, 1996.
52. S. Sahli and M. Aslam, "Pressure Sensors", Transducers 95, Stockhom, Sweden, 1995.
53. M. Aslam and D. Schulz, "Technology of Diamond Microelectromechanical Systems", Transducers 95, Stockhom, Sweden, 1995.
54. S. Sahli and M. Aslam, "Pressure Dependence of Piezoresistance", Applied Diamond Conference, Gaithersburg, USA, 1995.
55. S. Sahli, X. Hou and M. Aslam, "CBS....", Applied Diamond Conference, Gaithersburg, USA, 1995.
56. G.S. Yang and M. Aslam, "Temperature Sensors and Heaters", Applied Diamond Conference, Gaithersburg, USA, 1995.
57. D. Hong and M. Aslam, "Diamond Field Emitters", Applied Diamond Conference, Gaithersburg, USA, 1995.

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58. D. Hong and M. Aslam, "Diamond Field Emitter Study", IVMC 95, Portland, USA, 1995.
59. D. Hong and M. Aslam, "Diamond Field Emitter Pressure Sensor", IVMC 95, Portland, USA, 1995.
60. D. Hong and M. Aslam, "Diamond Field Emitter Displays", IVMC 95, Portland, USA, 1995.
61. S. Sahli and M. Aslam, "Pressure Dependence of Resistance", CFMR Symposium, MSU, E. Lansing, 1995.
62. S. Sahli, X. Hou and M. Aslam, "", CFMR Symposium, MSU, E. Lansing, 1995.
63. M.D. Jaeger, B. Golding, M. Thorpe, K. Shirai and M. Aslam, "Electrical Contacts to 3D Diamond Microcrystals", Bull. A.P.S. **40**, 221(1995).
64. S. Sahli and M. Aslam, "Pressure Dependence of Piezoresistance", CFMR Symposium, 1994.
65. S. Sahli , X. Hou, M.Aslam and B. Golding, "CBS Measurements", CFMR Symposium, 1994.
66. G.S. Yang and M. Aslam, "Ultra-High Nucleation Diamond Films for Thermistors", CFMR Symposium, 1994.
67. D.S. Hong and M. Aslam, "Diamond Cold Emitters", Diamond Technology Workshop, WSU, Troy MI, 1994.
68. G.S. Yang and M. Aslam, "Ultra-High Nucleation Density for Diamond Growth", Diamond Technology Workshop, WSU, Troy, MI, 1994.
69. Abu-Ageel, **M. Aslam**, L. Rimai, "Electrical Characterization of Polycrystalline SiC Thin Films Deposited on Fused Silica Substrates by Laser Ablation", Diamond Technology Workshop, WSU, Troy, MI, 1994.
70. Herr, J. Beck, J. McGrath, S. Sahli and **M. Aslam**, "Estimation of Diamond Film Thermal Conductivity Using Optimal Design Techniques", Sixth Inverse Problems in Engineering Seminar and Workshop, Cincinnati, 1994.
71. D.S. Hong and **M .Aslam**, ICNDST-4 (4th Int. Conf. New Diamond Sci. & Technol.), Kobe, Japan, 1994.
72. Yang, **M .Aslam** et al., ICNDST-4 (4th Int. Conf. New Diamond Sci. & Technol.), Kobe, Japan, 1994.
73. D.S. Hong and **M. Aslam**, "Field Emission From p-Type Polycrystalline Diamond Films", IVMC'94, Grenoble, France, 1994.
74. S. Sahli, X. Hou and **M. Aslam**,"Current Bias Stressing of p-type Diamond Films at Different Temperatures", High Temp. Elect. Conf., North Carolina, 1994.
75. G.S. Yang and **M. Aslam**, "Ultra High Nucleation Density for Diamond Temperature Sensors", High Temp. Elect. Conf., North Caroina, 1994.
76. Feldmann, M. Olinger and **M. Aslam**, "Analysis of New Cold Cathode Microelctrometer Using a Novel Corrugated Anode", Position Location and Navigation Symposium (PLANS'94), 1994.
77. Herr, J. Beck, J. McGrath, S. Sahli and **M. Aslam**, "Method Measuring Doped Diamond Film Thermal Conductivity Using Infrared Thermography", SPIE Int. Conf. on Diamond Film Semiconductors, Los Angelas, 1994.
78. **M. Aslam,** A. Masood, M. Tamor, "CVD Diamond Temperature Sensors", SPIE Int. Conf. on Diamond Film Semiconductors, Los Angelas, 1994.
79. Abu-Ageel, **M. Aslam**, L. Rimai, "Electrical Characterization of Polycrystalline SiC Thin Films Deposited on Fused Silica Substrates by Laser Ablation", Int. Conf. on SiC and Related Materials, Washington DC, 1993..
80. Taher, **M. Aslam**, M.A. Tamor, "CVD Microstructures for Sensor Applications", 2nd Int. Conf. on Application of Diamond Films and Related Materials", Tokyo, Japan, 1993.
81. D.S. Hong, **M. Aslam**, M. Olinger and M. Feldmann, "Simulations of Fabricated Field Emitter Structures", International Conference on Vacuum Microelectronic, Rode Island, USA, 1993.
82. **M. Aslam**, I. Taher, M.A. Tampor, R. Elder, "CVD Diamond Piezoresistive Sensors", Transducer 93, Int. Conference on Solid -State Sensors and Actuators, Yokohama, Japan, 1993.
83. Taher, **M. Aslam**, M.A. Tamor, "CVD Polycrystalline Diamond Structures For Micromechanical Sensor Applications", Diamond Workshop, Madison, Wisconson, USA, 1993.
84. Taher, **M. Aslam**, M.A. Tamor, "Doping Dependence of Piezoresistive Effect in Diamond", CFMR Symposium, MSU, 1993.
85. Rimai, R. Ager, J. Hangas, C. Peters, E.M. Logothetis, N. Abu-Ageel and **M. Aslam**, "Laser Deposited SiC on Fused Silica and Sapphire Substrates", MRS Meeting, Boston, 1992.
86. **M.Aslam**, G. Myers, P. Klimecky, L. Cathey, R. Elder and B. Artz, "Characterization of Evaporated Si Cold Emitters", 5th International Conference on Vacuum Microelectronics, Vienna, Austria, 1992.
87. **M. Aslam**, I. Taher, A. Masood, M. Tamor, "CVD Diamond Piezoresistive Sensors", 3rd International Conf. on New Diamond Science and Technol. & Diamond 92, Heidelberg, Germany, 1992.
88. Masood, **M. Aslam**, I. Taher, M. Tamor, T.J. Potter, C. Evans, T. Curtis and J. Ledford, "Diamond Piezoresistive Sensors for High Temperatures", CFMR Industry Symposium, East Lansing, MI, 1992.
89. klimecky, **M. Aslam**, G. Myers, R.E. Elder and B. Artz, " Current-Voltage Characteristics of Micromachined Si Vacuum Diodes", CFMR Industry Symposium, East Lansing, MI, 1992.
90. Pawlowski, **M. Aslam**, L. Rimai and W.P. Pratt, "In-Situ Laser Deposition of $YBa_2Cu_3O_x$ Films Using Microwave Plasma Disk Reactor Oxygen Source", CFMR Industry Symposium, East Lansing, MI, 1992.
91. Zapp, H. Tseng, **M. Aslam** and G. Brown, "Smart Logic Design for Instrumented Sphere Miniaturization", International Meeting of American Society of Agricultural Engineers, Sharlott, North Carolina, 1992.

92. **M. Aslam**, A. Masood, R.J. Fredricks, M.A. Tamor, "Thin Film Diamond Temp. Sensor Array for Harsh Aerospace Env.", SPIE Conf., Orlando, FL, 1992.
93. Masood, **M. Aslam**, M.A. Tamor and T.J. Potter, "Electrical Characterization of Boron Doped Diamond Film Resistors Synthesized by Hot-Filament CVD", 3rd Annual Diamond Workshop, Wayne State Uni., Detroit, MI, 1992.
94. **Aslam**, I. Taher, A. Masood, M.A. Tamor and T.J. Potter, "Homoepitaxial and Polycrystalline CVD-Diamond Films for Piezoresistive Devices", 3rd Annual Diamond Workshop, Wayne State Uni., Detroit, MI, 1992.
95. Masood, **M. Aslam**, M.A. Tamor and T.J. Potter, "Boron-doping and Electrical Characterization of Thin Diamond Films for Device Applications", ISDRS 91, Sharlottesville, Virginia, 1991.
96. **Aslam**, I. Taher, A. Masood, M.A. Tamor and T.J. Potter, "Technology and Characterization of CVD-Diamond Piezoresistive Devices", ISDRS 91, Sharlottesville, Virginia, 1991.
97. Tseng, **M. Aslam**, H.R. Zapp and G. Brown, "Multichip Housing for Instru. Sphere Miniaturization", American Society of Ag. Engineers Meeting, Chicago, IL, 1991.
98. Myers, **M. Aslam**, L. Cathey, R.E. Elder and B. Artz, "Fabrication of Silicon Cold-Cathodes by Electron Beam Evaporation", Technical Digest, 4th International Vacuum Microelectronics Conference, Nagahama, Japan, 1991.
99. Taher, **M. Aslam**, A.H. Meitzler, and G. sloka, "Resistance-vs-Strain Nonlinearity for Ion-Implanted, Junction-Isolated Piezoresistors", Sensors-Expo 90, Chicago, IL, U.S.A.(1990).
100. **Aslam**, B. Artz, T. J. Pratter, and S. Kaberline, "A Study of Micromachining-related Cross Contamination Pertaining to Hybrid Vacuum Microelectronic Devices," 3rd International Conference on Vacuum Microelectronics, Montery, CA, U.S.A.(1990).
101. Pawlowski, **M. Aslam**, L. Rimai, W.P. Pratt, "In-Situ Deposition of YBaCuO Films by Laser Deposition Using MPDR Oxygen Source", CFMR/Industry Symposium, Michigan State University, East Lansing, MI, U.S.A.(1991).
102. Pawlowski, **M. Aslam**, C. Nelson, W.P. Pratt, P. Vaishnava, E.M. Logothetis, and R. Soltis, "In Situ Deposition of YBaCuO Films by Laser Deposition", Fourth Annual CFMR/Industry Symposium, Michigan State University, East Lansing, MI, U.S.A.(1990).
103. Soltis, E. M. Logothetis, D. W. Hoffman, J.W. Hangas, Shinozaki, **M. Aslam**, L.E. Wenger, and J.T. Chen, "Deposition of $YBa_2Cu_3O_7$ Films on Sapphire by RF Triode Sputtering", International Conference on Science and Technology of Thin Film Superconductors, Denver, Colorado(1990).
104. Soltis, W.T. Donlon, S. Shinozaki, R.M. Ager, C.R. Peters, E.M. Logothetis, **M. Aslam**, L.E. Wenger, J.T. Chen, and R. Nelson, "Properties of BiSrCaCuO Films by RF Triode Sputtering", International Conference on Materials and Mechanisms of HTSC, Stanford University, Stanford, CA, U.S.A (1989).
105. R.E.Soltis, S.Shinozki, R.Ager, E.M.Logothetis, **M.Aslam**, L.E.Wenger and J.T.Chen, "R F Triode Sputter Deposition of Superconducting BiCaSrCuO Films", American Physical Soc. Meeting St.Louis, U.S.A. (1989).
106. **Aslam**, "Performance-limiting defects in VLSI devices", CM/ESD Conference, Dearborn, MI, U.S.A. (1989).
107. Soltis, S. Shinozaki, R.M. Ager, R.E. Chase, E.M. Logothetis, **M.Aslam**, R.Nelson, M.Gorbett, J.T.Chen and L.E.Wenger "Superconducting YBaCuO Films on Si and SiO_2 and SiO_2/Si Without Buffer Layers", Conf. on Science and Technology of Thin Film Superconductors, Colorado Springs, Colorado, U.S.A.(1988).
108. Soltis, **M. Aslam,** S. Shinozaki, R. Ager, E.M. Logothetis, J.T. Chen, and L.E. Wenger, "Rapid Thermal Annealing of YBaCuO Films on Si and SiO_2 Substrates", International Materials Research Society Symposia, Boston, Massachusetts, U.S.A., (1988).
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114. **Aslam** and P. Balk, "Structural Relationship Between Electron and Hole Traps in Thermal SiO_2 Films", 1983 IEEE Semiconductor Interface Specialists Conference, Fort Lauderdale, U.S.A., (1983).
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117. **Aslam**, R. Singh, and P. Balk, "Electronen-Selftrapping in SiO_2 von MOS-Strukturen", German Physical Society Conference, Freudenstadt, Germany (1983).

118. **M. Aslam**, M. Maier, D.R. Young, and P. Balk, "Effect of High Temperature Annealing on Electron Traps in SiO_2", ESSDERC and Symposium 82, Munich, Germany, (1982).

Invited and Other Seminars 28

1. D.M. Aslam, "Carbon-Based MEMS", Center for Micromanufacturing, Louisiana Tech U, Ruston, June 2008.
2. D.M. Aslam, "From Micro Electro Mechanical Systems to Diamond Neural Probes", Inst. Theoret. Physik, Technical University of Berlin, Berlin, Germany, December 2007.
3. D.M. Aslam, "Design, Fabrication and Testing of All-Diamond Neural Probes", Inst. Messtechnik, Technical University of Berlin, Berlin, Germany, December 2007.
4. D.M. Aslam, "Carbon Basen Micro and Nano Technologies for Microsystems", University of Engineering and Technology, Lahore, Pakistan, April 2007.
5. D.M. Aslam, "Carbon Basen Micro and Nano Technologies for Microsystems", GIK Institute of Technology, Topi, Pakistan, April 2007.
6. D.M. Aslam, "Role of Micro and Nano in TASEM", Owosso School, Owosso, MI, March 2007.
7. D.M. Aslam, "TASEM for Lay Audiences", Impressions 5 Museum, Lansing, 2006.
8. D.M. Aslam, "Role of Micro and Nano in TASEM", Department of Science Education, Harvard University, Cambridge, MA, 2006.
9. D.M. Aslam, "Role of Micro and Nano in TASEM", Center for Innovations in Education, Princeton University, Princeton, NJ, 2006.
10. D.M. Aslam, "Diamond Technology for Microsystems", Electrical Engineering, University of South Florida, Tampa, April 5, 2006.
11. D.M. Aslam, "Science Teacher Seminar", Science and Math Education, Michigan State U, 2002.
12. "Carbon-based Micro and Nano Technologies for WIMS", University of Michigan, Ann Arbor, MI, 2002.
13. "Diamond Sensor Technologies" Delphi Automotive, Warren, MI, 2000.
14. "Technology of poly-diamond: FED, sensors and MEMS", CMP seminar, Physics Dept, MSU, 2000.
15. "Diamond sensors", MSU Cyclotron Center, 1999.
16. "IC-compatible Diamond Films Technology for Automotive Sensors", Delco Electronics, Kokomo, IN, 1998.
17. "IC-compatible Diamond Films Technology for Field Emission Displays and Sensors", OIS, Northville, MI, 1998.
18. "Poly- and Microcrystalline Diamond Films Technology for Field Emission Displays", Display Technology and Manufacturing Center, University of Michigan, Ann Arbor, MI, 1997.
19. "Fabrication and Optimization of Triode Field Emission Displays Cells", SID Detroit Chapter Seminar, Michigan State University, E. Lansing, MI, 1997.
20. "Diamond Film Technology for Field Emission Displays", University of Michigan, Ann Arbor, MI, 1996.
21. "On-Chip Si Vacuum Microtubes", Wayne State University, Detroit, MI, 1992.
22. "Trapping Centers in MOS Devices with A1, Poly-Si or YBaCuO Gates", Electrical Engineering and Systems Science, Michigan State University, East Lansing, Michigan, U.S.A. (1988).
23. "Trapping Centers in MOS Devices with A1, Poly-Si or YBaCuO Gates", Microelectronics Center of North Carolina, Research Triangle Park, North Carolina, U.S.A. (1988).
24. "Common Origin for VLSI/ULSI Instabilities Related to Charge Trapping in SiO_2", Ford Scientific Research Laboratories, Dearborn, Michigan, U.S.A. (1987).
25. "Device Aspects of Optical Fibre Communication Systems", Avionics Engineering, PAF College of Aeronautical Engineering, Karachi, Pakistan (1985).
26. "Common Origin for Electron and Hole Traps in SiO_2 of MOS-Structures", ESAT Laboratory, Katholieke University Leuven, Heverlee, Belgium (1984).
27. "Structure of Electron and Hole Traps in Thermal SiO_2", Department of Electrical and Computer Engineering, Wayne State University, Detroit, Michigan, U.S.A. (1983).
28. "Annealing Behavior of Electron and Hole Traps in SiO_2 of MOS- Structures", Institute of Solid State Physics, Technical University, Munich, Germany (1983).
29. "High Temperature Annealing Behavior of Trapping Sites in SiO_2", Siemens Research Laboratories, Munich, Germany (1983).

Non-Reviewed Posters in Regional Research Meetings 54

[The noumber of papers/posters and participants in these meetings are over 150 and 175, respectively]

1. H. Chan, A. Shao, **D.M. Aslam,** "Growth of Conformal Carbon-Nanotube Layers for a μGC", WIMS ERC IAB Meeting, U of Michigan, Ann Arbor; ***2 posters*** during 2008.
2. Z. Cao, J. Lu and **D.M. Aslam,** "Poly-C Micro- and Nano-Resonators", WIMS ERC IAB Meeting, U of Michigan, Ann Arbor; ***2 posters*** during 2008.
3. Z. Cao and **D.M. Aslam,** "Poly-C MEMS Smart Packaging", WIMS ERC IAB Meeting, U of Michigan, Ann Arbor; ***2 posters*** during 2008.

4. H-Y. Chan and **D.M. Aslam,** "All-Diamond MEMS Neural Probes", WIMS ERC IAB Meeting, U of Michigan, Ann Arbor; ***2 posters*** during 2007.
5. A. Shao, **D.M. Aslam,** "Growth of Conformal Carbon-Nanotube Layers for a µGC", WIMS ERC IAB Meeting, U of Michigan, Ann Arbor; ***2 posters*** during 2007.
6. J. Lu and **D.M. Aslam,** "Poly-C Micro- and Nano-Resonators", WIMS ERC IAB Meeting, U of Michigan, Ann Arbor; ***4 posters*** during 2006-07.
7. Z. Cao and **D.M. Aslam,** "Poly-C MEMS Smart Packaging", WIMS ERC IAB Meeting, U of Michigan, Ann Arbor; ***2 posters*** during 2007.
8. H-Y. Chan and **D.M. Aslam,** "All-Diamond MEMS Neural Probes", WIMS ERC IAB Meeting, U of Michigan, Ann Arbor; ***2 posters*** during 2007.
9. X. Zhu and **D.M. Aslam,** "All-Diamond Packaging for WIMS", WIMS ERC IAB Meeting, U of Michigan, Ann Arbor; ***10 posters*** during 2002-07.
10. Y Tang, and **D.M. Aslam,** "Ultra-Sensitive Sensors for a Cochlear Prosthesis", WIMS ERC IAB Meeting, U of Michigan, Ann Arbor; ***12 posters*** during 2001-07.
11. Y. Lu and **D.M. Aslam,** "Growth of Conformal Carbon-Nanotube Layers for a µGC", WIMS ERC IAB Meeting, U of Michigan, Ann Arbor; ***6 posters*** during 2002-05.
12. N. Sepulveda-Alancastro and **D.M. Aslam,** "Poly-C RFMEMS Resonators", WIMS ERC IAB Meeting, U of Michigan, Ann Arbor; ***8 posters*** during 2002-06.

Non-Reviewed Technical Reports 29

1. A. Shao, **D.M. Aslam,** "Growth of Conformal Carbon-Nanotube Layers for a µGC", WIMS Annual Report (U of Michigan, Ann Arbor), p-47, 2006.
2. H-Y Chan, Y Tang, and **D.M. Aslam,** "All-Diamond Probes for Cochlear and Neural Application", WIMS Annual Report (U of Michigan, Ann Arbor), p-66, 2006.
3. Y Tang, and **D.M. Aslam,** "Ultra-Sensitive Sensors for a Cochlear Prosthesis", WIMS Annual Report (U of Michigan, Ann Arbor), p-69, 2006.
4. **D.M. Aslam,** "Technology-Assisted Science, Engineering, and Mathematics for K-Ph-D Education", WIMS Annual Report (U of Michigan, Ann Arbor), p-161, 2006.
5. Z. Cao and **D.M. Aslam,** "Smart All-Diamond Packaging for WIMS", WIMS Annual Report (U of Michigan, Ann Arbor), p-91, 2006.
6. X. Zhu and **D.M. Aslam,** "All-Diamond Packaging for WIMS", WIMS Annual Report (U of Michigan, Ann Arbor), p-108, 2006.
7. J. Lu and **D.M. Aslam,** "Poly-C Micro- and Nano-Resonators", WIMS Annual Report (U of Michigan, Ann Arbor), p-110, 2006.
8. Y. Lu and **D.M. Aslam,** "Growth of Conformal Carbon-Nanotube Layers for a µGC", WIMS Annual Report (U of Michigan, Ann Arbor), p-47, 2005.
9. Y Tang and **D.M. Aslam,** "Ultra-Sensitive Sensors for a Cochlear Prosthesis"[3], WIMS Annual Report (U of Michigan, Ann Arbor), p-70, 2005.
10. X. Zhu and **D.M. Aslam,** "All-Diamond Packaging for WIMS", WIMS Annual Report (U of Michigan, Ann Arbor), p-91, 2005.
11. **D.M. Aslam,** "K-PhD: Cognitive Learning Modules For Science and Engineering in K-12", WIMS Annual Report (U of Michigan, Ann Arbor), p-148, 2005.
12. Y. Lu and **D.M. Aslam,** "Growth of Conformal Carbon-Nanotube Layers for a µGC", WIMS Annual Report (U of Michigan, Ann Arbor), p-52, 2003.
13. Y Tang and **D.M. Aslam,** "Ultra-Sensitive Sensors for a Cochlear Prosthesis"[4], WIMS Annual Report (U of Michigan, Ann Arbor), p-78, 2003.
14. X. Zhu and **D.M. Aslam,** "All-Diamond Packaging for WIMS", WIMS Annual Report (U of Michigan, Ann Arbor), p-109, 2003.
15. N. Sepulveda-Alancastro and **D.M. Aslam,** "Poly-C RFMEMS Resonators", WIMS Annual Report (U of Michigan, Ann Arbor), p-130, 2003.
16. **D.M. Aslam,** "K-PhD: Cognitive Learning Modules For Science and Engineering in K-12", WIMS Annual Report (U of Michigan, Ann Arbor), p-158, 2003.
17. N. Sepulveda-Alancastro and **D.M. Aslam,** "Poly-C RFMEMS Resonators", WIMS Annual Report (U of Michigan, Ann Arbor), p-64, 2002.
18. Y Tang and **D.M. Aslam,** "Ultra-Sensitive Sensors for a Cochlear Prosthesis", WIMS Annual Report (U of Michigan, Ann Arbor), p-69, 2002.
19. Y. Lu, U. Kim, and **D.M. Aslam,** "Growth of Conformal Carbon-Nanotube Layers for a µGC", WIMS Annual Report (U of Michigan, Ann Arbor), p-93, 2002.
20. X. Zhu and **D.M. Aslam,** "All-Diamond Packaging for WIMS", WIMS Annual Report (U of Michigan, Ann Arbor), p-123, 2002.
21. R. Brown, ….. K.D. Wise, **D.M. Aslam**, et al., "Master of Engineering Degree in Integrated Microsystems",WIMS Annual Report (U of Michigan, Ann Arbor), p-133, 2002.
22. **D.M. Aslam,** "Microsensor Inspired Learning System (MILS) and Robot Inspired Learning System (RILS) in K-12", WIMS Annual Report (U of Michigan, Ann Arbor), p-139, 2002.
23. **M. Asalm**, G.S. Yang, A. Masood and R. Fredrick, "Diamond Film Temperature and Heat Flux Sensors", NASA Technical Report, 1995.
24. I. Taher, **M. Asalm**, M. Tamor, "CVD Diamond Films Strain Sensors", Ford Technical Memorandum, 1994.
25. M. **Aslam** and S.L. McCarthy, "Etching Behavior of Ambient Oxides in Si", Ford Technical Memorandum, SRM-87-14, 1987.
26. Do Thanh and **M. Aslam**, "Generation of Interface States in MOS Structures Upon Electron and Hole Injection", Jahresbericht 1982-83, Halbleitertechnik, Technical University, Aachen, Germany.
27. M. **Aslam** and R. Singh, "Annealing Behavior of Electron and Hole Traps in Polysilicon-SiO_2-Si Structures", Yahresbericht 1982-83, Halbleitertechnik, Technical University, Aachen, Germany.
28. M. **Aslam**, "Common Origin for Electron and Hole Traps in SiO_2", Yahresbericht, 1982-83, Halbleitertechnik, Technical University, Aachen, Germany.
29. M. **Aslam**, "Annealing Behavior of Electron Traps in SiO_2", Yahresbericht 1981, Halbleitertechnik, Technical University, Aachen, Germany.

7. RESEARCH FUNDING

7.1 NSF ERC Funding: $27M (MSU's share is $3.5M, Dean Aslam's share is $ 2.2M), 2000-2010

NSF ERC, "Wireless Integrated Microsystems",

Dean Aslam' Role: ***MSU-PI and Associate Director***

[3] Content of the report is updated every year without changing the title.
[4] Content of the report is updated every year without changing the title.

Table 3 *Eight Year Total Revenue to MSU = $ 2,535,635.61*

Year	Dean Aslam as MSI-PI: NSF $			Other Research Related Data				
	Total to MSU	Aslam's Share	Center-wide Av. per ERC Fac	Ph.D. graduated	Rev. Journal Publications	New Courses	Patents: Granted (Filed)	Spin-off Companies
2008	$ 347,000	$ 192,000	$ 105,000					
2007	$ 367,000	$ 192,000	$ 105,000	ERC Fac Av. Per Yr = **0.36**	ERC Fac Av. Per Yr = **0.51**	ERC Fac Av. 7 Yrs = **0.49**	ERC Fac Av. 7 Yrs = **1.4 (1.4)**	ERC Fac Av. 7 Yrs = **0.23**
2006	$ 407,620	$ 207,840	$ 107,000					
2005	$ 385,727	$ 237,532	$ 102,000	Aslam's Av. Per Yr = **0.5**	Aslam's Av. Per Yr = **2**	Aslam 8 Yrs = **2**	Aslam 8 Yrs = **1 (3)**	Aslam 8 Yr s = **1**
2004	$ 395,000	$ 213,266	$ 120,000					
2003	$ 333,268	$ 220,700	$ 97,000					
2002	$ 244,831	$ 192,039	$ 98,000					
2001	$ 214,704	$ 214,704	$ 109,000					
Average	**$ 336,893**	**$ 208,760**	**$ 105,000**					

7.2 Education Funding:

1. Woodcreek Magnet Elementary, "TASEM Learning Modules for 3rd Graders", 2008-9, $ 500**, PI**

7.3 Past Funding; *$ 2,368,055 (my share was $ 907,366)*

1. Lansing Area Schools and Parents, "TASEM Learning Modules for K-12 Education", 2008, $ 15,500, **PI**
2. Impressions 5 Museum, "TASEM Learning Modules for K-12 Education", 2007, $2,500, **PI**
3. Lansing Area Schools and Parents, "TASEM Learning Modules for K-12 Education", 2007, $ 15,500, **PI**
4. Lansing Area Schools and Parents, "TASEM Learning Modules for K-12 Education", 2003 – 06, $ 45,000, **PI**
5. Woodcreek Magnet Elementary, "TASEM Learning Modules for 3rd Graders", 2005-6, **$ 6,200, PI**
6. Oakland Schools, "TASEM Learning Modules for K-12 Education", 2005-06, **$ 6,200, PI**
7. NSF Equipment Grant, "Microfabrication equipment", 2001-04, multi-investigator, **$ 300,000**, (my share is $ 40,000), **Co-PI.**
8. DARPA, "Reconfigurable Adaptable Microrobot", 6 PIs, 1998-2002, **$1,430,355**, (*share is approximately* $245,000), founding **Co-PI**.
9. Terastore, "Carbon nanotubes", 2000-01, 2 PIs, **$ 19,000**, (my share is $ 19,000), **PI**.
10. NASA, "Carbon Nanotubes", 1999-00, 3 PIs. **$ 20,000** (my share is $ 6,666), **Co-PI.**
11. NSF MRSEC, "Sensor Materials", 1994-97, $ 230,000, **Co-PI**.
12. Norton, "Poly-C Films", 1993, $ 20,000, **PI**.
13. C&J Ind, "Poly-C Structures", 1992-93, $ 68,000, **PI**
14. NASA Langeley, "Poly-C Temperature Sensors", 1992-93, $ 100,000, **PI**.
15. Ford Sci. Labs., "Poly-C Technology and SiC films", 1990-94, $ 75,000, **PI**.
16. USDA, "Minaturization of Instrumented Sphere", 1989-90, $ 5,000, **PI**.
17. Chrysler Corporation, "MOS Relays", 1988-90, $ 34,000, **PI**.

8. PROFESSIONAL EXPERIENCE

8.1 Teaching/Research

Associate VP Americas	2008-	MANCEF (www.mancef.org), Albuquerque, New Mexico.
Associate Director	2000-	NSF Egineering Research Center for Wireless Integrated Mico Systems (located at U of Michigan, Ann Arbor).
Associate Professor	1988-	Electrical Engineering, Michigan State University, E. Lansing, MI, 48824.
Visiting Scholar	*2007-*	*Electrical Engineering and Computer Sciences, University of Michigan, Ann Arbor, MI*
Sabbatical Leave	*Fall 2007*	*U of Michigan, Ann Arbor, and Technical University of Berlin, Germany.*
Assistant Professor	1986-88	Elect. and Computer Engineering, Wayne State University, Detroit, MI 48202.
Summer Assignment	1987	Ford Scientific Research Laboratories, Dearborn, Michigan.
Squadron Leader	1984-86	Avionics Engineering Dept., PAF CAE, Karachi, Pakistan.
Post Doc. Position	1983-84	Electrical Engineering, Technical University (RWTH) Aachen.
DAAD Fellow	1975-83	RWTH Aachen, Germany.
Flight Lieutenant	1974-75	H & S Department, PAF College of Aeronautical Engineering, Karachi.
Lecturer	1970-74	Physics Department, Panjab University, Lahore, Pakistan.

8.2 Research Administration

2000 – Present	*Associate Director, NSF Engineering Research Center (ERC) for WIMS*
2000 – Present	*Member Executive Committee, WIMS ERC*
2000 – Present	*Member Administrative Committee, WIMS ERC*
1990 – Present	*MANTL Director & Principal Investigator on major External Funds (15 year average is **$ 120,000**)*

8.3 Industrial

1987 - 93	One day per week, Scientific Research Laboratories, Ford Motor Co., Dearborn, MI.

8.4 Academic

1999 - present One day per week, EECS Department, University of Michigan, MI.

8.5 Technological

1987 - Present Microsensor and micromachining technologies, IC-compatible diamond film technology for microsensors, MEMS and field emission displays.

1976 - 1984 MOSFET fabrication technologies and MOS characterization, RWTH Aachen .

8.6 Laboratory Development

- Micro and Nano Technology Lab **(MANTL);** Michigan State University (2000-present).
- *Microfabrication Laboratory* (cleanroom)**,** Michigan State University (with D.K. Reinhard).
- *Microsensor Lab.*, Michigan State University (C-V/I-V, field-emitter/microsensor characterization, etc.).
- *Microdevice Fabrication Laboratory* (class 100 cleanroom), designed at Wayne State University (1986-88).
- *MOS Characterization Laboratory*, Dept. of Semiconductor Engin., RWTH Aachen, Germany, 1978 - 80.

8.7 Hardware and Software Technologies

- ***Microcontrollers;*** chip programmers, C-compiler, system integration (robots, Microsystems, etc.).
- ***Operating Systems (familiarity/usage);*** Window, Linux, Mac.
- ***Software Tools;*** MS Office, OpenOffice, 3D StudioMax, Mathematica, Dreamweaver, CoventoreWare, PSpice, L-Edit.
- ***RFID (radio frequency identification);*** RFID readers, RFID tags, technology-assisted business innovations (TABI), robotic TABI table-top factories for supply chain models.
- ***Others;*** programmable robotic van de Graaff generators, GPS, HD Video shooting and editing, etc.

9. PROFESSIONAL AND PUBLIC SERVICE

Public Service and Service to Professional Societies

- IEEE founding SEM Nanotechnology Council Chair, 2008 -09.
- IEEE SEM Education Society Chair, 2008 - 09.
- Associate Vice President Americas of MANCEF, 2008-2010.
- A certificate of Appreciation awarded to Dean Aslam by American Society for Engineering Education for his service at West Point for ASEE Zone-1 conference, March 2008.
- Dean Aslam has served on the NSF review panel for the award of Micosystems Education Center (MEC) (awarded to TVI, UNM and Sandia) at TVI community college in Abuquerque, MN, 2003.
- Dean Aslam serves on National Visiting Committee of the TVI NSF Microsystems Education Center, 2004-2008.
- Faculty mentor, MSU branch of Student Leadership Council of NSF WIMS ERC during 2003-present.
- A certificate of Appreciation awarded to Dean Aslam and his grad students by Lansing School District for valuable contributions in K-12, 2004.
- In recognition of service of Dean Aslam his contribution to international peace and to Lansing area education, a special tribute was awarded by State Representative Paul N. DeWeese (of 67th district), Lansing, MI, 2002.
- Dean Aslam served on the Board of Directors of Global Hope Makers during 2001 - 2002.
- A Medal awarded to Dean M. Aslam in appreciation of his service to Detroit Chapter of ASM International, Farmington Hills, MI, U.S.A. (1990), 1990.

Professional Paid Consulting

2002-2003	Sentec Corporation, Walled Lake, MI; biomedical sensor using DRIE
2002	J. Boggs and Company; sensors in biomedical area
2000	Terastore, nanotubes.
1994 - 1995	S Diamond Optical Structures.
1992 - 1993	Smiths Industries, Grand Rapids, MI; cold emitter accelerometer.
1992 - 1993	Ford Motor Company, Dearborn, MI; diamond electronic devices.

Professional Volunteer Consulting & Service

2003 – present	Woodcreek Magnet Elementary School, science and technology curriculum development for better testing scores; live video interaction with their students out of my MSU office.
2002 – 2004	Rural Area Schools (Ovid-Elsie, MI), technology assisted science and engineering education to improve standards; live video interaction with their students out of MSU.

2000 – 2003 Okemos area schools, science, technology, engineering and mathematics (STEM) pilot program; three microsystems STEM hardware module categories (total of 15 modules) delivered for class room teaching in Okemos High (Mr. C. Kelly and Mr. J. Olstad).

2001 – 2002 After a 2nd grader from my K-12 team invented a robot and presented at the 2001 Ardesta Openhouse, Rick Schneider (CEO of Ardesta and Gateway Computers) donated $ 1,000 to Cornell Elementary School (the School of this second grader), Okemos, MI.

10. AWARDS, FELLOWSHIPS AND HONORS

- Best Paper Award for Innovations in Education received from COMS Int Conference, 2008.
- Member of National Visiting Committee of the TVI NSF Microsystems Education Center, 2004-2008.
- IGERT Program Award to Dean M Aslam by Dean of Engineering, University of South Florida, for support of their IGERT program, 2006.
- 'Excellent in Service' Award to Dean M. Aslam for chairing the poster session of 2006 Nanomedicine Conference, MSU, E. Lansing, 2006.
- Reviewer for IEEE Electron Device Letters, IEEE Trans. Electron Dev., IEEE JMEMS, Applied Physics Letters, J. Vacuum Science & Technology, J. of Applied Physics, Diamond and Related Materials, Carbon, Phys. Stat. Solidi, etc.
- Certificates of Recognition awarded to Dean Aslam by:
  - IEEE SEM section for outstanding contribution as invited speaker and to the success of the IEEE Fall 2008 SEM conference.
  - Sloan Foundation for graduating a minority doctoral student, 2008
  - ASEE Zone-1 for Contribution to Science Teacher Workshop at West Point, 2008.
  - Micro and Nanotechnology Commercialization Education Foundation for Contribution to High Desert MNT Regional Workshop, 2004.
  - MSU R.E. McNair Post-Baccalaureate Achievement Program for Mentoring a McNair/SROP Scholar.
- Member of Board of Directors of Global Hope Makers 2001-02.
- Member of Board of Directors of MSU Chapter of AAUP, 2008.
- Panelist for NSF research and SBIR proposals, 2003-present.
- DAAD (German Academic Exchange Service) Fellowship 1975-83.
- Pakistan Government Scholarship 1963-69 (awarded to high-achieving students).
- Senior Member of IEEE.
- Member of American Society for Engineering Education.

11. PERSONAL

US citizen
Languages other than English: *German, Urdu, Panjabi*
Hobbies: *Gardening, n*ew Lego-based innovative learning modules for K-12